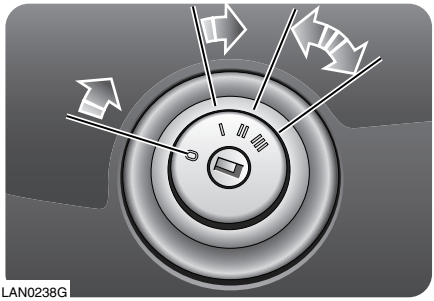
STEERING COLUMN LOCK

WARNING

Once the steering lock is engaged, it is impossible to steer the vehicle. DO NOT remove the key while the vehicle is in motion.

Caution: The gear selector MUST be in the P (park) position, before the starter key can be removed. If the starter key is left in place, a continuous battery drain occurs which could completely discharge the battery.


LAN0238G

The starter switch and steering column lock are located in the side of the steering column cover.

To unlock the steering column

Insert the key into the starter switch and rotate key to position **I**. If the key will not rotate, turn the steering wheel left or right while rotating the key.

To lock the steering column

Remove the key from the starter switch.

The lock is now set to operate. Rotate the steering wheel until the lock operates.

STARTER SWITCH

The starter switch uses the following sequence of key positions to operate the steering lock, electrical circuits and starter motor:

Position 0

- Steering locked.
- Some lighting circuits are operational, including: side lamps and hazard warning lamps.
- With the driver's door open, seat memory facility operational.

Position I

- Steering unlocked.
- Clock, audio system and lighter can now be operated.
- Wipers/washers are operational.

Position II

- All instruments, warning indicators and electrical circuits are operational.

Position III

- The starting sequence is initiated. Note that operation of position **I** electrical functions will be interrupted during engine cranking.

Note: *The gear selector position **P** or **N** must be selected before the engine can be started.*

STARTING - Petrol models

WARNING

Never start or leave the engine running in an unventilated building - exhaust gases are poisonous and contain carbon monoxide, which can cause unconsciousness and may even be fatal.

If the engine fails to start, continued use of the starter may result in unburnt fuel damaging the catalytic converter.

1. Check that the parkbrake is applied and that the gear selector is in the **P** (Park) or **N** (Neutral) position.
2. Switch off all unnecessary electrical equipment.
3. Turn the starter switch to position **II** and then on to position **III** and immediately release it. The starter will automatically switch off when the engine starts. DO NOT press the accelerator pedal while starting.

Note: *The battery charging and oil pressure warning indicators should extinguish as soon as the engine is running.*

Cold climates

In very cold climates the oil pressure warning indicator may take several seconds to extinguish. Similarly, engine cranking times will also increase. At -25°C (-13°F) the starter motor may require continuous operation for as long as 30 seconds before the engine will start. For this reason, ensure that all non-essential electrical equipment is switched off to maximise the available battery effort for starting.

After starting

Ensure that the parkbrake AND FOOT BRAKE are firmly applied and the accelerator pedal is not depressed while moving the gear selector lever from **N** or **P**. An interlock will prevent this movement if the foot brake is not applied.

STARTING - Diesel models

WARNING

Never start or leave the engine running in an unventilated building - exhaust gases are poisonous.

WARNING

The diesel engine must not be run above idle speed until the oil pressure warning lamp extinguishes. This will ensure that the engine and turbo-charger bearings are properly lubricated before being run at speed.

Similarly, ALWAYS allow the engine to idle for 10 seconds before switching off.

Caution: Continued use of the starter will not only discharge the battery, but may cause damage to the starter motor.

1. Check that the parkbrake is applied and that the gear selector is in the **P** (Park) or **N** (Neutral) position.
2. Switch off all non-essential electrical equipment.
3. Insert the starter key and turn the switch to position **II**. Wait until the glow plug warning lamp extinguishes.
4. Turn the key to position **III** and immediately release it. The starter will automatically switch off when the engine starts. DO NOT press the accelerator pedal while starting.

Note: *The waiting time will vary according to the engine coolant temperature (when the engine is hot, the glow plug warning lamp will extinguish almost immediately, or may not illuminate at all).*

In temperate climates DO NOT operate the starter for longer than 10 seconds. If the engine fails to start, switch off and wait 10 seconds before re-using the starter.

Note: *The battery charging and oil pressure warning indicators should extinguish as soon as the engine is running.*

Cold climates

In very cold climates the oil pressure warning lamp may take several seconds to extinguish. Similarly, engine cranking times will also increase. At -25°C (-13°F) the starter motor may require continuous operation for as long as 30 seconds before the engine will start. For this reason, ensure that all non-essential electrical equipment is switched off to maximise the available battery effort for starting.

After starting

Ensure that the parkbrake AND FOOT BRAKE are firmly applied and the accelerator pedal is not depressed while moving the gear selector lever from **N** or **P**. An interlock will prevent this movement if the foot brake is not applied.

GENERAL DRIVING ADVICE

Instruments and warning indicators

Caution: Red warning indicators are of particular importance, their illumination indicating that a fault exists. If a red indicator illuminates, always stop the vehicle and seek qualified assistance before continuing.

In the case of the parkbrake, the above only applies if the vehicle is moving when the indicator illuminates.

Before driving, it is important to fully understand the function of the instruments and warning indicators. See **INSTRUMENT PACK, 85**.

Power assisted steering

Note: *Power assistance is dependent on the engine running. If the engine is not running, a much greater effort will be required to steer the vehicle.*

Warming-up

In the interests of fuel economy and of reducing engine wear, it is advisable to drive the vehicle straight away, remembering that harsh acceleration or labouring the engine before the normal operating temperature has been reached, can damage the engine.

When the engine is cold, engine idle speeds will be faster than normal. Under these circumstances, use the foot brake to control the vehicle while idling, until the engine is warm and running at normal speed and be aware of the need to take additional care when manoeuvring the vehicle.

Vehicle height

Caution: The overall height of your vehicle exceeds that of ordinary passenger cars, see DIMENSIONS, 292. Always be aware of the height of your vehicle and check the available headroom before driving through low entrances. This is particularly important if the vehicle is fitted with a roof rack or if the sunroof is tilted open.

Vehicle stability

WARNING

Utility vehicles have a significantly higher roll-over rate than other types of vehicles. Since theses vehicles are designed to be operated off-road, they have a higher ground clearance and, hence, a higher centre of gravity. Such a feature has been associated with increased risk of vehicle roll-over. An advantage associated with higher ground clearance vehicles, is a better view of the road, allowing the driver to anticipate problems. Another factor shown to significantly increase roll-over risk, is unauthorised vehicle modifications, such as fitting incorrect specification tyres, oversize tyres, body lifting, incorrect springs/dampers and incorrect vehicle loading/trailer towing. However, on-road crash data also indicates that driver behaviour is a greater factor than a high centre of gravity, in determining a vehicle's overall roll-over rate. The single most effective driver behaviour, that can reduce the risk of injury or death in all crashes including roll-over, is to ALWAYS WEAR YOUR SEAT BELT and to properly restrain all child passengers in the rear seat, in an appropriate child safety seat. In a roll-over crash, an unbelted person is significantly more likely to die than a person wearing a seat belt.

Other measures that can reduce the risk of injury and death from vehicle crashes and roll-over are:

- Limit speed. Posted speed limits should never be exceeded, and you should always drive below these limits whenever traffic, weather, road or other conditions dictate. Always use your common sense and good judgement.
- Take curves at reasonable speeds, avoiding unnecessary braking.
- Drive defensively. Be aware of traffic, road and weather conditions. Avoid risk-taking behaviour such as following too close, rapid lane changing or abrupt manoeuvres.
- Assume that pedestrians or other drivers are going to make mistakes. Anticipate what they might do. Be ready for their mistakes.
- Avoid distractions such as cellular phone calling, reading, eating, drinking or reaching for items on the floor.
- Before changing lanes, check your mirrors and use your direction indicators.
- Always leave room for unexpected events such as sudden braking.
- Never operate your vehicle when you have consumed alcohol, are sleepy or fatigued or have taken any medication that affects judgement, reflexes or alertness.

WARNING

Many vehicle roll-overs occur when a driver attempts to bring a vehicle back onto the road after some or all of the wheels drift onto the shoulder of the road, especially when the shoulder is unpaved. If you find yourself in such a situation, do not initiate any sharp or abrupt steering and/or braking manoeuvres to re-enter the roadway. Instead, let the vehicle slow down as much as safely possible before attempting to re-enter the roadway and keep your wheels as straight as possible while re-entering the roadway.

Breakdown safety

If a breakdown occurs while travelling:

- Wherever possible, consistent with road safety and traffic conditions, the vehicle should be moved off the main thoroughfare, preferably onto the shoulder as far as possible. If a breakdown occurs on a motorway, pull well over to the inside of the hard shoulder.
- Switch on hazard warning lamps.
- If possible, position a warning triangle or a flashing amber lamp at an appropriate distance from the vehicle to warn other traffic of the breakdown (note the legal requirements of some countries).
- Consider evacuating passengers through the doors facing away from traffic, to a safe area away from the vehicle, as a precaution in case your vehicle is accidentally struck by another one.

Fuel economy

Fuel consumption is influenced by two major factors:

- How your vehicle is maintained.
- How you drive your vehicle.

To obtain optimum fuel economy, it is essential that your vehicle is maintained in accordance with the manufacturer's service schedule.

Items such as the condition of the air cleaner element, tyre pressures and wheel alignment will have a significant effect on fuel consumption. But, above all, the way in which you drive is most important. The following hints may help you to obtain better value from your motoring:

- Avoid unnecessary, short, start-stop journeys.
- Avoid fast starts by accelerating gently and smoothly from rest.
- Do not drive in the lower gears for longer than necessary.
- Decelerate gently and avoid sudden and heavy braking.
- Anticipate obstructions and adjust your speed accordingly well in advance.
- When stationary in traffic, select neutral to improve fuel economy and air conditioning performance.

Running-in

Proper running-in will have a direct bearing on the reliability and smooth running of your vehicle throughout its life.

In particular, the engine, gearbox, brakes and tyres need time to bed-in and adjust to the demands of everyday motoring. During the first 800 km (500 miles), it is essential to drive with consideration for the running-in process and heed the following advice:

- LIMIT maximum road speed to 110 km/h (68 mph) or 3,000 rev/min. Initially, drive the vehicle on a light accelerator and only increase engine speeds gradually once the running-in distance has been completed.
- DO NOT operate at full accelerator or allow the engine to labour in any gear. It is advisable NOT to use Sport mode when running in.
- AVOID fast acceleration and heavy braking except in emergencies.
- Remember! Regular servicing is vital to ensure that the brake pads are examined for wear and changed periodically to ensure long term safety and optimum performance.

Servicing requirements

Vehicles operated in arduous conditions, particularly on dusty, muddy or wet terrain, and vehicles undergoing frequent or deep wading conditions will require more frequent servicing. Contact a Land Rover Dealer/Authorised Repairer for advice.

After wading in salt water or driving on sandy beaches, use a hose to wash the underbody components and any exposed body panels with fresh water. This will help to protect the vehicle's cosmetic appearance and prevent impairment of parkbrake efficiency.

Wading

Caution: The maximum advisable wading depth is normally 490 mm (19 in.). but can be increased to 540 mm (21 in.), when the air suspension system is operated at Off-road height. Wading at a depth greater than the maximum advisable wading depth is not recommended.

Severe electrical damage may occur, if the vehicle remains stationary for any length of time with the water level above the door sills.

Do not switch off the engine during wading. If the engine stalls during wading, restart it immediately and, as soon as possible, get the vehicle checked by a Land Rover Dealer/ Authorised Repairer.

If, during wading, it is thought that water may have entered the engine air intake, switch off the engine immediately. Have the vehicle towed out and delivered to a Land Rover Dealer/Authorised Repairer for checking.

BEFORE DRIVING OFF ROAD

Before venturing off-road, it is absolutely essential that inexperienced drivers become fully familiar with the vehicle's controls, in particular the transfer gear switch, CommandShift, Hill Descent Control (HDC) and the Terrain Response system.

Basic information and Off-Road driving techniques can be found in the Off-Road driving handbook, available on-line at:
http//:www.ownerinfo.landrover.com

It is strongly recommended that off-road driver training is undertaken by anyone intending to drive off-road. Training is available at your nearest Land Rover Experience centre. More details can be found at:
http://www.landroverexperience.com

AUXILIARY EQUIPMENT

Caution: DO NOT use auxiliary equipment, such as roller generators, that are driven by only one or two wheels of the vehicle, as they will cause failure of the transfer gearbox.

EMISSION CONTROL SYSTEM

WARNING

Exhaust fumes contain poisonous substances and inhalation can cause unconsciousness and may even be fatal.

- **DO NOT drive with the tailgate open.**
- **DO NOT modify the exhaust system from the original design.**
- **ALWAYS have exhaust system leaks repaired immediately.**
- **If you think exhaust fumes are entering the vehicle, have the cause determined and corrected immediately.**

Land Rover vehicles are fitted with emission and evaporative control equipment necessary to meet a number of territorial requirements.

In many countries it is against the law for vehicle owners to modify or tamper with emission control equipment, or to sanction the unauthorised replacement or modification of this equipment. In such cases the vehicle owner and the repairer may both be liable for legal penalties.

It is important to remember that all Land Rover Dealer/Authorised Repairer are properly equipped to perform repairs and to maintain the emission control system on your vehicle.

Fuel Filling

SAFETY ON THE FORECOURT

WARNING

Petroleum gases are highly inflammable and, in confined spaces, are also extremely explosive.

Always take sensible precautions when refuelling:

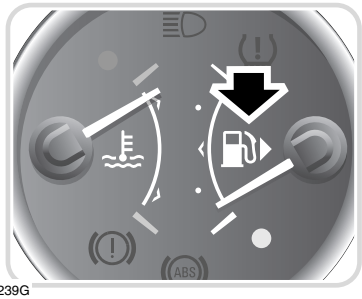
- Switch off the engine.
- Switch off mobile phones.
- Do not smoke or use a naked flame or light.
- Take care not to spill fuel.
- Do not overfill the tank.
- Do not fill petrol containers in the vehicle.

FUEL FILLER

WARNING

To avoid any sudden discharge of fuel, caused by excessive fuel vapour pressure, DO NOT fully remove the filler cap until any captive tank pressure has been released.

Take careful note of warning labels located around the filler cap.



LAN0239G

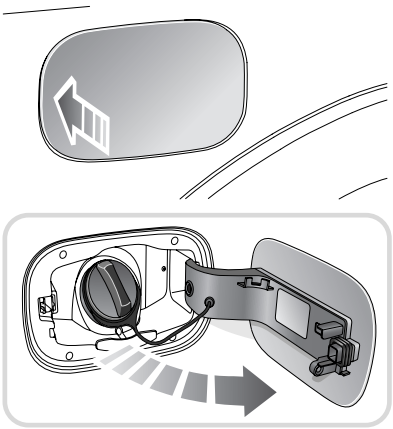
The fuel filler is located behind the rear right-hand wheel arch. An arrow on the fuel gauge points to that side of the vehicle.

