



DEFENDER

OWNER'S HANDBOOK

Publication Part No. LRL 10 02 51 801

This handbook forms part of the Owner literature supplied with your new vehicle. Left-hand drive and right-hand drive conditions may be shown in the graphics and where information is specific to a particular country, it is indicated as such.

The separate **Quick Start Guide** is designed to rapidly familiarise the driver with the initial set up and also explain some of the unique features. Please take the time to study all of the operating instructions supplied with your vehicle as soon as possible.

Important

The information contained in the literature pack covers all vehicle derivatives and optional equipment. Therefore it is possible that some of the information contained in the literature pack may not be applicable to your vehicle.

The options, hardware and software in your vehicle are from the available specifications for the market in which the vehicle was intended for sale. If your vehicle is to be used in another geographical area you may have to modify the vehicle specification to suit local conditions. Land Rover is not responsible for the cost of any modifications.

The information contained in this publication is correct at time of printing. Vehicle specification changes may have been made after this handbook was printed. If this occurs a handbook supplement may be added to the literature pack prior to sale. Subsequent updates can be viewed on the Land Rover Internet site at **www.landrover.com**.

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Introduction

SYMBOLS GLOSSARY

Warnings

WARNING



Safety warnings are included in this handbook. These indicate either a procedure which must be followed precisely, or information that should be considered with great care in order to avoid the possibility of personal injury.

Cautions

CAUTION



Cautions are included in this handbook. These indicate either a procedure which must be followed precisely, or information that should be considered with great care in order to avoid the possibility of damage to your vehicle.

Symbols



This recycling symbol identifies those items that must be disposed of safely in order to prevent unnecessary damage to the environment.



This symbol identifies those features that can be adjusted, disabled or enabled by a Land Rover Dealer/Authorised Repairer.

LABEL LOCATIONS



Warning labels attached to your vehicle bearing this symbol mean: Do not touch or adjust components until you have read the relevant instructions in the handbook.

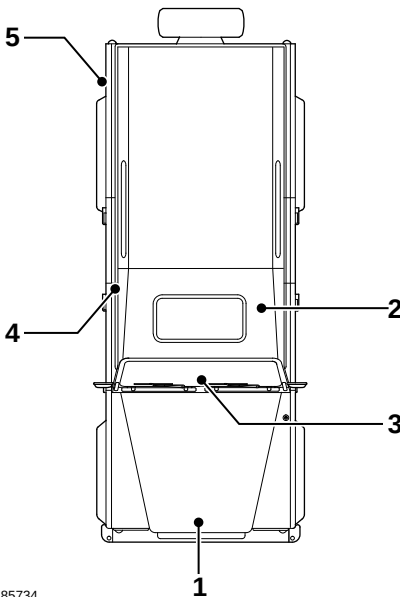


Labels showing this symbol indicate that the ignition system utilises very high voltages. Do not touch any ignition components while the starter switch is turned on.

Warning labels

Labels are attached to your vehicle at several positions. These are applied to draw your attention to important subjects, e.g. tyre pressures, tow bar use, roll-over risk, engine compartment hazards, etc.

Introduction



E85734

1. Fan cowl - Fan warning label, air conditioning label and Genuine Parts label
2. Top face of battery - Battery warning symbols
3. Facia - Transmission label
4. On right-hand rear wheel arch - Vehicle jacking label. Australia only - Tyre pressures label
5. Adjacent to the fuel filler cap - Fuel specification label

It is important that you are familiar with these subjects to ensure that your vehicle and its features are used safely. Using the index at the back of this handbook, refer to the relevant topic for more information.

HEALTH AND SAFETY

WARNINGS



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 off-road applications. An advantage of the higher ground clearance is a better view of the road allowing you to anticipate problems.



The vehicle is not designed for cornering at the same speed as conventional passenger cars any more than a low-slung sports car is designed to perform satisfactorily under off-road conditions. If at all possible, avoid sharp turns or abrupt manoeuvres. As with other vehicles of this type, failure to operate the vehicle correctly may result in loss of control or vehicle roll-over.



The vehicle should not be parked over long dry grass or other combustible material, particularly during dry weather. As the heat generated by the exhaust and emission control systems may be sufficient to start a fire.

DATA RECORDING

Service data recording

Service data recorders in your vehicle are capable of collecting and storing diagnostic information about your vehicle. This potentially includes information about the performance or status of various systems and modules in the vehicle such as engine, throttle, steering or brakes.

Introduction

In order to properly diagnose and service your vehicle, Land Rover and service and repair facilities may access vehicle diagnostic information through a direct connection to your vehicle.

PARTS AND ACCESSORIES

WARNINGS



The fitting of non-approved parts and accessories, or the carrying out of non-approved alterations or

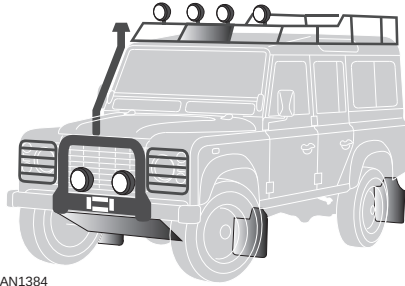
conversions, may be dangerous and could affect the safety of the vehicle and occupants and also invalidate the terms and conditions of the vehicle warranty.



Land Rover will not accept any liability for death, personal injury or damage to property which may occur as a direct result of fitment of non-approved accessories or the carrying out of non-approved conversions to Land Rover vehicles.



Land Rover strongly advise against making any modifications to the suspension or steering system. This could seriously affect the handling and stability of the vehicle leading to loss of control or roll-over.



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The vehicle has been designed, built and tested to cope with a variety of off-road driving conditions, some of which can place the severest possible demands on control systems and components. As such, fitting replacement parts and accessories that have been developed and tested to the same stringent standards as the original components will safeguard the continued reliability, safety and performance of your vehicle.

To augment the vehicle's already impressive performance, a comprehensive range of Land Rover approved spare parts and accessories is available, enabling the vehicle to fulfil a wide variety of roles, and enhancing and protecting the vehicle in the many tasks to which it can be applied.

Land Rover parts are the only parts built to original equipment specifications and approved by Land Rover designers; this means that every single part and accessory has been rigorously tested by the same engineering team that designed and built the vehicle and can therefore be guaranteed for twelve months with unlimited mileage.

A full list and description of all accessories is available from your Land Rover Dealer/Authorised Repairer.

Introduction

Electrical equipment

WARNING



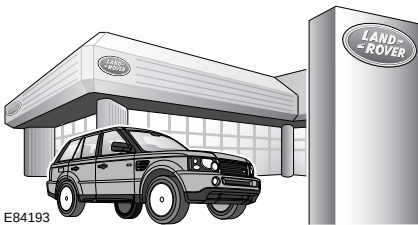
It is extremely hazardous to fit or replace parts or accessories, the installation of which requires the dismantling of, or addition to, either the electrical or fuel systems.

Always consult a Land Rover Dealer/Authorised Repairer before fitting any accessory.

Fitting inferior quality parts or accessories, may be dangerous and could invalidate the vehicle warranty.

It is recommended that you always consult a Land Rover Dealer/Authorised Repairer for advice regarding the approval, suitability, installation and use of any parts or accessories before fitting.

After-sales service



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The After Sales Parts service is of paramount importance, both in the UK and across the world. In the UK there are over 100 authorised Land Rover Dealers/Authorised Repairers, all computer linked for rapid ordering of parts and accessories.

In addition, with franchised representation in over 100 countries worldwide, Land Rover are able to support your vehicle wherever you go.

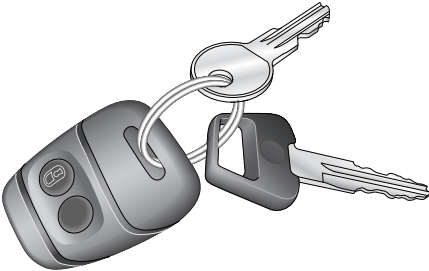
Travelling abroad

In certain countries, it is a legal requirement to fit parts made to the vehicle manufacturers' specification.

Owners should ensure that any parts or accessories fitted to the vehicle while travelling abroad, will also conform to the legal requirements of their own country when they return home.

