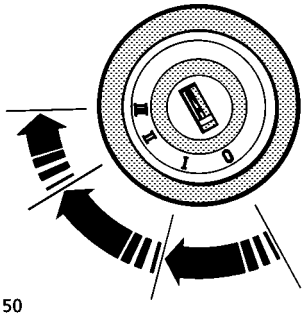
SECTION 3
Driving & operating

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Starter switch & steering lock



P0150

STEERING COLUMN LOCK

To unlock the steering column

Insert the ignition key FULLY and turn the starter switch to position 'I'

To lock the steering column

Turn the starter switch to position '0' and withdraw the key from the starter switch.

WARNING

DO NOT remove the key or turn the starter switch to position '0' while the vehicle is in motion. Once the steering lock is engaged, it is impossible to steer the vehicle.

STARTER SWITCH

The starter switch is located to the right of the steering column, and 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).

The fuel filler flap can be opened.

Most lighting circuits are operational, including: park lights, headlights and hazard warning lights.

Position 'I'

Steering unlocked.

Radio/cassette/CD player, electric windows, wipers and washers can be operated.

Position 'II'

All instruments, warning lights and electrical circuits are operational.

Position 'III'

Starter motor operates.

Release the starter key immediately the engine starts (the key will automatically return to position 'II').

Note that operation of position 'I' electrical functions will be interrupted during engine cranking.

NOTE: *On automatic models 'P' or 'N' must be selected before the engine will start.*

V8i PETROL MODELS

WARNING

The catalytic converter (if fitted) is easily damaged through improper use, particularly if the wrong fuel is used, or if an engine misfire occurs.

Before starting the engine and driving, ENSURE that you are familiar with the precautions shown under *'Catalytic converter'* later in this section.

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.

Starting

1. Check that the handbrake is applied and that the gear lever is in neutral ('P' or 'N' for automatic transmission).
2. Switch off all unnecessary electrical equipment.
3. Insert the starter key and turn the switch to position 'II' and then on to position 'III' to operate the starter motor; DO NOT press the accelerator pedal during starting, and RELEASE THE KEY as soon as the engine is running.

In temperate climates DO NOT operate the starter for longer than 5 seconds; if the engine fails to start, switch off and wait for 10 seconds before re-using the starter. Please note that continued use of the starter will discharge the battery. In temperate climates the battery charging and oil pressure warning lights should extinguish as soon as the engine is running.

In cold weather, or when the battery is in a low state of charge, on manual gearbox vehicles depress the clutch pedal while starting and hold it down until the engine is running.

Cold climates

In very cold climates the battery charging and oil pressure warning lights may take several seconds to extinguish. Similarly, engine cranking times will also increase; at -30° C 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.

Additionally, in very cold climates, use of a cylinder block heater will improve the engine's starting characteristics. Your Land Rover dealer can advise you about the supply and use of a cylinder block heater.

Warming-up

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

Automatic gearbox models

After starting, ensure that the handbrake or footbrake are firmly applied and the accelerator pedal is not pressed while moving the gear selector lever from 'N' or 'P', otherwise the vehicle will move immediately the selector lever is moved to one of the drive positions. This is particularly important when the engine is cold because the engine will be idling at a faster speed than normal.

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 tailgate door open.***
- ***DO NOT modify the exhaust system from the original design.***
- ***DO repair exhaust system or body leaks immediately.***
- ***If you think that exhaust fumes are entering the vehicle, have the cause investigated and corrected immediately.***

Parking

After bringing the vehicle to a stop, ALWAYS apply the handbrake and select neutral on manual gearboxes ('P' on automatic gearboxes) before releasing the footbrake and switching off the engine.

Switching off

Return the starter switch to position 'I' and then to position '0' to remove the key.

NOTE: *On vehicles fitted with an automatic gearbox, ensure that 'P' is selected before removing the key.*

DIESEL MODELS

WARNING

Your vehicle is fitted with a catalytic converter which can be easily damaged through improper use, particularly if the wrong fuel is used, or if an engine misfire occurs.

Before starting the engine ENSURE that you are familiar with the precautions shown under *'Catalytic converter'* later in this section.

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

Starting

1. Check that the handbrake is applied and that the gear lever is in neutral ('P' or 'N' for automatic transmission).
2. Switch off all unnecessary electrical equipment.
3. Insert the key and turn the starter switch to position ' II'. Wait until the glow plug warning light extinguishes.
4. Turn and hold the key in position 'III' to operate the starter motor; DO NOT press the accelerator pedal during starting, and RELEASE THE KEY as soon as the engine is running. If the engine stalls 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 cold weather, or when the battery is in a low state of charge on manual gearbox vehicles, depress the clutch pedal while starting and hold it down until the engine is running.

In temperate climates DO NOT operate the starter for longer than 5 seconds; if the engine fails to start, switch off and wait for 10 seconds before re-using the starter. Please note that prolonged use of the starter will discharge the battery.

Cold climates

In very cold climates the battery charging and oil pressure warning lights may take several seconds to extinguish. Similarly, engine cranking times will also increase; at -30° C 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.

Warming-up

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

WARNING

The engine must not be run above fast idle speed until the oil pressure warning light extinguishes. This will ensure that the engine and turbocharger bearings are properly lubricated before being run at normal driving speeds.

IMPORTANT INFORMATION

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.
- If you think that exhaust fumes are entering the vehicle, have the cause investigated and corrected immediately.

Switching off

To avoid the possibility of damaging the turbo-charger bearings through inadequate lubrication, ALWAYS allow the engine to idle for 10 seconds before switching off. Turn the engine off by returning the starter switch to position 'I' and then position '0' to remove key.

RUNNING-IN (petrol & diesel models)

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. It is, therefore, essential to drive with consideration for the running-in process for at least the first 800 km and observe the following advice:

- LIMIT maximum road speed to 110 km/h. 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.

EMISSION CONTROL SYSTEM

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 by a repair shop. In such cases the vehicle owner and the repairer may both be liable for legal penalties. It is important to remember that only Land Rover dealers are properly equipped to perform repairs and to maintain the emission control system on your vehicle.

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.

On automatic gearbox models, driving with the gearshift in 'D' in the HIGH range, but not in 'sport' mode, will provide the best fuel economy.

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

IMPORTANT DRIVING INFORMATION

Instruments & warning lights

Before driving, it is important to fully understand the function of the instruments and warning lights described in section 2.

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

Vehicle stability

Your vehicle has a higher ground clearance and, therefore, a higher centre of gravity than ordinary cars. This will result in different handling characteristics. Inexperienced drivers should take additional care, particularly in off-road driving situations and when performing abrupt manoeuvres at inappropriate speeds or on unstable surfaces.

Vehicle height

The overall height of your vehicle exceeds that of an ordinary car (even when ACCESS ride height is selected). 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 open.

Power assisted steering

The hydraulic power-assisted steering is equipped with a positive 'centre feel' characteristic, which gives enhanced vehicle stability at high speeds and in cross winds.

Power assistance is progressively applied the more the steering wheel is turned. For example: where manual steering effort would normally be greatest (at slow speeds on maximum lock), power assistance is at its greatest. Similarly, where only minimal steering effort would normally be required (at high speed with the wheels straight ahead), then power assistance is also minimal, thus enabling the driver to benefit from apparently consistent steering effort at all times.

