

FACTSHEET

KiNTO

Vehicle Safety Systems

This factsheet provides useful information and tips about the Advanced Driver Assistance Systems (ADAS), Anti-lock Braking Systems (ABS) and Airbags.

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Vehicle **Safety Systems**

Advanced technology in our vehicles plays a huge part in road safety. Modern vehicles are designed to prevent crashes and protect drivers. Understanding the key safety systems within your vehicle can enhance the safety of your journey and reduce the risk of being involved in an accident. Drivers should always check their vehicle's handbook to determine which safety systems are suitable for use in icy or wet conditions.

Advanced Driver Assistance Systems (ADAS)

ADAS is the collective name for several safety features on a vehicle. These features are designed to support the driver, not replace them.

ADAS continuously monitors the environment around the vehicle to enhance safety, comfort and awareness. They aim to reduce human error, improve reaction times and make every journey safer.

Key ADAS features

Autonomous Emergency Braking (AEB):

Detects obstacles and automatically applies the brakes if a collision is likely.

Driver benefit: Reduces the severity or prevents a crash.

Lane keep assist: Detects lane markings and provides steering assistance to keep the vehicle in its lane if it drifts unintentionally.

Driver benefit: Prevents sideswipe or road-edge incidents.

Adaptive cruise control: Helps maintain a safe following distance by automatically adjusting your speed.

Driver benefit: Reduces fatigue and improves comfort in traffic.

Blind Spot Information System (BLIS):

Monitors your blind spots and alerts you if another vehicle is hidden from view.

Driver benefit: Improves awareness during lane changes.

Traffic sign recognition: Reads road signs and displays them on the dashboard.

Driver benefit: Helps you stay within speed limits and follow road rules.

Important notes:

Make sure you read the Vehicle Handbook and understand these features, and when to use them, before setting off to avoid using them incorrectly. For example, if you are not aware of Lane Assist, your first response may be to counteract the action the car is automatically taking, potentially creating a more dangerous situation.

Some of the features may have slightly different names; familiarise yourself with what your vehicle offers.

Some of these options are activated through buttons on the steering wheel; don't rest your hands over the buttons as it can cause features to deactivate if pressed inadvertently.



How ADAS works: cameras, radar & sensors – the vehicle's eyes and ears

ADAS uses a combination of cameras, radar and ultrasonic sensors to monitor the environment 360° around the vehicle.

Forward-facing camera

- Mounted behind the rear-view mirror
- Reads lane markings, traffic signs and vehicles ahead
- Powers Lane Keep Assist, Traffic Sign Recognition and Driver Alert
- Works best when the windscreen is clean and unobstructed

Radar sensors

- Located behind the front bumper or grille
- Measures distance and speed of other vehicles
- Supports Adaptive Cruise Control and Autonomous Emergency Braking
- Performs well in poor light or weather but must remain properly aligned and unobstructed

Side and rear sensors

- Installed in the side mirrors, bumpers and quarter panels
- Used for Blind Spot Information System (BLIS) and Cross Traffic Alert
- Provide awareness during parking or lane changes

Driver responsibilities

- ADAS assists – it doesn't drive the vehicle
- Always keep hands on the wheel and eyes on the road
- Ensure sensors and cameras are clean and calibrated after repairs

ADAS should be recalibrated after:

- Windscreen replacement
- Body repairs
- Suspension repairs/modifications
- Wheel alignment
- Understand your system's limits – poor weather, glare or damaged roads may affect performance

Safety impact

- ADAS can reduce collisions by up to 40% when used correctly (Thatcham Research)
- 82% of drivers report feeling safer with ADAS technology (Thatcham Research)
- The best results occur when drivers understand how their systems work and trust them appropriately

Top tip:

Technology can support you, but it can't replace you. Therefore, continue to stay alert, engaged and allow the ADAS to work with you.

Anti-lock braking system (ABS)

The ABS prevents the wheels from locking up from heavy braking by automatically adjusting the brake pressure. It also helps you steer and control the vehicle safely during emergency stops or slippery/wet conditions.



