

Press Release

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The all-new Volvo V40 – Safety & Support: The most IntelliSafe Volvo model ever

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Adding several new high-tech features to a full deck of safety and support systems from larger models makes the all-new Volvo V40 the most IntelliSafe Volvo so far.

The new features include world-first Pedestrian Airbag Technology, Lane Keeping Aid with haptic auto steering, an ingenious Park Assist Pilot, automatic Road Sign Information, Active High Beam and a Cross Traffic Alert radar system at the rear.

The all-new V40 also features the groundbreaking Pedestrian Detection with full auto brake - as well as the City Safety further developed low-speed collision avoidance system which now operates at speeds up to 50 km/h.

Park Assist Pilot - making parallel parking easy

A study by global research institute TNS reveals that one-third of European drivers have problems with parallel parking. In a similar study by UK insurer elephant.co.uk, around two-thirds of interviewed drivers stated that they felt uncomfortable in parallel parking situations.

The new Park Assist Pilot makes parallel parking easy and precise 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 front, rear and side-facing ultrasonic sensors.

When the driver activates the Park Assist Pilot the sensors start to scan the side of the car. When a parking slot measuring a minimum of 1.2 times the car's length is detected, the driver is notified by an audible signal and advised to stop via a message in the instrument cluster.

The display guides the driver step by step via texts and animations in the instrument cluster until the car is correctly parked. Although the driver initially engages reverse gear and continues to control the speed of the car, steering is taken over by the Park Assist Pilot. When parking is completed the driver is notified by an audible signal and a text message.

The all-new Volvo V40 can also be equipped with a rear park assist camera and park assist sensors front and rear.

Lane Keeping Aid - active help to stay on course

Studies show that many accidents take place in uncritical traffic situations and good weather conditions due to driver distraction, drowsiness or illness. Approximately 30 percent of all accidents in Volvo Cars' statistical accident database are accidents with an initial road departure. About 75 percent of these occur on roads with speed limits of 70 km/h or more.

The new Lane Keeping Aid in the V40 helps the driver stay in the intended lane. This feature applies extra steering torque to the steering column when the car gets close to a lane marking and is about to leave the lane. The system is active at speeds between 65 km/h and 200 km/h.

The forward-looking camera monitors the left and right lane markings. Lane Keeping Aid registers the car's progress between the lane markings and takes action if the driver shows signs of unintentionally drifting out of the lane.

As a first step Lane Keeping Aid applies gentle steering wheel torque to help the driver steer back onto the intended course. If the car leaves the lane, the technology generates a distinctive warning through a haptic vibration in the steering wheel.

Enhanced Blind Spot Information System - for better visibility

The V40 is the first Volvo to offer the enhanced Blind Spot Information System (BLIS), which is radar-based. The technology can now also monitor and alert the driver to rapidly approaching vehicles up to 70 m behind the car. Of course it still informs the driver about vehicles in the blind spots on both sides of the car.

BLIS helps the driver avoid potentially dangerous lane-changing manoeuvres.

The enhanced BLIS is based on radar sensors located in the rear corners of the car, behind the bumper cover. The radars continuously scan the area behind and alongside the vehicle.

Warnings are displayed in LED indicators located in each A-pillar. A steadily glowing LED indicates when the radars cover a vehicle in the zone. The second warning level - LED flashing - occurs if the driver uses the turn indicator when the first alert is active.

Cross Traffic Alert - covering your back

Cross Traffic Alert uses the radar sensors at the rear end of the car to alert the driver to crossing traffic from the sides when reversing out of a parking space. This is especially helpful in tight and crowded areas where the side view might be limited due to infrastructure, vegetation or other parked cars.

The function warns of traffic up to 30 metres from the car. Smaller objects like bicycles and pedestrians may also be detected, but not always and only at a shorter distance. The alert, which remains active as long as the target is present in the zone, is delivered to the driver as an audible signal and a warning in the centre screen.

Road Sign Information - an extra "eye" on the traffic environment

High speed is a contributory cause behind a significant part of all fatal road accidents. European Road Safety Observatory (ERSO) studies show that speed is a contributing factor in 30 percent of all fatal accidents. A Swedish Road Administration research shows that between 100 and 150 lives would be able to be saved on Sweden's roads every year if drivers kept to the speed limits.

Road Sign Information supports the driver by displaying road signs in the instrument display. The forward-looking camera can detect speed limit signs as well as "no overtaking" signs. The road sign icon is shown until another sign is detected.