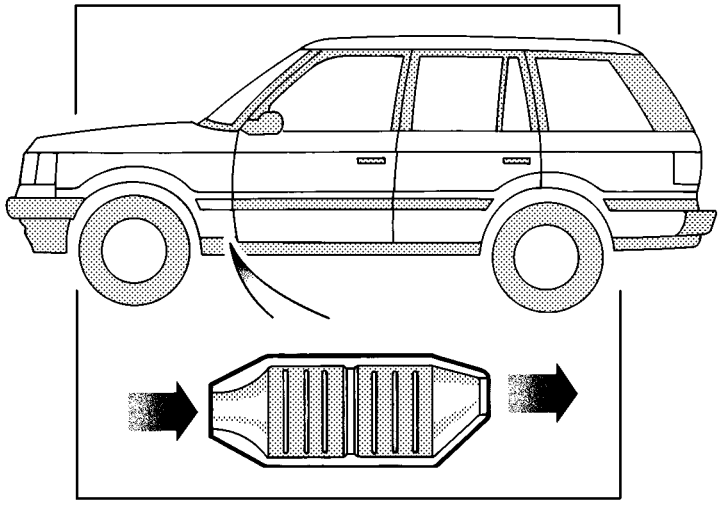
NOTE: *Power assistance is dependent on the engine running. If the engine is not running, greater effort will be required to steer the vehicle.*

Auxiliary equipment

WARNING

Do NOT use auxiliary equipment, such as a roller generator, which is driven by one wheel of the vehicle, as this could cause failure of the gearbox differential. In some cases the vehicle may attempt to drive itself forward.

Catalytic converter



P0177

CATALYTIC CONVERTER

The exhaust system on most models incorporates a catalytic converter, which converts poisonous exhaust emissions from the engine into environmentally less harmful gases, thereby reducing atmospheric pollution.

WARNING

The catalytic converter can be easily damaged through improper use, particularly if the wrong fuel is used. For this reason, it is VERY IMPORTANT that you heed the precautions which follow:

Fuel

- Use ONLY fuel recommended for your vehicle.

Starting the engine

- DO NOT continue operating the starter switch if the engine fails to start after a few attempts (unburnt fuel may be drawn into the exhaust system, thereby damaging the catalyst); seek qualified assistance.
- When starting a cold engine, DO NOT drive if a misfire is suspected; seek qualified assistance.

Catalytic converter

Driving

- Provided the engine has reached its normal operating temperature, if a misfire is suspected, or if the vehicle lacks power while driving, it may be driven SLOWLY (at risk of damaging the catalyst) to a Land Rover dealer for assistance.
- NEVER allow a vehicle to run out of fuel (the resultant misfire could destroy the catalyst).
- Engines burning excessive oil (blue smoke from the exhaust) 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.

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 very dry weather a fire could result).

Switching off

- DO NOT switch off the engine while a forward or reverse drive gear is selected.

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.
- 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 REQUIREMENTS

Petrol Engines

USE ONLY RECOMMENDED FUEL

The RON value (octane rating) of petroleum commonly available at garage forecourts will vary in different countries. The RON values quoted in 'General data' are MINIMUM requirements and, while they can be safely exceeded, no advantage is gained (either in fuel economy or performance) by using a higher octane fuel.

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

WARNING

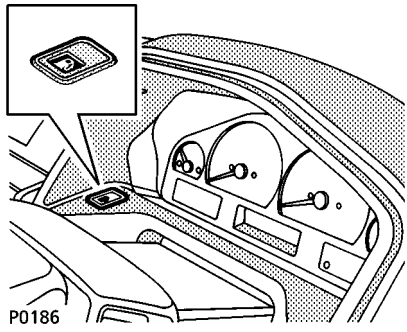
On petrol engine models fitted with a catalytic converter, serious damage to the catalyst will occur if leaded fuel is used!

Diesel engines

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. Ensure that the fuel filter element is changed at the recommended service intervals.

WARNING

On both petrol and diesel engine vehicles, if the fuel tank is accidentally filled with the wrong fuel, it is ESSENTIAL that you contact your Land Rover dealer BEFORE attempting to start the engine.



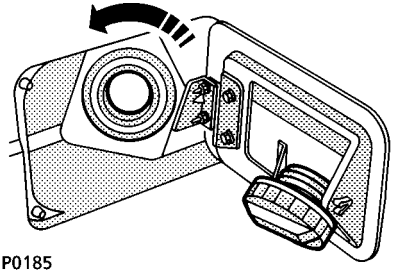
FUEL FILLER FLAP

The fuel filler is located in the rear right-hand wing. Press the fuel filler switch (shown in illustration) to open the filler flap.

The fuel filler switch may only be operated with the starter key turned to position '0'; it will not operate when the engine is running.

WARNING

To avoid any sudden discharge of fuel caused by excessive air pressure, the cap is designed to allow the fuel tank to vent during the first half turn. DO NOT fully remove the cap until pressure has been released. The cap should be removed and placed in the retaining bracket on the rear of the flap until refuelling is complete.



P0185

Fuel filling

Filling station pumps are equipped with automatic cut-off sensing to avoid fuel spillage; only fill the tank 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.

On petrol engine vehicles which are designed to operate ONLY on unleaded fuel, the fuel tank filler neck will ONLY accept a narrow filler nozzle of the type found on pumps that deliver unleaded fuel.

On petrol engine vehicles which are designed to operate on leaded fuel, the fuel tank filler neck will accept the wider filler nozzles found on pumps that deliver LEADED fuel.

WARNING

DO NOT fully fill the tank if the vehicle is to be parked on a slope in direct sunlight or high ambient temperature - expansion of the fuel could cause spillage.

EMPTY FUEL TANK
DO NOT RUN THE FUEL TANK DRY!

In the case of vehicles fitted with a catalytic converter, running the fuel tank dry could create an engine misfire capable of damaging the catalytic converter.

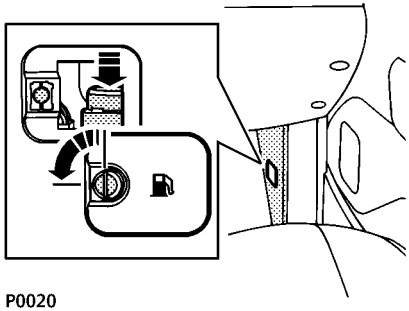
If you have run the fuel tank dry and have refilled the tank, turn the starter switch to position 'II'. After 4 seconds, switch off and then return the switch to position 'II' for a further 4 seconds before operating the starter motor; do not press the accelerator pedal during starting, and RELEASE THE KEY as soon as the engine is running.

In the case of diesel models, if the engine fails to start, qualified assistance will be required to prime the fuel system before the engine can be restarted.

SAFETY ON THE FORECOURT

Petroleum and diesel gases are highly inflammable and, in confined spaces, are also extremely explosive. Always take sensible precautions when refuelling:

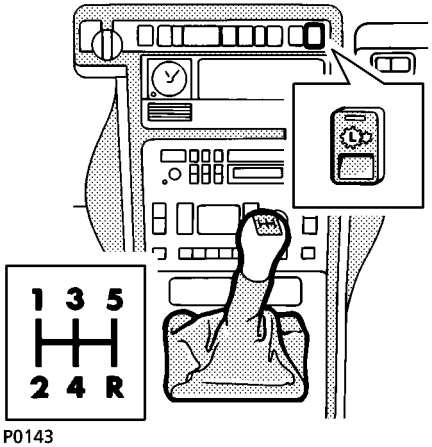
- Switch off the engine.
- Do not smoke or use a naked flame or light.
- Do not overfill the tank.



P0020

INERTIA SWITCH

For information about the operation of the inertia switch (see *'Locks & alarm'*).



P0143

MANUAL TRANSMISSION

Manual transmission vehicles are equipped with a five speed main gearbox and a two-speed transfer box. By using the main gearbox in combination with the transfer gears, ten forward and two reverse gear ratios are available.

Main gearbox

The gear positions for the main gearbox are shown on the gear lever knob. Note that when the main gearbox is in neutral, the gear lever is spring-loaded to automatically align between third and fourth gear positions.

Transfer gearbox

The transfer gearbox is operated by pressing the 'Hi/Lo' switch (illustrated).

- Use the high range for all normal road driving and also for off-road driving across dry, level terrain.
- Use the low range gears in any situation 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.

