Starting

STEERING COLUMN LOCK

\[ \text{WARNING:} \]
It is impossible to steer the vehicle when the steering lock is engaged. DO NOT remove the key, or turn it to position 0, while the vehicle is in motion.

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, and turn the steering wheel until the lock engages.

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: sidelamps and hazard warning lamps.
- With the driver’s door open, seat memory facility operational.

**Position I**
- Steering unlocked.
- Clock, audio system and cigar 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.

\[ \text{Note: On vehicles with automatic transmission, the gear selector position P or N must be selected before the engine can be started.} \]
**STARTING**

**WARNING:**

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

Before starting the engine and driving

1. Check that the parkbrake is applied and that the gear selector on automatic transmission vehicles 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. For diesel models, wait until the glow plug warning light 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: Continued use of the starter will not only discharge the battery, but may cause damage to the starter motor.*

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 lights should extinguish as soon as the engine is running.*

Caution: The diesel engine must not be run above idle speed until the oil pressure warning light 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.

**Cold climates**

In very cold climates the oil pressure warning light 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**

On automatic transmission vehicles 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 footbrake is not applied.

**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.

**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.
Starting

Fuel
ONLY use fuel recommended for your vehicle.

Starting the engine
• DO NOT continue to operate the starter after a few failed attempts (unburnt fuel may be drawn into the exhaust system, thereby poisoning the catalyst), seek qualified assistance.
• When starting the engine, DO NOT drive if a misfire is suspected and do not attempt to clear a misfire by pressing the accelerator - seek qualified assistance.

Driving
Consult your Land Rover Dealer/Authorised Repairer if your vehicle is burning excessive oil (blue smoke from the exhaust), as this will progressively reduce catalyst efficiency.
Driving Advice

GENERAL DRIVING ADVICE

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 (70 mph) or 3,000 rev/min. Initially, drive the vehicle on a light throttle and only increase engine speeds gradually once the running-in distance has been completed.
- DO NOT operate at full throttle or allow the engine to labour in any gear.
- 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.

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.
- Turn off air conditioning when not required.

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 highway, preferably onto the shoulder as far as possible.
- Switch on hazard warning lamps.
- If possible, position a warning triangle or a flashing amber light at an appropriate distance from the vehicle to warn other traffic of the breakdown, (note the legal requirements of some countries).
Driving Advice

- 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.

Servicing requirements
Vehicles which operate in arduous conditions, particularly on dusty, muddy, or wet terrain, and vehicles which undergo 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, wash the underbody components and exposed panels with fresh water. This will help to protect the vehicle's cosmetic appearance and prevent impairment of parkbrake efficiency.

Vehicle stability

**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. 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.

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.
- Take curves at reasonable speeds, avoiding unnecessary braking.
- Drive defensively. Be aware of road and weather conditions. Avoid risk-taking behaviour such as following too close, rapid lane changing or abrupt manoeuvres.
- Assume that pedestrians and other drivers are going to make mistakes. Anticipate what they might do. Be ready for their mistakes.
- Avoid distractions.
- Before changing lanes, check your mirrors and use the direction indicators.
- Never operate your vehicle when you have consumed alcohol, are sleepy or fatigued or have taken any medication that affects judgement, reflexes or alertness.

Wading
Caution: The maximum advisable wading depth is normally 600 mm (24 in). This can be increased to 700 mm (27 in) if the air suspension is set to off-road height. Wading at a depth greater than the maximum advisable wading depth is not recommended. If the vehicle remains stationary for any length of time in water above the level of the door sills, severe electrical damage may occur.

Do not switch off the engine during wading. If the engine stalls during wading re-start immediately. Should the engine stall get it checked by a Land Rover dealer/authorised repairer as soon as possible.

If during wading water enters the engine air intake switch off immediately. The vehicle should be towed from the water and recovered to a Land Rover dealer/authorised repairer.
BEFORE DRIVING OFF-ROAD
Before driving off-road it is absolutely essential that drivers become 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](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](http://www.landroverexperience.com)
Fuel Filling

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.

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.

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.

Press the fuel filler flap to open.

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

Caution: When replacing the fuel filler cap ensure that it is tightened until it ‘clicks’ three times. Failure to do so may result in the engine warning light illuminating due to evaporative emission levels increasing.
Fuel Filling

**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 ENGINE, 272.

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.

