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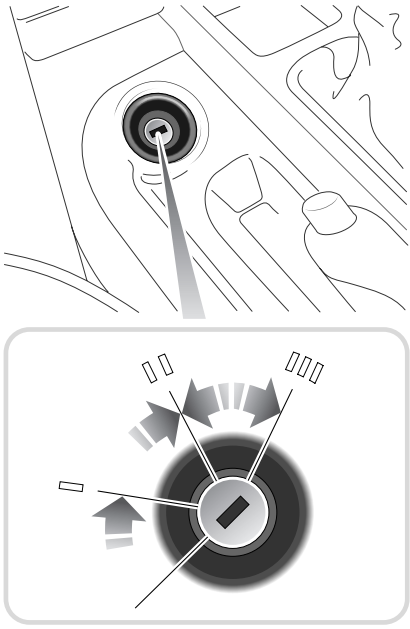
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STEERING COLUMN LOCK



H3923

The starter switch and steering column lock is located on the centre console, forward of the handbrake.

To unlock the steering column

Insert the key into the starter switch.

To lock the steering column

Remove the key from the starter switch.

Note: *The gear selector MUST be in the `P' (park) position, before the starter key can be removed.*

WARNING

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

Note: *Once removed, the starter key should not be left in close proximity to the starter switch. This can lead to the steering column lock operating repeatedly, discharging the vehicle battery.*

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 (if key is removed).
- Most lighting circuits are operational, including: sidelights, headlights and hazard warning lights.
- With the driver's door open, seat switches and seat memory facility operational.

Position `I'

- Steering unlocked.
- Steering wheel adjusts to set driving position.
- Clock, audio system and cigar lighter can now be operated.

Position `II'

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

Position `III'

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

Note: *The gear selector position `P' or `N' must be selected before the engine will start.*

STARTING - Petrol models

WARNING

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

Before starting the engine and driving, ENSURE you are familiar with the precautions shown under **CATALYTIC CONVERTER, 144**.

In particular, you should be aware that if the engine fails to start, continued use of the starter may result in unburnt fuel damaging the catalytic converter.

1. Check that the handbrake is applied and that the gear selector is in the `P' (Park) or `N' (Neutral) position.
2. Switch off all unnecessary electrical equipment.
3. Turn the starter switch to position `II' and then on to position `III' to operate the starter motor. DO NOT press the accelerator pedal while starting, and RELEASE THE KEY as soon as the engine starts cranking (the engine will automatically continue cranking until the engine starts).

If the engine stalls or fails to start, you MUST return the starter switch to position `I' before attempting to restart; the engine will not start by turning the starter switch from position `II'.

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

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 -30C the starter motor may operate continuously for as long as 30 seconds before the engine will start. For this reason, ensure that all non-essential electrical equipment is switched off.

After starting

Ensure that the handbrake and foot brake are firmly applied and the accelerator pedal is not depressed while moving the gear selector lever from `N' or `P', otherwise, the vehicle may move immediately the selector lever is moved to one of the drive positions (`D' or `R'). This is particularly important when the engine is cold, because the engine will be idling at a faster speed than normal.

Note: *The foot brake MUST be applied, before the gear selection lever can be moved out of `P' or `N' into a drive position.*

STARTING - Diesel models

WARNING

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

Before starting the engine and driving, ENSURE you are familiar with the precautions shown under **CATALYTIC CONVERTER, 144**.

1. Check that the handbrake is applied and that the gear selector is in the `P' (Park) or `N' (Neutral) position.
2. Switch off all unnecessary electrical equipment.
3. Insert the starter key and turn the switch to position `II'. Wait until the glow plug warning light extinguishes.

   Note: *The waiting time will vary according to the engine coolant temperature (when the engine is hot, the glow plug warning light will extinguish almost immediately, or may not illuminate at all).*
4. Turn the key to position `III' to operate the starter motor. DO NOT press the accelerator pedal while starting. RELEASE THE KEY as soon as the engine is running.

If the engine stalls or fails to start, you MUST return the starter switch to position `I' before attempting to restart; the engine will not start by turning the starter switch from position `II'.

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

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

Precautions

- **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 -30C the starter motor may need to be operated continuously for as long as 30 seconds before the engine will start. For this reason, ensure that all non-essential electrical equipment is switched off.

After starting

Ensure that the handbrake and foot brake are firmly applied and the accelerator pedal is not depressed while moving the gear selector lever from `N' or `P', otherwise, the vehicle may move immediately the selector lever is moved to one of the drive positions (D or R). This is particularly important when the engine is cold, because the engine will be idling at a faster speed than normal.

Note: *The foot brake MUST be applied, before the gear selection lever can be moved out of `P' or `N' into a drive position.*

DRIVING

WARNING

Vehicle stability

Your vehicle has a higher ground clearance and, hence, a higher centre of gravity than ordinary passenger cars to enable the vehicle to perform in a wide variety of different off-road applications. An advantage of the higher ground clearance is a better view of the road, allowing the driver to more easily anticipate problems. Inexperienced drivers should take additional care, remembering that your vehicle is not designed for cornering at the same speeds as conventional passenger cars, any more than a low slung sports car is designed to perform satisfactorily in off-road conditions. As with other vehicles of this type, failure to operate your vehicle correctly may result in loss of control or even vehicle rollover.

IMPORTANT INFORMATION

Vehicle height
The overall height of your vehicle exceeds that of ordinary passenger cars. Always be aware of the height of your vehicle and check the available headroom before driving through low entrances. This is particularly important if the vehicle is fitted with a roof rack or if the sunroof is tilted open.
Before Driving
Learn the layout and function of all the instruments, warning lights and controls.
Adjust the seat to a comfortable driving position from which you can ensure full control of the vehicle.
Always start the vehicle and operate the controls from the driving position.

Instruments and warning lights

Before driving it is important to fully understand the function of the instruments and warning lights see, **INSTRUMENT PANEL, 71**.

Note: *Red warning lights are of particular importance, illumination indicating that a fault exists. If a red light illuminates, always stop the vehicle and seek qualified assistance before continuing.*

Warming-up

DO NOT warm-up the engine by allowing it to idle at a slow speed.

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

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, it is essential to drive with consideration for the running-in process and heed the following advice:

- LIMIT maximum road speed to 112 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. It is advisable NOT to use Sport Mode when running in.
- AVOID fast acceleration and heavy braking except in emergencies.

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 (in Manual mode).
- Decelerate gently and avoid sudden and heavy braking.
- Anticipate obstructions and adjust your speed accordingly well in advance.
- When stationary in traffic, select neutral (`N') to improve fuel economy and air conditioning performance.

AUXILIARY EQUIPMENT

Caution: DO NOT use auxiliary equipment, such as roller generators, that are driven by one wheel of the vehicle, as they could cause failure of the gearbox differential.

EMISSION CONTROL SYSTEM

WARNING

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

- **DO NOT inhale exhaust gases.**
- **DO NOT start or leave the engine running in an enclosed unventilated area, or drive with the taildoor open.**
- **DO NOT modify the exhaust system from the original design.**
- **ALWAYS repair exhaust system leaks immediately.**
- **If you think exhaust fumes are entering the vehicle have the cause determined and corrected immediately.**

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

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

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

CATALYTIC CONVERTER

The exhaust system incorporates a catalytic converter, which converts poisonous exhaust emissions from the engine into environmentally less harmful gases.

Caution: Severe damage to the catalytic converter could occur if the engine is stopped for any length of time when being driven through water whose level is above the exhaust tailpipe.

Catalytic converters can be easily damaged through improper use, particularly if the wrong fuel is used, or if an engine misfire occurs. For this reason it is VERY IMPORTANT that you heed the precautions which follow.

Fuel

ONLY use fuel recommended for your vehicle, see, **ENGINES, 282**.

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), and do not attempt to clear a misfire by pressing the accelerator pedal - seek qualified assistance.
- When starting a COLD engine, DO NOT drive if a misfire is suspected and do not attempt to clear a misfire by pressing the accelerator - seek qualified assistance.
- Do not attempt to push or tow-start the vehicle.

