

PRESS INFORMATION

VOLVO

Volvo Cars of North America, LLC



Volvo Cars of North America, LLC

PRESS INFORMATION

New 2004 Volvo S80 Takes Driving Dynamics and Elegance to the Next Level

Chicago, IL - Volvo Cars is now advancing in the prestige segment with the introduction of a renewed Volvo S80 that integrates a range of design and technology improvements.

"We're talking here about significant changes, changes that will give the model considerably enhanced competitiveness in its segment. The Volvo S80 has always been renowned for in terms of safety, comfort and space. Now we are taking a huge stride forward in terms of elegance and driving dynamics too," said Hans-Olov Olsson, President and CEO of Volvo Car Corporation.

First unveiled five years ago, the S80's success is grounded in its unique ability to deliver a premium driving experience with solutions that reflect the concern for issues beyond simple person pleasures. Built off the highly adaptable P2 platform, the S80 was Volvo's first large front-wheel-drive car. The transverse-mounted engine configuration allows increased interior accommodations while maintaining a relatively compact exterior profile.

For 2004, the new S80 retains all that has made it such a luxury showcase for Volvo and adds numerous interior and exterior enhancements, a new engine and Volvo's unique FOUR-C (Continuously Controlled Chassis Concept) for a refined driving experience like no other. "We are extremely excited about this latest edition to the S80 lineup," commented Vic Doolan, President and CEO of Volvo Cars of North America. "It's a stunning evolution of the S80's groundbreaking design and the FOUR-C chassis technology has made the car's already exemplary ride that much better."

Refined Style

"The new Volvo S80 refines perfection. It's not just a matter of design, but equally of technological refinement and aesthetic feel. The new Volvo S80 should be so comfortable and easy to drive that every journey is a relaxing and refreshing experience. The key word here is regeneration," noted Olsson. The design of the new S80 focuses on a number of subtle, but very effective details. The exterior has a more elegant stance with all new front and rear fascias.. Inside the car, the emphasis is on heightening the aura of exclusiveness, with features such as new door panels and chronograph-inspired instruments similar to those seen in the recently introduced S60 R and V70 R.

Refined Drive Characteristics

The S80's already commendable drive characteristics gain a major boost with the introduction of the optional FOUR-C (Continuously Controlled Chassis Concept) active-chassis system, which was first utilized in the Volvo S60 R and V70 R. In the S80, FOUR-C has been uniquely programmed to provide maximum comfort over just about any road surface. The driver has the option of selecting a sportier setting at the touch of a button on the instrument panel. Another new feature is the power steering from German specialist ZF. This gives the Volvo S80 more direct steering response and increased steering precision.

Sales and Demographics

European sales of the new Volvo S80 started at the beginning of 2003 while North American cars are set to go on sale mid-year 2003 Volvo Car Corporation, Sweden, initially has its sights set on selling more than 40,000 cars per year, of which 16,000 will be sold in North America.

Most S80 buyers are male (54.5%) with almost 80 percent being college graduates. Average household income is about \$135,000, and as is the case with other Volvo vehicles, S80 owners are very family centric, with almost 25 percent have two children.

Volvo Cars of North America, LLC is part of the Volvo Car Corporation of Göteborg, Sweden. The company provides marketing, sales, parts, service, technology

and training support to Volvo automobile retailers in the US, Canada, Mexico and Puerto Rico.

In addition to the new S80, the 2003/2004 Volvo Cars model line-up includes the award winning XC90 SUV, rugged XC70 (Cross Country) and the versatile V70, the sporty S60 sedan, C70 convertible, and compact S40 and V40 models.



Volvo Cars of North America, LLC

PRESS INFORMATION

The New Volvo S80 - A Study In Scandinavian Design

Chicago, IL - The new Volvo S80 retains its familiar looks - yet not quite. A number of new design details create an overall impression of a new prestige car in Volvo's model range. "All new parts are like polished diamonds. Correctly designed and placed in the appropriate setting, they forge a powerful image of elegance and prestige in a very Scandinavian way," says Steve Harper, the person responsible for the design of the new Volvo S80.