Selecting 'High' or 'Low' range

To make the change between HIGH and LOW, **the vehicle must be stationary.**

1. With the vehicle stationary and the brakes applied, depress the clutch and select neutral.
2. Press the 'Hi/Lo' switch - the 'Hi/Lo' switch indicator light and transfer gearbox warning light (in the instrument panel) start flashing.
3. When the change is complete, both lights extinguish. If high range has been selected, the message centre displays 'HIGH' momentarily, then extinguishes. If low range has been selected, the message centre briefly displays 'LOW', after which 'L' is displayed.
4. Now select the required gear.

WARNING

DO NOT rush the transfer gear change. DO NOT release the clutch or move the gear lever until the 'Hi/Lo' indicator light and the transfer gearbox warning light stop flashing.

IMPORTANT INFORMATION

If the clutch is engaged before the transfer between high and low gears is complete, a 'clunk' or grinding sound will be heard and the indicator light in the switch will continue to flash. If this occurs, depress the clutch, select neutral and attempt the change again.

- If the vehicle is moving when a transfer gear change is attempted, the message centre will display 'SLOW DOWN'.
- If the 'Hi/Lo' switch is pressed when the gear lever is in any position other than neutral, 'SELECT NEUTRAL' will appear in the display.

Clutch

DO NOT use the clutch pedal as a foot rest. To prevent unnecessary wear, always keep the left foot well clear of the clutch pedal except when changing gear.

NOTE: *A foot rest is conveniently positioned to the left of the clutch.*

Starting and driving

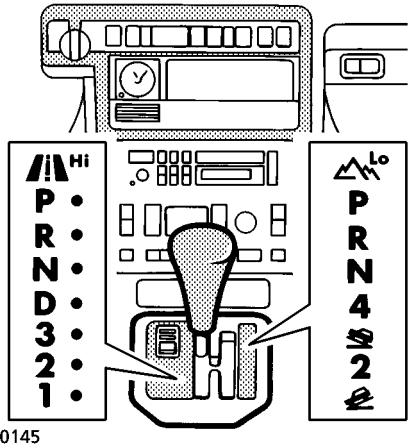
Before starting the engine, ensure that the handbrake is applied and the gear lever is in neutral.

WARNING

Manual transmission vehicles can be started with the clutch engaged and the vehicle in gear. This practise is NOT recommended - only start the vehicle with the gear lever in neutral.

Emergency towing

If it is necessary for the vehicle to be towed on all four wheels, transfer neutral MUST be selected. (See *'Emergency towing'*)



P0145

AUTOMATIC TRANSMISSION

Vehicles with automatic transmission are equipped with an 'H-gate' gear selector mechanism. This combines the operating mechanism of both the main gearbox and the transfer gears, and enables the gear selector positions for both the high and low gear ranges to be located side by side.

Gear selector lever

Move the selector lever forward or back along the driver's side of the 'H' to select the high range of gears. Similarly, by moving the lever to the passenger side, the low range can be selected instead. The 'H-gate' illumination is colour coded to identify the two ranges: high range illumination is green and low range is amber.



P0151

A spring loaded catch built into the handle of the gear selector lever restricts movement of the lever, thereby preventing inadvertent gear selection. The catch has two pressures:

- the first pressure enables gear changes to be made within a single range of gears (High range OR Low range).
- the second pressure enables the selector to be moved from one range of gears to another (ie. from High TO Low).

NOTE: *Gear selection between 'D' and '3' (High range) or '4' and '3' (Low range) may be made without pressing the catch.*

HIGH RANGE GEARS

Use the high range for road driving and also for off-road driving across dry, level terrain. The message centre will momentarily display 'HIGH' as soon as High range is selected, and then display the gear selected (eg. '3').

WARNING

DO NOT attempt to change to LOW range gears for normal road driving.

LOW RANGE GEARS

ONLY use low range gears in a situation 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.

When low range is selected, the message centre displays 'LOW' momentarily, and then 'L' is displayed along with the relevant gear selected (eg.'L2').

High/low range change warning

An audible warning will sound whilst a change from one gear range to another is attempted. The warning will cease once the change is complete or cancelled.

Using the 'H-gate'

To make a change from high to low or vice versa, **the vehicle must be stationary.**

1. Apply the brakes and, with the vehicle stationary, select 'N'.

2. Fully depress the catch built into the handle of the selector lever and move the lever across the cross-piece of the 'H-gate'. On reaching the required gear range, the 'H'-gate illumination and the transfer gearbox warning light (in the instrument pack) start to flash, and the audible warning sounds.

3. Wait until illumination of the new gear range selector positions is constant and the transfer gearbox warning light extinguishes (the audible warning will silence and High or Low is displayed in the message centre), before selecting the desired gear in the new range and releasing the brakes.

If the vehicle is moving when a transfer gear change is attempted, the message centre will display 'SLOW DOWN' and the audible warning will sound.

If the gear range is changed and forward or reverse drive engaged without first waiting in 'N' for the illumination to stop flashing and the audible warning to stop, the message centre will display 'SELECT NEUTRAL' and a warning will sound - reselect 'N' and wait for range change completion before selecting the required driving gear.

WARNING

To avoid personal injury and possible damage to the transmission, it is essential to ensure that any change of gear range is fully completed before releasing the brake and driving, i.e, wait until:

- ***Illumination of the gear range selector positions is continuous.***
- ***The transfer gearbox warning light has extinguished.***
- ***The audible warning is silent.***
- ***The message centre displays the appropriate message - 'HIGH' or 'LOW'.***

Selector lever positions (high range)

'P' Park
In this position the transmission is locked to prevent the vehicle from rolling away. Select ONLY with the vehicle stationary.

'R' Reverse
Select ONLY when the vehicle is stationary.

'N' Neutral
Use this position when the vehicle is stationary and the engine is to idle for a short period (eg. at traffic lights).

'D' Drive
In high range, select 'D' for all normal driving on good road surfaces; fully automatic gear changing occurs on all forward gears according to vehicle speed and accelerator position.

'3' (1st, 2nd and 3rd gears)
Automatic gear changing is limited to first, second and third gears only. In high range, use in congested traffic conditions and for town driving.

'2' (1st and 2nd gears)
Automatic gear changing is limited to first and second ratios only. In high range, use when driving up steep gradients and for negotiating very narrow twisting roads. This position also provides moderate engine braking for descending slopes.

'1' (1st gear only)
Use on very severe gradients, particularly when towing, and when maximum engine braking is required.

NOTE: *If position '2' or '1' is selected from 'D' or '3' while the vehicle is travelling at high speed in high range, then, depending on vehicle speed, third gear will immediately engage. Progressive deceleration will then cause downshifts into second and then first gear when appropriately low road speeds are reached.*

WARNING

Always leave the vehicle with the gear selector in 'P' (Park) position when parked, even when the starter key is not removed.

Starting and driving

Drivers unfamiliar with the performance characteristics of automatic gearboxes should thoroughly familiarise themselves with the following instructions before driving.

- Before starting the engine, ensure that both footbrake and handbrake are applied.
- After starting the engine, KEEP THE BRAKES APPLIED whilst moving the selector lever to the required drive position.
- Keep the brakes applied until you are ready to move - remember, once a drive position is selected, an 'automatic' will tend to creep forward (or backward).
- Never 'rev' the engine while selecting a forward or reverse drive gear, or while the vehicle is stationary with a drive gear selected - remember, an 'automatic' will move immediately the accelerator pedal is pressed.

Gear changing in high range

The road speeds at which gear changes take place vary according to the position of the accelerator; minimum acceleration will result in gear changes at low road speeds, while greater throttle openings will cause the gearbox to delay gear changes until faster road speeds have been reached (thereby increasing acceleration).

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

On long inclines, an automatic gearbox will sometimes change back and forth between gears. This occurs because the transmission does not include a ratio that is precisely right for the particular incline and vehicle loading circumstances. Excessive gear changing is wasteful of fuel and results in a loss of momentum; it can be prevented by selecting the '3' or '2' positions which limit the gearbox to lower ratios.

'Kick-down'

To provide rapid acceleration for overtaking, 'kick' the accelerator pedal to the full extent of its travel in a single, quick movement (this is known as 'kick-down'). Up to a certain speed, this will cause an immediate downshift into the lowest appropriate gear, followed by rapid acceleration. Once the pedal is relaxed, normal gear change speeds will resume (dependent on road speed and accelerator pedal position).

