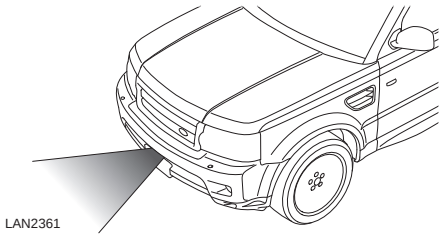
PRINCIPLE OF OPERATION

WARNING

Adaptive Cruise Control is not a collision warning or avoidance system. Additionally, Adaptive Cruise Control will not detect: stationary or slow moving vehicles below 10 km/h (6 mph); pedestrians or objects in the roadway; oncoming vehicles in the same lane.


LAN2361

A radar sensor mounted behind the front bumper, projects a beam directly forward to detect objects ahead.

ACC utilises this radar sensor to maintain a gap between your vehicle and a vehicle ahead. The gap can be adjusted to one of four distance settings to suit your driving style. If there is no vehicle ahead within radar range, a set road speed can be maintained. Any speed between 30 km/h (18 mph) and 180 km/h (110 mph) can be stored in the ACC memory.

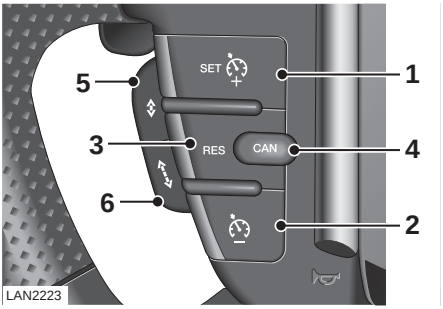
When ACC is active, a set gap can be maintained behind a leading vehicle even if your stored speed is higher. If the road situation allows you to move into an adjacent lane, your vehicle will automatically accelerate up to your stored speed as long as there is no vehicle ahead within radar range.

In a situation where your set gap is reduced by a slowing lead vehicle, ACC will automatically apply the brakes to re-establish the gap.

- Only use ACC when conditions are favourable, that is, straight, dry, open roads with light traffic.
- Do not use in poor visibility, specifically fog, heavy rain, spray or snow.
- Do not use on icy or slippery roads.
- It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- Keep the front of the vehicle free from dirt, metal badges or objects, including vehicle front protectors, which may prevent the sensor from operating.
- Do not use ACC when entering or leaving a motorway.

USING ACC

The system is operated by switches mounted on the steering wheel. The driver can also intervene at any time by use of the foot brake or accelerator pedals.



1. Set or increase the speed.
2. Decrease the speed.
3. Resume set speed
4. Cancels without erasing memorised speed.
5. Gap decrease.
6. Gap increase.

Setting a speed

Accelerate as normal until the required speed is reached.

Press button **1** briefly and the vehicle speed will then be stored in the memory and the system activated. The set speed will be displayed on the message centre (e.g. **SET SPEED 80 KM/H 50 MPH**).

Adjusting the set speed

There are three ways to change the set speed:

- Accelerate or brake to the required speed and press button **1**.
- Increase or decrease the speed by pressing and holding either button **1** or **2** until the required set speed is shown on the message centre. The vehicle speed will gradually change to the selected speed.
- Increase or decrease the speed in steps of 2 km/h (1 mph) by briefly pressing button **1** or **2**.

ACC operates between approximately 30 km/h and 180 km/h (18 mph and 110 mph) dependent on the country specification.

Set speeds outside this range will not be captured.

The ACC may apply the brakes to slow down the vehicle to the new set speed. The new set speed will be displayed on the message centre for four seconds after it has been changed.

Entering the follow mode

WARNING

When in follow mode the vehicle will not decelerate automatically to a stop, nor will the vehicle always decelerate quickly enough to avoid a collision without driver intervention.

Once a set speed has been selected, the driver can release the accelerator and the set road speed will be maintained.

When a vehicle ahead enters the same lane or a slower vehicle is ahead in the same lane and travelling in the same direction, the vehicle speed will be adjusted automatically until the gap to the vehicle ahead corresponds to the preset gap. The vehicle is now in follow mode.

The warning lamp on the instrument pack will illuminate and the message centre will display the gap set.

The vehicle will then maintain the constant time gap to the vehicle ahead until:

- The vehicle ahead accelerates to a speed above the set speed.
- The vehicle ahead moves out of lane or out of view.
- The vehicle ahead slows so that low speed automatic switch off occurs.
- A new gap distance is set.

If necessary, the vehicle brakes will be automatically applied to slow the vehicle to maintain the gap to the vehicle in front.

The maximum braking which is applied by the ACC system is limited and can be overridden by the driver applying the brakes, if required.