Fuel Filling

Caution: The fuel filler flap has a spring loaded release, do not force it open. If the flap has been forced open, it may fail to close properly. In this eventuality, take your vehicle to your Land Rover Dealer for attention, as this condition may be due to damaged or misaligned components.

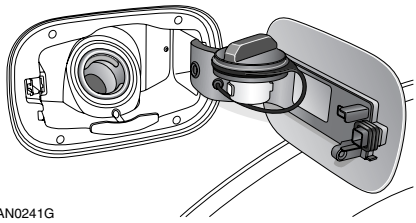
Caution: When replacing the fuel filler cap ensure that it is tightened until it clicks. Failure to do so may result in the engine warning lamp illuminating due to evaporative emission levels increasing.

With the vehicle fully unlocked (all doors and tailgate), press the left side of the fuel filler flap to open (shown in inset).



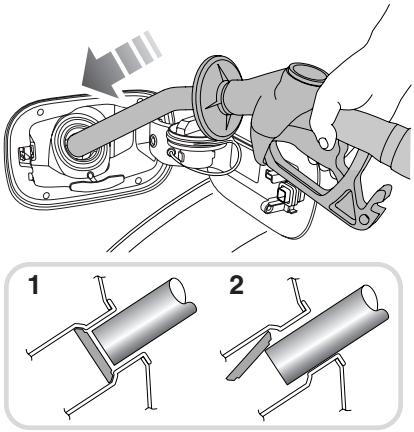
LAN0240G

The fuel filler flap springs out revealing the filler cap.



LAN0241G

Unscrew the filler cap and place it on the projection on top of the hinge of the fuel filler flap.



LAN0242G

Insert the pump nozzle (1) into the filler neck, pushing aside the spring-loaded cover (2).

When delivery is complete, withdraw the nozzle and replace the cap. Tighten the cap clockwise until you hear it click three times.

TYPE OF FUEL

Fuel specification - petrol engines

Caution: On petrol engine vehicles fitted with a catalytic converter, serious damage to the catalyst will occur if LEADED fuel is used!

See **ENGINES, 288**.

The RON value (octane rating) and type of petroleum available at garage forecourts will vary in different parts of the world.

During manufacture, engines are tuned to suit the fuel supplies commonly available in the country for which the vehicle is destined. However, if a vehicle is later exported to a different country, or is used to travel between different territories, the owner should be aware that the available fuel supplies may not be compatible with the engine specification.

Your engine will run on a lower grade of fuel but performance and fuel economy will be reduced.

Using petrol with a lower octane rating than 91 RON, however, can cause persistent, heavy engine knock (a metallic rapping noise). If severe, this can lead to engine damage.

If in doubt, seek advice from the territory concerned.

If heavy engine knock is detected when using the recommended octane rated fuel, or if steady engine knocking is present while maintaining a steady speed on level roads, contact your Land Rover Dealer/Authorised Repairer for advice.

Note: *An occasional, light, engine knock while accelerating or climbing hills is acceptable.*

Fuel specification - diesel engines

Caution: Maximum allowable Bio-diesel mix is 5%. To EN590 specification.

See **ENGINES, 288**.

Caution: If the fuel tank is accidentally filled with petrol, it is ESSENTIAL that you contact your Land Rover Dealer/Authorised Repairer BEFORE attempting to start the engine!

The quality of diesel fuel (Derv) can vary in different countries and only clean, good quality fuel should be used. It is important that the sulphur content of diesel fuel does not exceed 0.3%. In Europe all supplies should be within this limit, but in other parts of the world, you should check with your supplier.

In markets where the sulphur content exceeds 0.3%, more frequent engine oil and filter changes will be required.

FUEL FILLING

WARNING

DO NOT attempt to fill the tank beyond its maximum capacity. If the vehicle is to be parked on a slope, in direct sunlight, or high ambient temperature, expansion of the fuel could cause spillage.

Filling station pumps are equipped with automatic cut-off sensing to avoid fuel spillage. Fill the tank until the filler nozzle automatically cuts-off the supply. DO NOT attempt to fill the tank beyond this point.

Diesel engine vehicles

The use of commercial vehicle diesel pumps with a higher fill rate, may result in premature pump cut-off and fuel spillage.

EMPTY FUEL TANK

Caution: DO NOT RUN THE FUEL TANK DRY.

Running the fuel tank dry could create an engine misfire capable of damaging the engine, the catalytic converter or the fuel pump.

Note: *Should the vehicle run out of fuel, it will be necessary to add a minimum of 4 litres (0.8 gallons) of fuel in order to restart the vehicle. In some circumstances it will be necessary to drive a short distance, typically 1.6 - 5 km (1 - 3 miles) in order for the vehicles monitoring systems to register the additional fuel.*

FUEL CUT-OFF SYSTEM

In the event of an accident, the Supplementary Restraint System (airbag system) may stop the operation of the fuel pump, depending on the severity and type of the impact.

If this happens, the system must be reset before attempting to restart the engine.

Resetting the fuel cut-off system

WARNING

To avoid the possibility of fire or personal injury, do not reset the fuel cut-off system if you see or smell fuel.

If no fuel leak is apparent, reset the system as follows:

1. Turn the starter switch to position **0** and wait for 1 minute.
2. Turn the starter switch to position **II** and wait for 30 seconds.
3. Make a further check for fuel leaks.
4. If no leak is found, start the engine as normal.

CATALYTIC CONVERTER

WARNING

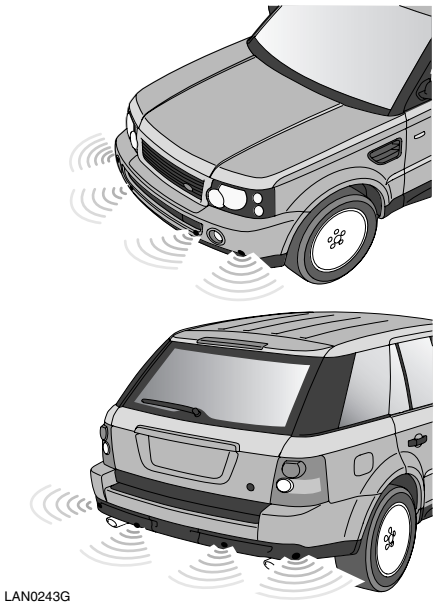
Exhaust system temperatures can be extremely high - DO NOT park on ground where combustible materials such as dry grass or leaves could come into contact with the exhaust system.

Caution: Catalytic converters can be easily damaged through improper use, particularly if the wrong fuel is used, or if an engine misfire occurs.

USING PARK DISTANCE CONTROL (PDC)

Caution: The Park Distance Control is a parking aid for guidance only. It remains the driver's responsibility to detect obstacles and estimate the vehicle's distance from them. The sensors may not be able to detect certain types of obstruction (narrow posts or small narrow objects, small objects close to the ground and some objects with dark, non-reflective surfaces, for example). Always be vigilant when reversing.

Caution: Keep the sensors free from dirt, ice and snow. If deposits build up on the surface of the sensors, their performance may be impaired. When washing the vehicle, avoid aiming high pressure jets directly at the sensors at close range.



LAN0243G

Park Distance Control (PDC) is a system that assists the driver when manoeuvring the vehicle into a parking space, or anywhere that there are obstacles that need to be avoided, warning the driver accordingly.

The vehicle is fitted with four ultrasonic sensors on each of the bumpers. (some vehicles are fitted with sensors only in the rear bumpers.)

The range of the front sensors, and the two sensors on the corners of the rear bumper is approximately 0.6 metres (2 feet). The two centre rear sensors have a range of approximately 1.5 metres (5 feet).

PDC in operation

Caution: PDC is automatically switched off at the rear when a trailer is attached to the vehicle.

The distance from an obstruction is identified by an intermittent tone sounding (higher pitch for the front sensors and a lower pitch for the rear). As the vehicle moves closer to an obstruction, the repetition frequency of the tones increases proportionally.

When the distance between the sensor and the obstruction is less than approximately 0.30 metres (1 foot), the tone becomes continuous.

Activating PDC

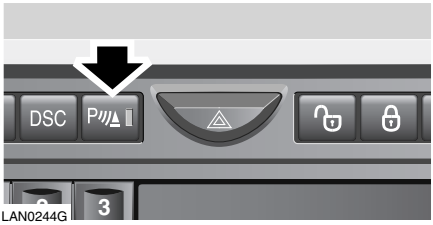
PDC is automatically activated whenever **R** (Reverse) is engaged, while the starter switch is turned on.

If **R** is selected, both front and rear sets of sensors become activated and a short confirmation tone sounds after one second.

In **R**, the sensors remain on regardless of speed.

If the driver selects **N** from **R**, both sets of sensors remain active.

Selection of Park **P**, or applying the EPB while the vehicle is stationary, will override other inputs and turn off the PDC system.



PDC is automatically cancelled when **D** (Drive) is selected and the vehicle exceeds 16 km/h (10 mph). When driving into a limited space, front PDC can be enabled manually.

Front PDC can be manually selected or deselected by pressing the switch (illustrated) on the centre front instrument panel. The switch indicator illuminates and a short tone sounds as confirmation.

Note: *The confirmation tone only sounds when the rear PDC is activated by selecting reverse, or when the system is re-activated by pressing the switch.*

If a long, high-pitched tone sounds and the switch indicator flashes when PDC is activated, then a fault in the system has been detected - first check that the sensors on the bumpers are not obscured by dirt, ice or snow. If the fault persists after cleaning the sensors, contact your Land Rover Dealer/Authorised Repairer for assistance.

AUTOMATIC TRANSMISSION USE

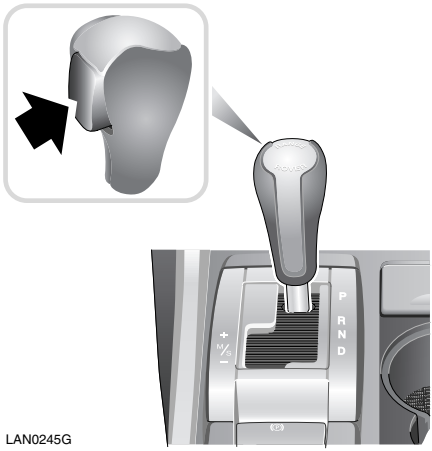
Starting

The engine can only be started with the selector lever in the **P** (Park) or **N** (Neutral) positions.

- ALWAYS apply the parkbrake and foot brake before starting the engine.
- KEEP THE BRAKES APPLIED while moving the selector lever into a drive position (the selector lever cannot be moved from the **P** or **N** position unless the foot brake is applied).

Note: *If pressure is applied to the selector lever before the foot brake is applied, any gear selected may not be available irrespective of the lever position. In this situation, remove pressure from the selector lever, ensure that the foot brake is applied and select the required gear.*

- The selector release button (see inset) must be pressed while selecting **P** and **R**, and also to enable the lever to be moved between the **P** and **R** positions.
- DO NOT rev the engine or allow it to run above normal idle speed while selecting **D** or **R**, or while the vehicle is stationary with any gear selected.
- ALWAYS keep the brakes applied until you are ready to move off - remember, once a drive gear has been selected, an automatic vehicle will tend to creep forward (or backward if reverse is selected).
- DO NOT allow the vehicle to remain stationary for any length of time with a drive gear selected and the engine running (always select **N** if the engine is to idle for a prolonged period).



LAN0245G

Note: *The gear selector lever MUST be in the **P** position before the starter key can be removed.*

Note: *For maximum air conditioning performance while stationary, select **P** or **N**.*

AUTOMATIC TRANSMISSION

Selector lever positions

WARNING

Do not leave children unattended in the vehicle, especially with keys in the starter switch.

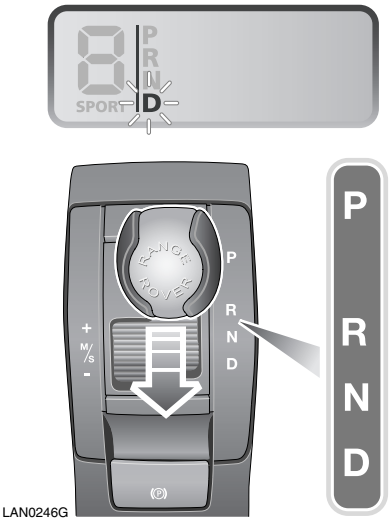
Select P and shut off the engine prior to exiting the vehicle.

Caution: DO NOT select P or R if the vehicle is moving.

DO NOT select a forward drive gear when the vehicle is moving backwards.

Do not select reverse gear when the vehicle is moving forwards.

An illuminated indicator on the selector panel and a number or letter on the gear selector display in the instrument pack, identify the selected gear position.



LAN0246G

P - Park:

This position locks the transmission and should be selected before switching the engine off. To avoid transmission damage, ensure that the vehicle is completely stationary, with the parkbrake applied, before selecting **P**.

The selector release button MUST be pressed before moving the selector lever into **P.**

Press the selector release button and foot brake to move the selector lever out of **P**.

Note: *The selector lever will not be released from **P** unless the engine starter switch is in position **II**.*

R - Reverse:

Before selecting **R**, ensure that the vehicle is stationary, with the brakes applied. The selector release button MUST be pressed before moving the selector lever into **R** position.

N - Neutral:

Select **N** when the vehicle is stationary and the engine is required to idle for a brief period (at traffic lights, for example). In **N**, the transmission is not locked, so the parkbrake must be applied whenever **N** is selected.

If the vehicle remains stationary, the selector lever becomes locked in **N** and it is then necessary to depress the brake pedal in order to release the selector lever.

Press the selector release button and foot brake to move from **N** to **R** or **D**.

D - Drive:

Select for all normal driving; full automatic gear changing occurs on all six forward gears, according to road speed and accelerator position.

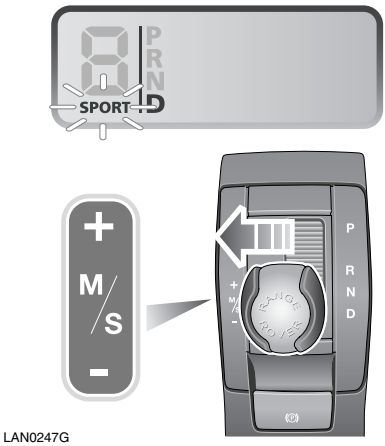
Kick-down in automatic mode

To provide rapid acceleration for overtaking, push the accelerator pedal to the full extent of its travel (this is known as kick-down), a click will be felt through the accelerator pedal. Up to a certain speed, this will cause an immediate downshift to the lowest appropriate gear, followed by rapid acceleration. Once the pedal is relaxed, normal gear change speeds will resume (dependent upon road speed and accelerator pedal position).