Keys and remote controls

USING THE KEY



E85174

You have been supplied with two sets of keys comprising:

- A black key for operating the starter switch and the door locks.
- A smaller, metal key, to operate the fuel filler cap lock. See **REFUELLING** (page 70).

Insert the black key into the driver's door lock and turn it towards the rear of the vehicle to lock and towards the front of the vehicle to unlock.

If the doors are locked with the key, the engine will be immobilised, but the alarm system is not armed.

Only unlock the doors using the key, if they were locked using the key. Unlocking the doors with the key may not disarm the alarm. The alarm must be disarmed using the remote control.

Note: On vehicles not fitted with central locking, the key must be used to lock and unlock each door individually.

GENERAL INFORMATION ON RADIO FREQUENCIES

Note: The radio frequency used by your remote control may be used by other devices. For example: amateur radios, medical equipment, wireless headphones, or other remote control devices. This may cause the frequency to be jammed, and prevent your remote control from operating correctly.

Environmental conditions can affect the operation of remote controls and the operating range may vary considerably depending on the vehicle's location.

Keys and remote controls

USING THE REMOTE CONTROL

Remote control

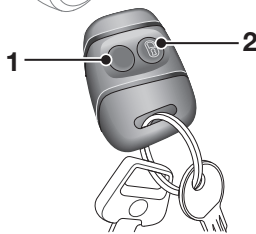
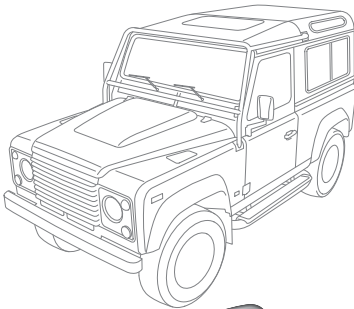
WARNING



Never leave the remote control in the vehicle if children or animals are also left in the vehicle. The vehicle's systems and remote control functions could be operated, which may result in injury.

Note: The operational range of the remote control will vary considerably depending on atmospheric conditions and interference from other transmitting devices.

The vehicle is supplied with two remote controls.



LAN1371

1. Unlock.
2. Lock.

Unlocking

Press the unlock (plain) button briefly to unlock the doors (including the taildoor) and deactivate the alarm. The hazard warning lamps will flash once to indicate that the vehicle is unlocked and the alarm has been deactivated. The interior lamps will illuminate to assist entry to the vehicle.

Note: On vehicles not fitted with central locking, the remote control will not unlock the doors - the key must be used.

Locking



Press briefly to lock the doors (including the taildoor) and activate the alarm. The hazard warning lamps will flash three times and the alarm indicator in the instrument panel starts to flash, to indicate that the vehicle is secure.

Note: On vehicles not fitted with central locking, the remote control will not lock the doors - the key must be used.

Remote battery

WARNING



The remote control contains delicate electronic circuits and must be protected from impact and water damage, high temperatures and humidity, direct sunlight and the effects of solvents, waxes and abrasive cleaners.

When the battery needs replacing, it will be apparent from the following symptoms:

- The remote control will only work every other operation when unlocking.
- The hazard warning lamps will not flash when the alarm is disarmed.

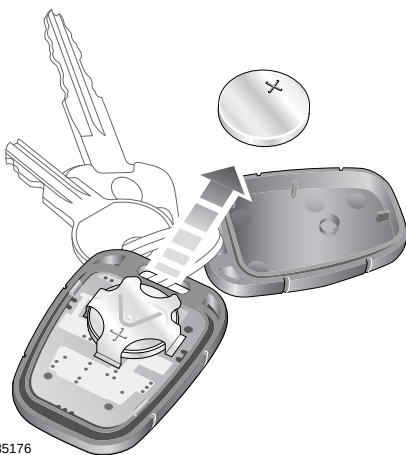
Do not remove the battery until you are ready to install the replacement.

Keys and remote controls

The engine will immobilise, five minutes after the key is removed from the starter switch (or 30 seconds after the starter switch has been turned off and the driver's door opened). If battery replacement is not completed within this period, the emergency key access code will need to be entered before the remote control can be synchronised.

Always fit a Land Rover STC 4080 or a Panasonic CR2032 replacement battery (available from a Land Rover Dealer/Authorised Repairer).

Battery replacement



1. Unlock the vehicle and disarm the alarm.
2. Turn the starter switch to position **II**, then turn to position **0** and remove the key.
3. Carefully prise the remote control apart. Start from the key ring end, using a coin or small screwdriver. Avoid damaging the seal between the two halves of the case and do not allow dirt or moisture to get inside the remote control.

4. Slide the battery out of its clip, taking care to avoid touching the circuit board or the contact surfaces of the clip.
 5. Press and hold one of the buttons for at least five seconds (this will drain any residual power from the remote control).
 6. Fit the new battery, ensuring that correct polarity is maintained (+ side facing up). Finger marks will adversely affect battery life; if possible, avoid touching the flat surface of the battery and wipe them clean before fitting.
 7. Press the two halves of the remote control firmly together and ensure that both halves are fully joined, to prevent moisture from entering the remote control.
 8. Operate the lock (padlock symbol) button at least four times within range of the vehicle, to resynchronise the remote control.
 9. Press the unlock button once to unlock
- The remote control is now ready for use.

Locks

LOCKING AND UNLOCKING

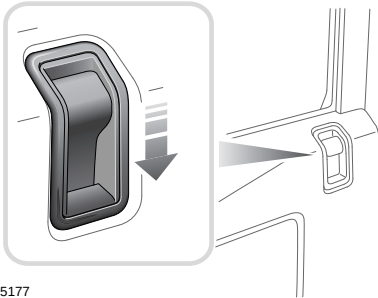
Locking and unlocking from inside the vehicle

WARNING



Do not depress the sill buttons as a means of locking the vehicle from outside the vehicle. This process - known as slam-locking - is not recommended, because keys can be locked inside accidentally.

Note: On vehicles fitted with central door locking, slam locking of the driver's door is prohibited.



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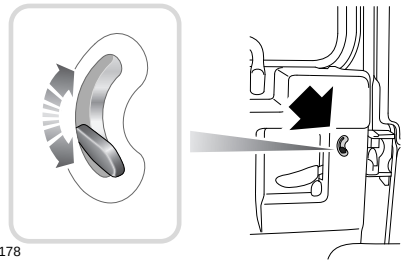
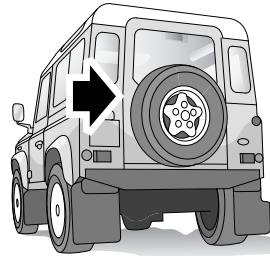
From inside the vehicle, each door can be individually locked/unlocked by depressing/lifting the appropriate sill locking button.

On vehicles with central door locking, operation of the driver's door sill locking button, locks all the other doors too. However, engine immobilisation and interior space protection are suspended unless the remote control lock button is pressed as well.

Note: Information on operating the child safety locks is given later in this handbook. See **CHILD SAFETY LOCKS** (page 30).

Taildoor

From outside, use the key to lock and unlock the taildoor: Turn the key clockwise to lock and counterclockwise to unlock.



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From inside the vehicle, ensure the door is closed, then push the locking catch up to lock or down to unlock the taildoor.

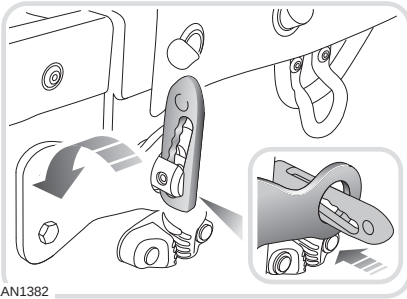
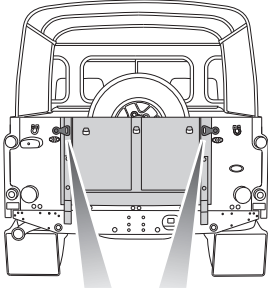
Locks

Tailgate

CAUTION



The tailgate is not a load-bearing surface.



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To latch the tailgate:

- Lift the tailgate and locate over both the latch plates as shown.
 - Pivot the latch plates upwards and forwards through 90 degrees.
 - Slide the latch plates down to secure.
- Reverse the process to open the tailgate.