Driving

- If a misfire is suspected, or the vehicle lacks power while driving, provided the engine has reached its normal operating temperature, it may be driven SLOWLY (at risk of catalyst damage) to a Land Rover Dealer/Authorised Repairer for assistance.
- NEVER allow the vehicle to run out of fuel (the resultant misfire could damage the catalyst).
- Consult your Dealer/Authorised Repairer if your vehicle is burning excessive oil (blue smoke from the exhaust), as this will progressively reduce catalyst efficiency.
- On rough terrain do not allow the underside of the vehicle to be subjected to heavy impacts which could damage the catalytic converter.
- DO NOT overload or excessively `rev' the engine.
- DO NOT switch off the engine when the vehicle is in motion with a drive gear selected.

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 - in dry weather a fire could result.

Vehicle maintenance

- Any engine misfire, loss of engine performance or engine run-on, could seriously damage the catalytic converter. For this reason, it is vital that unqualified persons do not tamper with the engine, and that regular systematic maintenance is carried out by a Land Rover Dealer/Authorised Repairer.
- DO NOT run the engine with a spark plug or HT lead removed, or use any device that requires an insert into a spark plug.

Fuel Filling

SAFETY ON THE FORECOURT

WARNING

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

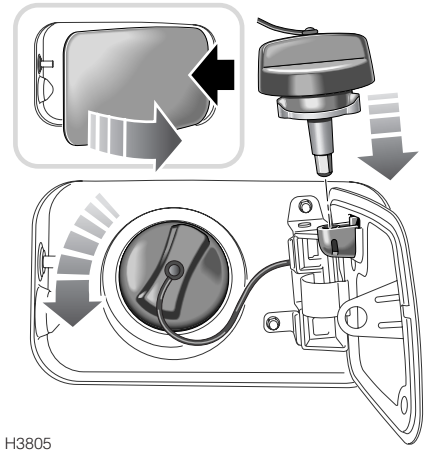
Always take sensible precautions when refuelling:

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

FUEL FILLER

WARNING

DO NOT fully remove the filler cap until any captive tank pressure has been released.



H3805

The fuel filler is located in the rear right-hand wing. With the vehicle fully unlocked (all doors and tailgate), press the right side of the fuel filler flap to open (shown in inset).

Carefully turn the cap anti-clockwise and allow any fuel tank pressure to be released. Once the pressure is released, it is safe to fully remove the filler cap. When refuelling, insert the filler cap in the socket on the back of the filler flap (see illustration).

When replacing, tighten the cap clockwise until you hear the fuel cap ratchet click once.

TYPE OF FUEL

WARNING

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

Petrol engine vehicles

- Use 95 RON UNLEADED petrol wherever possible. If 95 RON unleaded is unavailable, it is acceptable to run the vehicle on fuel with a RON rating down to 91 RON unleaded. In territories where only LEADED fuel is available, USE 95 RON LEADED

The RON value (octane rating) and type of petroleum (unleaded or leaded), available at garage forecourts will vary in different parts of the world. For example, in most European countries 95 RON unleaded fuel is readily available, but in some parts of the world fuel supplies may be limited to leaded or lower octane fuels only. The RON values quoted above are MINIMUM requirements and can be safely exceeded.

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. If in doubt, seek advice from the territory concerned.

Using petrol with a lower octane rating, 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 dealer for advice.

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

Diesel engine vehicles

WARNING

This vehicle is NOT compatible with `Bio-diesel' fuel.

Use diesel or automotive gas oil (AGO) to EN 590.

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.

WARNING

DO NOT add petrol to the fuel tank of a diesel engine vehicle, as substantial damage to the engine and associated components will occur. Land Rover cannot be held responsible for any costs incurred if such an error is made.

WARNING

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

FUEL FILLING

WARNING

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

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

Petrol engine vehicles

In markets where unleaded petrol is available, the fuel filler neck will accept ONLY a narrow filler nozzle of the type found on pumps that deliver UNLEADED fuel.

In markets where only leaded petrol is available, the filler neck is designed to accept a leaded filler nozzle.

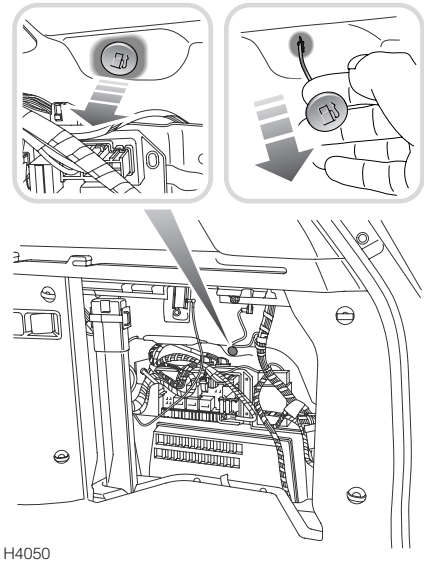
Diesel engine vehicles

The diesel pumps on garage forecourts fill at a maximum of 45 litres (11.89 gallons / 95.1 pints) per minute. Use of commercial vehicle diesel pumps with a higher fill rate, may result in premature pump cut-off and fuel spillage.

EMPTY FUEL TANK

Running the fuel tank dry could create an engine misfire capable of damaging the catalytic converter. DO NOT RUN THE FUEL TANK DRY.

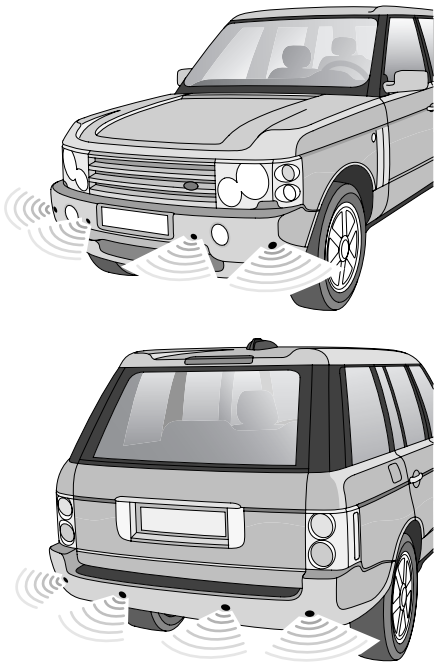
FUEL FILLER FLAP EMERGENCY RELEASE



H4050

If the vehicle battery has been disconnected or has discharged, the fuel filler flap can be opened manually. Open the rear loadspace access hatch see, **REAR LOADSPACE ACCESS HATCH, 129**. Pull the green release handle (as illustrated in the insets) to open the filler flap.

USING PARK DISTANCE CONTROL (PDC)*



H5275

WARNING

The parking aid is not infallible, it 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).

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

The vehicle is fitted with four ultrasonic sensors on each of the bumpers.

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

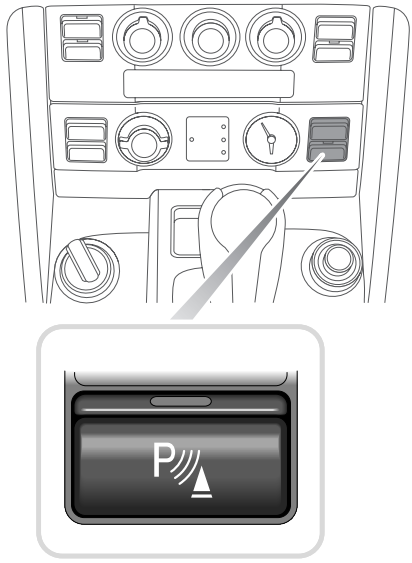
WARNING

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

Park Distance Control

Activating PDC

PDC is automatically activated whenever the reverse gear (`R') is engaged. When the starter switch is turned on, the indicator light in the switch illuminates and a short tone sounds after 1 second as confirmation.