Road Sign Information can be combined with the Speed Alert function, which provides the driver with a visual warning in the speedometer if the speed limit is exceeded.

Active High Beam - more relaxed driving in the dark

The new Active High Beam technology in the Volvo V40 helps the driver utilise high beam more efficiently. It also offers automatic switching between high and low beam at the right moment. The technology uses a forward facing camera together with sophisticated image processing to offer the driver the best possible visibility at night.

The camera monitors other vehicles and their headlamps and tail lamps. Advanced image processing software analyses this data and provides information about the position and direction of other vehicles. The calculation serves as the basis for automatic switching between low and high beam.

The all-new V40 can be equipped with Active Bending Lights - swivelling headlamps that follow the sweeps and bends of the road.

Visibility in poor conditions is also enhanced with the option of an electrically heated windscreen and a rain sensor, which automatically starts and regulates the wipers when it rains.

Adaptive Cruise Control & Distance Alert - keeping the distance

The all-new Volvo V40 can be equipped with Adaptive Cruise Control (ACC), which promotes comfortable driving by using radar to automatically maintain a set time gap to the car in front.

The driver sets the desired maximum speed and chooses a time interval to the vehicle in front.

When the radar sensor detects a slower vehicle, the car's speed is automatically adapted to match the vehicle in front.

The Queue Assist function on cars with automatic gearbox maintains the set gap all the way down to standstill, making this comfort-enhancing system extremely useful even in slow-moving queues with repeated starting and stopping.

Distance Alert is a feature that helps the driver keep a safe distance to the vehicle in front. He or she chooses between five different time gaps via buttons on the steering wheel. The selected gap is shown in the speedometer display. A light in the head-up display informs the driver if the gap to the car in front becomes too short.

Pedestrian Detection - unique in this class

Pedestrian accidents occur every day in our increasingly intensive traffic environments. In

Europe, 14 percent of all traffic fatalities are pedestrians. The corresponding figure for the USA is 12 percent and in China the proportion is over 25 percent.

Pedestrian Detection with full auto brake is a technology that can detect if a pedestrian steps out into the road in front of the car. If the driver does not respond in time, the car can warn and automatically activate the brakes. No other car in this class features a similar technology. Pedestrian Detection with full auto brake consists of a radar unit integrated into the car's grille, a camera fitted in front of the interior rear-view mirror, and a central control unit. The radar's task is to detect a pedestrian or vehicle in front of the car and to determine the distance to it. The camera determines what type of object it is.

Thanks to the dual-mode radar's wide field of vision, pedestrians about to step into the roadway can also be detected early on. The innovative technology is programmed to trace a pedestrian's pattern of movement and also to calculate whether he or she is likely to step into the road in front of the car. The system can detect pedestrians who are 80 cm tall or taller.

In an emergency situation the driver first receives an audible warning combined with a flashing light in the windscreen's head-up display. If the driver does not react to the warning and a collision is imminent, full braking power is automatically applied.

Pedestrian Detection with full auto brake can avoid a collision with a pedestrian at speeds up to 35 km/h if the driver does not react in time. At higher speeds, the focus is on reducing the car's speed as much as possible prior to impact.

Statistics reveal that the car's speed has considerable importance for the outcome of the collision. A lower speed of impact means that the risk of serious injury is significantly reduced.

Pedestrian Airbag Technology - a world first

In order to mitigate the consequences if a collision with a pedestrian is unavoidable, the Volvo V40 features newly developed Pedestrian Airbag Technology, a world first. It works like this:

Sensors in the front bumper register the physical contact between the car and the pedestrian. The rear end of the bonnet is released and at the same time elevated by the deploying airbag.

The inflated airbag covers the area under the raised bonnet plus approximately one third of the windscreen area and the lower part of the A-pillar.

The raised bonnet and airbag will help reduce the severity of pedestrian injuries.

Collision Warning and auto brake - with full braking power

Up to 90 percent of all road accidents are caused by distraction. Half of all drivers hitting another vehicle from behind do not brake at all prior to the collision.

Pedestrian Detection with Full Auto Brake is a further development of the Collision Warning with Auto Brake technology already introduced by Volvo Car Corporation. The all-new V40 can also detect, alert and automatically brake if the car risks colliding with another vehicle in front.

The aim of the initial warning is to alert the driver so that he or she can brake or avoid the danger. If the driver does not react in time to the warning, the car automatically activates full braking power. With automatic braking, the collision can be avoided if the speed difference between the two vehicles is up to 35 km/h.

