



LeasePlan

What's next?

Vehicle safety glossary

SafePlan Zero

Be a hero, aim for zero.

Today's drivers are protected by more car safety features than ever, including airbags, shatter-resistant glass, emergency lane keeping, intelligent adaptive cruise control and more. This is a guide to the most common car safety features (including the abbreviations used) and how they help to make driving safer.





A

Active bonnet is a safety system designed to enhance pedestrian safety or the safety of other vulnerable road users. When the sensors at the front detect a collision, the rear portion of the bonnet is raised to better absorb the impact with the pedestrian or other vulnerable road users.

Adaptive cruise control (ACC) is a system which maintains a constant vehicle speed but also monitors surrounding traffic conditions and adapts the speed accordingly.

Autonomous emergency braking (AEB) systems are safety systems that help the driver to avoid a crash and/or mitigate its consequences. Different sensor technologies can be used to identify critical situations ahead, including radar, camera and LiDAR. AEB systems can warn the driver and provide brake support or fully auto-brake the car without driver involvement. More advanced systems combine both of these functionalities.

Airbag cut-off switch: this system allows the passenger airbags to be switched off so that a rearward-facing child seat can be installed safely on the front passenger seat.

Airbags (frontal, side, centre, curtain knee): the airbag is a vehicle safety device that consists of an inflatable bag, also known as an airbag cushion. The airbag module is designed to inflate rapidly during a collision and provide the occupants with additional protection and restraint during a crash. Carefully designed vents in the airbag allow for controlled deflation during an impact, providing an energy-absorbing surface between the occupants and the interior of the car. Airbags are normally installed to offer protection in case of a frontal collision (frontal airbags) and lateral collision (side-curtain airbags and/or thorax airbags). Knee airbags and seatbelt airbags are also available. Centre airbags inflate between the driver and front passenger in case of a side impact to reduce the degree to which the occupants are pushed to the other side of the car and, in some cases, to protect against occupant-to-occupant injuries such as head contact. Airbags are only effective if seatbelts are worn.

Attention assist is a drowsiness-detection system that warns drivers and helps to prevent them from falling asleep at the wheel. It will prompt them to take a break before it's too late. Some attention assist systems use a sensitive steering angle sensor to monitor the way in which the driver is controlling the car. Others use a forward-looking camera to monitor the vehicle's position in the lane and analyse the driver's vigilance level.

B

Belt load limiters are devices designed to protect occupants from seatbelt-inflicted injury. In the event of a crash, the pretensioner tightens the belt immediately upon impact. Once the force in the belt has reached a certain level, the load limiter releases the webbing gradually so as not to exert too much force on the occupant's chest.

Belt pretensioner: the belt pretensioner is designed to retract some of the length of a seatbelt in the initial stages of an impact. This helps to tighten the seatbelt and restrain occupants quickly, thus reducing their forward movement during a collision.

C

Child restraint system (CRS) is a seat designed specifically to protect children during collisions. Most commonly the CRS is purchased and installed separately by a parent or carer, in line with the child's age or size. Some cars offer built-in CRS (also referred to as 'integrated CRS').



E

Emergency lane keeping and lane keep assist (ELK/LKA): sometimes a split second of distraction is enough for a vehicle to stray from its lane. The lane keep assist (LKA) feature will actively brake or steer the vehicle to ensure it stays in its lane. The emergency lane keeping (ELK) system intervenes much more rigorously in critical situations in which the vehicle veers out of its lane or is at risk of leaving the road.

ESC/ESP: the electronic stability control or electronic stability program is a system that improves the vehicle's stability by detecting and reducing loss of traction. When ESC detects loss of control, it automatically applies the brakes to each of the wheels individually, such as the outer front wheel to counteract oversteer or the inner rear wheel to counteract understeer. Some ESC systems also reduce engine power until control is regained.

H

Head restraints are an automotive safety feature that are attached to or integrated in the top of each seat to limit the rearward movement of the adult occupant's head relative to their torso in the event of a collision. This helps to prevent or mitigate whiplash or injury to the cervical vertebrae. Active head restraints are designed to automatically improve head position and/or geometry during a rear-end impact by moving towards the occupant's head.

