

Press Release

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The new Volvo C70 - Convertible with unique side-impact protection

For immediate release

- Unique approach to advanced side-impact protection
- Further-developed body structure with reinforced sides
- Extra-strong B-posts linked by a strong floor beam
- Sturdy laser-welded sills
- Doors designed to remain shut in a collision
- Different grades of steel for different tasks
- Door-mounted inflatable curtain of extra-stiff design

GÖTEBORG (September 22, 2005) – The new Volvo C70 convertible, set to launch in Canada in summer 2006, will feature leading-edge side-impact protection critical to in drop-top segment. Because the C70 is a hardtop convertible without a fixed roof, a major component of its protection was built-in using new manufacturing techniques, including an advanced body structure and several key technologies unique for an open-top car.

“Our goal was that the new Volvo C70 would have as effective side-impact protection as Volvo’s sedan models do,” says Ingrid Skogsmo, head of the Volvo Car Corporation’s Safety Centre. “But since the car does not have a fixed roof, we had to look for alternative solutions.”

In a side impact collision, the B-post is subjected to extreme forces. In a sedan model, this incoming crash energy is diverted along a variety of beams and panels down through the undercarriage and up into the roof structure. In a convertible, this is not possible since the vertical beams end at the top of the doors. Therefore, the incoming forces must be led forward, backward and downward into the body structure, where an integrated network of beams, reinforcements and airbags interact to keep the passenger compartment as intact as possible.

The two B-posts in the C70 have been reinforced structurally and linked together through a transverse floor beam. All told, there are five cross-members or bulkheads evenly distributed throughout the car’s length. A flexible deformation box between the B-post and cross-member on each side helps absorb the impact forces.

The sills have a far sturdier profile than in Volvo’s sedan models and laser-welded for added strength. They are also raised behind the B-posts to further contribute to effective protection even if the oncoming vehicle is a larger one, such as an SUV.

“The new Volvo C70 is the first convertible in the world designed for this type of situation,” reveals Ingrid Skogsmo.

The doors also play an important role in side-impact protection which have been reinforced with a robust longitudinal aluminium beam at the upper edge. They also feature diagonally fitted steel beams that help prevent penetration into the passenger compartment. The doors are designed to hook into the B-post and thus remain shut even in a collision. The incoming impact forces can thus be transferred both forward and rearward more efficiently through the body structure. Cross-

members ahead of the passenger compartment and a horseshoe-shaped beam behind the rear seat lead impact forces on to the opposite side of the car, thus reducing the risk of penetration into the passenger compartment.

Different grades of steel for different tasks

All the components in the body structure interact in different ways to distribute and absorb impact forces as effectively as possible. In order to give each component the right properties, the type of material used differs in different parts of the body.

- The longitudinal side-members, sills and B-posts and the bulkhead behind the rear seat are all made of High Strength Steel
- The A-posts, the doors' diagonal beams and the transversely installed floor beams are made of Extra High Strength Steel
- The deformation boxes between the B-posts and the transverse floor beams are made of a flexible foam material
- The upper door beams are made of aluminium.

Unique door-mounted inflatable curtain

One important component in the car's side-impact protection is the inflatable curtain or IC. In the new Volvo C70, it features a unique design.

"Since there are no roof beams in which to anchor the inflatable curtains, they have instead been fitted in the doors," explains Ingrid Skogsmo. "Upon deployment, they inflate upwards."

The curtains have an extra-stiff structure with double rows of cells that partly overlap one another. As a result, they can stay upright and help protect the head in an effective way even if the side windows are open.

In addition to the inflatable curtain, the front passengers are also protected by side-impact airbags. Their size has been tailored to help protect both the chest and hip of the front passengers.

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