MODE SWITCH

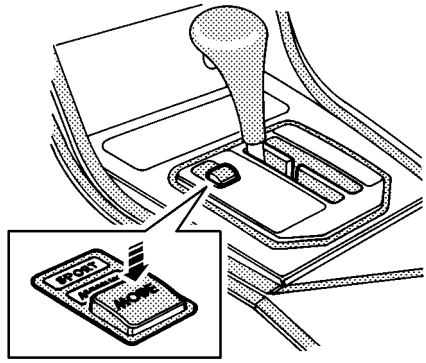
In High range, the mode switch is used to select 'Sport' mode.

In Low range, pressing the same switch selects 'Manual' mode.

Pressing the switch a second time returns the gearbox to its normal operation.

'Sport' mode

When accelerating in 'Sport' mode, gear changing is delayed to make optimum use of the engine's power. Select when increased acceleration is required, or when negotiating long inclines or twisting roads. However, you should be aware that driving in 'Sport' mode will increase fuel consumption.



P0172

To select 'Sport' mode, press the 'Mode' switch once whilst the gearbox is in High range (the message centre will display 'S' along with the selected gear, eg.'S3').

'Manual' mode

Press the mode switch whilst the gearbox is in Low range to select 'Manual' mode; this enables the transmission to function as a manual gearbox, providing maximum vehicle control and engine braking - ideal for use in severe off-road conditions (the message centre displays 'LM' along with the selected gear, eg.'LM3').

NOTE: *Changing from High to Low range (or vice versa) will automatically cancel 'Sport' or 'Manual' mode.*

Towing for recovery

If it is necessary for the vehicle to be towed on all four wheels, transfer neutral MUST be selected. (See *'Emergency towing'*).

FOOT BRAKE

As a safety precaution, the hydraulic braking system operates through dual circuits. If one circuit fails the other will continue to function, but increased brake pedal travel, greater pedal effort and longer stopping distances will be experienced.

Brake pads

Brake pads require a period of bedding in. You should avoid heavy braking except in emergencies for at least the first 800 km.

Remember that 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.

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 move a vehicle without the engine running because braking assistance may not be available. The pedal brakes will still function, but more pressure will be required.

ALWAYS take particular care when being towed with the engine turned off.

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. If the brake pedal is pumped the braking system may lose any remaining assistance available.

HANDBRAKE

Unlike most other vehicles, the handbrake operates on the rear propeller shaft, and NOT on the road wheels. This may result in slight movement of the vehicle after the handbrake is applied.

Apply the handbrake by pulling back the lever. To release, pull the lever back slightly and hold the release button depressed while allowing the lever to fully return to its off position.

WARNING

DO NOT apply the handbrake while the vehicle is in motion (except in an emergency) as this could result in loss of vehicle control and damage to the transmission.

Do not rely on the handbrake to operate effectively if the vehicle has been subjected to immersion in mud and water. (see 'Off-road driving').

ANTI-LOCK BRAKING

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

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 the 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.

ABS incorporates a monitoring system which checks that all the electrical components are in working order before each journey and also at frequent intervals while the vehicle is in use. The warning lights on the instrument panel are part of this system and it is essential that the driver observes these and fully understands their functions - these are fully described in Section 2 of the handbook under *'Warning lights'*.

WARNING

DO NOT drive until the red brake warning light has extinguished (with the handbrake released). If the light stays on or illuminates whilst driving, this indicates either a malfunction of the system or low fluid level in the reservoir. In this case ABS control is not available. Stop as soon as safety permits and seek qualified assistance before continuing.

ABS in action!

Under normal driving conditions (where sufficient road surface friction exists to reliably bring the vehicle to a halt without the wheels locking), ABS will not be brought into operation.

However, should the braking force exceed the available adhesion between the tyres and the road surface, then ABS will automatically come into operation; brake pedal 'feel' will harden, and the sound of solenoid cycling may be heard as the ABS regulates braking pressure to ensure wheel rotation.

Little further pedal travel will be possible at this point, but effort on the pedal can be varied to influence braking while the ABS retains control.

During braking, some vibration may be felt through the brake pedal. This is a normal result of the system regulating braking pressure. However, frequent vibration indicates a hazardous surface under the road wheels and is a warning to the driver to adjust speed to suit the road surface and traffic conditions.

When ABS stops operating, extra initial pedal travel will be experienced and the 'feel' of the brake pedal will revert to its non-ABS condition.

WARNING

Do not pump the brake pedal at any time as this will interrupt ABS operation and may increase braking distance.

Ensure that there are no obstructions beneath the brake pedal which may prevent full travel, i.e. additional floor mats.

Brake pedal reactions will be different from those experienced on a non-ABS vehicle.

Additional operating information

- Under ABS control, heavy braking on a dry road may produce tyre noise and slight marking of the road surface. Neither need cause concern.
- Solenoid cycling may sometimes be heard when driving on very rough roads or while 'feathering' (light braking) over irregular or pitted surfaces. This is part of the normal ABS function.
- If excessive pedal travel is experienced, full braking will still be available; push the pedal through the free movement until resistance is felt, then apply the necessary force to obtain braking. However, as soon as safety permits stop the vehicle and seek qualified assistance before continuing.
- On soft surfaces such as powdery snow, sand or gravel, and also on very rough surfaces, braking distances with ABS may be greater than those achievable with a non-ABS system. This is because the natural action of locked wheels on soft surfaces is to build up a wedge of material in front of the wheels which assists in stopping (however, ABS will continue to provide better stability and steering control).
- If the vehicle is brought to rest on a steep slope which has a very low-friction surface, the vehicle may slide with the wheels locked because there is no wheel rotation to signal movement to the ABS. If this occurs, momentarily release the brakes (to permit some wheel rotation), before re-applying them to allow ABS to regain control. Where a slow descent is necessary, engage a LOW range gear with the engine running to allow a controlled descent (see *'Off-road driving'* for further information).

WARNING

ABS is designed to operate only with genuine Land Rover parts, and the tyres and wheels specified in 'General data'.

Land Rover cannot accept any responsibility for inefficient operation of the system caused by modifications to the vehicle or the fitting of non-approved components. Always consult your Land Rover dealer for advice.

ELECTRONIC TRACTION CONTROL (if fitted)
The purpose of electronic traction control is to aid traction when one rear wheel spins whilst the other still has good grip, e.g, if one side of the vehicle is on ice and the other is on tarmac. The system works by applying the brake to a spinning rear wheel in order to transfer torque to the other side of the axle.

NOTE: *Traction control only operates below approximately 50 km/h.*

The instrument panel has a traction control warning light (TC) and, when appropriate, traction control messages will also be displayed in the message centre.



The warning light illuminates whenever the system is active (for a minimum of 2 seconds) and is accompanied by the message centre displaying 'TRACTION'. In the unlikely event that traction control is used continuously for too long (in excess of approximately 1 minute), then the control unit shuts down to allow cooling and the warning light flashes for at least ten seconds; this is accompanied by the message centre displaying 'TRACTION OVERHEAT'.

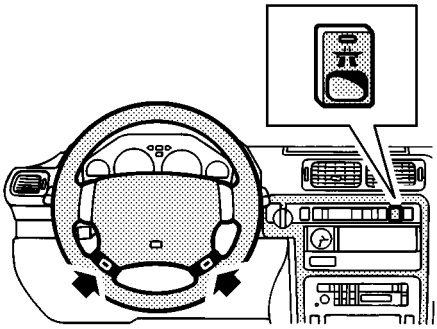
If there is a fault with the system, then the warning light will illuminate continuously and the message centre displays 'TRACTION FAILURE'. If this occurs, you should contact your Land Rover dealer at the earliest opportunity.