Note: *Driver braking will cancel ACC.*

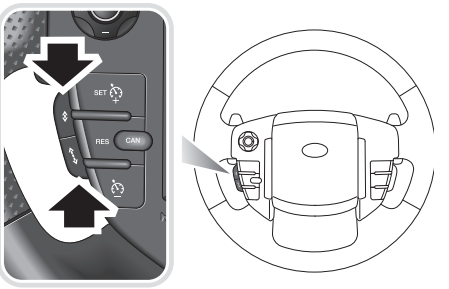
If the ACC system predicts that its maximum braking level will not be sufficient, then an audible warning will sound while the ACC continues to brake. **DRIVER INTERVENE** will be displayed on the message centre. The driver should take immediate action.

When in follow mode the vehicle will automatically return to the set speed when the road ahead is clear, for instance when:

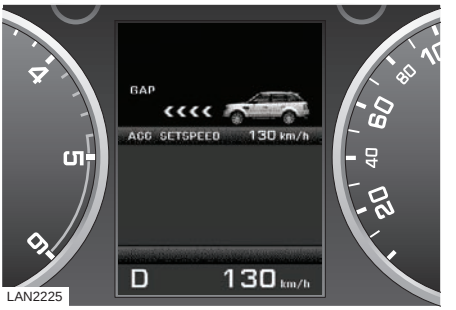
- The vehicle in front accelerates or changes lane.
- The driver changes lane to either side or enters an exit lane.

The driver should intervene if appropriate.

Adjusting the follow mode gap



LAN2224



LAN2225

The gap from the vehicle ahead can be decreased or increased by pressing the rocker switch on the steering wheel.

Four gaps are available and the selected gap setting will be displayed on the message centre when either button is pressed. After the ignition is switched on the default gap will be automatically selected ready for ACC operation.

Note: *It is the driver's responsibility to select a gap appropriate to the driving conditions.*

Overriding the set speed/follow mode

WARNING

Whenever the driver is overriding the ACC by depressing the accelerator pedal, the ACC will not automatically apply the brakes to maintain separation from any vehicle ahead.

The set speed and gap can be overridden by pressing the accelerator pedal when cruising at constant speed or in follow mode. If the vehicle is in follow mode, the instrument warning lamp will go out when the ACC is overridden by the driver using the accelerator and **CRUISE OVERRIDE** will be displayed on the message centre. When the accelerator is released the ACC function will operate again and vehicle speed will decrease to the set speed, or a lower speed if follow mode is active.

Automatic low speed switch off

If the speed of the vehicle decreases below 30 km/h (18 mph), the ACC system will be automatically switched OFF and the instrument warning lamp will go out.

If the brakes were being applied by the ACC system, they will be slowly released.

This will be accompanied by an audible warning, and **DRIVER INTERVENE** will be displayed on the message centre. The driver must take control.

ACC automatic switch off

ACC will disengage, but not clear the memory when:

- The CANCEL button **4**, is pressed.
- The brake pedal is pressed.
- The vehicle speed falls below 30 km/h (18 mph).
- **N** is selected.
- Dynamic Stability Control (DSC) activates.
- Electronic Traction Control (ETC) activates.
- Hill Descent Control (HDC) is selected.

ACC will disengage, and clear the memory when:

- The ignition is switched off.
- Maximum vehicle speed is reached.
- A fault occurs in the ACC system.

Resuming the set speed/follow mode

CAUTION

RESUME should only be used if the driver is aware of the set speed and intends to return to it.

By pressing the RESUME button **3**, after ACC has been cancelled, for example, after braking, the ACC will become active again provided that the set speed memory has not been erased. The set speed will be displayed for four seconds and the original set speed will be resumed, unless a vehicle ahead causes the follow mode to become active.

Driving with ACC active

The system acts by regulating the speed of the vehicle using engine control and the brakes. Gear changes may occur in response to deceleration or acceleration whilst in ACC.

ACC is not a collision avoidance system, however, during some situations the system may provide the driver with an indication that intervention is required.

An audible alarm will sound, accompanied by the message **DRIVER INTERVENE** if the ACC detects:

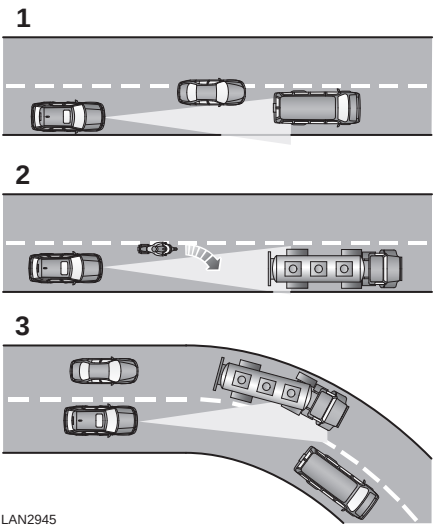
- A failure has occurred whilst the system is active.
- That using maximum ACC braking only is not sufficient.
- That the vehicle speed has decreased below the minimum for ACC operation.

