

Press Release

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City Safety standard in the new Volvo XC60

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The new Volvo XC60 is being launched with City Safety - Volvo Cars' in-house developed unique technology for avoiding low-speed collisions in city traffic and tailbacks. City Safety in combination with the recently introduced Collision Warning with Auto Brake means that Volvo Cars can now offer functions for auto-braking at all speeds.

Surveys indicate that 75 percent of all reported collisions take place at speeds of up to 30 km/h. In 50 percent of all rear end collisions the driver has not braked at all before the collision, mainly due to distraction. In these cases, City Safety could make a crucial difference. City Safety brakes the car automatically if the driver is about to drive into the vehicle in front. A collision can either thus be entirely avoided or if this is not possible, damage to cars and personal injuries can be reduced.

"City Safety is yet another example of Volvo's ambition to tackle real-life traffic situations when developing solutions aimed at preventing accidents. It feels particularly satisfying that we can also offer City Safety as standard in the new Volvo XC60," says Jonas Ekmark, manager of Preventive Safety at the Volvo Cars Safety Centre.

Benefits everyone

A Volvo equipped with City Safety offers a range of benefits both to its occupants and to the occupants of the vehicle in front:

- Protection of the occupants in the own car: Colliding with a vehicle in front of you can be both a physically harmful and an emotionally unpleasant experience. By reducing the speed prior to the impact, City Safety limits the injury risks for the occupants in the rear-ending car as well. Or even eliminates them completely if the car manages to stop before colliding.
- Protection of the occupants in the vehicle in front: The best protection for all involved is of course to avoid the accident in the first place and with City Safety this is often possible. However, in those cases where an accident cannot be avoided, City Safety helps reduce the force of the collision. The result is that the occupants of the vehicle in front suffer a less serious impact and may in fact entirely escape consequences such as whiplash injuries.
- Reduced owner costs: Even the lowest speeds and smallest bumps can result in significant costs and take time to put right. City Safety helps the owner reduce time-consuming contacts with the workshop and insurance company. What is more, Volvo is currently involved in a dialogue with the insurance companies regarding lower insurance premiums for cars equipped with City Safety, with confirmed reductions of between 15 and 30%.

Active at speeds of up to 30 km/h

City Safety is active at speeds of up to 30 km/h. If the vehicle in front brakes suddenly and City Safety determines that a collision is likely, the brakes are pre-charged. If the driver remains inactive, the car applies the brakes automatically. If the relative speed difference between the two vehicles is less than 15 km/h then City Safety may help the driver entirely avoid the collision. Between 15 and 30 km/h the focus is on reducing speed as much as possible prior to the impact.

Laser sensor monitors traffic in front

City Safety keeps an eye on traffic in front with the help of a laser sensor that is integrated into the top of the windscreen at the height of the rear-view mirror. It can detect vehicles and other objects

up to 10 metres in front of the car's front bumper.

City Safety is developed to react to vehicles in front that are either at a standstill or are moving in the same direction as the car itself.

Based on the gap to the vehicle in front and the car's own speed, the system makes 50 calculations a second to determine what braking force would be needed to avoid a collision. If the calculated braking force exceeds a certain level without the driver responding, the system determines that the risk of a collision is imminent.

City Safety helps either avoid or reduce the severity of the collision by automatically braking the car and reducing the throttle opening. At the same time, the brake lights are activated to warn other traffic.

Certain limitations

City Safety works equally well during the day and night. However, the laser sensor has the same limitations as all optical technologies in that the detection capacity can be limited by fog, snow or heavy rain. It is therefore necessary to keep the windscreen free of dirt, ice or snow. The sensor is covered by the windscreen wipers, but the driver should pay extra attention to keeping the sensor area clean at all times.

"It is important to underline that City Safety does not relieve the driver of the responsibility for maintaining a safe distance to avoid a collision. The automatic braking function does not react until it considers that a collision is imminent. City Safety will help reduce the consequences or completely avoid an imminent collision," says Jonas Ekmark.

New function controls the restraint system in a collision

In order to further boost safety and help reduce the risk of injuries, the laser sensor interacts with other on-board technology and controls the airbags and adaptive seat belt load limiters to suit the severity of the collision. This technology is known as Pre-Prepared Restraints (PRS) and is being introduced together with the new Volvo XC60. PRS forges a unique link between preventive systems (sensors) and protective safety systems. In case of a collision, the Restraint Control Module controls the deployment of the protective restraint systems. With the additional information supplied by the laser sensor the Restraint Control Module controls the adaptive seat belt load limiter depending on the severity of the collision. The potential of the adaptive seat belt load limiter to reduce injuries can therefore be further utilized.

PRS is active at all speeds, unlike City Safety which only operates up to 30 km/h. PRS is activated by means of a pyrotechnical device in the adaptive seat belt load limiter. This means that City Safety can be activated without PRS being activated, if the collision severity is lower than the level required for PRS activation.

Another two new safety functions launched

Volvo Cars is extending its safety offering with two new functions that stabilise the car in critical situations.

- **Further developed DSTC function**
Volvo's DSTC (Dynamic Stability and Traction Control) function has been further developed in the new Volvo XC60 in order to provide even more stable driving. DSTC registers deviations between the driver's intended direction and the car's actual direction. As a complement, the further developed DSTC function registers the car's roll rate as well, giving the opportunity to detect slowly built-up skids. This may occur if the driver suddenly releases the accelerator pedal while steering, for instance when leaving a highway slightly too late. By measuring the roll rate, the DSTC function is able to start the regulation at an earlier stage - and with greater precision. This is highly noticeable in dynamic driving where the car is exposed to high lateral forces.
- **New Trailer Stability Assist (TSA) offers improved control when towing a trailer**
The purpose of the new Trailer Stability Assist (TSA) function is to dampen the oscillation tendency that sometimes occurs when towing a trailer or caravan behind the car. In certain conditions, there is a risk that the rig might start snaking and it can be difficult for the driver to regain control once this occurs. TSA operates together with the further developed DSTC system to stabilise the rig by braking one or more wheels while at the same time restricting the engine's torque. TSA is sold as a separate active safety function when purchasing a tow-bar.

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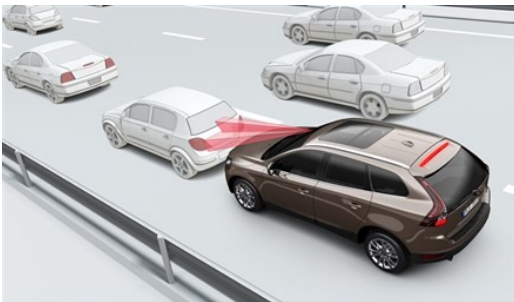
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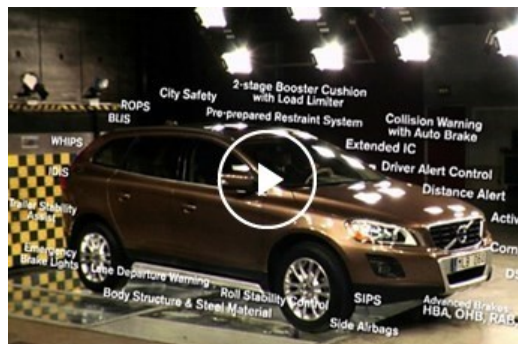
City Safety - low-speed auto brake



City Safety - activation message

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