Mislock

If one of the doors, the bonnet or the taildoor are not shut fully when the remote control lock button is pressed, the hazard lamps will fail to flash, indicating a mislock. If this occurs, the alarm system will not be fully armed. On vehicles fitted with central door locking, the doors will not lock in the event of a mislock.

Shut the open aperture. The hazard lamps will flash and the alarm system will be fully armed.

Note: If a mislock occurs as a result of an open door, interior space protection will not be activated.

Note: If a mislock occurs as a result of an open bonnet, the door apertures will still be protected by the alarm system and interior space protection will be active.

Alarm

ARMING THE ALARM



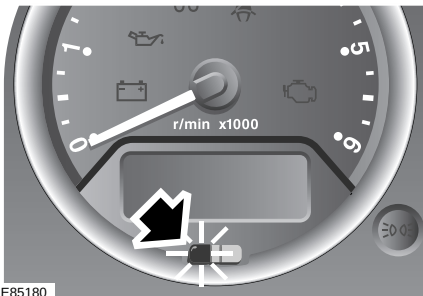
The alarm system is automatically armed, and the engine immobilised, when the remote lock button is pressed. The hazard lamps will flash to indicate that the alarm is armed.

Once armed, the alarm will sound if:-

- a door, the bonnet or the taildoor are opened.
- movement is detected within the vehicle interior.
- the vehicle battery is disconnected.
- an attempt is made to disconnect the alarm siren.

Note: If the alarm is armed and a window or the sunroof are left open the alarm will sound due to movement of air currents.

Alarm indicator



The alarm status is displayed by the indicator in the speedometer.

- Indicator off - alarm disarmed.

- Indicator flashes rapidly for 10 seconds when the remote lock button is pressed, then adjusts to a slower frequency - the alarm has been armed.
- If the indicator fails to adjust to a slower frequency after the initial 10 second period, the remote control battery needs replacing.
- Indicator flashes rapidly when the alarm is disarmed - the alarm has been triggered.
- Indicator flashes slowly - the engine is immobilised, but the alarm is disarmed.
- Indicator illuminates (without flashing) for 10 seconds before adjusting to a slow frequency flash - the driver's door is not closed.

Engine immobilisation

Engine immobilisation prevents the engine from being started without a valid key and remote control and is activated whenever the alarm is armed using the remote control. In addition, the immobiliser activates automatically under the following conditions:

- Thirty seconds after the starter switch has been turned off and the driver's door is opened.
- Five minutes after the starter switch is turned off or after the alarm system is disarmed (if the starter switch has not been turned on).

Note: Details on how to deactivate engine immobilisation are given later in this section. See **DISARMING THE ALARM** (page 16).

Alarm

DISARMING THE ALARM



When the vehicle is unlocked using the remote control, the alarm is automatically disabled and the engine is remobilised. The hazard lamps will flash once to indicate that the alarm is disabled.

Note: If the remote control is lost, damaged or fails to operate, it is necessary to enter the emergency key access code, to disarm the alarm and deactivate engine immobilisation.

Deactivating engine immobilisation

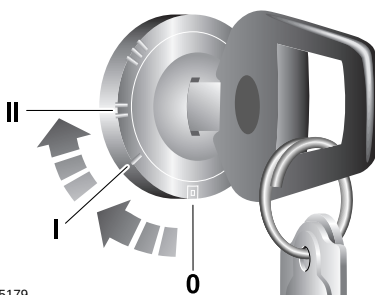
Engine immobilisation is deactivated automatically whenever the vehicle is unlocked using the remote control. Engine immobilisation is also deactivated when the starter switch is turned to position **II**, provided the remote control is on the same key ring as the key and in close proximity to the switch.

If, however, the remote control is damaged, or fails to operate, immobilisation can only be deactivated by entering the emergency key access code.

Emergency key access

Note: If the remote control cannot be used, it is impossible to disarm the alarm in the normal way. The alarm will sound (for 30 second durations) as soon as a door is opened and will continue until the code has been entered.

To deactivate engine immobilisation manually, in the event of remote control failure, follow the procedure below to enter the unique four digit emergency key access code. The code for your vehicle is recorded on the Security card.



E85179

1. Remove the remote control from the key ring and keep it well away from the starter switch while entering the code.
2. Unlock the driver's door using the key, open the door and enter the vehicle. Shut the driver's door.
3. Insert the key in the starter switch, turn and hold the key in position **II** until the alarm sounds. Then, turn off the starter switch and open and close the driver's door.
4. Turn the starter switch to position **II** the required number of times to enter the first digit of the code (if the digit is 4, turn the key to position **II** and then back to position **0** four times).
5. Open and close the driver's door (this will enter the first digit of the code).
6. Turn the starter switch to position **II** and back to **0** the required number of times to enter the second digit of the code, then open and close the driver's door.
7. Turn the starter switch to position **II** and back to **0** the required number of times to enter the third digit of the code, then open and close the driver's door.

Alarm

8. Turn the starter switch to position **II** and back to **0** the required number of times to enter the fourth digit of the code, then finally, open and close the driver's door one more time.

If the code has been entered correctly, the alarm indicator will extinguish, the alarm will stop sounding and the engine can be started.

If an incorrect code has been entered:

If the code is entered incorrectly, the alarm sounder will sound twice, the alarm indicator will continue to illuminate and the engine will fail to start. Before entering the code again, turn the starter switch to position **II** and hold in this position for five seconds.

After three failed entry attempts, the security system invokes a delay period of 30 minutes, during which the system will not accept further attempts to enter a code.

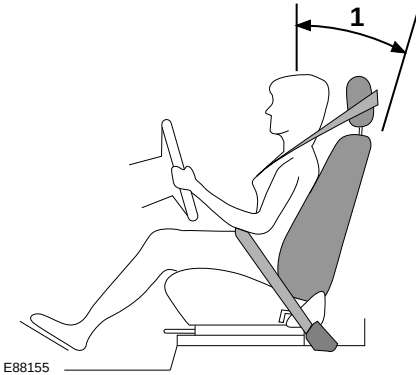
Memorise the emergency key access code or keep the Security card on your person, in case of emergencies. Never leave the card in the vehicle.

Deactivating the alarm when triggered

If the alarm has been triggered it can be deactivated by pressing either of the remote control buttons.

Seats

SITTING IN THE CORRECT POSITION



WARNING



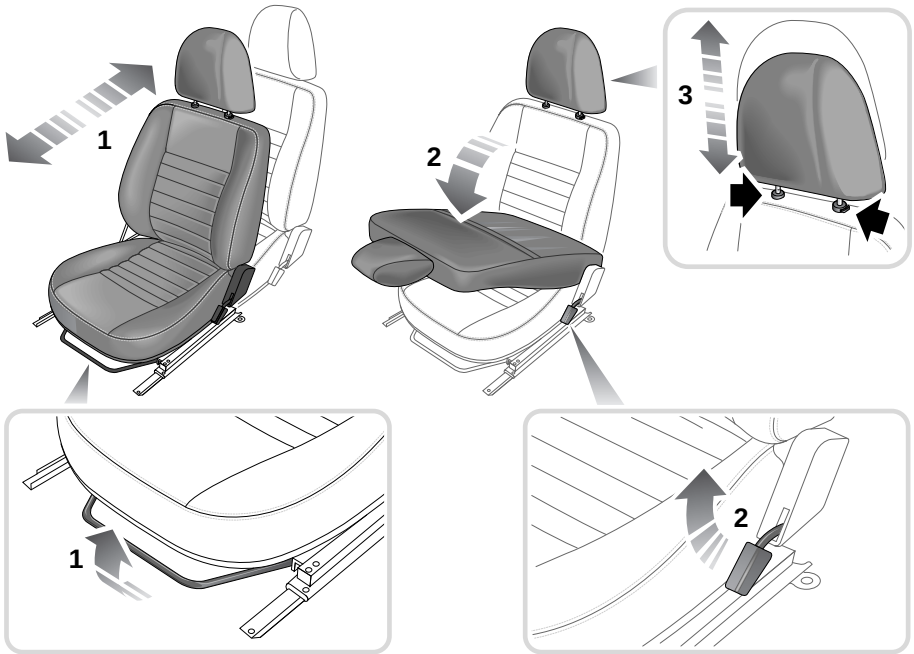
Do not adjust the seat while the vehicle is moving. Doing so could cause loss of vehicle control and personal injury.