Note: *Moderate accelerator pressure may also result in a downshift in the transmission, depending on vehicle speed.*

Sport mode

In Sport mode, full automatic progression through the gear ratios is retained and the transmission will stay in the lower gears for longer. This improves mid-range performance with downshifts occurring more readily.



LAN0247G

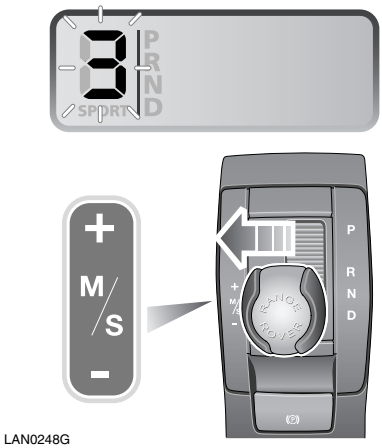
To select Sport mode, move the gear lever from the **D** position towards the left hand side of the vehicle (see illustration). The word **SPORT** will appear in the gear selector display in the instrument pack (for approximately 6 seconds) and the LED in the selector display to the side of the selector lever illuminates.

Sport mode can be deselected at any time, by returning the lever to the **D** position.

To return to Sport mode after CommandShift has been selected move the selector into the **D** position. Then move it back into Sport mode.

CommandShift ™

CommandShift gear selection can be used as an alternative to fully automatic transmission and is particularly effective when rapid acceleration or engine braking are required.



LAN0248G

1. With **D** selected, move the gear selector from the **D** position towards the left-hand side of the vehicle (this is the same as selecting Sport mode).
2. The transmission then automatically selects the ratio most appropriate to the vehicle's road speed and accelerator depression. Move the selector forward or backward to manually select a higher or lower gear (when available). The message **TRANSMISSION COMMANDSHIFT SELECTED** appears in the main message centre.
3. A single forward (**+**) movement of the selector lever will change the transmission to a higher gear. Rearward (**-**) movement of the lever will change down to a lower gear. The selected gear will be indicated in the digital display in the instrument pack (see inset).
4. To deselect CommandShift, simply move the selector lever sideways, back to the **D** position. Automatic gear changing will then resume.

Note: *In CommandShift, kick-down is still available for increased acceleration. See* ***Kick-down in automatic mode, 159****.*

Note: *When the Terrain Response is selected, the automatic transmission will go straight into CommandShift if the lever is moved into sport/CommandShift in any Special Program.*

Using CommandShift in HIGH range

If CommandShift is selected in HIGH range, 1st gear must be selected to move off from stationary. Normal sequential gear changing can be utilised once the vehicle is moving.

Using CommandShift in LOW range

If CommandShift is selected in LOW range, the vehicle can move off from stationary in 1st, 2nd or 3rd gear - this is particularly useful to improve traction when driving off-road.

Kick-down in CommandShift

When in CommandShift, kick-down overrides the manual gear selection, to provide increased acceleration.

In HIGH range, with CommandShift selected, kick-down will cause a downshift to the lowest gear possible for current vehicle speed.

ELECTRONICALLY SELECTED AUTOMATIC MODES

In automatic or Sport modes (not available in CommandShift), the transmission control system will electronically adjust gear change points to suit a variety of driving conditions.

Hill ascent, trailer and high altitude mode

A suitable gear change pattern is selected to retain lower gears for longer. This is to counter momentum loss caused by more frequent gear changing during hill ascent or when towing. This gear change pattern is also selected at high altitudes to combat reduced engine torque.

Hill descent mode

When in manual CommandShift mode, with the optimum gear for engine braking selected, the selector lever can then be moved across to the **D** position. The transmission will retain the previously selected manual gear until the descent is completed, then the transmission will automatically change to **D**.

High coolant temperature mode

In high ambient temperatures during extreme load conditions, it is possible for the engine and the gearbox to overheat. At a certain temperature the transmission will select a gear change pattern designed to aid the cooling process, whilst enabling the gearbox to continue performing normally in high temperatures.

Note: *When the Terrain Response system is used, automatic transmission change points/patterns will change depending on which mode has been selected.*

Limp-home mode

Should the transmission develop a fault, **F** is displayed in the gear position display and only limited gears are available. Seek immediate assistance from your Land Rover Dealer/ Authorised Repairer.

TRANSFER GEARBOX

Your vehicle is equipped with an electronically controlled transfer gearbox allowing the driver to select HIGH or LOW range driving gears.

HIGH range

HIGH range should be used for all normal road driving and also for off-road driving across dry, level terrain.

LOW range

LOW range should ONLY be used in situations where low speed manoeuvring is necessary, such as reversing a trailer or negotiating a boulder-strewn river bed, or when moving off while heavily loaded or towing.

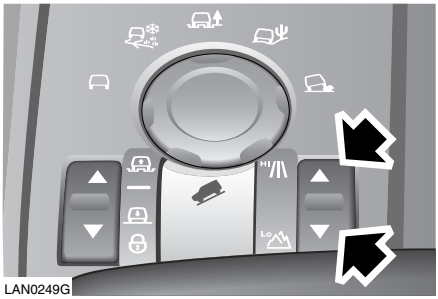
Also use LOW range for more extreme off-road conditions, such as steep ascents and descents. DO NOT attempt to use the LOW range for normal road driving.

Range changing

The recommended method of changing range is with the vehicle stationary. For vehicles equipped with a message centre, the messages displayed will assist the experienced driver in carrying out a range change on-the-move.

Stationary method

With the vehicle stationary and the engine running, apply the foot brake and move the automatic gearbox selector to **N** (neutral). Press the transfer gear switch to select HIGH or LOW and release it.



LAN0249G

While the vehicle is in HIGH range, the range indicator in the instrument pack display is extinguished and the HIGH range indicator at the switch is illuminated.

The range indicator in the instrument pack display illuminates continuously to act as a reminder that LOW range is engaged. It flashes to indicate a range change in progress and extinguishes once the vehicle is in HIGH range.

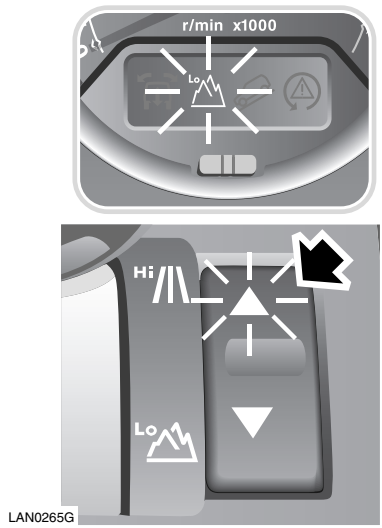


LAN0264G

While a HIGH to LOW range change is in progress, the HIGH range indicator in the switch will remain illuminated. The LOW range indicators in both the switch and the instrument pack display will flash.

When the range change is complete, the HIGH range indicator in the switch extinguishes. The LOW range indicators in both the switch and the instrument pack display will illuminate constantly.

A warning chime will sound, and **LOW RANGE ENGAGED** is displayed in the message centre for a few seconds.



LAN0265G

While a LOW to HIGH range change is in progress, the LOW range indicator in the switch will remain illuminated. The HIGH range indicators in both the switch and the instrument pack display will flash.

When the range change is complete, the LOW range indicator in both the switch and the instrument pack display extinguishes. The HIGH range indicator in the switch will illuminate constantly.

A warning chime will sound, and **HIGH RANGE ENGAGED** is displayed in the message centre for a few seconds.

RANGE CHANGING ON THE MOVE

Note: *If the vehicle speed is too high when a range change is requested, a warning chime sounds and* ***SPEED TOO HIGH FOR RANGE CHANGE*** *appears in the message centre.*

If **N** is not selected before using the transfer gear switch, the message **SELECT NEUTRAL FOR RANGE CHANGE** is displayed and a warning chime sounds.

Note: *Do not attempt to make moving range changes at speeds of 3 km/h (2 mph) or less.*

Changing from HIGH to LOW on the move

With the vehicle slowing down and travelling NO FASTER THAN 40 km/h (24 mph), first select **N** in the main gearbox. Press the rear of the transfer gear switch to the LOW position and release it.

Indication of the range change status is the same as for the Stationary method.

Now select **D** or manual CommandShift mode. The transmission interlock prevents the engagement of a drive gear until the range change is complete.

Changing from LOW to HIGH on the move

Caution: If the range change indicator still flashes when the starter key is turned from position II to position I, apply the parkbrake.

With the vehicle travelling NO FASTER THAN 60 km/h (38 mph), select **N** in the main gearbox. Press the front of the transfer gear switch to the HIGH position and release it.

Indication of the range change status is the same as for the stationary method.

Now select **D** (drive). The transmission interlock prevents the engagement of a drive gear until the range change is complete.

Transmission fault message

If a fault occurs within the transmission, a message will be displayed in the main message centre. See **MESSAGE CENTRE MESSAGES, 92**.

AUXILIARY EQUIPMENT

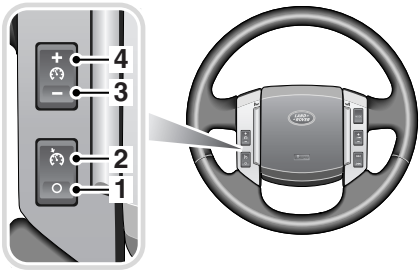
Caution: DO NOT use auxiliary equipment, such as roller generators, that are driven by only one or two wheels of the vehicle, as they will cause failure of the transfer gearbox.

CRUISE CONTROL

Caution: Always observe the following precautions:

- **DO NOT use cruise control in traffic conditions where a constant speed cannot easily be maintained.**
- **DO NOT use cruise control on winding or slippery road surfaces, or in off-road conditions such as rough tracks or on sand.**
- **Use of Sport mode is not recommended when cruise control is selected.**

Cruise control enables the driver to maintain a constant road speed without using the accelerator pedal. This is particularly useful for motorway cruising or for any journey where a constant speed can be maintained for a lengthy period.



LAN0252G

The steering wheel switches operate as follows:

1. **CANCEL:** Cancels without erasing memorised speed.
2. **RESUME:** Resume set speed.
3. **SET - :** Set the speed (**-**) or decrease.
4. **SET + :** Set the speed (**+**) or increase.

Note: *Cruise control is NOT available when the vehicle is being driven in LOW range.*

It is also not available when using the Terrain Response system, when Mud Ruts, Sand or Rock Crawl is selected and also when Hill Descent Control (HDC) is selected.

To operate

Accelerate until the desired cruising speed is reached. This must be above the system's operational minimum speed of 30 km/h (18 mph).

Press the **+** switch (4) to set the vehicle speed in the system's memory. Cruise control will now maintain that road speed.



The warning indicator in the instrument pack illuminates. With cruise control operating, speed can be increased by normal use of the accelerator e.g. for overtaking. When the accelerator is released, road speed will return to the previously set cruising speed.

Note: *When cruise control speed is set and the accelerator pedal is pressed for more than 60 seconds, cruise control will be cancelled.*

A speed can be set and stored whilst the vehicle speed is below 30 km/h (18 mph), or the vehicle is stationary but the gear selector is in **D** or **N**. Once the vehicle speed exceeds 30 km/h (18 mph) the set speed can be achieved by pressing the resume switch (2).

Suspending cruise control

Cruise control can be suspended by a single press of the **CANCEL** switch (1). The warning indicator in the instrument pack extinguishes.

Cruise control will also suspend when the brake pedal is pressed, when the gear selector is moved into neutral or if HDC or DSC becomes active.

To resume cruise control at the previously set speed, press the **RESUME** switch (2).

Note: *The set speed will NOT be erased by pressing the* ***CANCEL*** *switch (1). The set speed will only be erased when the starter switch is turned to position* ***0****, or the gear selector lever is moved to* ***R*** *or* ***P****.*

Reducing the cruise speed

Press and hold the **-** switch (3); the vehicle will decelerate. Release the switch as soon as the desired speed is reached. The vehicle speed at the point of switch release becomes the new set speed.

Alternatively, the set speed can be decreased incrementally by tapping the **-** switch (3). Each press of the switch will decrease the speed by 2 km/h (1 mph).

Increasing the set cruising speed

WARNING

When setting cruise control to the speed limit it is important to remember that it is possible for the vehicle speed to increase when travelling downhill. This may result in the vehicle speed exceeding the speed limit.

The driver must ALWAYS ensure that a safe speed is maintained below the speed limit, taking account of traffic and road conditions.

Press and hold the **+** switch (4); the vehicle will accelerate. Release the switch as soon as the desired speed is reached.

The vehicle speed at the point of switch release becomes the new set speed.

Alternatively, the set speed can be increased incrementally by tapping the **+** switch (4). Each press of the switch will increase the speed by 2 km/h (1 mph).

A further alternative is to increase speed by normal use of the accelerator. When the desired speed is reached, press the **+** switch (4) to set the cruise control.

Note: *If the accelerator pedal is pressed to increase speed, but the* ***+*** *switch (4) is not pressed, cruise control will be cancelled after 60 seconds.*

ADAPTIVE CRUISE CONTROL (ACC)

WARNING

Adaptive Cruise Control is not a collision warning or avoidance system. Additionally, Adaptive Cruise Control will not detect:

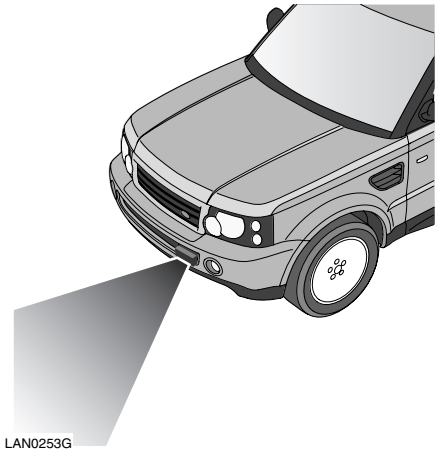
- **Stationary or slow moving vehicles below 10 km/h (6 mph).**
- **Pedestrians or objects in the roadway.**
- **Oncoming vehicles in the same lane.**

A radar sensor mounted in 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.



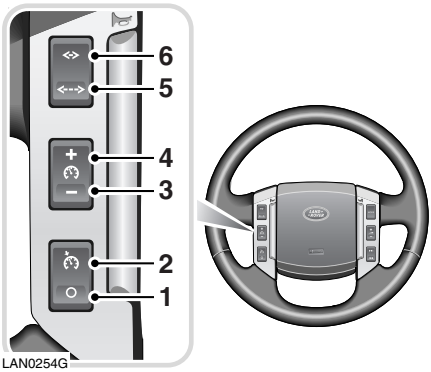
LAN0253G

- 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.

Adaptive Cruise Control (ACC)

Steering wheel switches

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.



The steering wheel switches operate as follows:

1. **CANCEL:** Cancels without erasing memorised speed.
2. **RESUME:** Resume set speed.
3. **SET - :** Set the speed **-** or decrease.
4. **SET + :** Set the speed **+** or increase.
5. **GAP <---> :** Gap increase.
6. **GAP <-> :** Gap decrease.