H4879

PDC can also be manually selected by pressing the switch (illustrated) on the centre front facia (the indicator light in the switch illuminates and a short tone sounds as confirmation). A second press of the switch deactivates the PDC system. If PDC has been manually switched off by pressing the switch, it will not activate automatically until either the switch has been pressed again, or the starter switch has been turned off and on again.

Note: *The confirmation tone only sounds the first time that PDC is selected (either by selecting reverse, or by pressing the switch), unless the starter switch has been turned off between uses.*

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 dealer for assistance.

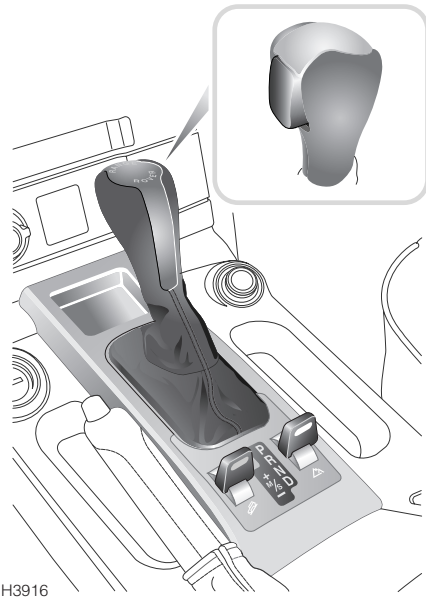
PDC in operation

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

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

PDC will remain active until the vehicle speed exceeds approximately 32 km/h (20 mph) or until the vehicle has travelled approximately 50 metres (165 feet), when it will automatically deactivate.

GEAR SELECTOR



H3916

The CommandShift™ transmission provides both automatic and manual operation of the gears.

Automatic operation

The transmission is naturally in automatic mode. With the engine started, gear selection can be made by moving the selector backward or forward to the appropriate position in a similar manner to other automatic gearboxes.

GEAR SELECTOR LEVER

Selector release button

The gearbox is fitted with a locking mechanism, designed to minimise the risk of accidental selection of the `P' (Park) and `R' (Reverse) positions.

The selector release button (see inset) must be pressed while selecting `P' and `R', and also to enable the lever to be moved between the `P' and `R' positions.

Note: *With the engine running, or the starter switch in position `II', the selector lever cannot be moved into a drive position unless the foot brake is applied.*

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.

Keep engine speed as low as possible when moving the selector between `R' and a forward gear.

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

Selector lever positions

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

**`P' - Park:**This position mechanically locks the transmission and should be selected before switching the engine off. To avoid transmission damage, ensure the vehicle is completely stationary, with the handbrake applied, before selecting `P'.

The selector release button MUST be pressed, in order to move the selector lever into, or out of, the Park position.

`R' - Reverse: Before selecting reverse, ensure the vehicle is stationary, with the brakes applied. Press the selector release button in order to move the selector lever into Reverse.

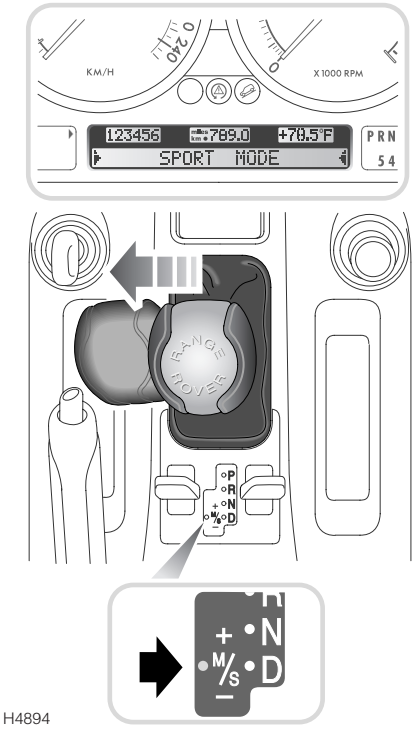
With the selector lever in the `R' position, Hill Descent Control can be selected see, **HILL DESCENT CONTROL, 166**.

**`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 handbrake must be applied whenever `N' is selected.

Press the selector release button to move from neutral to reverse.

`D' - Drive: Select for all normal driving; full automatic gear changing occurs on all five forward gears, according to road speed and accelerator position.

Sport mode



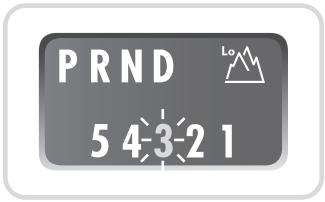
H4894

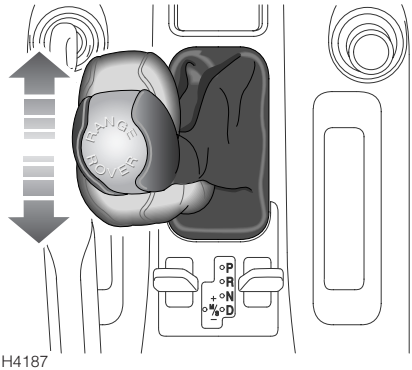
In Sport mode, full automatic progression through the gear ratios is retained. By selecting Sport mode, however, the power transmitted to the road wheels is increased by making lower gears more available. This results in improved mid-range performance, as the vehicle stays in the lower gears for longer. Sport mode also makes the lower gears more available for `kick-down' operation.

To select Sport mode, move the gear lever sideways across the gate from the `D' - Drive position towards the left hand side of the vehicle (see illustration). The word SPORT will appear in the transmission message centre (for approximately 6 seconds), the LED in the selector display to the rear of the selector lever (arrowed in inset) illuminates and `SPORT MODE' is displayed in the main message centre for 6 seconds.

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

MANUAL CommandShift™ GEAR SELECTION





H4187

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

There are five `gears`, all of which are selected sequentially by a single forward or rearward movement of the gear selector lever, as follows:

1. With `D' (Drive) selected, move the gear selector lever sideways from the `D' position towards the left hand side of the vehicle (this is exactly the same as selecting Sport mode).
2. The transmission then automatically selects the ratio most appropriate to the vehicle's road speed and accelerator depression.
3. A single forward (`+') movement of the selector lever will change the transmission to a higher gear, while rearward (`-') movement of the lever will change down to a lower gear. Repeated forward or rearward movements of the lever can be made until the desired gear ratio has been selected. The selected gear will be indicated in the digital display in the instrument panel (see inset).
4. To deselect manual mode, simply move the selector lever sideways, back to the `D' position. Automatic gear changing will then resume.

Note: *In manual mode, `kick-down' is still available for increased acceleration. see,* ***`Kick-down', 154****, for more information.*

Using CommandShift in HIGH range

If manual mode 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 manual mode 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, **Off-road Driving, 189** section of this handbook, for further details.

USING AN AUTOMATIC GEARBOX

The following information is particularly important for drivers who are unfamiliar with the techniques required to drive vehicles with automatic transmission.

Starting

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

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

IMPORTANT INFORMATION
Vehicles fitted with automatic transmission can NOT be `push' or `tow' started.

Driving in `D' or Sport mode

When driving, the transmission will automatically adjust to the most appropriate gear ratio, according to accelerator position, vehicle speed and terrain (whether the vehicle is driving uphill, downhill or on the flat).

Gear change speeds

With `D' selected, the road speeds at which gear changes take place will vary according to the position of the accelerator pedal: minimum acceleration will result in gear changes at low road speeds, while larger throttle openings will cause the gearbox to delay gear changes until faster road speeds have been reached (thereby increasing the rate of acceleration). Depending on vehicle speed, moderate pressure of the accelerator pedal may result in a downshift in gear, further increasing the rate of acceleration.

With practice, gear changes can be made to occur at a wide range of road speeds depending on the accelerator position.

`Kick-down'

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.*

'Kick-down' in manual 'CommandShift' mode:

When in manual CommandShift mode, kick-down overrides the manual gear selection, to provide increased acceleration. The characteristics of kick-down operation differs according to the gear range selected (HIGH or LOW).

