

Broad range of safety features for the all-new Volvo XC90

A wide range of safety innovations is available for the all-new XC90. Here is a selection of the technologies:

Run-off road protection (world first)

In a run-off road scenario, the all-new Volvo XC90 detects what is happening and the front safety belts are tightened to keep the occupants in position. The belts are firmly tightened as long as the car is in motion. To help prevent spine injuries, energy-absorbing functionality between the seat and seat frame cushions the vertical forces that can arise when the car encounters a hard landing in the terrain. The solution is capable of reducing the vertical occupant forces by up to one third.

The XC90 also features technologies that help the driver avoid run-off road scenarios: The Lane Keeping Aid applies extra steering torque if the car is about to leave the lane unintentionally, while Driver Alert Control, which is also standard, detects and warns tired or inattentive drivers. It even has Rest Stop Guidance, which directs the driver to the nearest rest area.

Auto brake at intersections (world first)

The XC90 is the first car in the world with technology that features automatic braking if the driver turns in front of an oncoming car. This is a common scenario at busy city crossings as well as on highways, where the speed limits are higher. The all-new Volvo XC90 detects a potential crash and brakes automatically in order to avoid a collision or mitigate the consequences of a crash.

City Safety auto braking functions

City Safety will become the umbrella name for all of Volvo Cars' auto brake functions – which are standard equipment in the all-new XC90.

City Safety now detects vehicles, cyclists and pedestrians in front of the car, day and night. A smarter and faster high-sensitive camera combined with advanced exposure control covers the whole span from dusk to dawn.

The purpose of the new collision avoidance system is to assist the driver in case there is a high risk of collision with another vehicle, pedestrian or cyclist through an intuitive warning strategy and a brake support system. If a collision is almost unavoidable, the system will provide autonomous braking when the driver fails to respond to the imminent threat.

Pre-crash protection in rear impacts

Rearward facing radars detect if a rear impact is imminent and safety belts are tightened in advance in order to keep the occupant in a good position. Lights also start flashing to warn the driver behind, and the brakes are activated to help reduce the impact on the occupants. Together with Volvo Cars' new seat design, which integrates the next generation of the groundbreaking Whiplash Protection System (WHIPS), this new holistic rear impact pre-crash function helps reduce whiplash injuries.

Groundbreaking rollover prevention and protection

The all-new XC90 comes with the latest generation Roll Stability Control as standard. The system uses advanced sensors to calculate the risk of rolling over. If the risk is assessed as high, engine torque is restricted and some braking force is applied to one or more wheels to counteract the rollover tendency.

If a rollover is inevitable, the Inflatable Curtains are activated. They cover all three seat rows for an extended period of time to help prevent head injuries. All seven seats in the XC90 have pyrotechnical safety belt pre-tensioners that also activate in rollover situations.

Stronger in every sense

To help keep the occupant space inside intact in a crash, the all-new XC90 has literally been made stronger in every sense. This is achieved by more extensive use of hot-formed boron steel, which is the strongest type of steel presently used in the car body industry.

The complete safety cage around the occupants is made from hot-formed boron steel and is designed for maximum occupant protection in all types of crash scenarios. The hot-formed steel amounts to about 40 per cent of the total body weight. This is approximately five times more than the first generation XC90.

Extended Road Sign Information

The XC90 is the first car on the market with Road Sign Information technology as standard. It has been further enhanced to show an extended selection of road signs in the digital display in front of the driver, such as various types of supplementary signs.

Queue Assist

Queue Assist enables safe and comfortable driving by automatically following the vehicle in front in slow-moving queues. Acceleration, braking and steering are controlled automatically.

Warning of vehicles in the blind spot

The outstanding IntelliSafe solutions in the all-new XC90 also include the Blind Spot Information System, which informs about vehicles in the blind spots. It also alerts the driver to vehicles that are approaching fast from behind.

Cross Traffic Alert covers the driver's back when reversing out of a parking space. It warns of approaching traffic up to 30 metres on each side, alerting the driver with an audible signal and a warning on the centre screen.

Automatic bay parking as well as parallel parking

The further-developed Park Assist Pilot facilitates both parallel and bay parking by taking over and operating the steering wheel while the driver handles the gearbox and controls the car's speed. The parking manoeuvre is based on information from twelve ultrasonic sensors around the car.

A bird's-eye view from above the car

The all-new XC90 also features a 360° Surround view that gives the driver a bird's-eye view, an overview of the surrounding area, seen from a point above the car. This bird's-eye view is enabled by four concealed fish-eye cameras – one integrated into the front, one integrated in each of the door mirrors and one fitted above the rear number plate.

The Surround view also gives the driver comfortable access to different views of the surrounding area such as front, rear and side views.