Setting a speed

Accelerate as normal until the required speed is reached.

Press the **SET +** button (4) 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 80KM/H 50MPH**).

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 in the instrument cluster will be illuminated.

CRUISE GAP



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.

Low speed automatic 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.

Overriding the set speed/follow mode

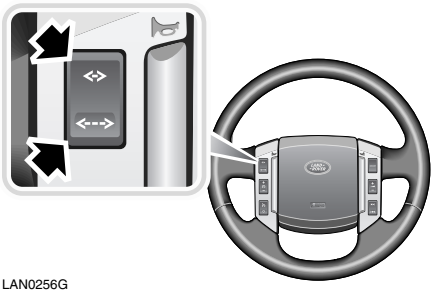
WARNING

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.

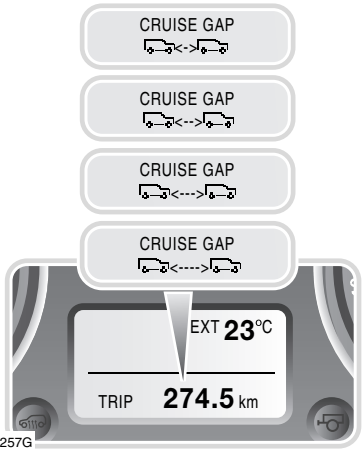
The set speed and gap can be overridden by pressing the accelerator pedal when cruising at constant speed or in follow mode. If the vehicle is in follow mode, the instrument warning lamp will go out when the ACC is overridden by the driver using the accelerator and **CRUISE OVERRIDE** will be displayed 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.

Adaptive Cruise Control (ACC)

Adjusting the gap



LAN0256G



LAN0257G

The gap from the vehicle ahead can be decreased or increased by pressing the rocker switch (5) or (6), 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 starter 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.*

Adjusting the set speed

There are three ways to change the set speed:

- Accelerate or brake to the required speed and press the **SET +** button (4).
- Increase or decrease the speed by pressing and holding either the **SET +** or **-** button (4) or (3) 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 the **SET +** (4) or **SET -** button (3).

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.

ACC automatic switch off

ACC will disengage, but not clear the memory when:

- The CANCEL button (1), 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 starter switch is set to position **0**.
- 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 (2), 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.

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 message will be issued. The brakes will not be applied.


LAN0255G

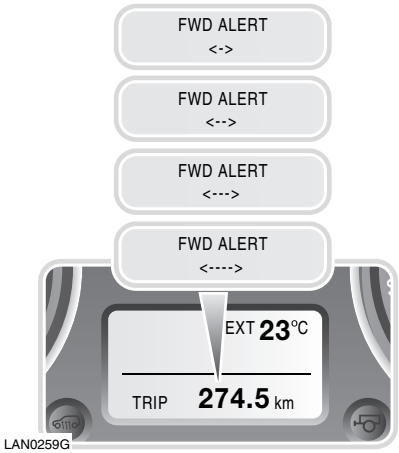
This additional feature may be switched on or off using the forward alert switch as indicated

When the indicator lamp in the switch is on, forward alert is active.

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.



LAN0259G

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.

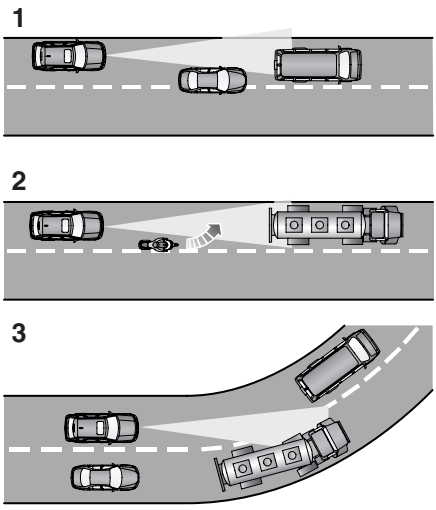
An audible alarm will sound, accompanied by the message **DRIVER INTERVENE** if the ACC detects:

- 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**.*
- *When engaged, the accelerator pedal rests in the raised position. Fully release the pedal to allow normal ACC operation.*
- *When braking is applied by the ACC the brake pedal may move down and up as braking is applied or removed. The vehicle brake lamps will be switched on while braking is applied.*

Detection limitations



LAN0250G

Detection limitations can occur:

1. When driving on a different line to the vehicle in front.
2. With vehicles which edge into your lane which can only be detected once they have moved fully into your lane.
3. 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.

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.

FOOT BRAKE

WARNING

DO NOT rest your foot on the brake pedal while travelling as this may overheat the brakes, reduce their efficiency and cause excessive wear.

NEVER allow the vehicle to freewheel with the engine turned off, as braking assistance will not be available. The pedal brakes will still function, but more pressure will be required to operate them.

If the RED brake warning indicator should illuminate while the vehicle is in motion, bring the vehicle to a halt as quickly as traffic conditions and safety allow and seek qualified assistance before continuing. See Warning Indicators, 104.

Never place non-approved floor matting or any other obstructions, under the brake pedal. This restricts pedal travel and braking efficiency.

For your safety, the hydraulic braking system operates through dual circuits. If one circuit should fail, the other will continue to function.

However, in the event of brake failure where only one circuit is operational, the vehicle should only be driven at slow speed to the nearest qualified Land Rover Dealer/Authorised Repairer.

In these circumstances, exercise extreme caution and be aware that increased brake pedal travel, greater pedal pressure, and longer stopping distances will be experienced.

Servo assistance

The braking system is servo assisted, but ONLY when the engine is running. Without this assistance greater braking effort is necessary to safely control the vehicle, resulting in longer stopping distances. Always observe the following precautions:

- ALWAYS take particular care when being towed with the engine turned off.
- If the engine should stop for any reason while the vehicle is in motion, bring the vehicle to a halt as quickly as traffic conditions safely allow, and DO NOT pump the brake pedal as the braking system may lose any remaining assistance available.

Brake pads

Brake pads require a period of bedding in. For the first 800 km (500 miles), you should avoid situations where heavy braking is required.

Remember! Regular servicing is vital to ensure that the brake pads are examined for wear and changed periodically to ensure long term safety and optimum performance.

Wet conditions

Driving through water or even very heavy rain may adversely affect braking efficiency. Always dry the braking surfaces by intermittent light application of the brakes, first ensuring that you are at a safe distance from other road users.

ANTI-LOCK BRAKES

WARNING

ABS cannot overcome the physical limitations of braking distance, or the danger of aquaplaning, i.e. where a layer of water prevents adequate contact between the tyres and the road surface.

The fact that a vehicle is fitted with ABS must never tempt the driver into taking risks that could affect safety. In all cases, it remains the driver's responsibility to drive within normal safety margins, having due consideration for prevailing weather and traffic conditions.

The driver should always take account of the surface to be travelled over and the fact that brake pedal reactions will be different to those experienced on a non-ABS vehicle.

The purpose of the anti-lock braking system (ABS) is to allow efficient braking without wheel locking - thereby allowing the driver to retain steering control of the vehicle.

Under normal braking conditions, where sufficient road surface friction exists to slow the vehicle without the wheels locking, ABS will not be activated. However, if the wheels begin to lock under braking, then ABS will automatically come into operation. This will be recognisable by a rapid pulsation felt through the brake pedal.

In an emergency situation, ABS functions most effectively when full braking effort is applied even when the road surface is slippery. The ABS system constantly monitors the speed of each wheel and varies the brake pressure to each, according to the available grip.

No matter how hard you brake, you should be able to continue steering the vehicle as normal.

- DO NOT pump the brake pedal at any time; this will interrupt operation of the system and may increase the stopping distance.
- NEVER place additional floor matting or any other obstruction under the brake pedal. This restricts pedal travel and may impair brake efficiency.

Warning indicator



A fault with the ABS system is indicated by illumination of the amber ABS warning indicator. If the indicator illuminates, drive with care, avoiding heavy brake applications and seek qualified assistance urgently. See **Anti-lock Braking System (ABS) - AMBER, 108**.

Off-road driving

While anti-lock braking will operate in off-road driving conditions, on certain surfaces total reliance on the system may be unwise. It cannot reliably compensate for driver error or inexperience on difficult off-road surfaces.

Note the following:

- On soft or deep surfaces such as powdery snow, sand or gravel, and on extremely rough ground, the braking distance required by the anti-lock braking system may be greater than for normal braking, even though improved steering would be experienced. This is because the natural action of locked wheels on soft surfaces is to build up a wedge of surface material in front which assists the wheels to stop.
- If the vehicle is stopped on a very steep slope where little traction is available, it may slide with the wheels locked as there is no wheel rotation to provide a signal to the ABS. To counteract this, briefly release the brakes to permit some wheel movement, then re-apply the brakes to allow ABS to gain control.

Cornering Brake Control (CBC)

Cornering Brake Control (CBC) is an advanced form of ABS, which maintains vehicle stability and steerability during braking whilst cornering or changing lanes at speed.

Emergency Brake Assist (EBA)

If rapid full brake application is made, EBA automatically boosts the braking force to the maximum and helps to stop the vehicle. Also, if the driver brakes more slowly, but with sufficient brake pressure to activate ABS on both front wheels, the system automatically increases the braking force so that all four wheels are in ABS control, optimising the performance of the ABS system.

Pressure should be maintained on the brake pedal during the entire brake application. If the brake pedal is released, EBA will cease operation.

A fault with the EBA system is indicated by illumination of the amber brake warning indicator. See **INDICATOR GROUPING, 104**.

In the event of a fault, the system should be checked by a Land Rover Dealer/Authorised Repairer at the earliest opportunity.

Electronic Brake Force Distribution (EBD)

Your vehicle is equipped with Electronic Brake Force Distribution (EBD), which balances the distribution of braking forces between front and rear axles to maintain maximum braking efficiency under all vehicle loading conditions.

For example; under light loads EBD applies less effort to the rear brakes to maintain vehicle stability; conversely allowing full braking effort to the rear wheels when the vehicle is towing or is heavily laden.

A fault with the EBD system is indicated by illumination of the red brake warning indicator. If this illuminates while the vehicle is being driven, gently stop the vehicle as soon as safety permits and seek qualified assistance.

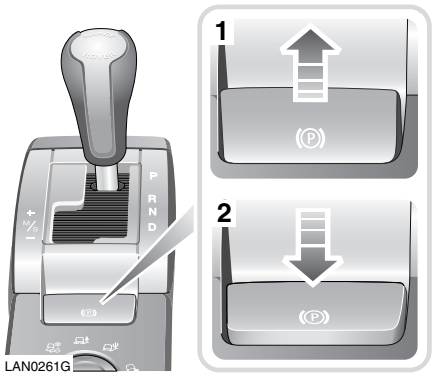
PARKBRAKE (EPB)

WARNING

DO NOT rely on the parkbrake system to hold the vehicle stationary if the amber parkbrake warning indicator is illuminated and/or the red warning indicator is flashing. Seek qualified assistance urgently.

Caution: Driving the vehicle with the parkbrake applied or repeated use of the parkbrake to decelerate the vehicle may cause serious damage to the brake system.

Your vehicle is equipped with an electrically operated parkbrake (EPB).



Applying the parkbrake manually

With the vehicle stationary, pull up the lever (1) and release it. The lever will return to the neutral position and the red parkbrake warning indicator in the instrument pack will illuminate.

If the lever is operated while the vehicle is travelling at less than 3 km/h (2 mph), the vehicle will be brought to a stop abruptly. The stop lamps will not illuminate.

If the system detects a fault with the parkbrake, the amber parkbrake warning indicator will illuminate and the message **PARKBRAKE FAULT** will appear on the instrument pack. If a fault is detected while EPB is operated, the red warning indicator will flash and the amber indicator will illuminate. Also the message **PARKBRAKE FAULT. SYSTEM NOT FUNCTIONAL** will appear in the main message centre. The red indicator will continue to be illuminated for at least ten seconds after the starter switch has been turned off.

Dynamic operation

In an emergency, the parkbrake can be applied dynamically, i.e. with the vehicle travelling at more than 3 km/h (2 mph). Pulling up on the lever and holding it up gives a gradual reduction in speed. The brake warning indicator will illuminate accompanied by a harsh sound and **CAUTION! PARKBRAKE APPLIED** appears on the main message centre. The stop lamps will illuminate.

Releasing or depressing the lever will cancel the parkbrake application.

Releasing the parkbrake manually

WARNING

The parkbrake operates on the rear wheels of the vehicle and hence secure parking of the vehicle is dependent on being on a hard and stable surface.

DO NOT rely on the parkbrake to operate effectively if the vehicle has been subjected to immersion in mud and water.

To disengage the parkbrake, the starter key must be in position **I** or **II**. Apply pressure to the foot brake while pressing down on the parkbrake lever.

It is not possible to manually release the parkbrake without pressing the foot brake.

If the parkbrake cannot be released manually, seek qualified assistance immediately.

Releasing the parkbrake automatically

If the vehicle is stationary with the parkbrake applied and in **D** or **R**, pressing the accelerator will release the parkbrake and allow the vehicle to move off.

To delay the automatic release feature, hold the lever in the apply position, then at the desired point, release it.

To assist in a smooth drive-away, the system anticipates the requirement and reduces the system load depending on the gradient (it may be possible to hear this pre-arm operation).

If the reduction in load causes the vehicle to move after a valid gear is engaged, the full system load will be re-applied to the parkbrake. This may cause a small reduction in the refinement of the subsequent drive-away. It is also possible to override this load reduction by lifting the parkbrake lever after gear engagement.

In the event of a fault, **PARKBRAKE FAULT. AUTO RELEASE NOT FUNCTIONAL** will appear in the main message centre. In this event, release the parkbrake manually.

Under most conditions the EPB system will release seamlessly as the accelerator is applied, allowing the vehicle to move forward. However, release times may be extended for an initial time period at the start of a journey when changing into gear from **P** or **N**. This is normal and is to allow for the extended gear engagement times that may occur under certain circumstances.

If the vehicle is used in severe off-road conditions, such as wading, deep mud, etc., additional maintenance and adjustment of the parkbrake will be required. Consult your Land Rover Dealer/Authorised Repairer.

Fault management

If a fault is diagnosed by the system when the starter is on but the parkbrake is not in use, the amber parkbrake warning indicator will flash and the message **PARKBRAKE FAULT** will be displayed in the main message centre.

Note: *Under some transmission fault conditions the parkbrake may not function, or may not operate automatically.*

DYNAMIC STABILITY CONTROL (DSC)

WARNING

Dynamic Stability Control (DSC) is unable to compensate for driver misjudgement. It remains the driver's responsibility to adopt a suitable driving style in every driving situation. Risks should never be taken on account of the additional security afforded by the DSC system.

DSC helps to optimise dynamic stability, even in critical driving situations. The system controls dynamic stability when accelerating. Additionally, it identifies unstable driving behaviour, such as understeering and oversteering and helps to keep the vehicle under control by manipulating the engine output and applying the brakes at individual wheels. Some noise may be generated when the brakes are applied. The system is ready to operate each time the engine is started.