Highway assist systems: a highway assist system is based on technology that supports the driver in monotonous driving situations (such as on motorways) by automatically adapting the driving speed in anticipation of bends in the road, speed limits and surrounding traffic conditions.



I

Intelligent adaptive cruise control (iACC) is a system which maintains a constant vehicle speed but also monitors local speed limits and surrounding traffic conditions and adapts the speed accordingly.

i-Size is a European safety standard for child restraint systems to ensure maximum protection for children, including rear-facing travel, ISOFIX and improved fitting. All i-Size child seats use the ISOFIX installation method. However, regular ISOFIX child seats do not necessarily comply with the stricter demands of i-Size.

ISOFIX is an internationally standardised system that enables a child seat to be fitted into a vehicle without the use of a seatbelt. It was designed to provide an easy and safe way of installing a child restraint system (CRS). The ISOFIX system was first introduced on the European market in 1997 and has been more widely available since becoming part of the European ECE R/44 test standard in 2004.

K

Kerb weight is the total weight of a vehicle including standard equipment, all necessary operating consumables such as motor oil, transmission oil, coolant, air conditioning refrigerant and fuel, while not loaded with either passengers or cargo.

L

Lane keeping systems (LKA/ELK): Sometimes a moment of inattention is enough for a vehicle to stray from its lane. Lane keep assist (LKA) is a feature that will actively brake or steer the vehicle to ensure it stays in its lane. Emergency lane keeping (ELK) intervenes much more aggressively in those critical situations where the vehicle is leaving the road or veering out of lane.



P

Pillars (A/B/C/D) are the vertical or near-vertical supports of the car roof and surround the glazed areas. From the front to the rear of the vehicle, they are designated as the A, B, C and D pillars, respectively.

Q

Quadricycles are promoted as convenient, economical means of transport. They are road-legal and a full licence may not even be required to drive them. Importantly, quadricycles do not have to pass the stringent legal safety tests that apply to normal passenger cars. Nevertheless, since many quadricycles look similar to small urban cars, some buyers may regard them as good alternatives to cars or motorcycles. The speed of light quadricycles is limited to 45km/h. However, heavy quadricycles are not speed-limited and, while some have very low maximum speeds, others can reach speeds of 100km/h.

S

Seatbelt reminder (SBR) is a safety system that uses audible and visual warnings to remind all occupants to fasten their seatbelts.

Shatter-resistant glass is laminated to ensure that the windscreen breaks into harmless pieces in the event of an accident, rather than covering the driver in hazardous shards of glass as used to be the case in earlier motor vehicles.

Speed assistance systems are designed to help the driver stick to the legal speed limit. Various systems are currently available, which either warn the driver when the car's speed exceeds the relevant speed threshold or actively prevent the car from exceeding the relevant speed threshold.

Stability control helps drivers to avoid dangerous rollover accidents. If the driver turns too hard, for example, the on-board computer compensates for the oversteer by sending power to different wheels to keep the car stable.



Type approval: all vehicles sold in Europe have to pass legal tests to ensure that they meet minimum standards for many different areas of performance, such as noise, emissions and safety. As the tests are not conducted on each individual vehicle but rather on the type of vehicle, this process is known as 'type approval'. Regular checks are carried out during the production process to ensure that the cars continue to comply with the approved type.



Vehicle identification number (VIN) is a unique 17-digit code used by the automotive industry to identify individual motor vehicles. The format of the VIN is defined in ISO 3833 and includes fields to identify the vehicle manufacturer and the manufacturing plant, the model code and a sequential production number unique to that vehicle.

Vulnerable road users (VRU) are defined as all non-motorised road users, such as pedestrians and cyclists as well as motorcyclists and people with disabilities or reduced mobility and orientation.





Be a hero aim for zero.

**Together towards zero serious
road traffic injuries in 2030.**

LeasePlan aims to make its fleet the safest in the industry by working towards zero serious serious traffic accident by 2030. SafePlan Zero includes content, tools, guidelines and reports on the three major safety areas: the driver, the vehicle and fleet management. For more information on our SafePlan programme, please contact us at www.leaseplan.com or via your regular LeasePlan contact person.