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 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: This vehicle is NOT compatible with Bio-diesel fuel.

See ENGINE, 272.

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.

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.

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

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 kilometers (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.
Park Distance Control

USING PARK DISTANCE CONTROL (PDC)

Caution: The parking aid is for guidance only. 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).

The front PDC may sound spurious tones if it detects a frequency tone using the same band as the sensors.

Park Distance Control (PDC) is a system that assists the driver when manoeuvring where there are obstacles that need to be avoided. When PDC is active, the indicator in the switch illuminates.

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 distance from an obstruction is identified by an intermittent tone sounding. As the vehicle moves closer to an obstruction, the intermittent tone increases speed.

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

Caution: Keep the sensors clean. If the sensors are dirty, their performance may be impaired. When washing the vehicle, avoid aiming high pressure jets directly at the sensors.

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

Activating PDC

When the starter switch is turned on, engaging Drive on automatic transmission vehicles and switching the Electronic Parkbrake (EPB) off will automatically activate the front PDC sensors.

The front sensors remain active until the speed exceeds 15 km/h (10 mph).

When the vehicle’s speed drops below 10 km/h (6 mph), the front sensors are re-activated.

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

If the driver selects Neutral from Reverse, both sets of sensors remain active.

Selection of Park, or turning on the EPB while the vehicle is stationary, will turn off the PDC system.
The system can be turned off by pressing the switch (arrowed). The system is reset if the starter switch is turned off and on again.

If a long, high-pitched tone sounds and the switch indicator light flashes when PDC is activated, then a fault in the system has been detected - contact your Land Rover Dealer/Authorised Repairer for assistance.
The six-speed manual gearbox has gear ratios to take full advantage of diesel engine characteristics.

When the gearbox is in neutral, the gear lever is spring-loaded to lie naturally between third and fourth gear positions.

**Caution:** Do not select reverse gear unless the vehicle is stationary.
Automatic Transmission

AUTOMATIC TRANSMISSION

Selector lever positions
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.

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.

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

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

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

The selector release button MUST be pressed before moving the selector lever into, or out of, the Park position.
Automatic Transmission

Press the selector release button and foot brake to move from Neutral to Reverse or Drive.

D - Drive:
Before selecting drive ensure that the brakes are applied. Select D for all normal driving; full automatic gear changing occurs on all six forward gears, according to road speed and accelerator position.

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.

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.

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.

Note: On vehicles fitted with the Terrain Response system, Sport mode will be available only with Terrain Response Special Programs off.

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.
1. With D selected, move the gear selector from the D position towards the left-hand side of the vehicle.

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 (-) and release will 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 and release of the selector lever will change the transmission to a higher gear, while rearward (-) movement and release 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: On vehicles fitted with the Terrain Response system, 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. See the Off-road Driving section of this handbook, for further details.

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 the current speed.
Automatic Transmission

ELECTRONICALLY SELECTED AUTOMATIC MODES

In fully automatic mode or CommandShift mode (not available in sport mode), 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 gear change pattern is selected to retain lower gears for longer. This is to counter momentum lost by more frequent gear changing during hill ascents or 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. The transmission will select a gear change pattern designed to aid the cooling process.

Note: On vehicles fitted with the Terrain Response system, 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.

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.
- Apply the footbrake, and KEEP THE BRAKES APPLIED while moving the selector lever into a drive position (the selector lever cannot be moved from P or N unless the foot brake is applied).

Note: If rearward pressure is applied to the selector lever before the footbrake is applied any gear selected may not be available irrespective of the lever position. In this situation return the lever to its previous position, ensure that the footbrake is applied, and select the required gear.

- The selector release button 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).

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

USING THE TRANSFER GEARBOX

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.

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. On vehicles with manual transmission, this will prevent prolonged slipping of the clutch.

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.

Range change indicators
While the vehicle is in HIGH range, the HIGH range indicator lamp at the switch is illuminated.

The range indicator lamp in the instrument pack display flashes to indicate a range change in progress.

While the vehicle is in LOW range the LOW range indicator lamp at the switch is illuminated.
While a HIGH to LOW range change is in progress, the LOW range indicator lamps at both the switch and the instrument pack display will flash.