Warning indicator



The indicator illuminates briefly as a bulb and system check when the starter switch is turned to position **II**.

If the warning indicator flashes, the system is active, regulating engine output and brake forces.

If the indicator illuminates constantly, and does not extinguish when the DSC switch is pressed, a fault has been detected in the system. Any fault will deactivate DSC. Drive with care and seek qualified assistance as soon as possible.

Deactivating DSC operation

Land Rover recommend that DSC is operational in all normal driving conditions.

In some driving conditions, to maximise traction, it may be beneficial to deactivate DSC. Such conditions include:

- To rock the vehicle out of a hollow or out of a soft surface.
- Starting in deep snow or on a loose surface.
- Driving in deep sand.
- Driving on tracks with deep longitudinal ruts.
- Driving through deep mud.



LAN0262G

To deactivate DSC, press and briefly hold the DSC switch on the instrument panel (the DSC warning indicator will illuminate continuously). Deactivating DSC has no effect on traction control operation.

Note: *Driving with DSC deactivated, may add additional loads on the brakes - always drive with DSC switched on if possible.*

Reactivating DSC

To reactivate DSC, press and briefly hold the DSC switch on the instrument panel. DSC will automatically reactivate when the engine is started.

ELECTRONIC TRACTION CONTROL (ETC)

ETC is continuously available to boost vehicle traction when one or more wheels has a tendency to spin, while others do not. It operates in conjunction with the DSC system.

If a wheel is spinning, ETC automatically brakes that wheel until it regains grip. This braking activity allows the engine power to be transmitted to the remaining wheels. Some noise may be generated when the brakes are applied.

Warning indicator



A fault with the ETC system is indicated by illumination of the amber DSC warning indicator. This could also indicate that the DSC has been manually deactivated. See **INDICATOR GROUPING, 104**.

If the indicator illuminates constantly, and does not extinguish when the DSC switch is pressed, a fault has been detected in the system. Any fault will deactivate ETC. Drive with care and seek qualified assistance as soon as possible.

HILL DESCENT CONTROL

Hill Descent Control (HDC) operates in conjunction with the anti-lock braking system to provide greater control in off-road situations particularly when descending severe gradients.

HDC is fully functional and should only be used in first and reverse gears in HIGH range and all gears in LOW range.

HDC is fully functional and should only be used in **D**, **R** and CommandShift **1** in HIGH range and in **D**, **R** and all CommandShift gears in LOW range. When in **D**, the vehicle will automatically select the most appropriate gear. The vehicle should not be driven with the HDC active in **N** neutral.

Note: *Some of the Terrain response program/range combinations will activate or deactivate HDC automatically.*

Warning indicator



HDC can be selected at speeds below 80 km/h (50 mph). The green warning indicator will illuminate continuously when vehicle speed reduces below 50 km/h (30 mph) and full HDC function is activated.

If the vehicle speed exceeds 80 km/h (50 mph), HDC will deselect and the green HDC indicator will extinguish.

If HDC is already selected and vehicle speed rises above 50 km/h (30 mph) in HIGH range, HDC function is suspended and the green HDC indicator will flash. A message will also appear in the main message centre.



LAN0263G

To select HDC

Press and release the switch (arrowed) to select HDC. To deselect, press and release again.

The green information indicator will extinguish. If HDC is deselected when HDC is operating, the system fades out, allowing the vehicle to gradually increase in speed.

When used in LOW range, HDC controls the vehicle speed more aggressively. Use LOW range gears when steep descents are to be attempted.

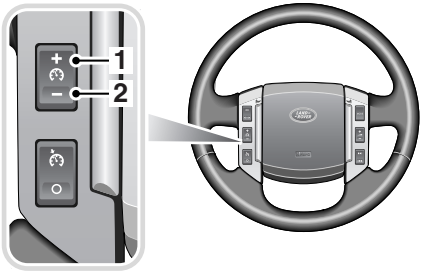
Note: *HDC is automatically deselected if the vehicle starter is switched off for more than 6 hours.*

Hill Descent Control

HDC in action

HDC should be used in conjunction with an appropriate gear selection.

During a hill descent, if engine braking is insufficient to control the vehicle speed, HDC automatically operates the brakes to slow the vehicle and maintain a speed relative to the selected gear range and the accelerator pedal position.



LAN0266G

While HDC is controlling the vehicle speed, descent speeds can be varied using the steering-wheel-mounted cruise control (1) **+** and (2) **-** switches. To reduce the descent speed, press and hold the **-** switch. The vehicle speed at the point of switch release will become the new descent speed.

To increase the descent speed, press and hold the **+** switch. The vehicle speed at the point of switch release will become the new descent speed. Alternatively, the descent speed can be adjusted by tapping the **+** or **-** switches. Each press of the switch will adjust the descent speed by approximately 0.5 km/h (0.3 mph).

Note: *Each gear has a pre-defined minimum descent speed.*

Note: *The descent speed will only increase if the gradient is sufficiently steep to cause the vehicle to accelerate as the braking effect is reduced. On a shallow slope, pressing the* ***+*** *switch may result in no speed increase.*

When driving off-road, HDC can be permanently selected to ensure that control is maintained. ABS and traction control are still fully operational and will assist if the need arises.

Note: *With HDC selected, gear changes can be carried out in the normal way.*

If the brake pedal is depressed when HDC is active, HDC is overridden and the brakes will perform as normal (a pulsation might be felt through the brake pedal). If the brake pedal is then released, HDC will recommence operating at the speed at which the brakes were released.

In extreme circumstances, the HDC system may cause brake temperatures to exceed their pre-set limits. If this occurs, **HDC TEMPORARILY NOT AVAILABLE SYSTEM COOLING** will be displayed in the message centre. HDC will then fade out and become temporarily inactive. HDC will not be available until the brakes reach an acceptable temperature, at which time the warning message will disappear from the message centre and HDC will, if required, resume operating.

If a fault is detected in the HDC system, **HDC FAULT SYSTEM NOT AVAILABLE** will appear in the display. If the fault is detected while the system is active, HDC will fade out. Do not attempt a steep descent when HDC is unavailable or use a very low gear and/or the foot brake. If a fault has been detected, consult your Land Rover Dealer/Authorised Repairer at the earliest opportunity.

HDC fade-out

HDC fade-out gradually decreases the HDC function with the effect that the rate of hill descent will increase. HDC will be disabled completely once the descent is complete.

If required (e.g. the angle of the descent levels out significantly), fade-out may be achieved deliberately by deselecting HDC while the system is operating.

HDC information indicator - GREEN

If HDC is selected and the operating conditions are met, the indicator will illuminate continuously.

If the indicator flashes while HDC is active, HDC operating conditions are not met.

AIR SUSPENSION

The air suspension system maintains the correct vehicle height by controlling the quantity of air in the vehicle's air springs.

Unless stated otherwise, height changes may only be made while the engine is running and the driver and passenger doors are closed.

When the air suspension system lifts the vehicle, it normally uses compressed air stored in its reservoir. The suspension will rise much more slowly if this reservoir is depleted due to repeated raising and lowering of the suspension.

On-road height

The normal height for the vehicle.

Off-road height

This is 55 mm (2.2 in.) higher than On-road height. It provides improved ground clearance and approach, departure and break-over angles. See **DIMENSIONS, 292**.

Off-road height can be selected at any speed up to 40 km/h (24 mph). When the system is at Off-road height, the system will automatically select On-road height if the vehicle speed exceeds 50 km/h (30 mph).

Note: *When using Terrain Response, some of its programs/range combinations will adjust suspension height automatically*

Extended mode

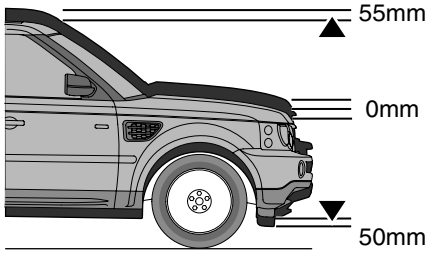
If the vehicle is grounded while at off-road height and traction control is induced, the system provides additional lift to clear the obstruction. Extended mode is activated automatically and cannot be selected manually.

Access height

WARNING

The driver should ensure that the vehicle is clear of obstacles and people before lowering the vehicle. Remember that, for example, the clearance under the floor and bumpers, and in the wheel arches, will be 105 mm (4.1 in.) less at Access height than at Off-road height.

This is 50 mm (2 in.) lower than On-road height. It provides easier entry, exit and loading of the vehicle.



LAN0277G

Access height can be selected at any time, but the system response will depend on the vehicle's speed:

- If the vehicle speed is greater than 20 km/h (12 mph), the suspension will wait for up to one minute for the vehicle to slow down. If the vehicle does not slow down to below 20 km/h (12 mph) within this time, the Access height request will be cancelled.
- If the vehicle speed is less than 20 km/h (12 mph), the suspension will move to a part-lowered height and remain at this height for up to one minute. If the vehicle does not slow down to 8 km/h (5 mph) within this time, the Access height request will be cancelled.

- If the vehicle speed is lower than 8 km/h (5 mph), the suspension will be lowered to Access height immediately.

Access height may be selected up to 40 seconds after the starter is turned off, provided that the driver's door has not been opened within this time.

The suspension will automatically rise from Access height when the vehicle speed exceeds 10 km/h (6 mph).

If Access height was selected directly from Off-road height, the system will return to Off-road height when the vehicle speed exceeds 10 km/h (6 mph). Otherwise the system will lift the suspension to On-road height.

High speed height

This feature lowers the suspension ride height by 20 mm if the vehicle exceeds 160 km/h (100 mph) for longer than five seconds. This action is automatic and cannot be over-ridden. Ride height will return to normal when vehicle speed remains below 130 km/h (80 mph) for 30 seconds.

Note: *NEVER exceed the speed limits.*

Crawl (locked at Access height)

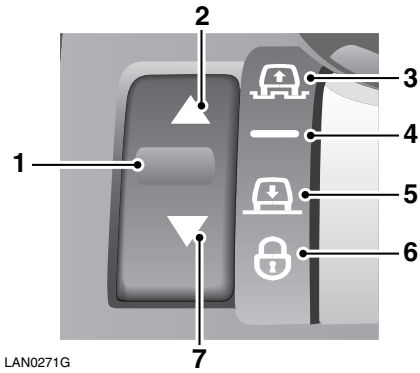
This mode enables the vehicle to be driven at low speeds at Access height to give increased roof clearance in low car parks, etc.

Crawl can be selected when the vehicle speed is below 35 km/h (22 mph), but will not be activated until vehicle speed drops below 10 km/h (6 mph). When the vehicle is in Crawl, On-road height will be selected automatically if the vehicle speed exceeds 40 km/h (24 mph).

Messages

When a message centre is fitted to the vehicle, messages relating to the air suspension system may be displayed. See **MAIN MESSAGE CENTRE, 90**

Adjusting suspension heights



1. Raise/lower switch
2. Raising indicator
3. Off-road indicator
4. On-road indicator
5. Access indicator
6. Lock indicator
7. Lowering indicator

Suspension heights

The raise/lower switch (1) is used to move up or down through the suspension heights. Indicators (3), (4) or (5) will be lit to show the height selected. A message indicating the suspension height will also be displayed in the message centre when Off-road, Access or Crawl is selected.

Indicators (2) or (7) will be lit to show the direction of movement. They extinguish when the height change movement is completed.

If a height change is requested that is not allowed, such as attempting to raise the height of the vehicle with the engine not running, indicators (2) and (7) will flash twice and a chime will sound. A message will be displayed on the message centre.

A flashing indicator (2) or (7) indicates that the system is in a waiting state or shows that it will automatically override the driver's choice if speed criteria are exceeded.

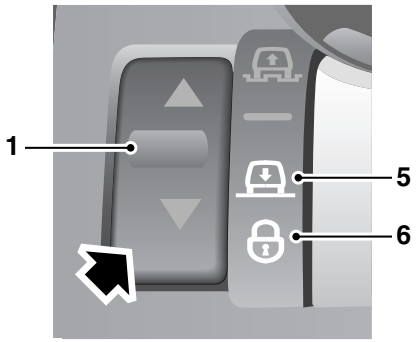
Selecting Access height

If Access height is selected above 20 km/h (12 mph), indicators (5) and (7) will flash while the system waits for the vehicle to slow down.

When the vehicle slows down to 20 km/h (12 mph), indicator (4) will extinguish as the system goes to the part-lowered height. indicator (5) will be lit and indicator (7) will continue to flash.

When the vehicle slows down to 8 km/h (5 mph), indicators (5) and (7) will be lit. When Access height is reached, indicator (7) will extinguish.

Selecting and cancelling Crawl (locked at Access height)



LAN0272G

When the suspension is at On-road or Access height and the vehicle speed is below 10 km/h (6 mph), press the raise/lower switch (1) in the down direction for one second. Indicators (5) and (6) will be lit to confirm the selection.

Crawl can be cancelled manually by pressing the raise/lower switch in the up direction for one second. Indicator (6) will extinguish.

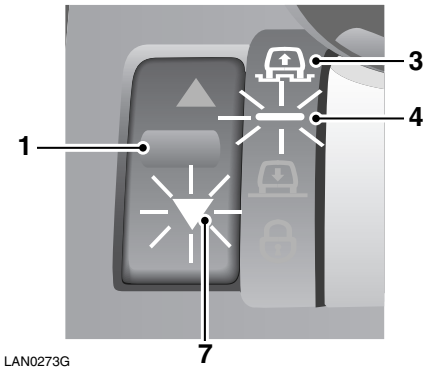
Note: *When Crawl is cancelled, the suspension will rise to On-road height if the vehicle speed is greater than 10 km/h (6 mph).*

Selecting Access height directly from Off-road height

When the suspension is at Off-road height, press switch (1) down, then press it again before indicator (7) goes out.

The system will remember to return the suspension to Off-road height automatically if the vehicle is driven above 10 km/h (6 mph).

Automatic height change warnings



LAN0273G

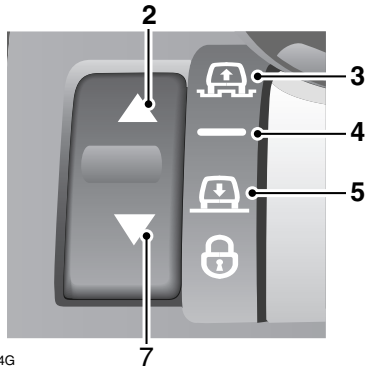
When the suspension is at Off-road height, Access or Crawl, the suspension height will change automatically when vehicle speed exceeds predetermined levels.

When the suspension is at Off-road height or Crawl, it warns the driver that the vehicle is approaching a speed threshold. A chime will sound, a message will be displayed on the message centre and the On-road indicator (4) and either (2) or (7) will flash.

The Off-road height speed warning is shown above. If the vehicle slows down, the warning will disappear.

