

Press Release

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ALL-NEW VOLVO V70: Takes Safety to New Heights

...including a world breakthrough for the benefit of families with young children

Geneva, Switzerland – (March 6, 2007) Volvo Cars introduces the third generation of its V70 wagon at the Geneva Motor Show. Volvo – a segment leader – looks to the all-new V70 as taking safety to new heights,...an area in which Volvo is also well-renowned.

"In developing the all-new V70 we aimed to produce the safest car in its segment," says Ingrid Skogsmo, Director of Volvo Cars Safety Center. "The V70 model is comprised of a sophisticated network of interacting safety systems, highly efficient energy absorption thanks to its patented body structure and the latest generation of side airbags and whiplash protection," Skogsmo notes. "Furthermore, we are introducing a world innovation in the field of child safety."

Improved Child Safety with Extended IC (Inflatable Curtain) and Integrated Booster Cushions – A World Breakthrough

To improve safety for children in the rear seat of the all-new V70 model, Volvo has further developed the Side Impact Protection System (SIPS) with a stronger body structure, extended inflatable curtains, and a world's-first height-adjustable integrated child booster cushion.

The booster cushion – integrated into the rear seat – is adjustable at two levels, allowing children of different sizes sufficient viewing out the windows, while still providing the most effective protection. The lower setting is intended for children between 42 and 55 inches in height and weighing between 48 and 79 lbs. The upper setting is designed for children measuring 37-47 inches and weighing between 33 and 55 lbs. The all-new Volvo V70 can be equipped with integrated child booster cushions in both outer rear seats.

The adjustable booster cushion means the seat belt geometry is optimum irrespective of the child's height. The integrated booster cushion is also accompanied by safety belts with specially adjusted force limiters. They contribute to the best possible protective effect by restraining the child with just the right amount of tensioning force in the event of a collision.

The inflatable curtains in the all-new Volvo V70 have been extended by 21/3 inches which, in combination with the height-adjustable booster cushions and the strong body side structure, provide more children of different sizes with effective protection in a side impact.

In addition, the comfortable seating of the booster cushions for children helps create a more harmonious atmosphere in the car, resulting in a greater peace of mind for the driver thus providing better conditions for relaxed driving.

New, Stronger Side Structure

To optimize side-impact protection – for all occupants – the entire side structure of the all-new V70 is both stronger and lighter thanks to a well-balanced combination of high-tensile steel of different grades (high strength steel, extra high strength steel and the extremely strong ultra high strength steel). The various components and grades of steel interact to minimize penetration into the passenger compartment, ultimately by design causing the entire car to move sideways – away from the source of a collision.

The new type of side-impact airbag, first seen in the all-new S80, makes Volvo's patented SIPS (Side Impact Protection System) into an even more effective safety system. The new side impact airbags have two separate chambers – one for the hip section and a separate one for the chest. Since the hips can withstand greater force than the chest, the lower chamber inflates with up to five times more pressure than the upper section. The side-impact airbags interact with the inflatable curtains and the all-new V70 network of safety beams to provide the most effective protection in the segment, if not the industry.

Crumple Zones Using Different Grades Of Steel

The patented front body structure in the all-new V70 is divided into zones, each of which has a different task during the deformation sequence. The outer zones are responsible for most of the deformation, lessening the closer the collision forces get to the passenger compartment.

In order to give each zone the right properties, different grades of steel are used in different structures, a total of four different grades. "With the zone system, we can exploit the properties of the material to maximize the best possible energy absorption," Skogsmo explains. "The aim is that the passenger compartment should be preserved in a predictable way, in a variety of collision scenarios."

Second-generation WHIPS

The Volvo system for avoiding neck injuries – WHIPS (Whiplash Protection System) – is one of the most effective on the market. In the event of a rear-end collision the front seat backrest accompanies the passenger's initial body movement and dampens the incoming force rather like one's hand does when catching a ball.

The all-new V70 features the same generation of WHIPS mechanism as was launched on the all-new S80 model. This generation was further developed to ensure that the damping motion is gentle and to provide good contact between the head and head restraint throughout the impact sequence.