In HIGH range, with manual mode selected, kick-down will cause a downshift of at least two gears (`5' to `3', for example). When in LOW range, the downshift will only be one gear (`5' to `4', for example).

Parking

After bringing the vehicle to a stop, ALWAYS apply the handbrake and select `P', before releasing the foot brake and switching off the engine. The starter key can only be removed if `P' is selected.

ELECTRONICALLY SELECTED AUTOMATIC MODES

The transmission control system electronically selects different gear change modes, listed below, designed to suit a variety of driving conditions.

Note: *The electronic modes described below cannot be selected by the driver and will not operate if `Sport' mode is selected.*

Hill ascent, trailer and high altitude mode

A suitable gear change pattern is selected which retains lower gears for longer, to counter momentum loss caused by more frequent gear changing, which can occur when climbing hills or when towing a trailer or caravan. This gear change pattern is also selected at high altitudes to combat reduced engine torque.

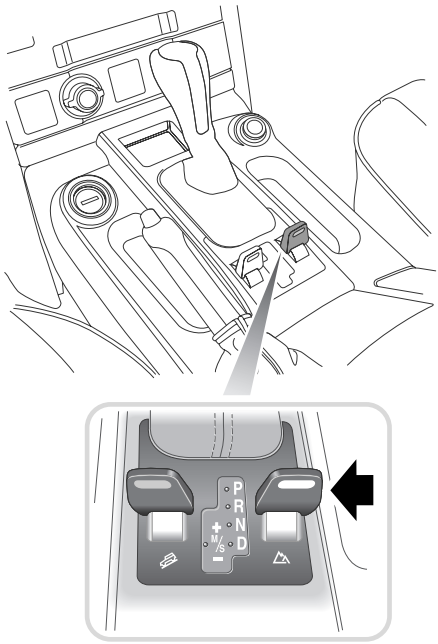
Hill descent mode

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, the transmission will select a gear change pattern designed to aid the cooling process, whilst enabling the gearbox to continue performing normally.

TRANSFER GEAR SWITCH



H4951

The second gearbox (known as the transfer box) is used to select either the high or low range of gears.

High range (`H')

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

Low range (`L')

Use the low range ratio ONLY in situations where low speed manoeuvring is necessary, such as reversing a trailer or negotiating a boulder strewn river bed; also use low range for more extreme off-road conditions where progress in high range cannot be maintained. DO NOT attempt to use the LOW range ratio for normal road driving.

USING THE TRANSFER GEARBOX

Your vehicle is equipped with an electronically controlled transfer gearbox. There are two ways of operating the transfer gear switch; the stationary method - recommended for inexperienced drivers - and the `on the move' method for experienced drivers.

Caution: DO NOT attempt to use LOW range gears for normal road driving. Doing so will limit the vehicle's top speed and may damage drivetrain components.

Stationary method

With the vehicle stationary and the engine running, apply the foot brake and then move the automatic gearbox selector to the `N' (neutral) position before moving the transfer gear switch (arrowed) fully rearwards. When the switch is released, it returns to the default position.

Changing from high to low on the move

With the vehicle slowing down and travelling NO FASTER THAN 32 km/h (10 mph), select `N' (neutral) in the main gearbox, then move the transfer gear switch fully rearwards (the switch returns to the `forward' position when released). The low range indicator light in the gear selector display flashes while the range change is occurring. When the range change is complete, the light illuminates constantly, a warning chime will sound and `LOW RANGE' is displayed in the message centre for a few seconds. Now select `D' (drive) or manual CommandShift mode. The transmission interlock prevents the engagement of a drive gear until the range change is complete.

Note: *If the vehicle speed is too great when a range change is requested, a warning chime sounds and `SLOW DOWN' appears in the message centre.*

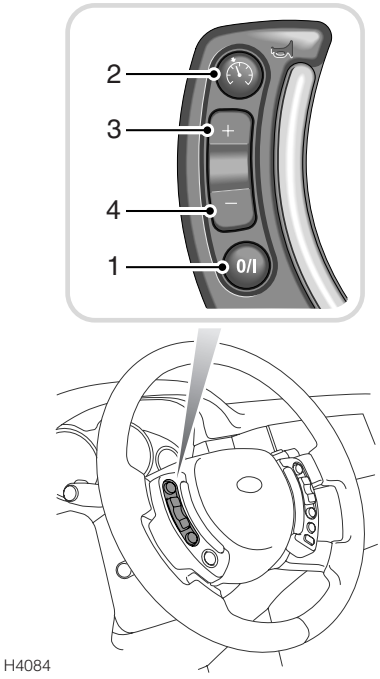
Changing from low to high on the move

With the vehicle travelling NO FASTER THAN 48 km/h (30 mph), select `N' (neutral) in the main gearbox, then move the transfer gear switch fully rearwards (the switch returns to the `forward' position when released). The low range indicator light in the gear selector display flashes while the range change is occurring. When the range change is complete, the light extinguishes, a warning chime will sound, and `HIGH RANGE' is displayed in the message centre for a few seconds. Now select `D' (drive). The transmission interlock prevents the engagement of a drive gear until the range change is complete.

Note: *If the vehicle speed is too great when a range change is requested, a warning chime sounds and `SLOW DOWN' appears in the message centre.*

Note: *If the vehicle is travelling at 3.2 km/h (2 mph) or less, then any change of ratio is to be carried out as if the vehicle is stationary (i.e. apply the foot brake and select `N', before moving the transfer gear switch). This is necessary to prevent the interlock feature locking the selector lever in `N'.*

CRUISE CONTROL*



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

The cruise control system has four switches:

1. Master switch (On/Suspend/Off).
2. Resume switch.
3. Accelerate set switch.
4. Decelerate switch.

WARNING

DO NOT use cruise control on winding or slippery road surfaces, or in traffic conditions where a constant speed cannot be easily maintained

Caution:

Always observe the following precautions:

DO NOT use cruise control when using reverse gear.

DO NOT use cruise control in off-road conditions such as rough tracks or on sand.

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

ALWAYS switch off the master switch when you no longer intend to use cruise control.

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

To operate

1. Press the master switch (warning light in the instrument panel illuminates).
2. Accelerate until the desired cruising speed is reached. This must be above the system's operational minimum speed of 32 km/h (20 mph).
3. Press the `+' switch (3) to set the vehicle speed in the system's memory. Cruise control will now maintain that road speed without the need for operation of the accelerator pedal.

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 selected cruising speed.

To reduce the cruising speed: Press and hold the `-' switch (4); 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 1 km/h (0.6 mph).

Note: *Cruise control will not operate at speeds below 32 km/h (20 mph).*

To increase the set cruising speed: Press and hold the `+' switch (3); 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 1 km/h (0.62mph.

A further alternative is to increase speed by normal use of the accelerator. When the desired speed is reached, press the `+' switch (3) to set the cruise control.

Suspending cruise control

Cruise control will suspend when the gear selector is moved into neutral, or when the brake pedal is pressed or if HDC or DSC becomes active. Cruise control can also be suspended by a single press of the master switch (1).

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

Switching off cruise control

To switch off cruise control, press the master switch (1) once to suspend cruise control and then press and hold the switch again until the warning light in the instrument panel extinguishes.

Note:

Petrol Engine Models

The set speed held in the cruise control memory will be erased when either the master switch (1) or the starter switch is turned off.

Diesel Engine Models

The set speed will NOT be erased by pressing the master switch (1). The set speed will ONLY be erased when the starter switch is turned to position `O' (off).

FOOT BRAKE

For your safety, the hydraulic braking system operates through dual circuits. If one circuit should fail, the other will continue to function. However, in the event of brake failure where only one circuit is operational, the vehicle should only be driven at slow speed to the nearest qualified dealer. In these circumstances, exercise extreme caution and be aware that increased brake pedal travel, greater pedal pressure, and longer stopping distances will be experienced.