Door open override

If a door is opened during a height change while the vehicle is at rest, the height change will be restricted.



LAN0274G

The indicator for the target height (3, 4 or 5) will remain lit and the raising indicator (2) or the lowering indicator (7) will flash.

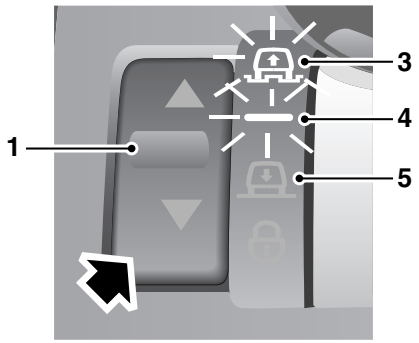
The height change will resume if all of the doors are closed within 90 seconds.

If the doors are not closed within this time, the raising indicator (2) or the lowering indicator (7) will extinguish and the indicators showing the heights above and below the current position will be illuminated.

Selecting a new height using the raise/lower switch (1), or driving off will reset the system.

Extended mode

If the vehicle is grounded and traction control is induced, the system raises the vehicle by 35 mm (1.4 in.) to clear the obstruction. Extended mode is activated automatically and cannot be selected manually.



LAN0275G

When Extended mode is activated, indicator (3) will flash if the suspension is above Off-road height. Indicators (3) and (4) will flash if the suspension is between Off-road and On-road heights. Indicators (4) and (5) will flash if the suspension is between On-road and Access heights. A message will be displayed on the message centre.

To exit Extended mode, either press the raise/lower switch (1) briefly up or down, or drive the vehicle at a speed greater than 5 km/h (3 mph) for 30 seconds.

Additional lift whilst in Extended mode

When Extended Mode has been invoked and the automatic lifting of the vehicle has been completed, the driver can request an additional lift in order to clear the obstacle. This can be particularly useful when Extended Mode has been invoked on soft surfaces.

To request additional lifting wait for the raising indicator (2) to extinguish, then press and hold the switch (1) in the up direction for 3 seconds whilst ALSO pressing the brake pedal. A chime will sound to confirm that the request has been accepted. The raising indicator (2) will be illuminated while the vehicle is being lifted.

Suspension freeze

If the system is attempting to change the suspension height and it detects that the suspension is prevented from moving, the system will freeze all movements.

This can be caused by attempting to lower the vehicle onto an obstacle or attempting to lift the vehicle against an obstruction.

The symbols behave in the same way as described in Extended mode and the same message will be displayed on the message centre. As in Extended mode, to exit this freeze state, either press the switch (1) up or down, or drive the vehicle at a speed greater than 20 km/h (12 mph).

Remote operation

WARNING

The remote control will operate effectively from inside the vehicle. It is therefore important to keep it out of reach of children at all times.

When operating the remote control from inside the passenger compartment, ensure that the underside of the vehicle has been checked for obstructions before lowering, and that a responsible adult has been posted outside the vehicle to supervise the lowering process.

Care should be taken with all suspension height changes when a trailer is attached to the vehicle.

The remote control is programmable to give a range of functions. See **REMOTE CONTROL PROGRAMMING, 41**. If the vehicle's remote control has been configured to operate the air suspension, height may be controlled remotely to assist in loading the vehicle or attaching a trailer.

After programming, to change the suspension height via the remote control, remove the starter key, turn on the hazard warning lamps and close all doors. Remote operation is not possible unless this is done.



LAN0276G

To raise the vehicle, press and hold the Land Rover button (3) and Lock button (1).

To lower the vehicle, press and hold the Land Rover button (3) and Unlock button (2).

If any button is released during the raising or lowering of the suspension, all movement of the suspension will stop. It will restart once the buttons are pressed again.

The height will initially change slowly but, after three seconds, the speed will increase. While the height is changing, a indicator on the raise/lower switch will be lit according to the direction of movement.

If the starting height is above or below On-road height, movement will stop when On-road height is reached. Further movement can be achieved by releasing the buttons and pressing them again.

Normal height control will resume when the vehicle is driven away.

Note: *Remote operation is disabled when the vehicle is moving.*

DYNAMIC RESPONSE

Caution: If the warning lamp illuminates RED a system fault has occurred that may result in serious damage to vehicle components. Stop the vehicle and switch off the engine as soon as safety permits. Seek qualified assistance immediately.

Dynamic Response is a patented feature unique to Land Rover. The system is designed to eliminate vehicle body roll at low cornering speeds and reduce body roll at higher cornering speeds, while maintaining a soft, car-like, suspension for straight line travelling. On uneven surfaces and rough tracks, the Dynamic Response system will adjust the suspension according to the vehicle speed and roughness of the surface to provide improved passenger comfort.

At very low speeds the roll bars are effectively decoupled, giving significant benefits in off-road axle articulation and improved traction.

The system is entirely automatic in operation and cannot be influenced by the driver in any way. However, the functionality of the warning indicator in the instrument panel is very important and drivers should be aware of the following:

Warning indicator



The warning indicator illuminates RED when the starter switch is turned to position **II**. After two seconds, the RED illumination changes to AMBER and, after a further two seconds, the indicator extinguishes. This process is a system check that takes place every time the vehicle is used. Provided the Dynamic Response system and air suspension system are operating correctly, illumination will not occur at any other time.

If illumination occurs while driving, a fault with the system is indicated, as follows:

- **If the indicator shows RED** (a flashing red indicator, which changes to constant illumination after two minutes, and is accompanied by a warning chime):

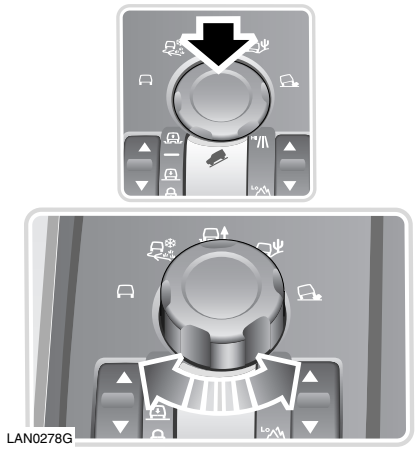
  This indicates a system fault that may result in serious damage to vehicle components and reduced Dynamic Response performance. You must stop the vehicle as soon as safety permits and switch off the engine. DO NOT CONTINUE DRIVING! Seek qualified assistance immediately

- **If the indicator shows AMBER** (constant illumination):

  This indicates a system fault that will result in reduced Dynamic Response performance, but will not leave the vehicle in a dangerous condition. You may continue driving, but reduce speed, take additional care, and consult a Land Rover Dealer/Authorised Repairer at the earliest opportunity.

TERRAIN RESPONSE™

The Terrain Response system is permanently active, continuously providing benefits in traction and driveability. These can be further enhanced for specific on and off-road driving conditions by the selection of special programs, using one simple driver interface.



To raise the rotary knob, press down on it lightly and release. To lower the rotary knob, press down until it clicks.

This interface allows the driver to tell the vehicle what sort of terrain is to be driven over. Based on the selected special program, the system optimises the vehicle set-up for the prevailing conditions, providing the optimum in traction, driveability and vehicle composure.

The Terrain Response special programs, automatically bring in changes in vehicle drive and suspension systems, that have until now been only individually and manually controllable by the driver.

The suspension and drive systems comprising Terrain Response are:

- Engine management.
- Gearbox management.
- Intelligent differential control.
- Dynamic stability, traction control and HDC systems.
- Air suspension.

The system will provide a variable accelerator response, ranging from very cautious for slippery conditions (where a large pedal movement has only a small effect on engine power) to very responsive, e.g. for sand, where engine power is allowed to rise more quickly.

This further extends the breadth of off-road capability of Land Rover vehicles. In addition, Terrain Response offers control of systems that have previously not been manually controllable.

Terrain Response

Note: *Since each Terrain Response special program uses the optimum settings of each drive component - accelerator response, suspension, transmission, etc. - relative to the terrain being driven over, it follows that changing from one special program to another brings in a different set of criteria.*

This means that, for instance, the engine revs produced by the current accelerator position might increase or decrease slightly in the new program, or the suspension could change height. The changes are not dramatic, but are noticeable.

To obtain the maximum benefits from the system, it is suggested that you first try it out in circumstances where any distraction will not affect other road users.

Terrain Response is designed to benefit the driver, regardless of the level of off-road driving experience. The enhanced traction system, with the control of many system parameters through one simple driver input, coupled with specific advice from the message centre, will aid drivers with limited off-road experience. Additionally, the system can back-up the skills of experienced drivers, who will also benefit from the wider performance envelope available through the special programs.

Using Terrain Response

WARNING

When towing, the automatic vehicle height rise associated with using the system in low range, will be automatically prevented by the system. This will be indicated by a message in the message centre. However, this function relies on the fitting of a Land-Rover approved towing electrical socket. Failure to fit a Land-Rover approved towing electrical socket or to follow these guidelines may lead to the vehicle being raised to off-road height even with a trailer attached.

The Terrain Response system is always active and can not be switched off. When the vehicle is started, the system will normally start in its General program. Using the correct special program, will provide benefits in how the vehicle can be driven over different surfaces or terrains. It is recommended that a special program be engaged whenever driving conditions could become difficult.

Depending on the terrain, it may be beneficial for the automatic transmission to change gear under different speed and load conditions. Each special program will provide the most appropriate gear-shift points for the terrain, including the most appropriate gear to set off in (i.e., second, HIGH range, or third, LOW range, in Grass-Gravel-Snow or first, LOW range, when in Rock Crawl).

The amount of slip allowed in the electronically controlled differentials will be optimised continuously, both from the point of view of traction and vehicle stability.

Depending on the Terrain Response program selected, the control of the differentials will vary to provide the optimum settings.

Note: *Special programs should be engaged pro-actively - before starting to drive in particular conditions. They are not intended as a means of extracting a vehicle that has been driven into difficulties.*

The system has been designed to instil confidence regarding choice of special program, despite the fact that conditions associated with each program are distinctly different. However, the vehicle will be very capable under all circumstances, even when no special program is selected, as some sub-systems will re-act to the conditions where possible. In case of any uncertainties about the most appropriate special program selection, it will be best to leave the system in Terrain Response General program until terrain conditions become more distinct and a program choice can be made with more confidence.

The system is of particular use when driving off-road, but, even here, it should be used pro-actively and not be used as a means of retrieving control.

If a Terrain Response special program has been selected, then the transmission can be left in **D**. If descending a slippery slope, CommandShift **1** or **2** should be considered.

Driver over-ride options

WARNING

This height increase will start regardless of whether the vehicle is moving or not.

All systems will be set to optimum parameters for the terrain conditions reflected in the choice of control program. Two of the systems controlled by Terrain Response may also be operated independently by the driver:

- Air suspension.
- Hill Descent Control.

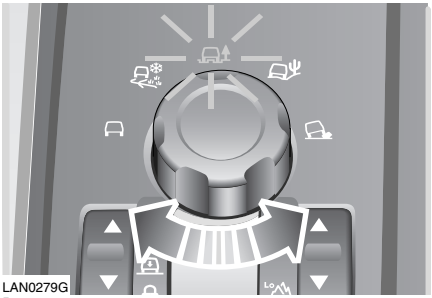
In some special programs, the Terrain Response system will switch on HDC and in LOW range the system will automatically move the suspension to Off-road height.

Both the HDC and ride height automatic selections can be cancelled by the driver at any time. Conversely, if HDC or a specific ride height has not been automatically selected by the system, the driver can always choose to operate it as normal at any time.

Whether the HDC or ride height options are being brought in automatically by the system, or manually by the driver, the changes of state will be confirmed through the message display and by the individual system information indicators. Use of the system in the special programs, particularly in low range, may prompt some driving advice and warnings as well as additional information to be displayed on the message centre.

Note: *Gear selection can be overridden, by using the CommandShift function on the gearbox to lock the vehicle in a particular gear.*

Operation


LAN0279G

A rotary knob just behind the gear lever is rotated to select the required special program. When the selector reaches either end of the selection range, it can be turned further, but doing so has no effect.

In addition to the Terrain Response General setting, four special programs are available:

- Grass/gravel/snow (also includes ice).
- Mud/ruts.
- Sand.
- Rock Crawl.

When the starter switch is turned on, the graphics around the control knob are illuminated, with the active program highlighted in amber. The brightness of the graphics night illumination is controlled as part of the instrument illumination control; the brightness of the amber lighting is high or low, depending on the use of the headlamps.

If a special program is active, the special program symbol will also be displayed on the message centre.


LAN0280G

If the starter switch is turned off when any special program is selected, then the system will remember for approximately six hours which program was selected, and return to that program once the starter switch is turned back on.

The system indicates, via the message centre that the previously selected special program is still selected. After more than six hours, the system will automatically revert back to the General program (special programs off).

Terrain Response

Terrain Response general



When the Terrain Response special programs are off, the system will be in its General program. This will be indicated by the above symbol being displayed briefly on the message centre. Sub-systems will adapt to the prevailing terrain conditions and select control settings based on the conditions sensed.

This program setting is compatible with all on and off-road terrain conditions. Normal conditions in which it is not necessary to select a specific program include driving on surfaces that closely match a hard road surface. Dry cobbles, Tarmac or even wooden planks are all included in the scope which consists of hard supportive surfaces with no loose coating of water, dust or similar material.

It is recommended that a special program be de-selected, once the specific conditions for its use no longer prevail. This is done by turning the selector knob back to the General program position.

When a special program is de-selected, all vehicle systems will be returned to their normal control settings. The one exception is HDC, which will remain active if it was manually selected previously. Also, as a precaution, the vehicle will change from raised to Normal ride height only when moving.

Grass-Gravel-Snow



Use this program for surfaces where the underlying base is fairly firm, but a coating of other material gives a tendency to slip. The coating can be water, slime, grass, snow or loose gravel, shale or pebbles, or even a thin coating of sand. This program should also be selected in icy conditions.

In this special program the Terrain Response systems will select settings to give the best traction, handling and driveability for predominantly slippery conditions. Hill Descent Control will be engaged automatically in low range, but can be manually de-selected. See **HILL DESCENT CONTROL, 181**.

In slippery conditions, it is often beneficial to start off in a higher gear than usual, for example, CommandShift **2** in HIGH range or CommandShift **3** in LOW range.

For use of the vehicle with snow chains fitted, see **SNOW CHAINS, 241**.

Note: *When in deep snow, if the vehicle is struggling for forward traction or is stuck, then switching off Dynamic Stability Control (DSC) may be an advantage. If DSC is switched off, then it must be switched back on as soon as the difficulty is overcome.*

Mud-Ruts



Use this program when traversing ground that is not only muddy or deeply rutted, but possibly soft and uneven to the point of demanding maximum axle displacement. This unevenness can also be that brought about by sizeable wooden debris in the form of roots, brushwood, small logs, etc.