Collision Warning and auto brake was considered the best auto braking system in the world in a test by German organisation ADAC in 2011. In the all-new V40, auto brake performance at higher speeds has been improved compared to previous versions.

City Safety - now active up to 50 km/h

Rear-end impacts are common in dense city traffic and when driving in traffic queues. About 75 percent of these collisions occur at speeds below 30 km/h and in 50 percent of cases, the driver has not braked at all prior to the collision.

In 2011, the benefits of the City Safety technology were documented in another IIHS (Insurance Institute for Highway Safety) report quoting a reduction of the collision frequency by up to 22 percent.

Insurance claims involving the Volvo XC60 show that City Safety reduces the cost of personal injury claims by 51 percent - while vehicle repair costs were lowered by more than 20 percent.

The all-new V40 is the first Volvo that features an upgraded City Safety system. This system is now active at speeds up to 50 km/h (previously 30 km/h).

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.

The car automatically brakes if the driver fails to react in time when the vehicle in front slows down or stops - or if the car is approaching a stationary vehicle too fast.

The collision can be avoided if the relative speed difference between the two vehicles is below 15 km/h. If the speed difference is between 15 and 50 km/h, the speed of impact is reduced to

minimise the effects of the collision.

A study by Swedish insurance company Volvia shows that Volvo cars equipped with City Safety are involved in approximately 20 percent fewer rear-end accidents than cars without auto brake.

Driver Alert Control - detecting and warning tired drivers

Studies by German insurance organisation GDV show that one out of four accidents on the Autobahn is caused by driver fatigue. Swedish Road Administration accident data indicate that tired drivers are causing up to 30 percent of all accidents.

Driver Alert Control is designed to detect and warn tired drivers. The system can also cover other situations where the driver is distracted.

Driver Alert Control consists of a camera, a number of sensors and a control unit. The camera continuously measures the distance between the car and the road lane markings. The sensors register the car's movements. The control unit stores the information and calculates whether the driver risks losing control of the vehicle.

If the risk is assessed as high, the driver is alerted via an audible signal. A text message appears in the car's information display, displaying a coffee cup symbol to advise him or her to take a break.

Full set of crash safety features - including new knee airbag

The all-new Volvo V40 also features world-class crash safety including a safety cage with effective deformation zones and various grades of high-strength steel.

Safety belt pre-tensioners are standard in the front and outer rear seats and the front seats are equipped with whiplash protection (WHIPS) to help prevent neck injuries. Both the driver and front seat passenger seat have dual stage airbags. There are also side airbags integrated in the front seat backrests.

The driver's side is also fitted with a new knee airbag. It is installed in the dashboard above the pedals and deployed together with the other airbags in the event of a frontal collision.

The Roll Over Protection System includes a robust body structure, seat pre-tensioners and Inflatable Curtains. The Inflatable Curtains cover both sides, from the A-pillar to the C-pillar, and deploy in frontal offset, side or rollover accident situations.

A closing velocity sensor collects information and interprets pre-crash data in order to prepare the restraint systems - belts and airbags - for the expected crash violence in low and mid-severe frontal accidents.

ISOFIX attachments are standard and Volvo Car Corporation offers thoroughly tested child seats that cover ages from newborn up to 10 years.

Personal Car Communicator

The V40 is available with a Personal Car Communicator remote that enables keyless drive. The remote can both transmit and receive signals, providing the driver with locking and alarm information. The positions of the driver's seat and the door mirrors are stored in the memory when the car is locked.

Quotes

Thomas Broberg, Senior Safety Advisor Volvo Car Corporation:

"The all-new V40, the most compact car in our V-range, has class-leading safety. It is also packed with more intelligent support systems than any previous Volvo. Yet another important step toward our vision that nobody should die or suffer serious injuries in a new Volvo car by the year 2020."

"Volvo is leading the development of spearhead technology that helps the driver avoid collisions. All the features are designed around the driver, helping him or her to stay alert and well informed to avoid collisions and dangerous situations. The all-new V40 is the first car in our model range with technology that actively helps the driver steer clear of danger."

"The safety systems are intelligent and work together to make driving more pleasant and safe. They are designed to warn about threats. If necessary, they can also step in and intervene in critical situations. And, in some situations where the collision is unavoidable, there are safety features to help mitigate the consequences. However, this does not mean that these sophisticated systems take over the driving. Their main task is to assist the driver, thereby making the driving experience more comfortable and less complicated."

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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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