When the range change is complete, the HIGH range indicator lamp at the switch extinguishes. The LOW range indicator lamps at 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.

While a LOW to HIGH range change is in progress, the HIGH range indicator lamps at both the switch and the instrument pack display will flash.

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

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

**Stationary range changing - Automatic transmission**

With the vehicle stationary and the engine running, apply the foot brake and select **N** (neutral). Move the transfer gear switch towards the range required (HIGH or LOW).
Transfer Gearbox

Stationary range changing - Manual transmission
With the vehicle stationary and the engine running select the neutral position.
Move the transfer gear switch towards the range required. When the switch is released, it returns to the default position. Range change status will be confirmed after a couple of seconds by the instrument pack and message centre at which point any manual gear can be selected normally using the clutch.

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.

Range changing on the move

Note: If a range change is requested when the shift lever is not in neutral, the message SELECT NEUTRAL FOR RANGE CHANGE is displayed and a warning chime sounds.
If the vehicle speed is too high for a range change and the shift lever is not in neutral, there will be no message or warning chime.

Automatic transmission
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.

Manual transmission
If neutral 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

Automatic transmission - With the vehicle slowing down and travelling NO FASTER THAN 40 km/h (24 mph), select N.
Manual transmission - With the vehicle slowing down and travelling NO FASTER THAN 20 km/h (12 mph), depress the clutch and select neutral.
Pull the transfer gear switch fully rearwards to the LOW position and release it.
Indication of the range change status is the same as for the Stationary method.
When the range change is confirmed by the indicators, select D or the most appropriate manual gear for the vehicle speed.
With automatic transmission an interlock prevents selection of a drive gear until the range change is complete. With manual transmission, if a gear is selected before the range change is complete, the change will cancel and may leave the transfer box in neutral. An audible warning will be given if this happens.
A failed range change condition produces loss of drive, and attempting to move the vehicle in this state is not possible. After a failed range change, it will be necessary to reselect neutral in the main gearbox and request the range change again in the normal way.

Changing from LOW to HIGH on the move

With the vehicle travelling NO FASTER THAN 60 km/h (38 mph), select N or neutral. 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 or the most appropriate manual gear for the vehicle speed.
Caution: If the range change indicator lamp still flashes when the starter key is turned from position II to position I, apply the parkbrake.

Transmission fault lamp/message
If a fault occurs within the transmission, a lamp will illuminate in the instrument pack display. The colour of that lamp will indicate what criteria apply to driving the vehicle. See Warning Indicators, 98.

If a message centre is fitted, a message will be displayed in the main message centre.
Cruise Control

CRUISE CONTROL
Cruise control enables the driver to maintain a constant road speed without using the accelerator pedal.

The steering wheel switches operate as follows:
1. SET+: Set the speed (+) or increase.
2. SET -: Set the speed (-) or decrease.
3. RESUME: Resume set speed.
4. CANCEL: Cancels without erasing memorised speed.

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.
- Use of Sport mode is not recommended when cruise control is selected.

Note: Cruise control is NOT available when the vehicle is being driven in LOW range gears. It is also not available on vehicles fitted with the Terrain Response system, when Mud Ruts, Sand or Rock Crawl 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 switch 1 to 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.

Suspending cruise control
Cruise control can be suspended by a single press of switch 4. 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 switch 3.
Cruise Control

Note: The set speed will NOT be erased by pressing switch 4. The set speed will only be erased when the starter switch is turned to position 0 or the gear selector is moved to P or R.

To reduce the cruising speed
Press and hold switch 2; 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. Each press of the switch will decrease the speed by 2 km/h (1 mph).

To increase the set cruising speed

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

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

Press and hold switch 1; 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. 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 switch 1 to set the cruise control.
Brakes

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 full braking assistance will not be available. The foot 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, 98.
Never place non-approved floor matting or any other obstructions under the brake pedal. This restricts pedal travel and braking efficiency.

**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.

**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.

**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.

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.
ANTI-LOCK BRAKES (ABS)

If the wheels begin to lock under braking, ABS will automatically come into operation to allow efficient braking without wheels locking. This will be recognisable by a rapid pulsation felt through the brake pedal.