This acts like the previous program, except that it selects settings for the individual systems that optimise traction and driveability for muddy/rutted driving conditions, with driver over-ride options as before. The program is available in HIGH and LOW range, but LOW range is recommended.

It is anticipated that this program will usually be used in low range. If not, the driver will be prompted to consider selecting low range. If the Mud-Ruts program and low range are selected together, the vehicle ride height will be raised automatically.

Sand



Use this program to drive on soft and predominantly dry, yielding sandy ground, such as dry beaches, dunes and sand deserts. Also consider using this program for deep gravel.

The Sand special program uses the control settings and software logic best suited to driving on sand, with the driver-override option as before.

In instances where the sand is damp or wet and soggy, the conditions are better addressed by the use of mud/ruts special program.

Where the sand is extremely soft and dry and of a depth that allows the wheels to sink well into it, there may be additional benefit in switching off the Dynamic Stability Control. See **Deactivating DSC operation, 179**.

Rock Crawl

Caution: Selection of a wholly inappropriate special program for the prevailing terrain conditions, will not endanger the driver or immediately damage the vehicle. However, if continued, such an action will impair vehicle response to those conditions and will reduce the durability of the suspension and drive systems.



Use this program to cross wet or dry, solid, unyielding ground, such as clusters of boulders, which demands high levels of road-wheel displacement and careful vehicle control. This program would also be used for crossing river beds strewn with large rock features submerged below water.

Unlike the other options, Rock Crawl is only selectable in LOW range. If selection is attempted in HIGH range, the special program selection will NOT be accepted and the driver will be prompted to select LOW range. This special program will utilise system control settings to optimise the vehicle suspension and traction system for the conditions, which are likely to require extreme suspension articulation and good low-speed control.

When a special program requires increased air suspension height, the system will automatically select it, unless it suspects that a trailer is attached because an electric load is seen on the trailer socket.

A message will be displayed on the message centre.

Inappropriate special program selection

If an inappropriate special program is attempted to be selected - such as choosing Rock Crawl while in HIGH range - the symbol of that program will flash amber, an audio warning will sound, and the message centre will advise that the chosen special program is unavailable and will suggest corrective action to be taken.

If, after 60 seconds, the requirements have not been met, the warnings will cease and the message centre will show which program remains active.

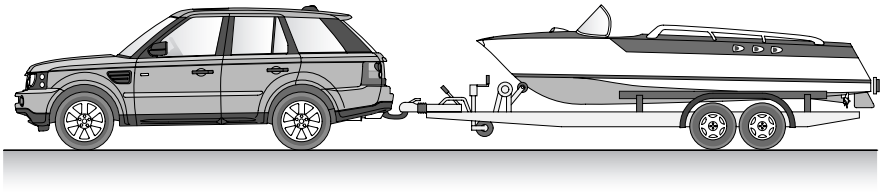
Should the system become partly inoperable for any reason, it may not be possible to select certain special programs and a warning will be given when selection of an affected program is attempted. If the system should become totally inoperable, all of the control program symbols will be switched off and the message centre will display a message.

The air suspension system provides an automatic levelling function. See **AIR SUSPENSION, 184**. In circumstances where the system is used in LOW range, it is most likely that mobility and vehicle composure would benefit from increased ground clearance.

System messages

Messages relating to the Terrain Response system are displayed on the message centre.

For an explanation of those messages, see **MAIN MESSAGE CENTRE, 90**.



LAN0282G

TOWING

WARNING

To preserve vehicle handling and stability, only fit towing accessories that have been designed and approved by Land Rover.

DO NOT use lashing eyes or vehicle recovery towing eyes to tow a trailer. Use of the towing eyes for purposes other than their designed intention could result in damage or injury.

Caution: An equalising or other form of weight distributing hitch should NOT be used with your vehicle.

The torque ranges of Land Rover engines allow maximum-weight loads to be pulled smoothly from standstill and reduce gear changing on hills or rough terrain.

It is the driver's responsibility to ensure that the towing vehicle and trailer/caravan are loaded and balanced, so that the combination is stable when in motion. When preparing your vehicle for towing, pay attention to any instructions provided by the trailer/caravan manufacturer as well as to the information that follows.

Balancing the combination

To ensure optimum stability, it is essential that the trailer adopts a level aspect. In other words, the trailer must be level with the ground, with the towing hitch and trailer drawbar set at the same height (note the illustration above).

This is particularly important when towing twin axle trailers!

- The trailer should be level with the ground when loaded.
- The height of the drawbar hitch point should be set so that the trailer is level when connected to the loaded vehicle.

Points to remember:

- When calculating the laden weight of the trailer, remember to include the weight of the trailer PLUS the load.
- The recommended trailer nose weight, plus the combined weight of the vehicle's load-carrying area and rear seat passengers, must never exceed the specified maximum rear axle load. See **Vehicle Weights, 291**.
- Before balancing the combination, ensure that:

  All doors are closed.

  The engine is running.

  On-road ride height is selected.

  This ensures that the towing hitch is at the correct height.
- Where the load can be divided between trailer and tow vehicle, loading more weight into the vehicle will generally improve the stability of the combination.
- Towing regulations vary from country to country. Always ensure national regulations governing towing weights and speed limits are observed (refer to the relevant national motoring organisation for information). The vehicle's maximum permissible towed weight refers to its design limitations and NOT to any specific territorial restriction. See **Vehicle Weights, 291**.

Note: *When towing do not exceed 100 km/h (60 mph), or 80 km/h (50 mph) when the temporary spare wheel is in use. See* ***WHEELS AND TYRES, 290****.*

Gear range selection

To avoid overheating the gearbox, it is not advisable to tow heavy trailer loads at speeds of less than 32 km/h (21 mph) using the transfer gearbox in HIGH range. Select LOW range instead.

Vehicle weights

WARNING

In the interest of safety, the gross vehicle weight, maximum rear axle weight, maximum trailer weight and tow hitch load (nose weight) must not be exceeded.

The nose weight, plus the combined weight of the vehicle's load carrying area and rear seat passengers, must never exceed the specified maximum rear axle load. See Vehicle Weights, 291.

Exceeding allowable vehicle and axle loads will increase the risk of tyre and suspension failure, increase stopping distance and adversely affect vehicle handling and stability. This may result in a crash or roll-over.

When loading a vehicle to its maximum weight (gross vehicle weight), ensure that axle loading does not exceed the permitted maximum values. It is the driver's responsibility to limit the vehicle load in such a way, that neither the maximum axle loads, nor the gross vehicle weight, are exceeded. The most accurate method of determining load distribution is by using a public weighbridge.

Nose weight must be the greater of 50 kg or 7% of the actual trailer laden weight, up to the maximum tow hitch load. Nose weight can be measured using a proprietary brand of nose weight indicator.

Trailer socket

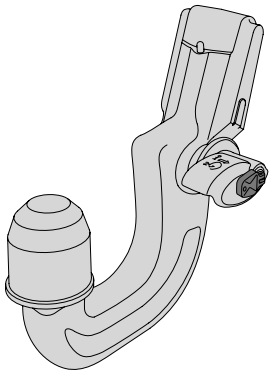
The trailer socket is located alongside the rear towing eye, behind the rear bumper cover. See **Removing the rear cover, 207**.

The vehicle's electrical system is configured to support all towing requirements and the electrical socket fitted complies with legal requirements for the specific territory in which the vehicle was sold.

All towing circuits are independently fused in a satellite fusebox located in the lower loadspace trim panel. See **Tow hitch fuses, 270**.

ESSENTIAL TOWING CHECKS	
Tyre pressures:	Increase rear pressures of towing vehicle to those for Maximum gross vehicle weight conditions. See **WHEELS AND TYRES, 290**. Ensure trailer/caravan tyres are at recommended pressures.
Nose weight:	If the vehicle is loaded to the Gross Vehicle Weight (GVW), the nose weight is limited to 150 kg (330 lb). If a greater nose weight is necessary (up to 250 kg (550 lb) maximum), vehicle load should be reduced to ensure the GVW and rear axle weights are not exceeded. See **Vehicle Weights, 291**.
Breakaway cable or secondary coupling	A breakaway cable or secondary coupling MUST be attached. If the trailer/caravan is fitted with brakes, it is usual for an attached breakaway cable to operate the brakes in the event of the coupling becoming detached. See your trailer manufacturer's literature. If your trailer does not have a breakaway cable, a secondary coupling must be attached. Use a suitable point on the towing bracket to securely attach the coupling. It is not advisable to loop cables or couplings around the neck of the tow ball as they could slide off.

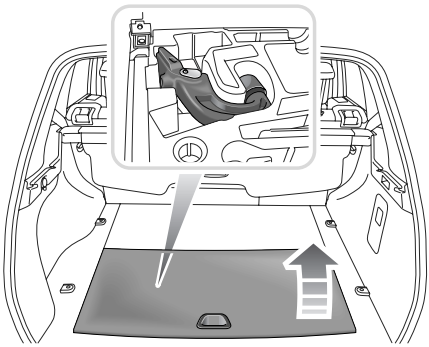
TOW BAR



LAN0284G

Your vehicle is fitted with a towing housing which will accept a detachable tow bar.

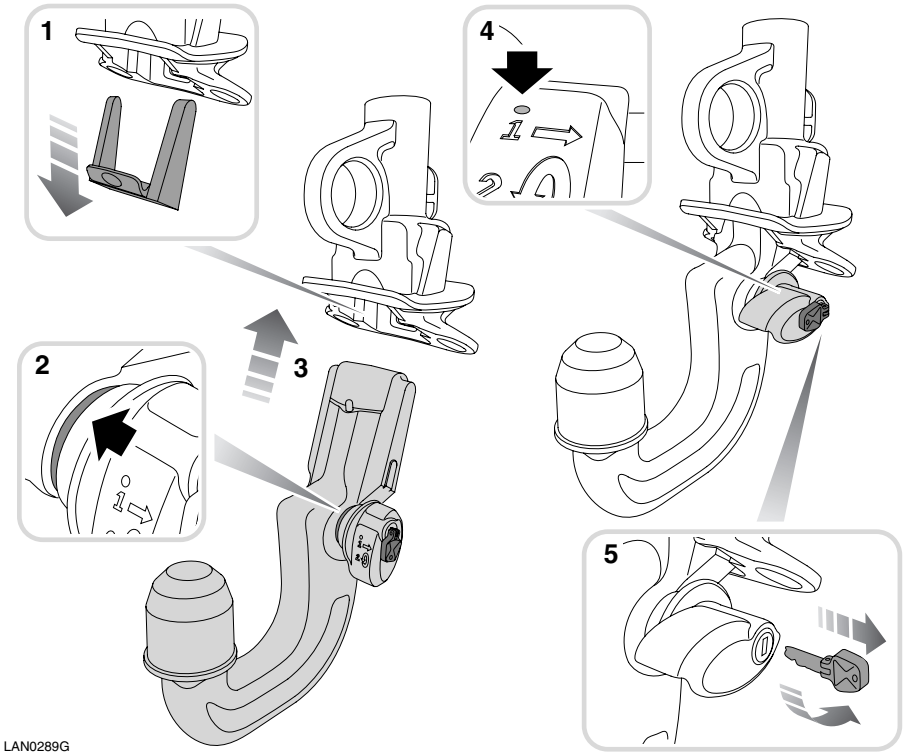
Detachable tow bar stowage



LAN0287G

The tow bar is stowed under an access hatch in the rear loadspace floor.

Fitting the detachable tow bar



WARNING

The tow bar is heavy. Care must be taken when handling it.

WARNING

When handling the tow bar, hold the bottom of the component. Locking into position occurs automatically and causes the locking lever to rotate under spring pressure.

1. Remove the protective cover from the tow bar mounting.

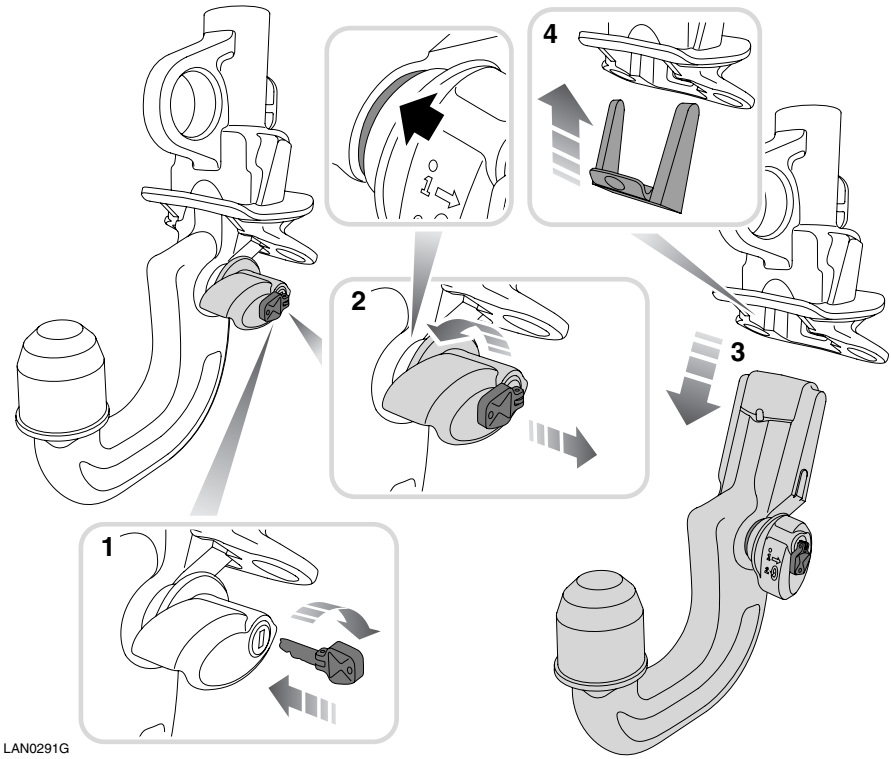
   Note: *The protective cover should be stowed in the tow bar stowage area, while the tow bar is installed.*

2. The tow bar can only be installed when the green locking lever is in the unlocked position.
3. Insert the tow bar into the mounting and push firmly upwards until the tow bar locks into position.
4. The red marker should be completely covered by the green locking lever.
5. A key is provided to prevent theft from the vehicle. Turn the key anticlockwise to lock the tow bar. Remove the key and store in a safe place.

The tow bar must be locked in position before towing. The tow bar can only be locked if it is installed correctly into the tow bar mounting.

It is advised that the tow bar be removed and stored within the vehicle stowage when not in use.

Removing the tow bar



WARNING

The tow bar is heavy. Care must be taken when handling it.

1. Insert the key and turn it clockwise to unlock the tow bar.
2. To remove the tow bar, pull the handle outwards and rotate the handle anticlockwise until a click is heard. The marker on the handle should show red.
3. Carefully lower the tow bar and place it in its stowage area and fully secure it.
4. Replace the protective towing cover in the tow bar mounting. Press the bottom of the cover to fix it in position.