The design of the new Volvo S80 is packed with these "diamonds" - outside and inside - that are set to enhance an already clean styling language. The front fascia has been reworked. The soft-nose section that surrounds the grill has a new profile with a gentler transition to the body sides and includes a new spoiler panel. The air intake in the spoiler has been re-profiled and features a transverse chrome strip, which links together the foglamps. The foglamps are new and have larger light apertures. The grill has a square mesh pattern highlighted in dark silver metallic. The surrounding trim is chromed. This gives an elegant three-dimensional impression.

Chrome in combination with color-matched moldings and other details emphasize the car's clean, modern design. This applies, for instance, to the chromed door handles and the moldings below the side windows. The door mirrors have been redesigned to help reduce wind noise and dirt accumulation on the side windows.

Redesigned rear section

The rear of the Volvo S80 has been redesigned for more distinct style. The trunk lid is now made in one single piece. The panel, which holds the license plate, has been reshaped and is capped by a chrome trim panel.

The tail lamps are somewhat smaller. They make more room for the bumper cover, which is accentuated by a slim chrome strip at the bottom of the glass panel. The intervening space is painted in the body's color. The brake lamps now feature LED technology, which means the brake lights are activated more quickly.

The rear bumper has a more rounded profile. It is color-matched to the car's body, with the exception of the dark gray panel at the bottom. This harmonizes instead with a corresponding panel along either side of the body.

New door panels

The redesigned door panels create a more blended transition into the instrument panel. The front doors have new handles that make it easier to reach and close an open door.

Interior trim details such as the center console and controls are of a darker charcoal color than before. There is the option of panel inserts in aluminum or wood. The new wood panels are machined from cultivated walnut trees.

The ventilation system controls are accented with chromed inlays and the control panel for the power front seats is color-matched to the rest of the interior.

The textile upholstery on the rear hatshelf is of a new quality, of the same type as found in the Volvo XC90. The sun-visors are now covered in the same textile as the inner roof lining.

New instruments

The gauges in the instrument pod have been redesigned. In six-cylinder models a broad polished aluminum ring is used to create an elegant, sporty image surrounding the

dials. Five-cylinder models incorporate a thin metal dial surround, similar in appearance to those found in the XC90 SUV.

A new three-spoke wooden sports steering wheel is available as an option on the S80. The steering wheel is of the same type as that fitted to the S60 and V70.

S80 Premier - even more exclusive

The Volvo S80 Premier is the most exclusive Volvo S80 available. Several features available on this model only, such as Rear Seat Entertainment (RSE) system, special leather upholstery and genuine walnut panel inserts, are fitted as standard equipment to make the Volvo S80 Premier a motoring experience out of the ordinary.

Design summary;

1. Front section:

- Softer contour with a gentler transition to the body sides
- Redesigned spoiler and fog lights
- New grille and grille surround
- Redesigned outside mirrors

2. Rear section:

- One piece trunk lid with added chrome accent
- Smaller tail lamp design
- LED's replace traditional bulbs for tail lamps
- Restyled rear bumper

3. Interior:

- Front door panels feature larger handles
- Interior trim panels darker charcoal color
- Optional Walnut Wood or Aluminum insert panels
- Redesigned instrument cluster
- Optional three-spoke steering wheel



Volvo Cars of North America, LLC

PRESS INFORMATION

Volvo S80 Luxury + Four-C Chassis

Chicago, IL - The Volvo S80, the flagship of Volvo's sedan range, is now available with optional Four-C chassis suspension system. The same type of actively controlled chassis as fitted to the high-performance Volvo S60 R and V70 R. The difference is that in the Volvo S80, this technology has been adapted for front-wheel drive and is exploited primarily to enhance comfort.

As in the S60 R and V70R, the driver has the option of selecting chassis behavior, with a choice between a Comfort and a Sport setting. An Advanced Sport mode is added to the S60 R and V70 R.

Volvo active chassis technology makes for an extremely comfortable ride, particularly on poor quality road surfaces. Damping is adjusted continuously in response to road surface for an almost 'gliding across the road' feel. When the urge strikes to be a bit more spirited on an inviting stretch of twisting country road, a ugh touch on the FOUR-C button and the chassis setting is immediately transformed to suit a more enthusiastic driving style.