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

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.

- 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:**

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.

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. For further information on the functionality of the ABS warning indicator, see Anti-lock braking system - AMBER, 101.

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 steering control during braking whilst cornering or changing lanes at speed.
Brakes

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.

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 Warning Indicators, 98.

Electronic Brake Distribution (EBD)
Electronic Brake Force Distribution (EBD), balances braking forces between front and rear axles to maintain maximum braking efficiency.

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. See Warning Indicators, 98

PARKBRAKE

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.

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

Applying the parkbrake
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 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 in the message centre. The stop lamps will illuminate.

Releasing the parkbrake

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 switch must be in position I or II. Apply pressure to the foot brake on automatic transmission vehicles, (foot brake and/or clutch pedal in vehicles with a manual gearbox) while pressing down on the parkbrake lever.

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

To perform a hill start on vehicles with a manual gearbox, it is necessary for the driver to co-ordinate the parkbrake release command (pressing down on EPB switch) with the release of the clutch and application of the accelerator in a similar manner to a conventional handbrake system.

Applying the parkbrake automatically
On manual transmission vehicles the parkbrake will be applied automatically when the starter key is removed. This operation must only be carried out when the vehicle is stationary. This feature can be inhibited by pressing down on the lever while removing the starter key.

Releasing the parkbrake automatically

Note: This feature is only available on vehicles equipped with automatic transmission.
If the vehicle is stationary, with the parkbrake applied and D (Drive) or R (Reverse) selected, 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 before 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 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.
Brakes

Releasing the parkbrake in an emergency
If the vehicle has the parkbrake applied and an electrical fault prevents the system operating normally, there is provision for mechanically releasing the parkbrake.

⚠️ **WARNING:**
As this operation removes the static braking on the vehicle, chocks must be placed on both sides of one of the wheels or the foot brake must be applied before releasing the cable.

Using a suitable tool lift out the coin tray situated on the opposite side of the gear shift lever from the parkbrake. This reveals a stirrup cable end. Attach the jack handle to the cable loop, insert the screwdriver shaft into the jack handle and pull to release the parkbrake cable.

⚠️ **WARNING:**
This could take considerable physical effort.
If the tools slip, break or are used incorrectly a serious injury may occur.
Whenever possible, this operation should be carried out by Roadside Assistance.

The parkbrake switch must be applied to reinstate normal function.
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.
Dynamic Stability and Traction Control

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.

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. 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.

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.
Dynamic Stability and Traction Control

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.

DSC is reactivated automatically when the program is changed on vehicles fitted with the Terrain Response system.

ELECTRONIC TRACTION CONTROL (ETC)
ETC improves vehicle traction when one or more wheels has a tendency to spin. It operates in conjunction with the DSC system.

If a wheel is spinning, ETC automatically brakes that wheel until it regains grip.

Warning indicator
A fault with the ETC system is indicated by illumination of the amber warning indicator. This could also indicate that the DSC has been manually deactivated. See Warning Indicators, 98.

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 urgently.
Hill Descent Control

HILL DESCENT CONTROL (HDC)

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.

In vehicles with manual transmission, HDC should only be used in first and reverse gears in HIGH range and all gears in LOW range. Once the vehicle is moving, the clutch pedal should be fully released.

In vehicles with automatic transmission, HDC 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.

Note: If Terrain Response is fitted, some of its program/range combinations will activate HDC automatically.

HDC can be selected at speeds below 80 km/h (50 mph). The green HDC 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.

To select HDC

Press and release the switch (arrowed) to select HDC. To deselect, press and release again (the green HDC 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 starter switch is turned off for more than 6 hours.

HDC in action

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

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.

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. 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. On vehicles not fitted with a message centre, the HDC amber warning indicator will flash. 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 message centre or the amber HDC warning indicator will illuminate if no message centre is fitted. 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.
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, 276.

Off-road height can be selected at any speed up to 40km/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:** If Terrain Response is fitted, in use, 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**

This is 50 mm (2.0 in.) lower than On-road height. It provides easier entry, exit and loading of the vehicle.

**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.

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 20mm, 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.
Air Suspension

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 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.
For an explanation of those messages, see MAIN MESSAGE CENTRE, 84.