Cruise control

IMPORTANT INFORMATION

- DO NOT use cruise control on winding or slippery road surfaces, or in traffic conditions where a constant speed cannot easily be maintained.
- ALWAYS switch off the master switch when you no longer intend to use cruise control.
- DO NOT rest your foot under the accelerator pedal while cruise control is engaged - your foot could be trapped.

NOTE: *On automatic gearbox models, selecting Cruise control while the gearbox is in 'Sport' mode will result in more frequent and harsher acceleration and gear changing. This is not recommended.*



P0175

CRUISE CONTROL (if fitted)

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 three switches: a master switch on the fascia panel and two control switches marked 'SET+' and 'RES' (arrowed in illustration) mounted in the steering wheel.

To operate

1. Press the master switch (the indicator light in the switch illuminates).
2. Accelerate until the desired speed is reached - this must be above the system's minimum operational speed of 45 km/h for petrol engine models, or 50 km/h for diesel engine vehicles.
3. Press the 'SET+' switch to set the vehicle speed in the cruise control system's memory. Cruise control will now maintain that road speed without the need for operation of the accelerator.

With cruise control operating, speed can be increased temporarily, e.g. for overtaking, by normal use of the accelerator. When the accelerator is released, road speed will return to the selected cruising speed.

To reduce the cruising speed

Use the brake pedal to slow the vehicle until the required speed has been reached, then press the 'SET+' switch to establish a new cruising speed (remember that cruise control will not operate at speeds below 45 km/h for petrol engine models, or 50 km/h for diesel engine vehicles.

On petrol models only: press the 'RES' switch once momentarily to cut off cruise control; if the brake pedal is not used, the vehicle will slow down gradually. When the desired speed has been reached, press the 'SET+' switch to establish the new cruising speed.

To increase the set cruising speed

Press and hold the 'SET+' switch; the vehicle will accelerate automatically. Release the switch as soon as the desired speed has been reached.

Alternatively, the set speed can be increased incrementally by 'tapping' the 'SET+' switch. For each five taps the speed will increase by 8 km/h.

Disengaging cruise control

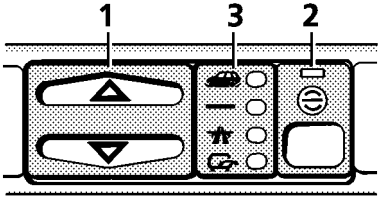
Cruise control will automatically disengage if the brake (or clutch) pedals are pressed, or when the gear lever is moved into neutral (gear selector lever position **'N'** for automatic gearbox).

On petrol models only: press the 'RES' switch once momentarily to cut off cruise control; this allows the vehicle to slow down gradually.

If required, press the 'RES' switch again to re-engage cruise control at the previously-set speed.

NOTE: *The speed held in the cruise control memory will be cancelled when either the cruise control master switch or the starter switch are turned off.*

NOTE: *Cruise control will disengage automatically if your road speed falls to less than 75 per cent of the set speed (this could occur when towing uphill).*



P0176

Your vehicle is fitted with an electronically controlled air suspension system (EAS) which provides five 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.

In addition, the EAS also provides automatic suspension levelling.

Before operating EAS

Remember, even if a change of ride height is selected, it will NOT take place:

- If the tailgate or any door is open.
- Whilst the footbrake is continously applied for less than 3 minutes.
- If the engine is not running (except for selection of 'Access' within 40 seconds of switching off).

If the 'Access' mode is required, ensure the handbrake is applied (select 'P' for automatic transmission).

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.*

CONTROLS

Ride height selector (1)

Press and release the upper or lower arrow on the rocker switch to raise or lower the vehicle to the next ride height setting (the relevant indicator light will illuminate).

'Inhibit' switch (2)

The indicator light in the switch illuminates as a bulb check when the starter is initially turned to position 'II'.

- Press the switch to select 'Inhibit' mode (indicator light illuminates). This will prevent automatic changes between Standard and Low ride height.
- Press again to switch off.

NOTE: *Even in 'Inhibit' mode, the ride height can automatically change from 'Access'/'Crawl' to the 'Low' ride height and from Extended or High profile to High or Standard.*

Ride height indicator panel (3)

All indicator lights illuminate as a bulb check when the starter switch is initially turned to position 'II' and remain illuminated until the engine is started.

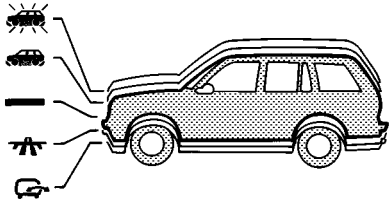
Each specific indicator light illuminates when a height setting is in operation. When a change in height is activated, the indicator lights illuminate in the following sequence:

- The new height indicator light flashes.
- When the new height is reached, its indicator light stops flashing and illuminates continuously (the previous indicator light extinguishes).



Air suspension warning light
The warning light on the instrument panel illuminates as a bulb check when the starter switch is turned on and remains illuminated until two seconds after the engine has started.

In addition, the light will illuminate whilst driving whenever 'High' or 'Extended' ride heights are selected, and also if a fault with the air suspension system is detected.



HEIGHT SETTINGS



Standard ride height
Suitable for most driving conditions and recommended for towing (see *'Towing with EAS'*).



High ride height
Approximately 40 mm above 'Standard'. Improves approach and departure angles (off-road) and is also recommended for wading.

Can be selected manually under 55 km/h. If this speed is exceeded EAS automatically returns to 'Standard'.

NOTE: *The air suspension warning light illuminates when this height is selected.*

WARNING

High ride height must not be selected for driving on the public highway.



Low ride height
Approximately 25 mm below 'Standard'. Selected automatically when speeds of over 80 km/h are sustained for over 30 seconds. This setting lowers the vehicle's centre of gravity, thereby improving the handling characteristics of the vehicle. The vehicle automatically returns to 'Standard' if speeds below 55 km/h are sustained for over 30 seconds. 'Low' can be manually selected at any speed when Inhibit mode has been selected.

Access/Crawl ride height



Access mode
Approximately 65 mm below 'Standard', enabling easier access or loading. 'Access' can be selected with the engine running and for up to 40 seconds after it has been switched off provided:

- The vehicle is stationary.
- The handbrake is applied (gearshift in 'P' for automatic transmission).
- All doors and the tailgate are closed.
- The footbrake is NOT applied.

'Access' can also be preselected up to 40 seconds before the vehicle stops. However, the suspension will not begin to lower until the vehicle is stationary with the handbrake applied, the gear selector in the 'P' (park) position and the footbrake released. Preselection is automatically cancelled if the 40 second period is exceeded.

NOTE: *If a door/tailgate is opened or the footbrake is applied while the vehicle is changing height, the change will be interrupted.*

When moving off, vehicle height automatically returns to 'Standard' ('Low' if 'Inhibit' mode was operational BEFORE 'Access' was selected).

If 'Inhibit' mode is selected AFTER 'Access', 'Crawl' mode is selected (see *'Crawl' mode*).

WARNING

Always take care when UNLOADING your vehicle in an area where height is restricted.

With the starter switch turned off, the suspension will automatically re-level the vehicle every time a door (or the tailgate) is opened and then closed (and every few hours thereafter).

After unloading, the height of the vehicle will therefore increase.

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'.
- If the 'Inhibit' mode is already active, release the 'Inhibit' switch (indicator light extinguishes).
- Press the 'Inhibit' switch (indicator light illuminates).
- The message centre emits an audible warning and 'EAS MANUAL' is displayed.

IMPORTANT INFORMATION

While in 'Crawl' mode: If the vehicle exceeds 16 km/h, the message centre emits an audible warning and displays 'SLOW: 40 KMH MAX'.

If the vehicle exceeds 40 km/h, the ride height automatically changes to 'Low'.

If the vehicle then slows to 32 km/h, the EAS automatically returns to 'Crawl' mode.

If road speed reduces to 8 km/h, the message centre emits an audible warning and displays 'EAS MANUAL'.

If the engine is switched off in 'Crawl' mode, the vehicle will return to 'Access' mode when restarted. If 'Crawl' is still required, it MUST be reselected !