Servo assistance

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

- NEVER allow the vehicle to freewheel with the engine turned off.
- 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, first ensuring that you are at a safe distance from other road users.

Brake pads

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

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

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

WARNING

Never place a none-approved floor matting or any other obstructions under the brake pedal. This restricts pedal travel and braking efficiency.

NEVER move a vehicle without the engine running because braking assistance will not be available. The pedal brakes will still function, but more pressure will be required to operate them.

If the brake warning light should illuminate while the vehicle is in motion, bring the vehicle to a halt as quickly as traffic conditions and safety permit and seek qualified assistance before continuing. DO NOT pump the brake pedal - the braking system may lose any remaining servo assistance available.

ANTI-LOCK BRAKES

WARNING

ABS cannot overcome the physical limitations of stopping the vehicle in too short a distance, cornering at too high a speed, 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 his/her safety or that of other road users. In all cases, it remains the driver's responsibility to drive within normal safety margins, having due consideration for prevailing weather and traffic conditions.

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

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

Under normal braking conditions, (where sufficient road surface friction exists to slow the vehicle without the wheels locking), ABS will not be activated. However, should the braking force exceed the available adhesion between the tyres and the road surface, then ABS will automatically come into operation. This will be recognisable by a rapid pulsation felt through the brake pedal.

In normal road use, in an emergency situation, ABS functions most effectively when full braking effort is be 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 grip.

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

WARNING

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.

Note: *If the vehicle power supply has been interrupted, ABS will be de-activated. ABS can be reactivated by driving a short distance, or by turning the steering wheel from one limit position to the other while the vehicle is stationary and with the engine running. The ABS warning light will extinguish when the system is reactivated.*

Warning light



A fault with the ABS system is indicated by illumination of the amber ABS warning light. If the light illuminates, drive with care, avoiding heavy brake applications and seek qualified assistance urgently. For further information on the functionality of the ABS warning light, see **Anti-lock braking system - AMBER, 83**.

Off-road driving

While anti-lock braking is designed to operate equally effectively in `off-road' driving conditions, on certain surfaces total reliance on the system may be unwise - remember, in normal circumstances, anti-lock braking operates only AFTER the wheels have started to slip. 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 because there is no wheel rotation to signal movement 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.
- Before driving off-road read and thoroughly understand the **`Off-road driving'** section of this handbook see, **BEFORE YOU DRIVE, 189**.

Cornering brake control (CBC)

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

Emergency brake assist (EBA)

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

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

A fault with the EBA system is indicated by illumination of the amber brake warning light. In the event of a fault, the system should be checked by a Land Rover Dealer/Authorised Repairer at the earliest opportunity.

Electronic brake force distribution (EBD)

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

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

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

HANDBRAKE

To engage the handbrake, pull the lever up (the handbrake warning light illuminates).

To release, pull the lever up slightly, depress the button and lower the lever (the handbrake warning light extinguishes).

Always apply the handbrake fully whenever you park.

When parking on a slope, do not rely on the handbrake alone to hold the vehicle, always select `P' (park) for extra security.

Ensure the parking pawl of the gearbox has fully engaged by carefully releasing the foot brake and allowing the vehicle to `rock' into `P' (park). This is particularly important when LOW range is selected.

WARNING

DO NOT apply the parking brake whilst the vehicle is in motion (except in an emergency), as this could result in a loss of control and damage to the transmission.

WARNING

In exceptional cases, if the handbrake has to be used to slow or stop the vehicle, do not pull the lever up too hard. Keep the button on the lever depressed the whole time.

Too violent an application of the handbrake could over-brake the rear wheels and cause the rear of the vehicle to skid.

DO NOT rely on the handbrake to operate effectively if the vehicle has been subjected to immersion in mud and water see, WADING, 199.

Note: *The brake lights do not illuminate when the handbrake is applied.*

DYNAMIC STABILITY CONTROL (DSC)

WARNING

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

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

Warning light



The warning light illuminates as a bulb and system check when the starter switch is turned to position `II' and should extinguish when the engine is running.

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

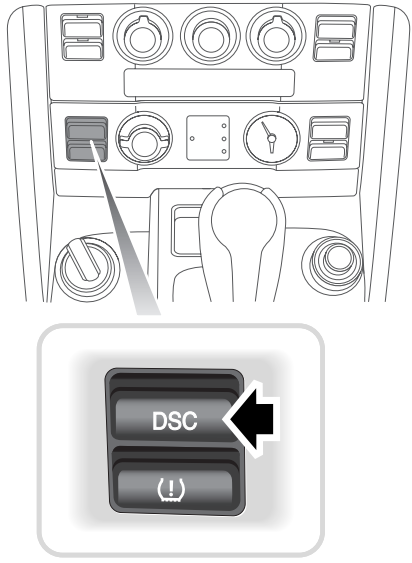
If the light fails to extinguish when the engine is started, or illuminates when driving, a fault in the system has been detected or DSC has been manually deselected. The vehicle can still be driven with care, but be aware that driving characteristics of the vehicle may change in adverse conditions.

Suspending DSC operation

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

In some driving conditions, where forward traction should be maximised, 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.



H4877

To deactivate DSC, press the DSC switch on the facia (the DSC warning light will illuminate continuously). Deactivating DSC has no affect on traction control operation.

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

Reactivating DSC

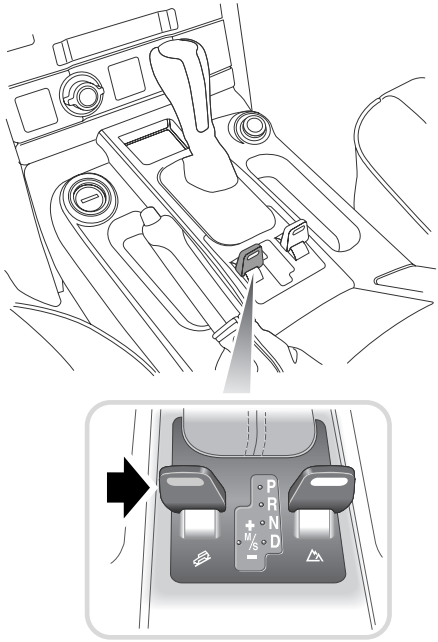
To reactivate DSC, press the DSC switch on the facia. DSC will automatically reactivate when the engine is started.

Note: *If the battery is discharged or has been disconnected, the DSC and ABS warning lights will illuminate constantly as a reminder that the system is not active. To reactivate the DSC system, either turn the steering wheel from lock to lock (with the engine running and the vehicle stationary), or drive the vehicle for a short distance around a curve. When the system is reactivated, the warning lights will extinguish and the system will be fully active.*

ELECTRONIC TRACTION CONTROL (ETC)

ETC is continuously available to boost vehicle traction when one or more wheels has a tendency to spin, while the others have more grip. It operates in conjunction with the DSC system. If a wheel is spinning, ETC automatically brakes that wheel until it regains grip. This braking activity causes the engine power to be transferred to the remaining wheels. Some noise may be generated when the brakes are applied.

HILL DESCENT CONTROL



H4949

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.

To select HDC

HDC can be selected at any speed if LOW range is selected in the transfer gearbox, and can be selected at up to 33 km/h (21 mph) if the vehicle is in HIGH range. The HDC `Information' warning light in the instrument pack will illuminate when HDC has been successfully selected.

Move the switch (arrowed) fully rearwards to select HDC.

If the vehicle speed is too high when an attempt to select HDC is made, `NO HDC - SLOWDOWN' appears in the message centre and the HDC warning light will extinguish when the switch is released.

To deselect HDC, move the switch rearwards (the warning light will extinguish). If HDC is deselected when HDC is operating, the warning light will flash as 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: *If the vehicle speed exceeds 60 km/h (37 mph) when in HIGH range, HDC will be automatically deselected (warning light extinguishes). HDC is also automatically deselected if the vehicle ignition is switched off for more than 6 hours.*

Hill Descent Control in action

HDC can be used with the transmission in CommandShift mode, in `R' (reverse) and `D' (drive). When in `D', the vehicle will automatically select the most appropriate gear.