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 height indicators
Indicators (2) or (7) will illuminate 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 while vehicle speed is above 20 km/h (12 mph), indicators (5) and (7) will flash while the system waits for the vehicle to slow down. The system will cancel the access height request if the vehicle does not slow sufficiently within one minute.
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.
The vehicle must slow down to 8 km/h (5 mph), within one minute to prevent access height cancellation. Indicators (5) and (7) will be lit. When Access height is reached, indicator (7) will extinguish.
Access height may be selected up to 40 seconds after the starter switch is turned off, provided that the driver’s door has not been opened within this time.
Air Suspension

Selecting and cancelling Crawl (locked at Access height)

When the suspension is at On-road or Access height and the vehicle speed is below 35 km/h (22 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

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.
The indicator for the target height (3, 4 or 5) will remain lit and the lifting 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 clear of the obstruction. Extended mode is activated automatically and cannot be selected manually.

When Extended mode is activated, indicator (3) will flash. 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 is invoked and the automatic lifting of the vehicle has been completed, the driver can select 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) 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.

To exit Extended mode briefly press either the raise or lower switch. Alternatively, the vehicle will automatically lower if driven at a speed greater than 5 km/h (3 mph) for 30 seconds.
Air Suspension

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 on to an obstacle or attempting to lift the vehicle against an obstruction.
The indicators operate 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 operate the air suspension.
Terrain Response

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.

This 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 throttle 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).

In addition, Terrain Response offers control of systems that have previously not been manually controllable.

Note: Since each Terrain Response special program uses the optimum settings of each drive component - throttle 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 throttle 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

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

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. On vehicles fitted with automatic transmission, 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).

In addition to the electronically controlled centre differential, fitted to the vehicle as standard, Terrain Response may also be optionally equipped with an electronically controlled rear differential. 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 automatic transmission can be left in D. If descending a slippery slope, CommandShift 1 or 2 should be considered.
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 warning 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.

**Driver over-ride options**
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:
- Air Suspension
- Hill Descent Control
may also be operated independently by the driver.

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.

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

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 main message centre 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:** Automatic gearbox gear selection can be overridden, by using the CommandShift function on the gearbox to lock the vehicle in a particular gear.

**Terrain Response operation**

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.
Terrain Response

When the starter switch is turned on, the indicators around the control knob are illuminated, with the active program highlighted in amber. The brightness of the indicators 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 vehicle’s headlamps.

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

If the Mud-Ruts, Sand or Rock Crawl special programs are selected when the starter switch is turned off, 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 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. Vehicle 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 rotary 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 special 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.
Terrain Response

In this special program the Terrain Response systems will select settings to give the best traction, handling and control for predominantly slippery conditions. Hill Descent Control will be engaged automatically in low range, but can be manually de-selected. See HILL DESCENT CONTROL (HDC), 176.

In slippery conditions, it is often beneficial to start off in a higher gear than usual, for example, second gear in HIGH range or third gear in LOW range. Upon selection of the Grass/Gravel/Snow program, the driver of a manual gearbox vehicle will be reminded of this via a message. This message will appear only once per ignition cycle.

For use of the vehicle with snow chains fitted, see SNOW CHAINS, 228.

**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 special 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 special 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 special 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, 174.

Rock Crawl

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.
Terrain Response

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.

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 the vehicle’s response to those conditions and will reduce the durability of the suspension and drive systems.

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 indicators will be switched off and the message centre will display a message.

The air suspension system provides an automatic levelling function. See AIR SUSPENSION, 179. 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.

Messages

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

For an explanation of those messages, see MAIN MESSAGE CENTRE, 84.
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. The use of LOW range is recommended for manual transmission vehicles when manoeuvring heavy trailers or performing hill starts, to avoid excessive clutch wear.

**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.

It is the driver’s responsibility to ensure that the towing vehicle and trailer 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 manufacturer as well as to the information that follows.

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

**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.
- Before balancing the combination on vehicles equipped with air suspension, 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

- 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).

**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.

**Gear range selection**
To avoid overheating the gearbox, and the clutch in manual gearbox vehicles, it is not advisable to tow heavy trailer loads at speeds of less than 32 km/h (21 mph) using the main 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.