The seat, head restraint and seat belt, all contribute to the protection of the user. Correct use of these components will give you greater protection, therefore you should always sit in an upright position, with the base of your spine as far back as possible and seatback reclined no more than 30 degrees (1).

- Adjust the head restraint so that it's highest point is level with the top of your head.
- Position the seat belt so that it is mid-way between your neck and your shoulder. Fit the strap tightly across your hips, not across your stomach.
- Ensure that your driving position is comfortable, and enables you to maintain full control of the vehicle.

Seats

MANUAL SEATS



E85185

1. Fore and aft adjustment.
2. Seat back angle adjustment.
3. Head restraint height adjustment. See **HEAD RESTRAINTS** (page 21).

Front seat base removal

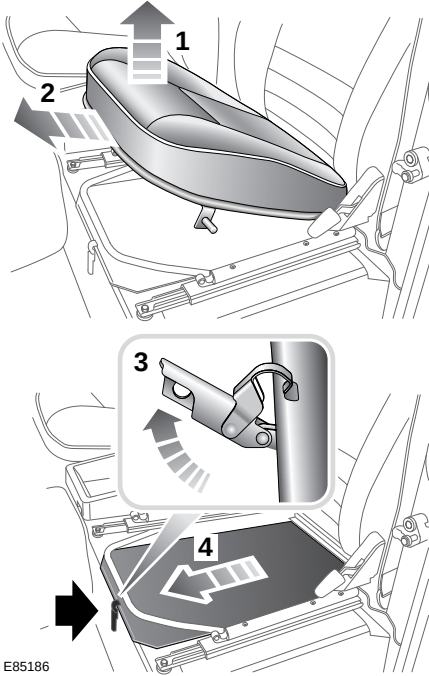
CAUTION

⚠ On vehicles equipped with seat heaters, an electrical lead connects the heater unit in the seat cushion with the vehicle wiring harness. When removing the seat base, care must be taken to avoid straining or damaging the lead. If necessary, carefully disconnect the lead from the seat base.

Seats

It is necessary to remove the front seat base to access the following:

- Driver's seat
 - Battery compartment
 - Wheel change tool kit
- Passenger seat
 - Secondary fuse box



Remove the relevant seat base as follows:

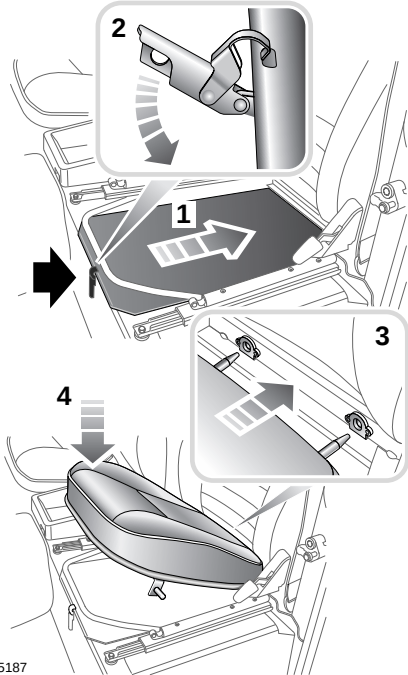
1. Firmly pull up the front of the seat base, to release from the retaining clips.
2. Pull the seat base towards the front of the vehicle to remove.
3. Release the catch on the front of the underseat compartment (solid arrow in illustration).
4. Slide the lid forwards to remove.

Refitting the seat base

WARNING



Ensure that the seat base is securely in place before driving.

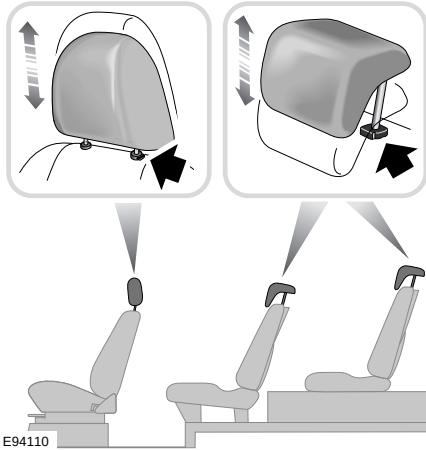


Refit the seat base as follows:

1. Slide the underseat compartment lid back into position.
2. Secure the catch and (if necessary) reconnect the seat heater electrical lead.
3. Insert the rear of the seat base, to engage the two locating pins.
4. Push down firmly on the front of the seat base, to re-engage the retaining clips.

Seats

HEAD RESTRAINTS



WARNINGS



Head restraints are designed to support the head, not the back of the neck. The restraint must be positioned correctly to restrain rearward movement of the head in a collision. An incorrectly adjusted head restraint increases the risk of death or serious injury in the event of a collision.



Adjust the head restraint so that the top of the head restraint is above the centre line of the head. An incorrectly adjusted head restraint increases the risk of death or serious injury in the event of a collision. See **SITTING IN THE CORRECT POSITION** (page 18).



Do not drive, or carry passengers with the head restraints removed from occupied seats. The absence of a correctly adjusted head restraint increases the risk of death or serious injury in the event of a collision.

WARNINGS



Never adjust the head restraints while the vehicle is in motion. An incorrectly adjusted head restraint increases the risk of death or serious injury in the event of a collision.

Raising

To raise a head restraint, pull up on the restraint until it is in the required position.

Lowering

To lower a head restraint, press the release button (arrowed) before lowering the head restraint to the required position.

REAR SEATS

WARNINGS



Always ensure that objects carried within the vehicle are secured properly. Unsecured items can cause death or serious injury in the event of an impact or sudden manoeuvre.



Never allow passengers to travel in the load space under any circumstances. All vehicle occupants should be seated correctly, and wear a seat belt at all times when the vehicle is in motion. Failure to do so will greatly increase the risk of death and serious injury in the event of an accident or heavy braking.

The third row seats can be folded individually as required to increase loadspace. The split fold second-row rear seat can be folded completely to accommodate large loads, or partially to accommodate long loads and still retain seating for passengers.

Seats

Folding the rear seats

WARNING



Ensure that if the rear head rests are removed they are stored securely.

Never leave them loose in the vehicle, as they can cause serious injury or death in the event of an accident, heavy braking, or sudden manoeuvres.

CAUTION



To prevent marking the seats, ensure that the seat belt buckles are in the stowed position before folding the seats.

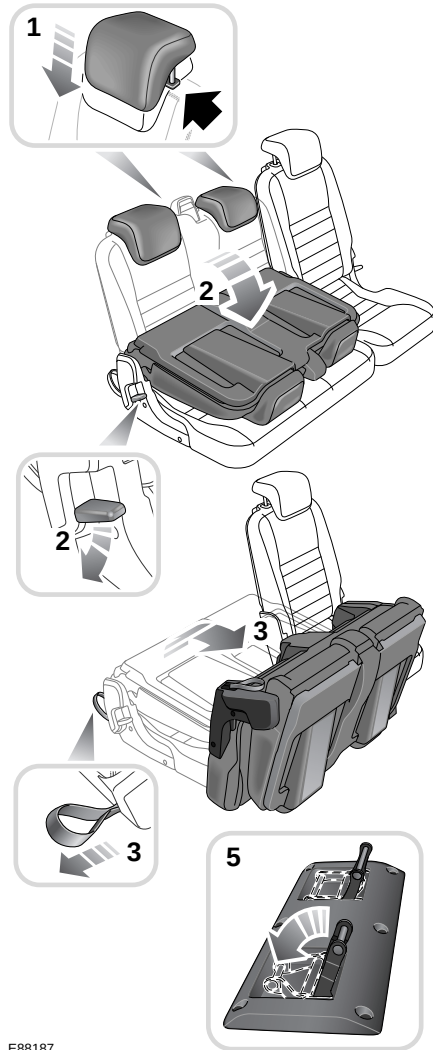
Second-row seats

CAUTION



Before folding the second-row seats, it may be necessary to adjust the front seats forwards and adjust the front seat backrests to a more upright position. This prevents damage caused by the folded second-row seats rubbing against the front seats.