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

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 a reduced speed.

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

If a fault is detected in the HDC system, `HDC INACTIVE' will appear in the display. Do not attempt a steep descent when HDC is unavailable. If a fault has been detected, consult your Dealer/Authorised Repairer at the earliest opportunity.

HDC fade-out

HDC fade-out gradually decreases the HDC brake intervention with the effect that the rate of hill descent will increase. If this occurs the HDC information light will flash for the period that HDC takes to fade. HDC will be disabled completely once the descent is complete.

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

If a fault with the HDC system is detected, or if the braking system exceeds a pre-set temperature due to extreme conditions, HDC will automatically fade out.

Warning light



HDC information light - GREEN

The light illuminates briefly as a bulb and system check when the starter switch is turned to position `II' and also when HDC is selected.

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

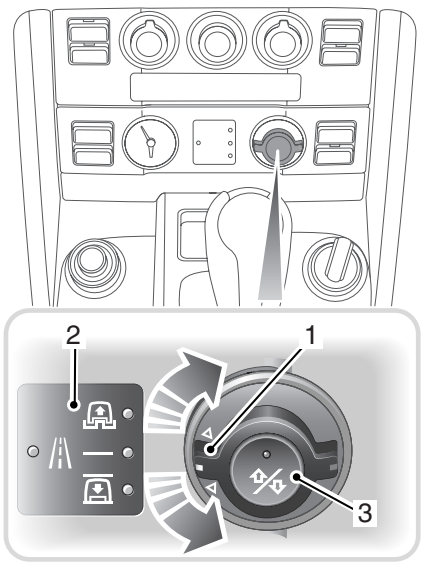
If the light flashes while HDC is active, normal functionality may cease and HDC `fade out' may be induced.

ELECTRONIC AIR SUSPENSION (EAS)

When the engine is running, the EAS operates automatically on the vehicle to maintain a level or efficient vehicle height regardless of vehicle load.

If the height of the vehicle is reduced by additional loading (attachment of a trailer, for example), the system automatically increases air pressure to the springs to compensate for the additional weight or changed attitude of the vehicle. Similarly, if loads are removed and the vehicle height increases in consequence, the system will reduce air pressure to bring the vehicle back to a level position.

MANUAL OPERATION



H3943

Your vehicle is fitted with an electronically controlled air suspension system (EAS) which provides four different ride height settings including an 'Access' mode. These settings increase or decrease the height and ground clearance of your vehicle to cope with different driving conditions. The four height settings are as follows:

- Off-road height.
- Standard height.
- Motorway height (not user selectable).
- Access height.

For a more detailed description of the different height settings, please refer to the relevant passages later in this section.

Before operating EAS

Remember, even if a change of ride height is selected, it will NOT take place if any door is open.

Note: *Frequent changes between ride heights could cause the compressor to overheat. If this occurs, EAS will be fully operational again after a few minutes when the compressor has cooled.*

1. Ride height selector

Push the switch up or down to raise or lower the vehicle to the next ride height setting.

2. Ride height indicator panel

When the vehicle is at a particular ride height, the corresponding indicator light illuminates. If a new ride height is selected, the current indicator light remains illuminated and the indicator light for the new setting flashes, until the new height is reached (the original indicator light extinguishes). If the current ride height indicator light flashes when a new height is selected, the new ride height is invalid and the height change will not be performed.

3. Suspension inhibit switch

Press to select inhibit mode (not operational at Off-road height), the indicator light in the switch illuminates. This prevents automatic or manual changes between ride heights. Press again to cancel inhibit mode.

Access height switch

Press to lower the vehicle to access height, for easier loading/unloading. See **ACCESS HEIGHT, 170**, for further information.

MOTORWAY HEIGHT



At high speeds, the suspension is automatically lowered to motorway height to improve ride quality and vehicle handling at motorway speeds. The motorway height setting is approximately 20 mm (0.79 in) below the standard ride height setting.

The motorway height setting is activated automatically when the electronic air suspension system detects the vehicle being driven at more than 96.5 km/h (60 mph), for more than 30 seconds.

When the system detects that the vehicle speed has fallen below 65 km/h (40 mph) for more than one minute, the vehicle automatically rises to the standard height setting. If the vehicle comes to rest while still at motorway height, the vehicle will not rise unnecessarily.

If the inhibit button is pressed while in motorway height, the vehicle will not automatically rise to standard height when the vehicle speed falls. Motorway height will be maintained until the inhibit switch is pressed for a second time, when normal automatic height adjustment is resumed.

Motorway height selection is fully automatic and cannot be selected manually by the driver.

From motorway height, the driver can manually select standard height, by rotating the ride height selector up. If the vehicle is travelling at less than 24 km/h (15 mph) the vehicle can be lowered to access height by rotating the ride height selector down.

Electronic Air Suspension

OFF-ROAD HEIGHT



At low speeds, the vehicle height can be raised to increase ground clearance for when driving off-road.

WARNING

DO NOT select off-road height while driving on the road, or when the suspension has been lowered below standard ride height - any sudden or unexpected change to the vehicle's height or attitude could cause an inexperienced driver to lose control, or disturb the load/weight distribution within the vehicle.

DO NOT attempt to select off-road height while towing.

To select off-road height, ensure the vehicle is travelling at less than 48 km/h (30 mph) and then rotate the ride height selector clockwise. The vehicle will be raised to 50 mm (1.97 in) above the standard ride height and the appropriate light on the ride height indicator panel will illuminate.

Note: *The front axle will be raised 10 mm (0.39 in) higher than the rear axle.*

The vehicle will stay at off-road height until either standard ride height is selected using the ride height selector, or the vehicle speed exceeds 48 km/h (30 mph).

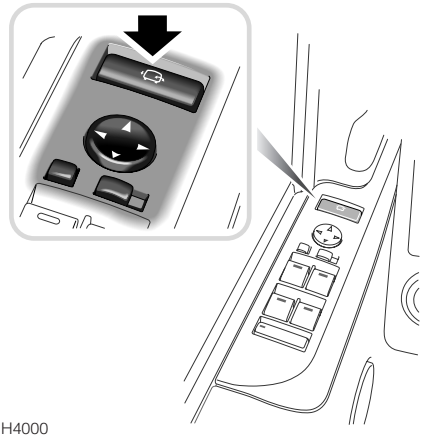
If the vehicle speed is too high when off-road height is selected, the standard ride height indicator will flash to indicate that the request has not been performed. Reduce the vehicle speed to below 48 km/h (30 mph) and then select off-road height.

Note: *Off-road height can NOT be selected if the inhibit switch is on and the inhibit function can not be selected while at off-road height.*

ACCESS HEIGHT



Access height lowers the vehicle to 40 mm (1.57 in) below standard ride height and improves accessibility (for passengers and luggage).



H4000

Access height can be selected when in any ride height, by either pushing the ride height selector down when in standard or motorway ride height, or by pressing the access height switch on the driver's door switch panel (arrowed above).

Access height can be selected when the vehicle is travelling at less than 80 km/h (50 mph). The access height indicator light will start flashing, but EAS will not start to lower the vehicle to access height until the vehicle speed drops to below 24 km/h (15 mph). If the vehicle does not come to a rest within 65 seconds after the access height preselect was requested, or the vehicle speed rises above 80 km/h (50 mph), the access request is cancelled and the indicator light stops flashing. Access will need to be reselected if required.

Note: *If the vehicle speed increases to more than 32 km/h (20 mph), when the vehicle is at access height, the EAS will automatically reselect standard ride height.*

If the vehicle is travelling at above 80 km/h (50 mph) when access preselect is requested, the standard ride height indicator light flashes to indicate that the request has not been performed.

Access mode should only be selected whilst the vehicle is moving. In extreme circumstances, if it is necessary to select access height whilst the vehicle is stationary, `N' (neutral) should be selected and the handbrake applied. Note that some noise from the suspension may be heard, accompanied by vibrations.