Extended ride height
Approximately 70 mm above 'Standard'. Extended ride height is automatically selected if the vehicle comes to a halt as a result of the chassis coming into contact with the ground. It CANNOT be selected manually ('High' indicator light flashes and the High suspension warning light illuminates).

'Extended' ride height is automatically sustained for 10 minutes after which it returns to 'High' unless the 'ride height' selector is used to select a different setting.

EAS MESSAGES

The following messages may appear in the message centre display. These are warnings to which the driver must respond.

Message	Meaning	Solution
'EAS MANUAL'	vehicle locked in 'Access'.	EAS WARNING! The vehicle is being driven on its bump stops.
'SLOW: 30 KPH MAX'	road speed too high for current ride height.	slow down to less than 30 km/h.
'EAS FAULT'	there is a fault with the air suspension.	Consult your Land Rover dealer.
'SLOW: 55 KPH MAX'	Air suspension fault.	Slow to 55 km/h and seek qualified assistance

EAS functions ('Inhibit' mode off)

Down selections

'Extended' to 'High' after 10 minutes operation, or press the lower arrow on the ride height selector once.

'Extended' to 'Standard' speed above 55 km/h, or press the lower arrow twice.

'High' to 'Standard' speed above 55 km/h, or press the lower arrow once (if speed is less than 55 km/h).

'Standard' to 'Low' speed above 80 km/h for longer than thirty seconds.

'Standard' to 'Access' press the lower arrow once (see *'Access mode'*).

Up selections

'Low' to 'Standard' speed below 55 km/h for over thirty seconds or press the upper arrow on the ride height selector when the vehicle is stationary.

'Access' to 'Standard' move off from stationary, or press the upper arrow once whilst stationary, or move automatic gearbox selector lever from Park and release the hand brake.

'Standard' to 'High' press the upper arrow once below 55 km/h.

EAS functions ('Inhibit' mode on)
(indicator light illuminated)

Down selections

'Extended' to 'High' after 10 minutes of operation, or press the lower arrow on the ride height selector once.

'Extended' to 'Standard' speed above 55 km/h, or press the lower arrow twice.

'High' to 'Standard' speed above 55 km/h or press the lower arrow once.

'Standard' to 'Access' press the lower arrow twice.

'Standard' to 'Low' press the lower arrow once.

'Low' to 'Access' press the lower arrow once.

Up selections

'Access' to 'Low' (not for 'Crawl') move off from stationary, or press the upper arrow once.

'Low' to 'Standard' press the upper arrow once.

'Standard' to 'High' press the upper arrow once below 55 km/h.

TOWING WITH EAS

When towing, it is recommended that the suspension is locked in 'Standard ride height' as follows;

- Press the 'Inhibit' switch (indicator light illuminates).
- Select 'Standard' (as described earlier in this section).

FAULT DIAGNOSIS

If the EAS self-check detects a minor fault in the system, 'Standard' is automatically selected. No ride height changes are possible until the fault is rectified. The message centre emits an audible warning and 'EAS FAULT' is displayed. All the EAS indicator lights flash in unison for 30 seconds before they, and the High suspension warning light, illuminate continuously.

If a major fault is detected, the vehicle lowers to 'Access', and the message centre emits an audible warning and displays 'SLOW: 55 KPH MAX'.

If a second fault occurs, all the EAS indicator lights flash again.

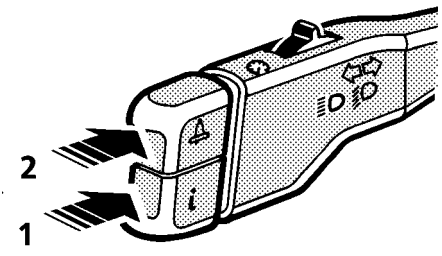
WARNING

If either a minor, or major fault develops, take your vehicle to your dealer as soon as possible. Only an authorised Land Rover dealer will be able to rectify faults.

NOTE: *Certain minor faults are rechecked after the EAS system is re-powered. If the message 'EAS FAULT' is displayed, switch off the engine and keep all doors and tailgate closed for at least 2 minutes, then re-start the engine.*

If a fault is no longer present, normal operation is restored. However, a record of the fault is stored by the system's computer to aid your dealer.

Trip computer & overspeed warning



P0192

The trip computer provides valuable information to assist the driver to calculate fuel stops, journey times and distances.

The two push switches (illustrated) operate the trip computer and overspeed warning system, and messages from the trip computer and overspeed warning system are displayed in the message centre.

NOTE: *The message centre's primary function is to display warning messages generated by the vehicle's monitoring systems. Trip computer messages are of secondary importance and therefore automatically overridden when other, more important, information is required for display. The trip computer and overspeed warning messages resume when other messages are no longer valid.*

TRIP COMPUTER

With the starter switch in position 'II', press switch (1) to scroll through the trip computer functions. These will appear in the following order:

- DISTANCE TO EMPTY
- AVERAGE FUEL CONSUMPTION
- AVERAGE SPEED
- TRIP DISTANCE TWO
- TRIP DISTANCE ONE

NOTE: *Trip Distance One is the computer's default position.*

Distance to empty

This function is automatic and indicates the remaining distance you can travel before the fuel gauge reads empty - the message centre displays: 'RANGE - - -'.

If the estimated remaining distance falls below 80 km/h, the message centre will display 'REFUEL, RANGE < 80', indicating that you should refuel at the earliest opportunity.

NOTE: *If a recalculation of the Distance To Empty function occurs when the range is between 80 - 90 km/h, the display will show the distance to empty message but NOT the refuel message. Take care not to run out of fuel!*

Trip computer & overspeed warning

Average fuel consumption

This function is automatic and indicates the average fuel consumption since the last time the trip computer was reset (average fuel consumption is calculated by dividing the distance travelled by the amount of fuel used).

While the system is calculating the average fuel consumption, the display shows 'COMPUTING MPG'. Once the fuel consumption value is calculated, 'AVERAGE MPG' will be displayed, and a 3 digit fuel consumption value (shown in tens, units and tenths of a gallon) also appears in the display.

NOTE: *The displayed value will not change at a rate greater than 0.1 litres/100 km per 6 seconds, and will be between 0 and 99.9 litres/100 km.*

Average speed

This function is automatic and indicates the average speed since the last time the trip computer was reset (average speed is calculated by dividing the actual distance travelled by the accumulated time in which the starter switch has been turned on).

While the system is calculating the average speed, the display will show 'COMPUTING MPH'. Once the calculation has been made, the display changes to 'AVG. SPEED' followed by 3 digits indicating the average speed in hundreds, tens and units.

NOTE: *The Average Speed display will change at a maximum rate of 4 km/h per 5 seconds.*

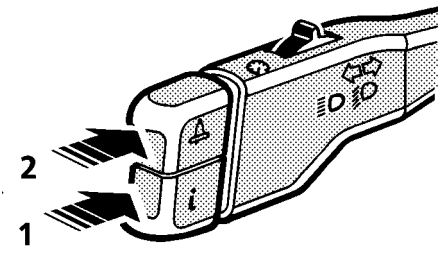
Trip distance two

This function records the distance over which the average fuel consumption and speed have been calculated, and will always be the distance the vehicle has travelled since the computer was last reset. The message centre displays 'TRIP2 ---'.

Trip distance one

This is a standard trip recorder of the type fitted to most motor vehicles and records the distance travelled since the reset button (on the right of the instrument pack) was last pressed. Press the reset button to zero the trip recorder. If the message display shows an internal or trip computer message, it can be changed to display the Trip Distance One function by operating the trip recorder reset button - the message centre displays the distance only (without 'TRIP1 ---').