**Tyre pressures:**
Increase rear pressures of towing vehicle to those for Maximum Gross Vehicle Weight conditions.

**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.

**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.

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**WARNING:**
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.

**Trailer socket**
The trailer socket is located alongside the rear towing eye and behind the rear bumper cover. The vehicle’s electrical system is configured to support all towing requirements and the electrical socket fitted will comply with legal requirements for the specific territory. All towing circuits are independently fused in a satellite fusebox located in the lower loadspace trim panel, see Tow hitch fuses, 256.

**ESSENTIAL TOWING CHECKS**

<table>
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Towing

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

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

Detachable tow bar stowage
Five-seater models: The tow bar is stowed under an access hatch in the rear loadspace floor.

Seven-seater models: The tow bar is stowed on the left-hand side of the rear loadspace, behind an access cover.
Fitting the detachable tow bar

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 lock 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.

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

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

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, is set behind a removable cover in the lower front bumper.

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

Rear towing eye

The towing eye provided at the rear of the vehicle can be used to tow your vehicle, or another vehicle, in recovery situations.
Removing the front cover

Rotate each of the fasteners through 90° with a coin (or something similar), to loosen the cover. Lower the top edge and then pull the cover forward to remove it.

Refitting the front cover

Offer up the cover and ensure that the two lugs on the bottom edge engage with the holes in the body panel. Tighten the fasteners by turning each clockwise through 90°.
Removing the rear cover

Rotate each of the fasteners through 90° 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

Offer up the cover and ensure that the four hooks on the top edge engage with the holes in the body panel. Tighten the fasteners by turning each clockwise through 90°.
Towing the Vehicle

TOWING FOR RECOVERY

**WARNING:**
ALWAYS adhere to the following procedure when towing the vehicle. Failure to do so could result in unintended vehicle movement or unanticipated vehicle conditions.

DO NOT remove the starter key or turn the starter switch to position 0 while the vehicle is in motion as this will lock the steering.

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: Under no circumstances can the 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 dolly arrangement, to lift it clear of the ground.

When preparing to tow the vehicle on four wheels, it is essential that neutral (N) is selected and that the parkbrake is applied.

If the following conditions are met, the vehicle can be towed for a maximum distance of only 50 km (30 miles) at a maximum speed of 50 km/h (30 mph). If the stated distance or speed is exceeded damage to the transmission may occur.

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, 195).
2. With the parkbrake applied, insert the starter key and turn it to position II.
3. Apply the foot brake and place the auto selector lever/manual gear lever into the 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.
6. Release the parkbrake before towing the vehicle.

Caution: The vehicle must not be towed under the following circumstances:

- If the gearbox cannot be set in neutral.
- If the rear electronic differential has failed in the locked position.

Note: Leaving the starter switch in position I or II for extended periods may drain the vehicle battery.
Towing the Vehicle

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 O.
5. Remove the towing attachment and replace the panel in the front bumper.

Recovery on a 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 towing dolly arrangement to lift it clear of the ground.

Lashing eyes
Pairs of lashing eyes for insertion of appropriate hooks are fixed to the underside of the vehicle. DO NOT secure lashing hooks 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.

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. See Air Suspension, 179.
Load Carrying

ROOF RACKS
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 roof racks 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.

WARNING:
The MAXIMUM load for approved roof rack systems is 75 kg (165 lb) for normal road use. 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.
Headlamp Systems

HEADLAMPS
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 fill-in high beam halogen lamp alongside.
- An Adaptive Front Lighting System (AFS).

Bi-Xenon headlamps
Some vehicles are fitted with Xenon low/high beam headlamp units. Xenon lamps provide significantly improved visibility, especially during adverse weather and driving conditions.

Bi-Xenon units use a Xenon bulb for both high beam and low beam, whilst 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 light is significantly longer than that of a conventional or halogen bulb.

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.
Headlamp Systems

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 movement reduces as speed increases.

Static bending lights 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

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

B. Shows the light spread of a vehicle fitted with AFS.

Cornering 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.
Headlamp Systems

The system switches on the lamp, if it has received an input from the vehicle’s 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.

A. Shows the light spread of a vehicle not fitted with cornering lamps.
B. Shows the light spread of a vehicle fitted with cornering lamps.