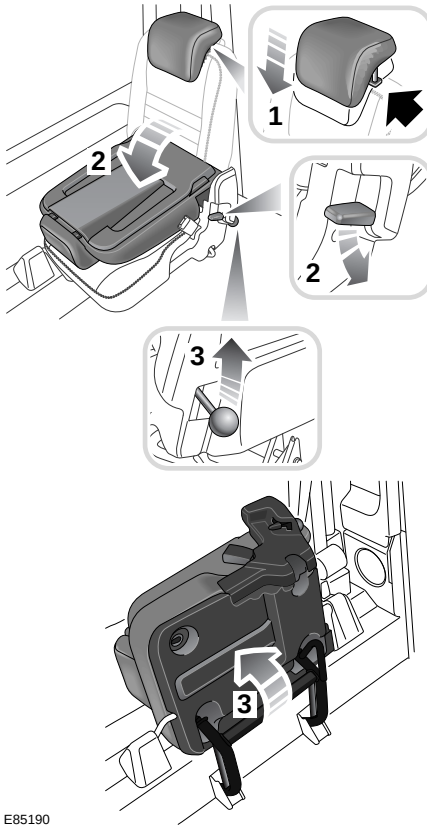
1. Fully lower the head restraints.
2. Push the catch down to release the seat back, then fold the seat back forwards.
3. Pull the strap towards the front of the vehicle to pivot the seat into the stowed position.
4. If required, repeat the process for the rest of the second-row seat.
5. If folding the double seat or the whole second-row, fold the floor-mounted latch striker bar(s) into the floor, to create a flat loading area.



E88187

Seats

Third-row seats



E85190

1. Lower the head restraints.
2. Push the seat back locking catch downwards to release and fold the seat back forwards.
3. Pull the seat base locking lever upwards to unlock, then fold the seat upwards towards the side of the vehicle until the retaining catch engages.

Raising the rear seats

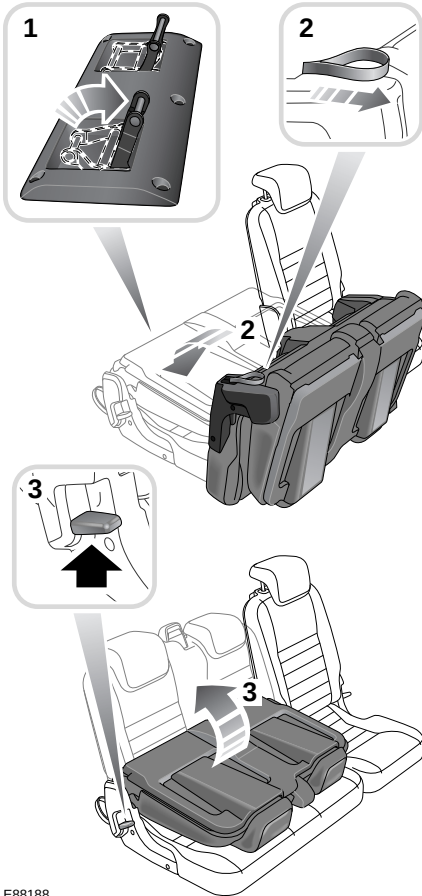
WARNING



Ensure that when a rear seat is raised, the locking mechanism is fully engaged. Failure to do so can increase the risk of death or serious injury in the event of an accident or sudden manoeuvre or heavy braking.

Seats

Second-row seats



E88188

Note: If the vehicle is parked on a slope, it is possible that the floor-mounted latch striker bar(s) will not align correctly with the locking mechanism and will fail to engage correctly. For this reason, it is recommended that the seats are raised while the vehicle is on level ground.

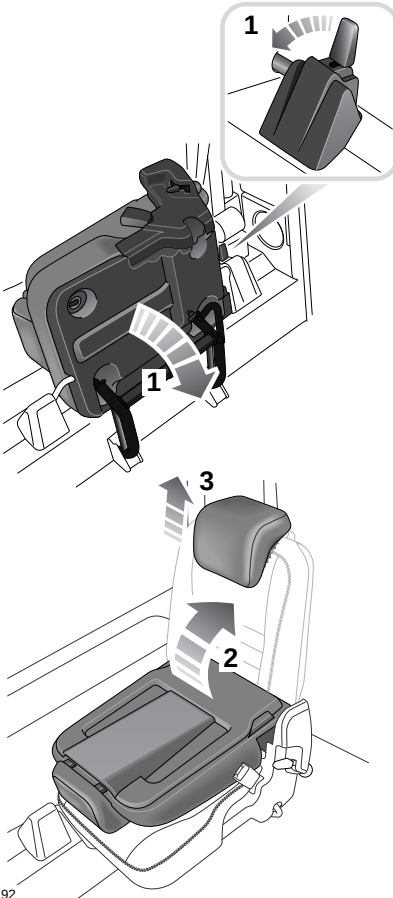
Note: If the front seats have been adjusted while the second-row seats were folded, it may be necessary to adjust the front seats forward to allow the second-row seats to be raised. Also check that the second-row seat head restraints are in the lowered position.

1. Raise the floor-mounted latch striker bar(s) forwards from the floor, as far as they will go.
2. Pull the strap towards the rear of the vehicle to pivot the seat out of the stowed position.
3. Unfold the seat back rearwards, ensuring that the catch engages.

Note: If the floor-mounted latch striker bar is not raised into the correct position, it will not be possible to fully unfold the seat back.

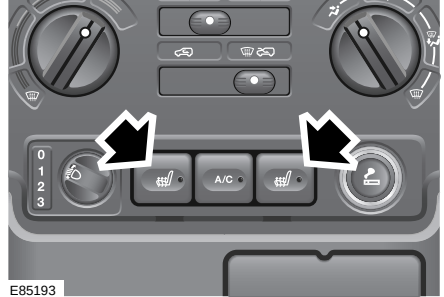
Seats

Third-row seats



1. Pull the release catch inwards to unlatch the seat assembly, then lower the seat base into position until securely latched.
2. Unfold the seat back rearwards, ensuring that the catch engages.
3. Adjust the head restraint to the correct position.

HEATED SEATS



CAUTION

! To prevent the battery from becoming discharged, the seat heaters should only be operated when the engine is running.

With the starter switch turned to position **II**, press the appropriate switch to activate the seat heater (the switch indicator will illuminate). The seat heaters will operate intermittently to maintain the seat temperature within a factory set temperature range.

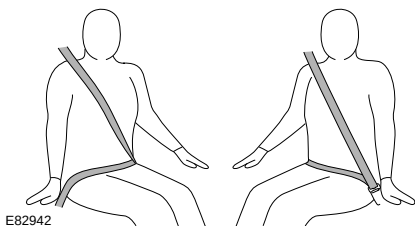
Press the switch again to turn off.

Note: Rear seats are not equipped with seat heaters.

Seat belts

PRINCIPLE OF OPERATION

Seat belts



E82942

WARNINGS

 Seat belts are designed to bear upon the bony structure of the body, and should be worn low across the front of the pelvis or the pelvis, chest and shoulders, as applicable; wearing the lap section of the belt across the abdominal area must be avoided.

 Seat belts should be adjusted as firmly as possible, consistent with comfort, to provide the protection for which they have been designed. A slack belt will greatly reduce the protection afforded to the wearer.

 Care should be taken to avoid contamination of the webbing with polishes, oils and chemicals, and particularly battery acid. Cleaning may safely be carried out using mild soap and water.

 The belt should be replaced if webbing becomes frayed, contaminated or damaged.

 It is essential to replace the entire assembly after it has been worn in a severe impact even if damage to the assembly is not obvious.

 Belts should not be worn with the straps twisted.

WARNINGS

 Do not carry hard, fragile, or sharp items between your person and the seat belt. In an impact the pressure from the seat belt on such items can cause them to break, which in turn may cause death or serious injuries.

 Each belt assembly must only be used by one occupant; it is dangerous to put a belt around a child being carried on the occupant's lap.

 The occupants of the front seats should not travel with the seat back at more than 30 degrees from upright. Doing so will reduce the protection afforded by the seat belt.

Seat belt safety

WARNINGS

 Seat belts should be worn by all vehicle occupants, for every journey no matter how short. Failure to do so will greatly increase the risk of death or serious injury in the event of an accident.

 Never wear just the lap belt or just the shoulder belt of a lap/shoulder diagonal seat belt. Both of these actions are extremely dangerous and may increase your risk of injury.