In Sport mode the dampers become firmer for a sportier road feel. This Sport setting gives the car quicker steering response and a firmer grip on the road. With a micro-adjustment time of about 500 times per second for each shock absorber, the suspension system is ready to respond almost instantly to driver and road demands.

In the "Sport" and "Comfort" settings, the Four-C chassis uses the control technology called Sky Hook that makes the body feel like it is floating along over irregularities in the road.

"It's almost as if the body of the car is suspended from above on virtual shock absorbers. Hence the expression Sky Hook", explains Marcus Rothoff, head of Four-C Technology development at Volvo Car Corporation.

Optimum distribution

A body in motion

When taking a curve, damping is controlled so that pressure on the road surface is distributed optimally between the four wheels. Well-balanced road surface contact promotes fast and distinct steering response.

To help provide controlled road holding and stability even at higher speeds, damping increases automatically with road speed. If lateral acceleration increases at the same time, for instance in a curve, this too increases the damping rate.

When the car is heavily laden, the damping rate is increased to reduce the risk of the suspension bottoming out and to maintain the car's ride and road holding characteristics.

During braking and acceleration, the system automatically strives to keep the body level with the road surface, without the dipping at the nose or squatting at the rear.

FOUR-C

The active chassis is based on a highly advanced technology known as FOUR-C (Continuously Controlled Chassis Concept). This system was developed together with Öhlins Racing AB. In FOUR-C, each shock absorber is regulated electronically and entirely individually. Damping is varied continuously with immense speed, from soft to hard in less than one twenty-fifth of a second. The driver does not notice the change.

Body and wheel movements are monitored continuously with the help of a number of sensors in the car. The sensors provide about 500 reading impulses a second, measuring parameters such as:

- The car's speed and acceleration

- Lateral acceleration (when taking a curve)
- The wheels' suspension movements
- The steering wheel's position and how fast it is turned
- The engine's current (calculated) torque
- The degree of braking

Owing to the speed of the FOUR-C system, the car can even handle really difficult "washboard" surfaces without causing the wheels to lose their composure.

FOUR-C is optional on the Volvo S80. The system requires that the car is equipped with DSTC - Dynamic Stability and Traction Control - since the DSTC sensors provide some of the necessary information about the car's behavior.

The combination of FOUR-C and DSTC makes the Volvo S80 a highly competent and extremely comfortable long-distance touring sedan - offering exceptional ride comfort allied to dependable road holding properties.

Improved steering characteristics

Just like the Volvo S60 R, Volvo V70 R and Volvo XC90, the new Volvo S80 is now equipped with a steering gear from ZF of Germany. The result is more direct steering response and enhanced steering precision.

ZF is also supplying the new speed-dependent power steering, which requires lower steering force when parking, yet without affecting steering precision at higher speeds.



Volvo Cars of North America, LLC

PRESS INFORMATION

Volvo Adds All-Wheel-Drive to S80 Sedan

Chicago, IL - The new 2004 Volvo S80 AWD showcases an electronically controlled Active On-Demand (AOD) system, which provides nearly instantaneous power distribution between the front and rear wheels. Borrowed from the S60 AWD, Volvo is continuing to expand its offering of all-wheel drive into popular sedan variants.

Like all current Volvo's with AVID this system operates completely automatically, independent of the driver. The advantage of the new system is the speed and sophistication with which it operates. All-wheel-Drive is standard on S80's with the 2.5T engine.

In normal driving situations, the S80 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 occurs 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 in 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. Up to 65 percent of the engine's power may be distributed 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 such as gravel, for example, the rear wheels can be engaged quickly with maximum power transfer. During low-speed cornering or parking maneuvers 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 DSTC - Dynamic Stability and Traction Control - traction control system) in the car to optimize traction in almost any driving situation.

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 S80 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 Folkesson, Senior Vice President of Research & Development at Volvo Car Corporation.

Smooth, seamless power for the S80 AWD comes from the proven 2.5-litre, 5-cylinder aluminum engine with variable valve timing and light-pressure turbocharger. Output is 208 hp at 5,000 rpm and maximum torque is 236 lb./ft. at a low 1,500 rpm. The engine is certified to meet ULEV II emissions standards.

Enhanced engine management software helps the engine deliver impressive power and highly responsive performance - important characteristics that contribute to the S80 AWD's dynamic character.