Crawl mode

If it is necessary to manoeuvre the vehicle in an area where height is restricted, Crawl mode should be selected as follows:

- Select access height and if the vehicle is still moving, stop so that access height is achieved.
- Press the inhibit switch.

Note: *If the inhibit switch is pressed before the vehicle starts lowering to access height (i.e before the vehicle speed drops below 24 km/h (15 mph), the access request is cancelled and the vehicle will return to standard height.*

The vehicle is now in crawl mode and all manual and automatic height changes are inhibited, provided the vehicle does not exceed 40 km/h (25 mph).

If the vehicle speed exceeds 32 km/h (20 mph), a message appears in the message centre (accompanied by a warning chime) warning the driver to keep the vehicle speed low.

WARNING

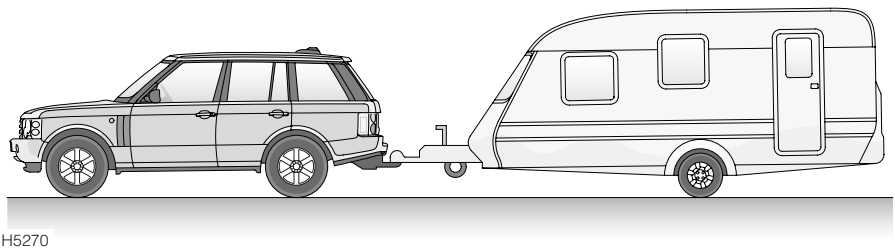
If vehicle speed exceeds 40 km/h (25 mph) when in crawl mode, the mode is cancelled and the vehicle will raise to standard ride height. If the vehicle is still in an area of restricted height, this could seriously damage and trap the vehicle.

TOWING A TRAILER

When the electrical plug for a trailer attachment is connected to the vehicle socket, the EAS controller acts as though the inhibit button is activated. The only height change which is accepted is a return to standard height, if the vehicle is not already at standard height. The standard height indicator light and the inhibit light are illuminated. Once standard height is reached, no other ride height change will be available.

WARNING

If the vehicle is at any ride height other than standard height, when a trailer is fitted, trailer weight distribution and balance may be affected when the vehicle returns to standard height.



H5270

TOWING

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. A smoother start can be achieved with trailers over 2000 kg (4400 lb) by moving off in low range then changing to high range while on the move.

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

WARNING

To preserve the vehicle's handling and stability, it is recommended that you fit only towing accessories designed and approved by Land Rover.

DO NOT exceed the gross vehicle weight, maximum rear axle load, maximum trailer weight and tow hitch load (nose weight). See, TOWING WEIGHTS, 289. Exceeding allowable loads will increase the risk of tyre or suspension failure, increase stopping distance, and adversely affect vehicle handling and stability.

DO NOT exceed manufacturers specifications for the towing equipment or the trailer/caravan.

DO NOT use the rear towing eyes to tow a trailer or caravan- serious damage to the vehicle may result.

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 at the top of the page). This is particularly important when towing twin axle trailers! Adjust the height of the hitch point if necessary.

With the engine running and all doors closed, the suspension will automatically be set to standard height when the towing electrical socket is utilised see, **TOWING A TRAILER, 171** and is designed to cope with a heavy trailer load without upsetting the balance or feel of the vehicle.

To maintain standard suspension height without connecting to the electrical socket, press the suspension inhibit switch. See **3. Suspension inhibit switch, 169**.

- The trailer should be level with the ground when loaded
- The height of the draw bar 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 both the trailer and its load.
- The trailer nose weight plus the combined weight of the rear seat passengers and the vehicle's load carrying area must never exceed the GVW or the individual maximum axle loads.

  Note: *When towing, European legislation allows for the GVW to be exceeded by 100 kg (220 lb) see,* ***VEHICLE WEIGHTS, 288****.*

- Where the luggage load can be divided between trailer and tow vehicle, loading more weight into the vehicle will generally improve the stability of the combination. However, ensure that the GVW and maximum rear axle load are not exceeded and that the combination remains level.
- For maximum stability, ensure that loads are properly secured and unable to shift position during transit. Also, position loads so that most of the weight is placed close to the floor and, where possible, immediately above or close to the trailer axle(s).
- Towing regulations vary from country to country. Always ensure national regulations governing towing weights and speed limits are observed (refer to the relevant national motoring organisation for information). The vehicle's maximum permissible towed weight refers to its design limitations and NOT to any specific territorial restriction see, **TOWING WEIGHTS, 289**.

Note: *When towing, do not exceed 97km/h (60 mph). Additionally, if the temporary spare wheel* * *is in use, do not exceed 80 km/h (50 mph).*

Vehicle weights

When loading a vehicle to its maximum (GVW), take account of the load distribution to ensure that axle loads do not exceed the permitted maximum values. It is your responsibility to limit the vehicle load in such a way that neither the maximum axle loads nor the GVW are exceeded. The most accurate method of determining load distribution is by using a public weighbridge.

Nose weight should be approximately 7% of the actual trailer laden weight to maintain optimum stability. Nose weight can be measured using a proprietary brand of nose weight indicator.

Electronically selected gearbox modes

A suitable gear change pattern for trailer towing, hill ascent and high altitude is selected electronically and retains lower gears for longer. This feature is enabled to counter momentum loss caused by more frequent gear changing, which can occur when climbing hills or when towing a trailer or caravan. This gear change pattern is also selected at high altitudes to combat reduced engine torque.

Gearbox overheating

To avoid overheating the gearbox, it is not advisable to tow heavy trailer loads at prolonged speeds of less than 32 km/h (20 mph) using the main gearbox in high range. Use the transfer gearbox to select low range instead.

Towing on severe inclines

If a journey includes severe inclines and the Gross Train Weight (the maximum permissible weight of vehicle, plus trailer see,**TOWING WEIGHTS, 289**) is towed, ensure that the grille and radiator are free from obstruction and that only high quality fuel is used. This enables the engine and the cooling system to operate more efficiently.

Trailer socket

The vehicle connector provides a 5 amp output, which must NOT be exceeded. If it is required to exceed 5 amps, a 12S and a 13 pin accessory harness kit is available from your Land Rover Dealer/Authorised Repairer, increasing the output to 15 amps.

Tachographs

In some circumstances it is necessary for a tachograph to be fitted. In Europe, this is usually when the vehicle is used for business purposes and the combined maximum weights of vehicle and trailer exceed 3500 kg (7716 lb).

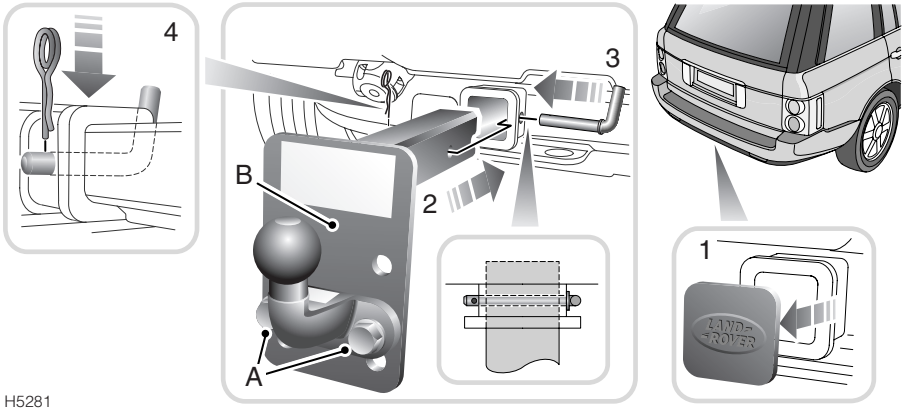
Please contact your local Department of Transport for detailed information.