Protection for other road users

Protection for pedestrians and cyclists has also been further developed in the all-new V70. The front has been given energy-absorbing properties, not least with a generously dimensioned soft structure in front of the bumper that helps reduce the risk of leg injuries. In addition, the spoiler's lower edge has been reinforced and moved forward, almost on a level with the bumper. The aim is that the area of contact on a pedestrian's or cyclist's leg should be distributed across a larger area, thus helping to further reduce the risk of injury.

The hood is raised and its underside has a honeycomb structure which similarly spreads the load in the event of an impact, thus helping to absorb the energy and reduce the risk of personal injury.

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SIDEBAR: #1

All-New V70 Zone System

ZONE FOR DEFORMATION AT LOW SPEEDS

The front bumper is structured around a cross-member made of aluminum. The attachment points at the all-new V70 longitudinal beams are designed as collapsible "crash boxes." These "boxes" help absorb incoming low-speed collision forces without damaging the rest of the vehicle's beam structure.

ZONE FOR DEFORMATION AT HIGH SPEEDS

The straight sections of the longitudinal beams are made of high strength steel, a very tough grade of steel that is optimized for high energy absorption. This zone accounts for most of the deformation.

ZONE FOR BACKUP

The beam section that curves out towards the A-pillars serves as a barrier protecting the passenger compartment and also as a backup to reduce deformation. Its shape also helps minimize the risk of the front wheel penetrating into the passenger compartment. Instead, the wheel helps absorb the collision forces. This section is very rigid and is made of extra high strength steel.

THREE-POINT ATTACHMENT

A rigid cross-member links the two A-pillars and the lower side-members, forming a particularly sturdy three-point attachment on each side. This design is particularly effective at protecting the passenger compartment in case of a severe impact.

SIDEBAR: #2

Advanced, Interacting Braking Functions

HYDRAULIC BRAKE ASSIST (HBA) is a new generation of Volvo's emergency braking support system, helping the driver to brake in the shortest possible distance in a panic situation. Unlike the previous system – solely based on vacuum – brake pressure in the all-new V70 is also reinforced hydraulically. In an emergency situation where the driver does not press the brake pedal sufficiently quickly and firmly, HBA can help ensure that the ABS system is optimally utilized, reducing the braking distance.

OPTIMIZED HYDRAULIC BRAKES (OHB) reinforce braking ability under hard braking by utilizing hydraulics to compensate for low vacuum pressure in the brake servo.

READY ALERT BRAKES (RAB) can predict rapid braking and apply the brake pads against the discs even before the driver has time to press the brake pedal. The braking system's response time – and the braking distance – can thus be shortened. The braking system can be triggered by either the accelerator pedal being released suddenly or the adaptive cruise control registering an obstacle in front of the car.

FADING BRAKE SUPPORT (FBS) utilizes hydraulics to gradually build up braking pressure during long hard braking, thus helping to cut the risk of brake fade and to maintain pedal feel.

SIDEBAR: #3

All-new Volvo V70: Other Protective Safety Solutions

- Improved child safety with extended IC (Inflatable Curtain) and integrated booster cushions – a world breakthrough
- New, stronger side structure
- Crumple zones made from different grades of steel
- Compact transverse engines contribute to collision safety
- Second-generation WHIPS
- Protection for other road users
- Collapsing steering column which, upon deformation, moves horizontally for the best possible interaction with the airbag
- Pedals with a function that limits the risk of penetration into the passenger compartment
- Airbags with two-stage function
- Seat belt pre-tensioners for all five seats
- Seat belt reminders for all five seats
- Force limiters for the front seat belts
- Reinforced, transversely fitted tubular beam between the A-pillars
- Strong SIPS tubes in the seats and a sturdy magnesium bracket in the middle of the car
- Diagonally fitted beams of ultra high strength steel in the doors
- ACC (Adaptive Cruise Control)
- Collision Warning with Brake Support
- BLIS (Blind Spot Information System)
- PCC (Personal Car Communicator)
- Active Bi-Xenon headlights
- Automatically locked storage unit in the luggage compartment

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

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