Note: *ACC operates when the gear selector lever is in position* ***D****.*

Note: *When engaged, the accelerator pedal rests in the raised position. Fully release the pedal to allow normal ACC operation.*

Note: *When braking is applied by the ACC the vehicle brake lamps will be switched on.*

Detection limitations



LAN2945

Detection limitations can occur:

1. When driving on a different line to the vehicle in front.
1. With vehicles which edge into your lane which can only be detected once they have moved fully into your lane.
2. There may be issues with the detection of vehicles in front when going into and coming out of a bend.

In these cases ACC may brake late or unexpectedly. The driver should stay alert and intervene if necessary.

ACC failure

If a fault occurs during operation of the system in cruise or follow modes, the ACC system will switch off and cannot be used until the fault is cleared. The message **DRIVER INTERVENE** appears briefly and is then replaced by the message **CRUISE NOT AVAILABLE**.

If failure of the ACC or any related system occurs at any other time the message **CRUISE NOT AVAILABLE** will be displayed. It will not be possible to activate the ACC system in any mode.

Accumulations of dirt, snow or ice on the sensor or cover may inhibit ACC operation. Fitting of a vehicle front protector or metallised badges may also affect ACC operation.

If this occurs in ACC cruise/follow mode, the audible alarm sounds and the message **DRIVER INTERVENE** appears briefly. The message **ACC SENSOR BLOCKED** is then displayed. The system is no longer active.

Note: *The same messages may also be displayed while driving on open roads with few objects for the radar to detect.*

Clearing the obstruction allows the system to return to normal operation. If the obstruction is present when ACC is inactive, e.g. on initial starting or with the ACC system switched off, the message **ACC SENSOR BLOCKED** will be displayed.

Tyres other than those recommended may have different sizes. This can affect the correct operation of the ACC.

FORWARD ALERT

Limited warning of vehicles ahead is provided during ACC operation by the ACC **DRIVER INTERVENE** warning. The forward alert feature additionally provides warnings whilst ACC is not engaged; if a vehicle is detected close ahead, then the warning tone and **FORWARD ALERT** message will be issued. The brakes will not be applied.

The forward alert feature may be switched on or off via the **Vehicle Set-up** menu. See **VEHICLE INFORMATION AND SETTINGS MENU** (page 37).

The indicator in the instrument panel will illuminate when forward alert is switched on.

The sensitivity of the warning may be changed:

- Press the gap decrease button when ACC is disengaged to display and then decrease the sensitivity of the alert.
- Press the gap increase button to display and then increase the sensitivity of the alert.

Both of these alerts are accompanied by the **FWD ALERT <----->** message in the message centre.

ADVANCED EMERGENCY BRAKE ASSIST

WARNING

Advanced Emergency Brake Assist, is an additional safety system and is not intended to relieve the driver of the responsibility for exercising due care and attention when driving.

On vehicles fitted with Advanced Emergency Brake Assist, brake response is improved in preparation for emergency braking if the ACC sensor detects a moving vehicle close ahead.

In the event of a collision risk, you are alerted by a **FORWARD ALERT** warning message and an audible warning signal. If the risk of collision increases after the warning, Advanced Emergency Brake Assist is activated. The brakes are automatically applied gently in preparation for rapid braking (which may be noticeable). If the brake pedal is then pressed quickly, braking is implemented fully, even if the pressure on the pedal is light.

Advanced Emergency Brake Assist is available at speeds above 7 km/h (5 mph) and will function even if Forward Alert and Adaptive Cruise Control are switched off.

A fault with the system will be indicated by the warning **FORWARD ALERT UNAVAILABLE** appearing in the message centre. Advanced Emergency Brake Assist will not be available until the fault is rectified.

CAUTION

The system may not react to slow moving vehicles and will not react to stationary vehicles or vehicles not travelling in the same direction as your vehicle.

Advanced Emergency Brake Assist can only improve braking performance if the driver applies the brakes.

Warnings may not appear if the distance to the vehicle ahead is very small or if steering wheel and pedal movements are large (e.g. to avoid a collision).

Advanced Emergency Brake Assist utilises the same radar sensor as Adaptive Cruise Control and Forward Alert - the same limitations of performance apply. See **USING ACC** (page 151).