 No modifications or additions should be made which prevent the seat belt mechanism from taking up slack, or prevent the seat belt being adjusted to remove slack. A slack seat belt offers a greatly reduced level of occupant protection in an impact.

 If any damage, wear, cuts, defects, or impaired operation are noted with the seat belts, the vehicle should be taken to a Land Rover Dealer/Authorised repairer for immediate attention. Do not use the vehicle if the seat belts cannot be operated correctly.

Seat belts

WARNINGS



When using seat belts to restrain items other than occupants, take care to ensure that the belts are not damaged, or exposed to sharp edges.



Care must be taken to avoid contaminating the seat belt webbing, and seat belt mechanisms with any chemicals, liquids, grit, dirt, or cleaning products. If the seat belts do become contaminated they should be replaced immediately. Contaminated seat belts may not operate correctly in an impact and cannot be relied upon.

Seat belt checks

Note: If the vehicle is parked on an incline, the seat belt mechanism may lock. This is not a fault, and the belt should be gently eased out from the upper anchorage.

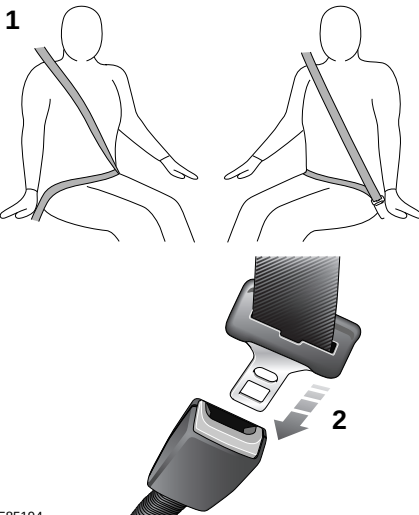
The seat belts should be inspected regularly to check for fraying, cuts, or wear to the webbing, and the condition and security of the mechanism, buckles, adjusters, and mounting points.

Checks

- With the seat belt fastened, give the webbing near the buckle a quick upward pull. The buckle must remain securely locked.
- With the seat belt unfastened, unreel the seat belt to the limit of its travel. Check that it unreels smoothly with no snatches or snags. Allow the belt to fully retract, again checking for smooth operation.
- Partially unreel the seat belt, then hold the tongue plate and give a quick forward pull. The mechanism must lock and prevent any further unreeling.

If any of the seat belts fail to meet those criteria, immediately contact your Land Rover Dealer/Authorised Repairer.

FASTENING THE SEAT BELTS



E85194

1. Draw the belt out smoothly, ensure that the seat position, and your position on the seat are correct. The belt should lay flat across the pelvis, chest, and mid-point of the collar bone between the neck and shoulder.
2. With the seat belt correctly positioned, place the metal tongue into the buckle nearest to you. Press it in until a click is heard.

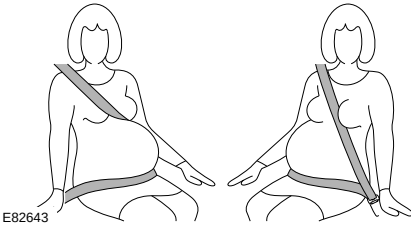
Releasing the seat belts

Note: When releasing the seat belt it is advisable to hold the belt before pressing the release button. This will prevent the belt from retracting too quickly.

To release the seat belt, press the red button.

Seat belts

USING SEAT BELTS DURING PREGNANCY



WARNINGS



Position the seat belt correctly for the safety of the mother and unborn child.

Never wear just the lap strap, and never sit on the lap strap whilst using just the shoulder strap. Both of these actions are extremely dangerous, and may increase your risk of serious injury in the event of an accident or during emergency braking.



Never place anything between you and the seat belt in an attempt to cushion the impact in the event of an accident.

It can be dangerous, and will reduce the effectiveness of the seat belt in preventing injury.

Position the lap strap comfortably across the hips beneath the abdomen. Place the diagonal part of the seat belt between the breasts and to the side of the abdomen. Ensure that the seat belt is not slack or twisted.

Child safety

CHILD SEATS

WARNINGS



Crash statistics show that children are safest when properly restrained on the rear seat.



Do not use a forward facing child seat until the child using it is above the minimum weight of 9 kg (20 lb.) and able to sit up unaided. Up to the age of two, a child's spine and neck are not sufficiently developed to avoid injury in a frontal impact.



Do not allow a baby or infant to be held or carried on the lap. The force of a crash can increase effective body weight by as much as thirty times, making it impossible to hold onto the child. Children typically require the use of a booster seat appropriate to their age and size, thereby enabling the seat belts to be properly fitted, reducing the risk of injury in a crash. Children could be endangered in a crash if their child restraints are not properly secured in the vehicle.



Do not use a child seat that hooks over the seat back. This type of seat cannot be satisfactorily secured and is unlikely to be safe for your child.

It is very important for all infants and children under 12 years of age to be restrained in a suitable child safety seat appropriate to their age and size.

Child restraint check list

Every time a child travels in the vehicle observe the following:-

- Use appropriate child restraints.
- Carefully follow the restraint system manufacturers instructions.
- Adjust the harnesses for every child on every trip.
- Ensure that all slack is removed from the adult seatbelt.
- Always check the security of the child restraint.
- Do not dress a child in bulky clothing, or place any objects/padding between the child and the restraint.
- Regularly check the fit and condition of child restraints. If the fit is poor, or wear/damage is visible replace the restraint immediately.
- Set a good example - always wear your seat belt.

Note: The information contained in the following table may not be applicable to all countries. If you are in any doubt regarding the type and fitment of child seats seek advice from your Land Rover Dealer/Authorised Repairer.

Child safety

Child safety seating and positions

Mass group	0 = Up to 10 kg (22 lb)	0+ = Up to 13 kg (29 lb)	I = 9-18 kg (20-40 lb)	II = 15-25 kg (40-67 lb)	III = 25-36 kg (67-80 lb)
Seating positions					
Front passenger	U	U	U	U	U
Second-row seats	U	U	U	U	U
Third-row seats	U	U	U	U	U

- U = Suitable for universal category restraints approved for this mass group.
- UF = Suitable for Forward-facing universal category restraints approved for this mass group.
- X = Not suitable for children in this mass group.

CAUTION



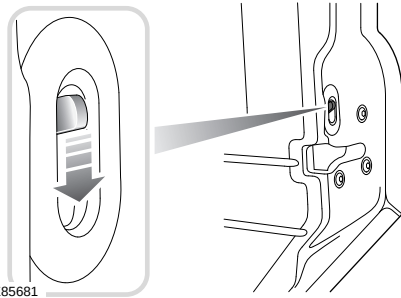
Information given within the table is correct at the time of going to press. However, availability of child restraints may change. Please consult your Land Rover Dealer/Authorised Repairer for the latest recommendation.

Note: The legislation which governs how and where children should be carried when travelling in a vehicle, is subject to change. It is the responsibility of the driver to comply with all regulations in force.

BOOSTER CUSHIONS

In a situation where a child is too large to fit into a child safety seat, but is still too small to safely fit the three point belt properly, a booster seat is recommended for maximum safety. Follow the manufacturer's instructions for fitting and use, then adjust the seat belt to suit.

CHILD SAFETY LOCKS



E85681

Child safety locks are fitted to the rear doors to allow you to prevent accidental opening of the doors when the vehicle is in motion.

If children are to be carried in the rear seat positions, it is recommended that the rear door interior handles are disabled.

Note: For convenience, the rear door interior handles should be re-enabled when carrying adult passengers in the rear seat positions.

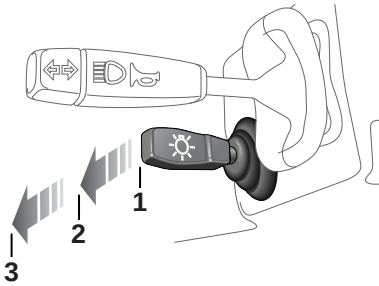
To change the child lock settings:-

1. Open the door to access the child safety lock.
2. Move the locking lever up to enable, or down to disable the interior door handle, as required.