ESSENTIAL TOWING CHECKS	
Tyre pressures:	Increase rear pressures of towing vehicle by at least 21 kPa ((0.21 Bar) (3.04 psi) up to a maximum of 302 kPa (3.02Bar) (43.8 psi), unless the temporary spare wheel* is in use, where standard pressure should be maintained in this wheel. See,**Tyre pressures, 287**. Ensure trailer/caravan tyres are at the pressures recommended by the trailer manufacturer.
Nose weight:	It is recommended that the nose weight should be approximately 7% of gross caravan/trailer weight up to maximum of 150 kg (330 lb). If the vehicle is loaded to the Gross Vehicle Weight (GVW), the nose weight is limited to150 kg (330 lb). If a trailer with over-run brakes is used the nose weight can be increased up to 250 kg (550 lb) total nose weight. However, vehicle payload **MUST BE RESTRICTED** by at least the same weight to ensure that the GVW and rear axle load 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 manufacturers literature. If your trailer does not have a breakaway cable, a secondary coupling must be attached. Use a suitable point on the towing bracket to securely attach the coupling. It is not advisable to loop cables or couplings around the neck of the tow ball as they could slide off.

TOW BAR FITMENT

There are two different types of tow bar that can be fitted to your vehicle. The following pages give you the information to fit and remove both types.

Drop plate tow bar*



1. Remove the plastic protective cover (marked with the Land Rover logo) from the tow bar mounting aperture.
2. Insert the stock of the tow bar assembly into the mounting aperture.
3. Insert the securing bar, so that it passes through the walls of the aperture and through the tow bar assembly stock.
4. Insert the straight part of the retaining pin through the securing bar.

Removal of the tow bar is the reverse of the fitting procedure. Once the tow bar is removed, ensure that it is returned to its protective case and that it is secured in such a way that it cannot move around inside the vehicle. Remember to refit the plastic protective cover into the tow bar mounting aperture.

Drop plate height adjustment

Remove the two bolts (A) securing the tow bar to the drop plate (B).

Reposition the tow bar on the drop plate so that it aligns with one of the other two height settings and secure the two bolts. Tighten the bolts to a torque of 170 Nm

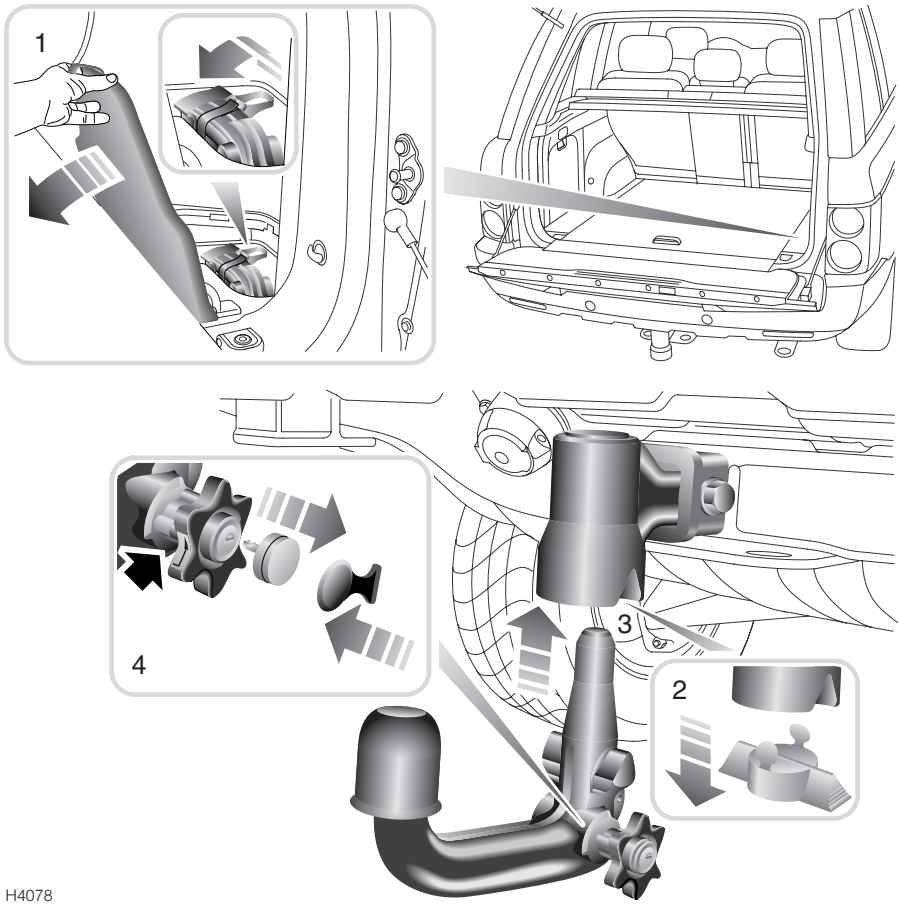
WARNING

Before towing, ALWAYS check that the retaining pin is firmly in place through the securing bar.

NEVER leave the tow bar loose in the vehicle, where it could become a projectile in the event of heavy braking or an accident.

The drop plate tow bar is stowed in a bag and should be strapped to one of the luggage anchorage points in the rear loadspace.

Detachable tow bar*



The detachable tow bar is located under an access hatch on the right hand side of the rear loadspace floor.

1. Lift up the access hatch, release the Velcro strap and remove the tow bar.
2. Remove the protective plastic cover from the tow bar mounting.

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

The tow bar should be in the unlocked position, this can be determined by a red marker on the handwheel lining up with a green bar on the body of the tow bar (arrowed in inset `4'). If this is not the case (a green marker lines up with the green bar), refer to the procedure for unlocking the tow bar, detailed in **`Removing the tow bar'** later on this page. The tow bar can only be installed when in the unlocked position.

1. Insert the tow bar bolt into the tow bar mounting and push firmly upwards until the tow bar `locks' in position. When the towbar locks, the green marker on the handwheel will line up with the green bar on the tow bar.
2. Turn the key anti-clockwise to lock the handwheel, then remove the key and fit the protective cover onto the handwheel lock.

Note: *Store the key in the tow bar stowage area for safe keeping.*

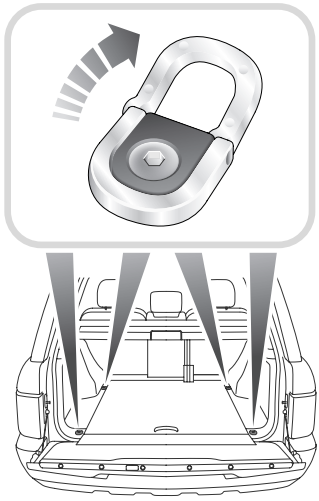
Removing the tow bar mounting for off-roading

Remove the cover from the handwheel lock, insert the key and turn it clockwise.

To remove the tow bar, it is necessary to unlock it using the handwheel. Pull the handwheel out, then rotate it clockwise, until a `click' sounds - the red marker on the handwheel should now line up with the green bar. The tow bar is now unlocked.

Carefully lower the tow bar and place the cover over the handwheel key. Ensure that the tow bar is securely strapped into its stowage area under the loadspace floor and remember to refit the red protective plastic cover into the tow bar mounting.

LUGGAGE ANCHOR POINTS



H4185

Four fixing points are provided in the rear luggage compartment floor, to assist in safely securing large items of luggage. Land Rover provide a range of approved luggage retention accessories.

WARNING

DO NOT carry unsecured equipment, tools or luggage which could move and cause personal injury in the event of an accident or emergency manoeuvre either on or off-road.

ROOF RACKS

A range of roof rack systems is 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.

WARNING

The MAXIMUM load for approved roof rack systems is 100 kg (220 lb) for normal road use and 50 kg (110 lb) off-road. The above weights include the mass of the roof rack system.

Only fit roof racks that have been designed for your vehicle. If in doubt, consult your dealer.

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

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.

Check to ensure the roof rack and load are secure after 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.

WARNING

To avoid the risk of personal injury or death, DO NOT permit children or any other person to travel on the roof rack (or access ladder whilst the vehicle is in motion.