Trip computer & overspeed warning



P0192

Resetting the trip computer

With the starter switch turned to position 'II', press and hold switch 1 for at least 2 seconds:

- Distance To Empty and Average Fuel Consumption functions both reset. The display will show 'COMPUTING RANGE' and 'COMPUTING MPG' until a distance of 1 kilometre has been travelled, after which the computer will once again be able to calculate an average fuel consumption figure.
- Average Speed is reset. The display will show 'COMPUTING MPH' until the vehicle has travelled far enough (1 kilometre) for an average speed to be available.
- Trip Distance Two function resets to zero

NOTE: *The Trip Distance One function is not affected by resetting the trip computer.*

TRIP COMPUTER OVERSPEED WARNING

The overspeed warning function is an aid to keeping within speed limits, and is selected by pressing switch 2 ('bell' symbol).

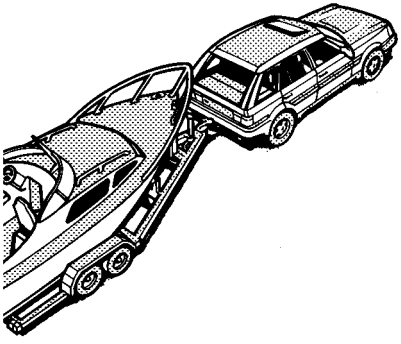
To set the speed limit, press the switch (once or twice) until 'SPEED LIMIT - - -' is displayed, and then hold the switch until the required speed appears in the display (speeds will scroll upwards in increments from 30 km/h to 140 km/h.

NOTE: *The display will start scrolling from which ever speed was previously set in the system memory.*

As soon as the required speed appears in the display, release the switch. That speed will then be set in the system memory.

Whilst driving, if you exceed the pre-set speed, 'SPEED LIMIT - - -' will be displayed in the message centre and an audible warning will sound.

To cancel the speed you have set, press switch 2 again (the message 'SPEED LIMIT OFF' will appear).



P0211

TOWING WITH YOUR VEHICLE

The torque ranges of Land Rover engines allow maximum-weight loads to be pulled smoothly from standstill, and reduce gear changing on hills or rough terrain. The suspension is designed to cope with a heavy trailer load without upsetting the balance or feel of the vehicle.

WARNING

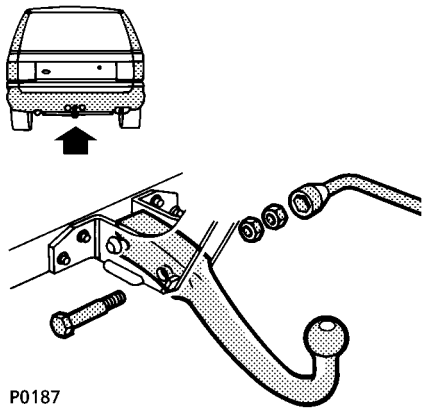
Only fit towing accessories that have been designed and approved by Land Rover.

Ensure that the gross vehicle weight and maximum rear axle weight are not exceeded.

When preparing your vehicle for towing always pay careful attention to the trailer manufacturer's recommendations and the following guidelines.

- Set the electronic air suspension to 'INHIBIT' select STANDARD ride height and maintain that setting whilst towing.
- Ensure that the vehicle and trailer tyre pressures are as recommended by the trailer manufacturer.
- Check the operation of trailer brakes and lights.
- For maximum stability, ensure that loads are properly secured and unable to shift position during transit. Where possible, position loads so that most of the weight is placed close to the floor and immediately above or close to the trailer axle(s).
- After loading the trailer check that the weight on the hitch point (this is called the draw-bar loading weight, or nose weight), is in accordance with the manufacturer's recommendations.
- When calculating the laden weight of the trailer, remember to include the weight of the trailer PLUS the load.
- Where the load can be divided between trailer and tow vehicle, loading more weight into the vehicle than the trailer will generally improve the stability of the combination.

NOTE: *Towing regulations vary from country to country. It is very important, therefore, to ensure that national regulations governing towing weights and speed limits are observed. The maximum permissible towed weights and information stated on the instruction label attached to the tow bracket refer to the vehicle's design limitations and NOT to any specific territorial restrictions (see 'Maximum permissible towed weights').*



THE LAND ROVER TOWBALL

(if fitted)

In some countries, vehicles are supplied with a Land Rover towball - this is stowed in the storage tray at the side of the spare wheel.

Insert the towball into the channel beneath the rear bumper, locating the rear of the towball over the stud at the rear of the channel. Hold the towball in position and, from the left hand side, insert the bolt through the channel and the towball.

Ensure that the head of the bolt rests firmly against the side of the channel. A block welded to the left hand side of the channel prevents rotation of the bolt when the locknuts are tightened.

Using the wheelbrace, separately fit and tighten the two locknuts.

WARNING

Before towing, ALWAYS check that the locknuts are fully tightened and that the cutout in the towball body is located on the stud at the rear of the channel.

ALWAYS store the towball in the storage tray at the side of the spare wheel. NEVER leave the towball loose in the vehicle where it could become a projectile in the event of heavy braking or an accident.

NOTE: *In some countries it is a requirement that the towball remains attached to the vehicle.*

MAXIMUM PERMISSIBLE TOWED WEIGHTS (all models)

	On-road	Off-road
Unbraked trailers	750 kg	500 kg
Trailers with overrun brakes	3,500 kg	1,000 kg
Trailers with coupled brakes	3,500 kg	1,000 kg

NOSE WEIGHT

The recommended maximum trailer nose weight is 150 kg. The nose weight plus the combined weight of the vehicle's load carrying area and rear seat passengers must NOT EXCEED the maximum rear axle load or the gross vehicle weight (as shown in *'General data').*

AUTOMATIC GEARBOX MODELS

If very heavy trailer loads are towed (particularly at high altitude or in hot climates), the 'GEARBOX OVERHEAT' warning may appear in the message centre.

This warning indicates that the gearbox oil is too hot, in which case you should reduce road speed or manually select a lower gear or transfer to the LOW range of gears. If the message persists, stop the vehicle and allow the gearbox to cool. If the message resumes after cooling, seek qualified assistance before continuing.

VEHICLE WEIGHTS

When loading a vehicle to its maximum (gross vehicle weight), consideration must be taken of the unladen vehicle weight and the distribution of the load to ensure that axle loadings 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 gross vehicle weight are exceeded (see *'General data'*).

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.

TRAILER SOCKET (if fitted)

When the engine is running, power consumption from the trailer socket must not exceed 5 amps.

ROOF RACK

A Land Rover approved roof rack is available as an accessory. Fitting instructions and loading recommendations are detailed in the literature provided with the roof rack; observe all recommendations.

The total load must NOT exceed that given in *'General data',* and must include the weight of the roof rack within the load.

IMPORTANT INFORMATION
A loaded roof rack can reduce the stability of the vehicle, particularly when cornering and encountering cross winds. All loads should be evenly distributed, and secured within the periphery of the rack. Only fit roof racks that have been designed for your vehicle. If in doubt, consult your dealer.

STARTING AN ENGINE WITH A DISCHARGED BATTERY

The ONLY recommended methods of starting a vehicle with a discharged battery are:

- Using a substitute battery fitted to the disabled vehicle.
- Using booster cables (jump leads) to connect the battery from a donor vehicle to the discharged battery.

WARNING

- ***Batteries emit explosive hydrogen gas - keep sparks and naked lights away from the engine compartment.***
- ***DO NOT attempt to jump start the vehicle if the electrolyte in the battery is suspected of being frozen.***
- ***Make sure BOTH batteries are of the same voltage (12 volts), and that the booster cables have insulated clamps and are approved for use with 12 volt batteries.***
- ***DO NOT disconnect the discharged battery.***
- ***DO NOT connect positive (+) terminals to negative (-) terminals, and ensure booster cables are kept away from any moving parts in the engine compartment.***
- ***Take care when working near rotating parts of the engine.***

USING BOOSTER CABLES

If a donor vehicle is to be used, both vehicles should be parked with their battery locations adjacent to each other. Ensure that the two vehicles do not touch.

Apply the handbrakes and ensure that the transmission of both vehicles is set in neutral ('P' or Park for vehicles with automatic transmission).