TOWING EYES

WARNING

The towing eyes at the front and rear of the vehicle are designed for on-road vehicle recovery purposes only and must NOT be used to tow a trailer or caravan.

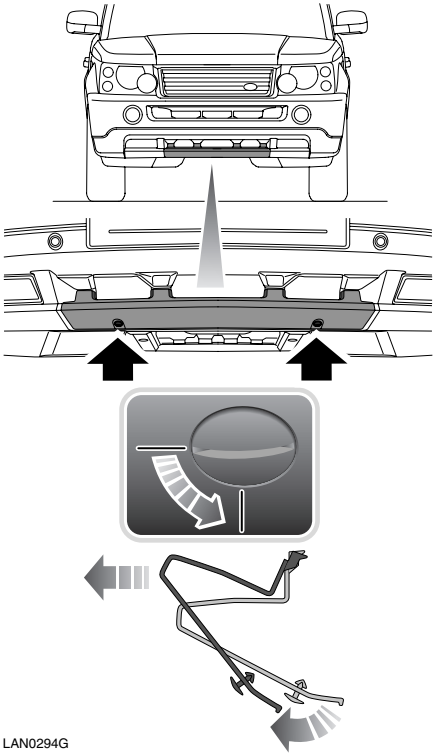
Use of the towing eyes for purposes other than their designed intention could result in damage or injury.

Front towing eye

A front towing eye, set behind a removable panel in the lower front bumper, is provided at the front of the vehicle for on-road recovery.

Before driving off-road, remove the panel from the lower front bumper, as a precaution against accidental loss.

Removing the panel

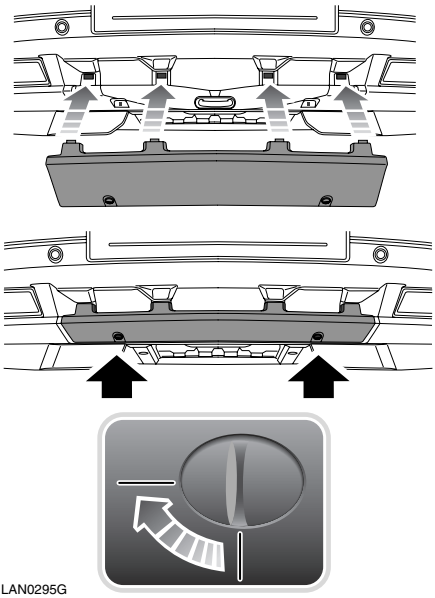


LAN0294G

Rotate each of the fasteners through a quarter turn with a coin (or something similar), to loosen the panel. Rotate the lower edge forwards then pull the panel to release the four top edge hooks from their locating holes.

Towing Eyes

Refitting the panel

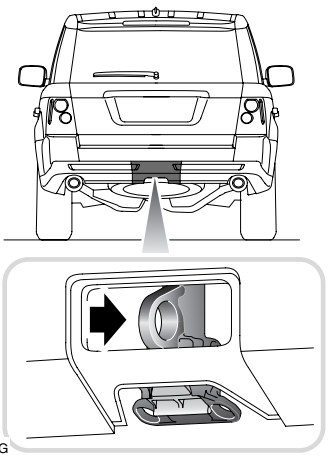


LAN0295G

Offer up the panel to the bumper and ensure that the four hooks on the top edge engage with the holes in the bumper. Rotate the lower edge backwards ensuring that the lower edge is located in the bumper channel.

Tighten the fasteners by turning each clockwise through a quarter turn.

Rear towing eye

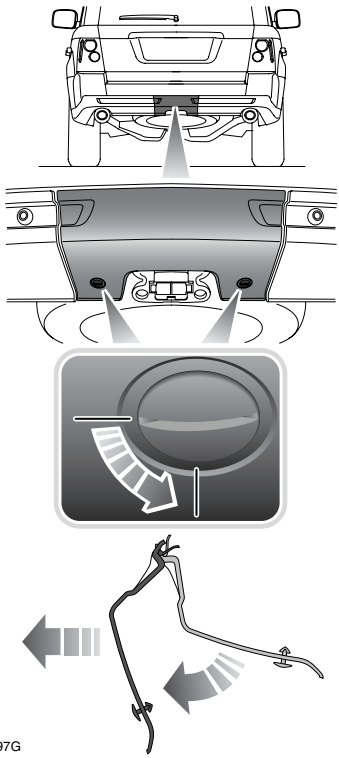


LAN0299G

The towing eye provided at the rear of the vehicle can be used for towing your vehicle or towing another vehicle in recovery situations.

Towing Eyes

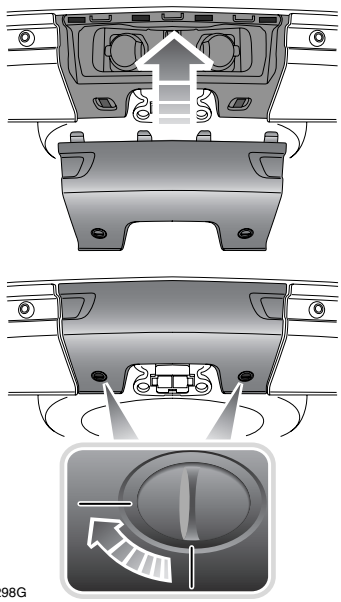
Removing the rear cover



LAN0297G

Rotate each of the fasteners through a quarter turn with a coin (or something similar) to release the lower edge. The cover can then be rotated to release the hooks at the top.

Refitting the rear cover



LAN0298G

Offer up the cover and ensure that the four hooks on the top edge engage with the holes in the bumper.

Tighten the fasteners by turning each clockwise through a quarter turn.

TOWING FOR RECOVERY

Caution: Under no circumstances must your vehicle be towed with only two wheels in contact with the ground. It must be towed with all four wheels on the ground, recovered onto a trailer, or have a combined wheel lift and towing dolly arrangement to lift it clear of the ground.

Most vehicle recovery specialists will load your vehicle onto a trailer - this is the recommended method. However, if it is necessary to recover the vehicle by towing with all four wheels on the ground, use the following procedure:

Towing the vehicle on four wheels

WARNING

DO NOT remove the key or turn the starter switch to position 0 while the vehicle is in motion.

Without the engine running, the brake servo and power steering pump cannot provide assistance; greater effort will therefore be required to operate the brake pedal and turn the steering wheel. Longer stopping distances will also be experienced.

Caution: ALWAYS adhere to the following procedure when towing the vehicle with all four wheels on the ground. Failure to do so could result in unintended vehicle movement or unanticipated vehicle conditions.

When preparing to tow the vehicle on four wheels, it is essential that N is selected on the transmission. Before selecting N, ensure that the parkbrake is applied and properly secured.

Note: *Your vehicle has permanent four-wheel drive and is fitted with a steering lock. The following procedure must be carried out carefully to prevent damage to the vehicle.*

1. Secure the towing attachment from the recovery vehicle to the front towing eye. See **TOWING EYES, 205**.
2. With the parkbrake applied, insert the starter key and turn it to position **II**.
3. Apply the foot brake and place the gear selector lever into the **N** (neutral) position.
4. Turn the starter switch to position **I**. Do not turn the starter switch to position **0**.
5. If required, the starter switch may be turned to position **II**, to operate the brake lamps and direction indicators.

   Note: *Leaving the starter switch in position **I** or **II** for extended periods may drain the vehicle battery.*
6. Release the parkbrake before towing the vehicle.

If the above conditions are met, the vehicle may only be towed for a distance of 50 km (30 miles) at a maximum speed of 50 km/h (30 mph).

If the gearbox cannot be set in **N**, the vehicle must not be towed under any circumstances.

If the rear electronic differential has failed while locked, the vehicle must not be towed under any circumstances.

After towing on four wheels

After towing, perform the following steps:

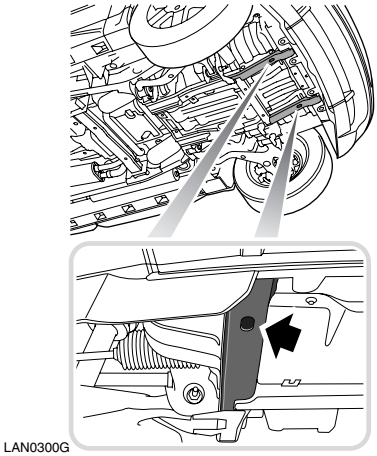
1. Apply the parkbrake.
2. Turn the starter switch to position **II** and apply the foot brake.
3. Place the auto selector lever in the Park position.
4. Turn the starter switch to position **0**.
5. Remove the towing attachment and replace the panel in the front bumper.

RECOVERY ON A TRAILER

Caution: Once the vehicle is loaded onto the trailer and if the vehicle electronics are operational, the air suspension must be set to Access height. This should be done BEFORE securing the vehicle to the trailer.

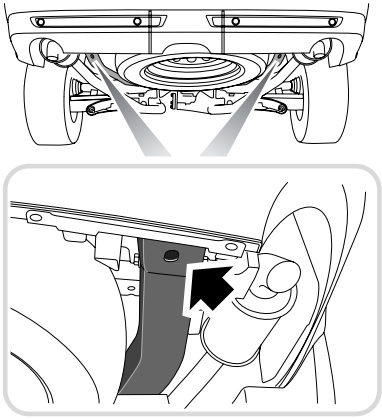
Recovery by trailer is the recommended method. Most vehicle recovery specialists will load the vehicle onto a trailer or have a combined wheel lift and dolly arrangement, to lift it clear of the ground.

Lashing eyes



LAN0300G

Front lashing eyes



LAN0301G

Rear lashing eyes

Pairs of lashing eyes are fixed to the underside of the vehicle - at the front (to the rear of the front wheels) and at the rear (either side of the towbar attachment bracket). DO NOT secure lashing hooks or trailer fixings to any other part of the vehicle.

Note: *The front and rear lashing eyes are for lashing only and must NOT be used for towing.*

ROOF RACKS

WARNING

The MAXIMUM load for approved roof rack systems is 75 kg (165 lb). This weight includes the mass of the roof rack system.

A loaded roof rack can reduce the stability of the vehicle, particularly when cornering and encountering cross winds.

Check to ensure the roof rack and load are secure after 50 km (30 miles) of any journey.

Driving off-road with a loaded roof rack is not recommended. If it is necessary to stow luggage on the roof rack while driving off-road, all loads must be removed before traversing side slopes.

A range of roof rack systems are available as Land Rover approved accessories. For further information about roof rack systems approved for use with your vehicle and advice as to which system would suit your requirements best, please consult your Land Rover Dealer/ Authorised Repairer.

Always observe the following precautions:

- Only fit a roof rack that have been designed for your vehicle. If in doubt, consult your Land Rover Dealer/Authorised Repairer.
- All loads should be evenly distributed, side to side, with any weight bias towards the front of the roof rack system.
- Ensure all loads are secured within the periphery of the roof rack system.

HEADLAMPS

WARNING

Bi-Xenon lamp units operate at a high temperature. If they have recently been in use, allow sufficient time for them to cool down before touching them.

Used Xenon lamp units contain mercury, which is hazardous and can be injurious to health.

The Xenon system generates up to 28 000 volts and contact with this voltage could lead to fatality. Ensure that the headlamps are switched off and turn off the starter switch, before working on the system.

Replacement or maintenance of Xenon lamps should be carried out only be qualified personnel.

There are three types of headlamp systems:

- Halogen high/low beam main lamp with a fill-in high beam halogen lamp alongside.
- Bi-Xenon high/low beam main lamps with a fill-in high beam halogen lamp alongside.
- An Adaptive Front Lighting System (AFS).

Bi-Xenon headlamps

Bi-Xenon units use a Xenon bulb for both high beam and low beam, while a halogen bulb is used for high-beam fill-in. A shutter, operated by a solenoid, changes the direction of the Xenon light beam, to give either low or high beam.

The operational life of a Bi-Xenon lamp is significantly longer than that of a conventional or halogen bulb.



Seek advice about the proper disposal of Bi-Xenon lamp units, from a Land Rover dealer or your local authority.

Front Lighting Systems

Adaptive Front lighting System (AFS)

AFS is a new lighting system designed to give the driver improved visibility. It has two main components: A swivelling headlamp unit and a static bending lamp, with a beam set to 45 degrees from the centre line of the vehicle.

The headlamp units can swivel left or right, to improve light spread on bends in the road and they operate throughout the vehicle speed range. They also react to braking or acceleration in the vertical plane, to maximise headlamp performance. Additional lighting is supplied by the static bending lamps, at speeds between 30 km/h (18 mph) and 70 km/h (44 mph). If the higher speed is exceeded, the static bending lamps will only reactivate when speed reduces to 60 km/h (37 mph). These headlamps broaden the beam of the headlamps when cornering.

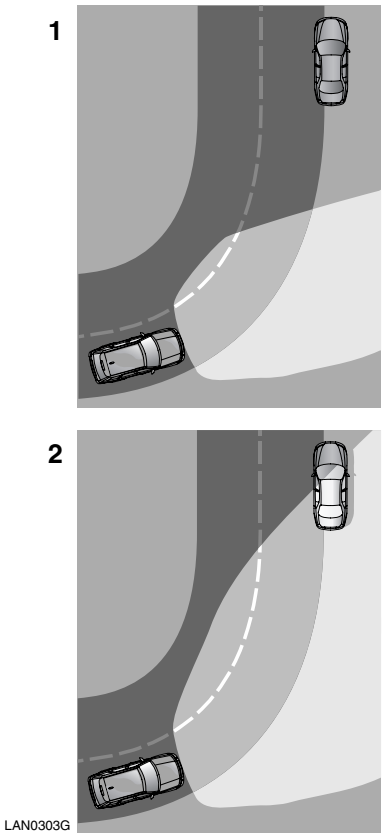
The system takes inputs from the vehicle's road speed and steering angle, to determine the amount of horizontal swivel. The amount of swivel is highest at low manoeuvring speeds and reduces as speed increases.

Static bending lamps operate when the system detects a steering wheel rotation of 70 degrees or more.

If reverse gear is selected, the lamps return to the central position and the unit's swivelling capability is disabled.

The AFS advantage

1. Shows the light spread of a vehicle not fitted with AFS.
2. Shows the light spread of a vehicle fitted with AFS.



Static bending lamps

These lamps broaden the beam of the headlamps when cornering during normal night driving.

Additional lighting comes from the static bending lamps which have a beam set to 45 degrees outward from the centre line of the vehicle.

The system switches on the lamp if it has received an input from the direction indicator. As the system is ignition-based, the lamps will not stay on, even if the vehicle is parked with the direction indicator lever in the operating position.

Only the lamp on the same side as the operating direction indicator comes on.

Operating the direction indicators will also activate the relevant lamp.

If reverse gear is selected, the lamps return to the central position and the unit's swivelling capability is disabled unless the direction indicators are operating.

1. Shows the light spread of a vehicle not fitted with AFS.
2. Shows the light spread of a vehicle fitted with AFS.