Lighting

LIGHTING CONTROL

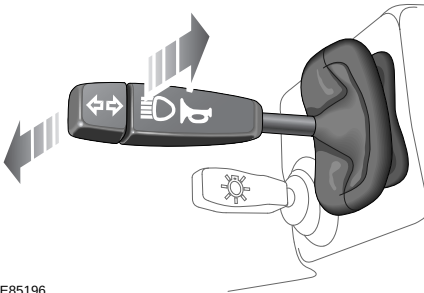
Main lighting switch



E85195

1. Headlamps/side lamps off.
2. Side, tail and instrument panel lamps on.
3. Headlamp dipped beam on.

Main beam



E85196

1. When the headlamp dipped beams are switched on, push the indicator stalk to change to full beam.
2. To flash the headlamps at anytime, briefly pull the indicator stalk and release it.



When the headlamp main beam is on, the main beam warning indicator (blue) will illuminate.

Note: Do not use main beam where it may dazzle other road users.

REAR FOG LAMPS



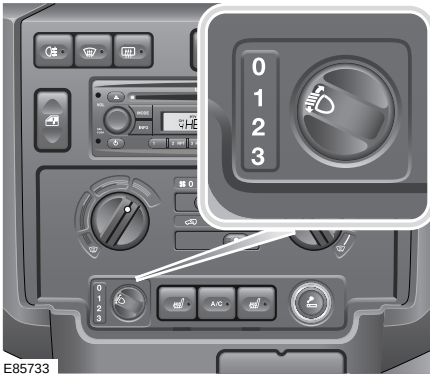
E85197

Rear fog lamps will only operate when dipped beam headlamps are selected. Press the rear fog lamp button to switch on, press again to switch off.

Switching off the headlamps or turning the starter switch to position 0, will also automatically extinguish the rear fog lamps (the fog lamps will then need to be selected again manually, when needed). Always switch fog lamps off as soon as visibility permits.

Lighting

HEADLAMP LEVELLING



E85733

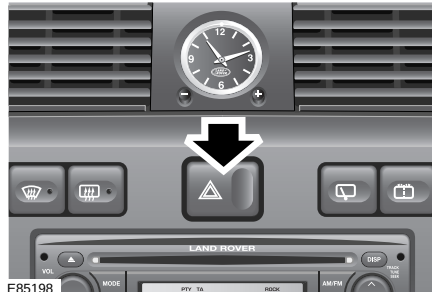
Use the headlamp levelling control to account for vehicle loading changes, so that headlamps provide adequate illumination without dazzling other road users.

Vehicle load	Switch position
Driver only (loadspace empty)	0
Driver and front seat passenger (loadspace empty)	0
Driver and passengers in all seats (loadspace empty)	1
All seats occupied and loadspace loaded to maximum rear axle weight	2
Driver only, with loadspace loaded to maximum rear axle weight	3

Vehicles fitted with front seats only

Positions **1** and **2** should only be used when required, according to the distribution and weight of the load being carried.

HAZARD WARNING FLASHERS



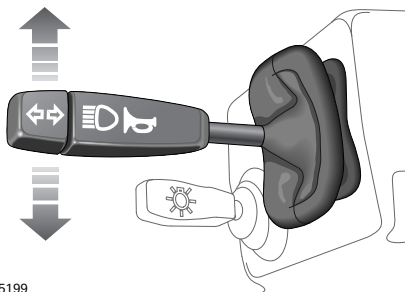
E85198

Press to operate; all the direction indicator lamps (including those fitted to a trailer) will flash together. The direction indicator warning lamps in the instrument pack will also flash while the hazard warning flashers are operating.

Note: Hazard warning flashers can be used with the starter switch on or off.

Lighting

DIRECTION INDICATORS

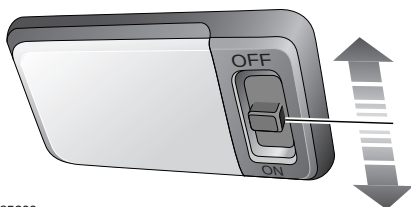


E85199

The direction indicators are operated using the indicator stalk. Move the stalk up to indicate a right turn and down to indicate a left.

Hold the stalk part-way up or down against spring pressure to indicate a lane change.

INTERIOR LAMPS



E85200

- OFF - lamp permanently off.
- Central - lamp illuminates automatically.
- ON - Lamp continuously on.

With the switch in the centre position, the interior lamp illuminates automatically whenever a door is opened or the alarm system is disarmed. The lamp remains illuminated for 15 seconds after the doors are closed, or until the starter switch is turned on.

After driving, the interior lamps will fade and extinguish, as soon as the vehicle is locked or when the last door is closed.

On Station Wagon models, opening the taildoor also activates the interior lamps.

Note: With the switch in the central position, the lamps will extinguish after approximately 8 minutes (e.g. if a door is left open), to prevent battery discharge.

CHANGING A BULB

General information

CAUTION

 Always replace bulbs with the correct type and specification. If you are in any doubt contact your Land Rover Dealer/Authorised Repairer for advice.

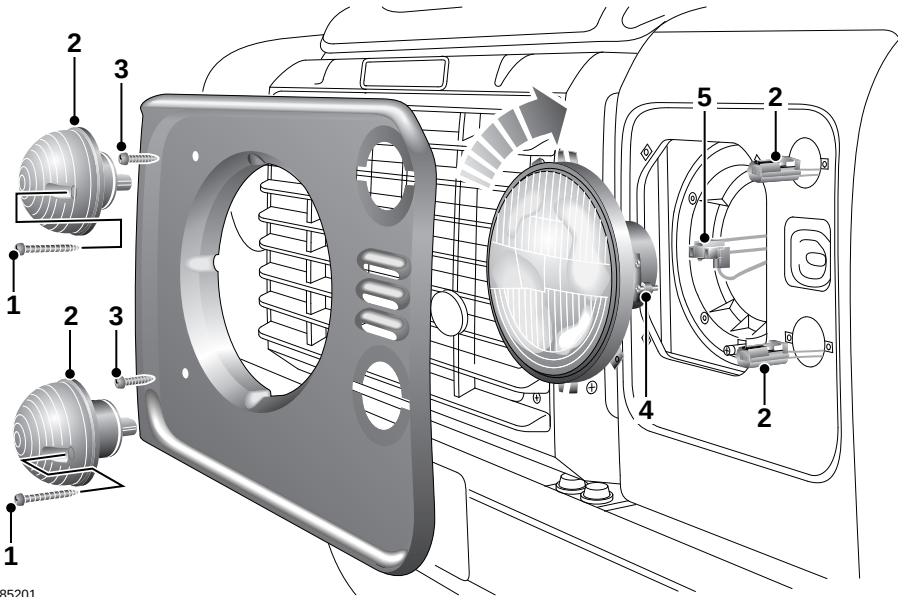
Note: In certain territories it is a legal requirement to carry spare bulbs. A replacement bulb kit is available as an approved accessory from your Land Rover Dealer/Authorised Repairer.

Halogen bulbs

Halogen bulbs are used for the main beam and dipped beam headlamps. Take care not to touch the glass part of the bulb with your fingers; always use a cloth to handle the bulb. If necessary use methylated spirits to remove finger prints.

Lighting

Removing the headlamp unit



E85201

In order to change a headlamp unit bulb, you must first remove the headlamp unit.

To remove the headlamp unit:-

1. Undo and remove the four screws retaining the side and direction indicator lamps.
2. Release the side and direction indicator lamps forward and disconnect the electrical connectors.
3. Undo and remove the two screws and remove the plastic finisher.
4. Undo and remove the headlamp retaining screw, rotate the headlamp clockwise to disengage and lift out the headlamp.
5. Disconnect the electrical plug from the back of the headlamp by pressing in the locking tab and pulling the connector out.

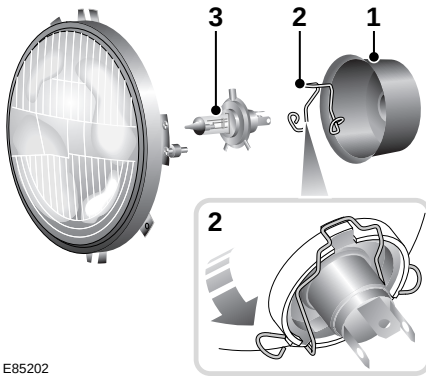
CAUTION

⚠ Do not place the lamp unit face down on hard or abrasive surfaces. Doing so may scratch the surface of the lens.