Turn off the starter switch and ALL electrical equipment of BOTH vehicles, then follow the instructions specific to petrol or diesel engine models on the pages that follow.

CONNECTING THE BOOSTER CABLES

PETROL ENGINES

Always adopt the following procedure:
Connect the RED booster cable between the positive (+) terminal of the donor battery and the positive (+) terminal of the discharged battery.

Connect the BLACK booster cable from the negative (-) terminal of the donor battery to a good earth point (eg. an engine mounting or other unpainted surface) at least 0.5 m from the battery and well away from fuel and brake lines on the disabled vehicle (engine lifting ring shown in illustration).

WARNING

For safety reasons;

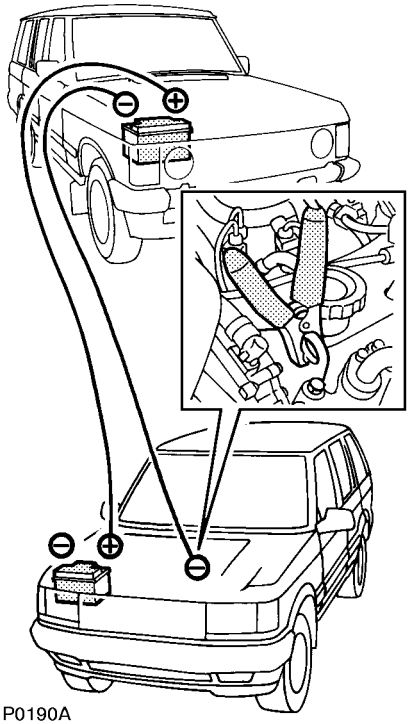
- ***DO NOT connect the BLACK cable to the negative terminal of the discharged battery - if in doubt, seek qualified assistance.***

Check that the booster cables are clear of any moving parts in either engine, then start the engine of the donor vehicle and allow it to idle for a few minutes.

Now start the vehicle with the discharged battery. Once both engines are running normally, allow them to idle for two minutes before switching off the engine of the donor vehicle.

DO NOT switch on any electrical circuits on the previously disabled vehicle until AFTER the booster cables have been removed.

Disconnecting the booster cables must be an EXACT reversal of the procedure used to connect them, ie: disconnect the BLACK cable from the earth point on the disabled vehicle FIRST.



P0190A

CONNECTING THE BOOSTER CABLES

DIESEL ENGINES

Always adopt the following procedure, ensuring the cables are connected in the order shown below:

1. Connect one end of the RED booster cable to the positive (+) terminal of the donor battery.
2. Connect the other end of the RED booster cable to the positive (+) terminal of the discharged battery.
3. Connect one end of the BLACK booster cable to the negative (-) terminal of the DISCHARGED battery.
4. Connect the other end of the BLACK booster cable to the negative (-) terminal of the donor battery.

WARNING

For safety reasons:

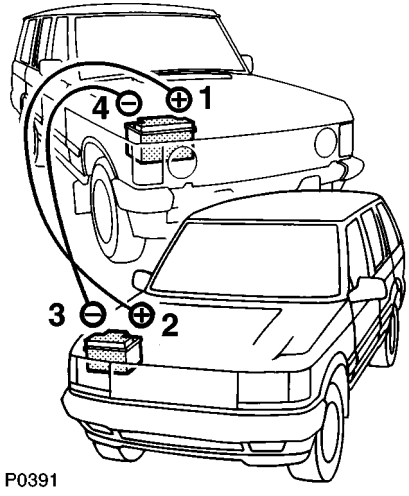
- ***ALWAYS connect the BLACK cable to the donor battery LAST.***
- ***ENSURE that each connection is securely made and that there is no risk of the clips accidentally slipping or being pulled from the battery terminals.***
- ***BE AWARE that loose connections between cable clips and battery terminals could cause sparking, which could lead to explosion or fire.***

Check that the booster cables are clear of any moving parts in either engine, then start the engine of the donor vehicle and allow it to idle for a few minutes.

Now start the vehicle with the discharged battery. Once both engines are running normally, allow them to idle for two minutes before switching off the the donor vehicle engine.

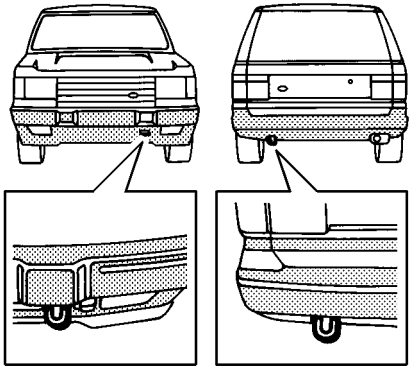
DO NOT switch on any electrical circuits on the previously disabled vehicle until AFTER the booster cables have been removed.

Disconnecting the booster cables must be an EXACT reversal of the procedure used to connect them, ie: disconnect the BLACK cable from the negative (-) terminal on the donor vehicle FIRST.



P0391

Emergency towing



P0132

Front towing eye

Use ONLY when the vehicle is to be towed with ALL four wheels on the ground. (see *'Towing the vehicle on four-wheels').*

Rear towing eye

Use ONLY when towing another vehicle.

WARNING

If transfer neutral has been selected, it is essential to remove fuse 11 and press the transfer 'Hi/Lo' switch (to re-select high or low range) before leaving the vehicle stationary.

Towing the vehicle on four-wheels

If it is necessary to recover the vehicle by towing on all four wheels, select transfer neutral as follows:

- With the starter key removed, insert a fuse (5 amps or greater) in fuse position 11 in the right hand seat fuse box. Insert key and turn the starter switch on; the transfer box will automatically select neutral (wait until the message centre displays 'TRANSFER NEUTRAL'), then turn the starter switch off.
- Turn the starter switch to position 'I' to unlock the steering and leave in this position while the vehicle is being towed.
- To re-engage HIGH or LOW range after towing, turn the starter switch off, remove the fuse from position 11, then turn the starter switch on and press the range change switch (manual gearbox) - the transfer box will engage the HIGH or LOW gear range.

NOTE: *If, due to an accident or electrical fault, it is considered unsafe to turn the starter switch, the battery must be disconnected.*

IMPORTANT INFORMATION

DO NOT attempt to tow the vehicle unless the starter switch is turned to position 'I' (to unlock the steering).

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

Without the engine running the power steering pump and brake servo cannot provide assistance. Greater effort will be required to operate the brake pedal and to turn the steering wheel and, therefore, safely control the vehicle.

Towing the vehicle on two-wheels

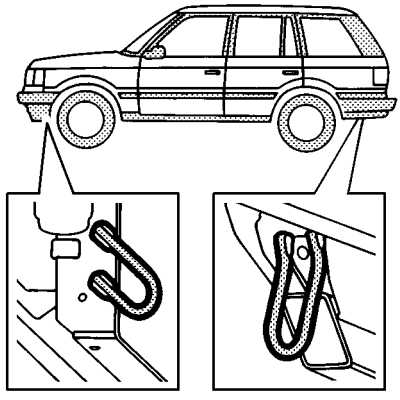
If it is necessary to recover the vehicle by towing on two wheels only, always adhere to the following:

Remove the propeller shaft from the axle which is to remain on the road.

The propeller shaft flange and shaft must be marked before removal to ensure correct re-assembly. Secure the suspended propeller shaft safely to prevent damage.

WARNING

If the rear axle is to be raised, the steering wheel and/or linkage MUST be secured in a straight ahead position, but the steering lock MUST NOT be used for this purpose. The vehicle can then be attached to the towing truck.



P0133

Transporter or trailer lashing

If your vehicle should require transporting on the back of a truck, then the air suspension must be set to 'ACCESS' before being lashed (see *'Electronic air suspension'*). Use the rings on the front and rear cross-members as lashing points (see illustration). DO NOT secure lashing hooks or trailer fixings to any other part of the vehicle.

If the air suspension cannot be set to the 'ACCESS' position, then your vehicle must be lashed by its wheels and NOT by the lashing rings referred to above.