How does the ABS work?

1. Sensors on each wheel monitor speed continuously
2. If one wheel starts to lock up, the ABS control unit instantly reduces brake pressure on that wheel
3. The system rapidly applies and releases the brakes several times per second – far faster than a human could
4. This keeps the tyres just on the edge of traction, allowing maximum braking force without skidding

Benefits to the driver

Maintains steering control: Prevents wheel lock-up so you can steer around hazards while braking hard.

Driver benefit: Keeps the vehicle stable and responsive.

Reduces stopping distance (on dry roads): Optimises brake pressure for maximum grip.

Driver benefit: Helps stop safely and straight.

Improves safety in wet or icy conditions: Automatically adjusts braking to surface grip.

Driver benefit: Reduces loss of control on slippery roads.

Pedal feedback: You may feel pulsing or vibration under heavy braking.

Driver benefit: Normal indication that ABS is working.

Safety impact

- Vehicles equipped with ABS are significantly less likely to be involved in loss-of-control crashes

Driver tips

- In an emergency, press firmly on the brake pedal and hold – do not pump the brakes
- You may feel the pedal pulsate or vibrate – this is normal operation
- Maintain a safe following distance – ABS helps control, but physics still applies

FACTSHEET

- Ensure tyres are properly inflated and tread depth is legal; ABS can't overcome worn tyres
- If the ABS warning light stays on, have the system checked by an Authorised Repairer immediately

Limitations and considerations

- ABS doesn't always reduce stopping distance on loose gravel, snow or soft surfaces – it prioritises control over sheer braking force
- Systems rely on correct tyre grip and road surface condition; poor maintenance reduces effectiveness
- It cannot compensate for excessive speed or unsafe following distances

Top tip:

ABS helps you stop – but control is still in your hands.

Keep calm, brake firmly and let the system do its job.

Airbags

Airbags are a critical part of a vehicle's passive safety system. They are designed to protect the driver during a collision by cushioning the impact and reducing risk. When combined with seatbelts, airbags can significantly reduce the severity of injuries to drivers and passengers.

Types of airbags in vehicles

Front airbags: Driver and passenger, front dashboard area.

Purpose: Protects head and chest in frontal collisions.

Side airbags: Seat or door mounted.

Purpose: Protects torso in side impacts.

Curtain airbags: Roof lining above side windows.

Purpose: Protects head in sideways or rollover impacts.

Knee airbags: Beneath steering column (driver).

Purpose: Protects legs and knees in frontal impact.

Seatbelt airbags (selected models):

Built into the rear seatbelts.

Purpose: Spreads impact force over a larger area to reduce chest injury.

Important safety guidance

Always wear a seatbelt

- Airbags are designed to work with seatbelts, not replace them

Maintain correct driving position:

- Sit at least 25cm (10 inches) away from the steering wheel

Child safety:

- Never use a rear-facing child seat in a front seat with an active passenger airbag
- Always deactivate the passenger airbag if fitting a rear-facing child seat

Warning lights:

- If the airbag warning light stays on or flashes, have the system inspected by an authorised repairer immediately

Post-collision:

- Airbags and sensors are single-use components – they must be replaced after deployment

Safety impact

- Airbags can reduce serious head and chest injuries by over 40% in severe frontal collisions

- When combined with seatbelts and pretensioners, they provide the highest level of passive safety protection available
- Proper seatbelt use and seating position are essential for airbag effectiveness

Limitations and considerations

- Airbags deploy only in certain types of collisions – they may not activate in minor impacts, side scrapes or rear-end bumps
- They do not protect occupants outside the normal seating position (e.g. leaning forward or feet on dashboard)
- Tampering, water damage or non-genuine parts can compromise performance

Top tip:

Airbags save lives – but only when used correctly.

Always wear your seatbelt, sit upright and trust the vehicle's intelligent safety systems to protect you.