Lighting

Headlamp unit bulbs

Halogen dipped and main beam



E85202

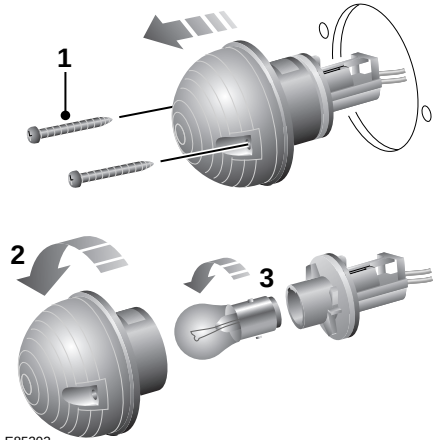
With the headlamp unit removed:-

1. Remove the rubber cover.
2. Release the spring clip that secures the bulb.
3. Remove the bulb from the headlamp unit.

When replacing the bulb, ensure the larger tab on the bulb is pointing towards the top of the headlamp unit, then secure the spring clip.

When replacing the rubber cover, firmly press the centre to seal around the electrical contacts of the bulb, then refit the electrical plug.

Side lamp and indicator bulbs



E85203

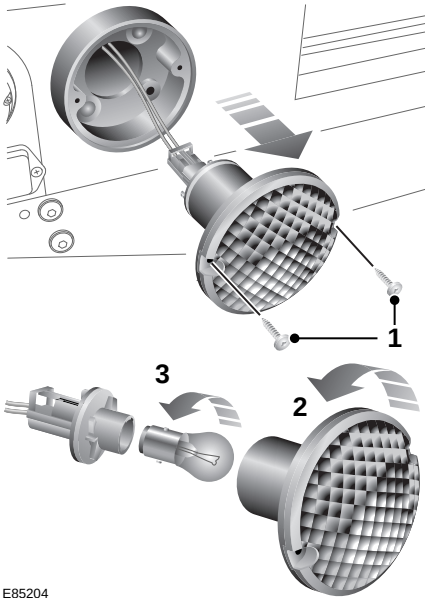
With the headlamp unit removed:-

1. Remove the two retaining screws and withdraw the unit.
2. Twist the lens counterclockwise to release the bulb unit.
3. Push and twist the bulb to remove.

Lighting

Rear lamp bulbs

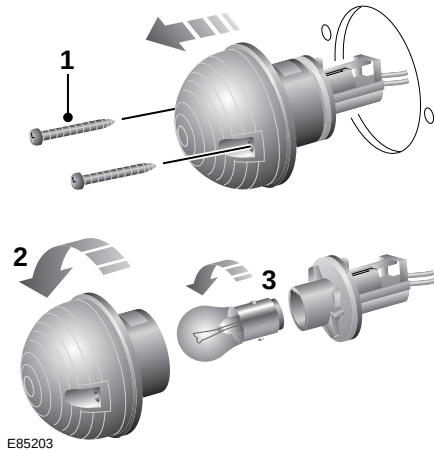
Reverse and rear fog lamp bulbs



E85204

1. Remove the two retaining screws and withdraw the unit.
2. Twist the lens counterclockwise to release the bulb unit.
3. Push and twist the bulb to remove

Tail, stop and indicator bulbs

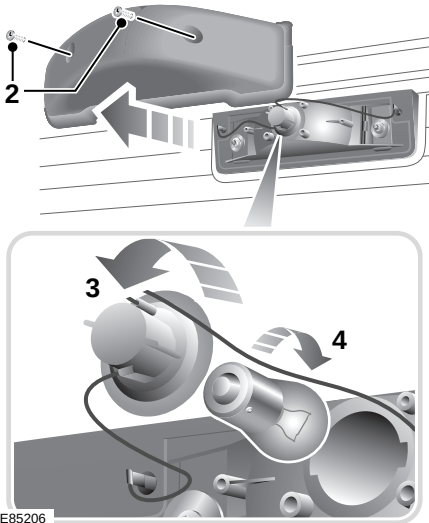


E85203

1. Remove the two retaining screws and withdraw the unit.
2. Twist the lens counterclockwise to release the bulb unit.
3. Push and twist the bulb to remove.

Lighting

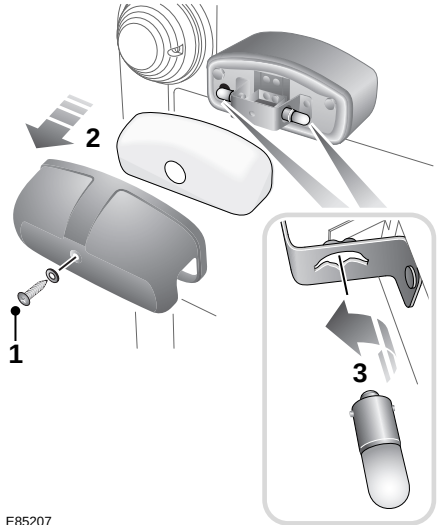
High level brake lamp



E85206

1. Open the taildoor.
2. Undo and remove the two retaining screws and remove the cover.
3. Twist the bulb holder counterclockwise to remove.
4. Push and twist the bulb counterclockwise to remove.

Number plate lamps

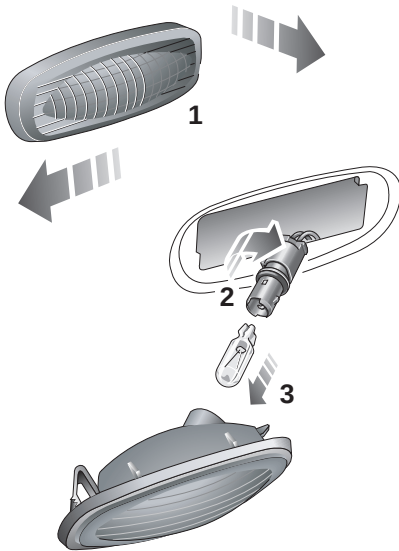


E85207

1. Undo and remove the securing screw.
2. Remove the cover.
3. Twist to remove the appropriate bulb.

Lighting

Side repeater lamp

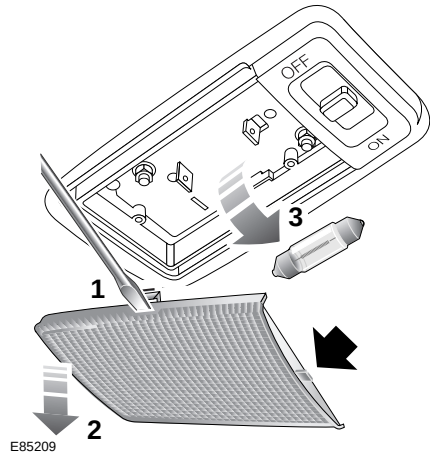


LAN1372

1. Push the lens firmly to the left and lift the right-hand edge, then remove the lamp unit.
2. Twist to release the bulb holder from the lamp unit.
3. Pull the bulb out of the holder.

When refitting, ensure that the tabs on the lamp unit (arrowed) are on the right-hand side and are inserted into the aperture, before pushing the lamp unit into position in the wing.

Interior lamp bulbs



E85209

1. Insert a small, flat-bladed screwdriver into the indent on the side of the lens.
2. Carefully prise the lens from the lamp unit.
3. Prise the bulb from the bulb holders to remove.

When replacing the lens, first locate the lug (arrowed), before pushing the lens into position.

Lighting

BULB SPECIFICATION CHART

CAUTION



Before attempting to replace a bulb, ensure that both the affected lamp, and the vehicle's starter switch, are turned off. If the circuit is live a short circuit can occur which may damage the vehicle's electrical system.

Lamp	Specification	Power (Watts)
Halogen headlamp (Dip and Main beam)	H7	60/55
Front side lamps	W5W	5
Front direction indicators	PY21W	21
Rear direction indicators	PY21W	21
Side repeater lamps	W5W	5
Reverse lamps	P21W	21
Rear fog lamps	P21W	21
Stop lamps	P21W	21
Tail lamps	W5W	5
High mounted stop lamp	P21W	21
Number plate lamps.	W4W	4
Interior lamps.	W10W	10

Wipers and washers

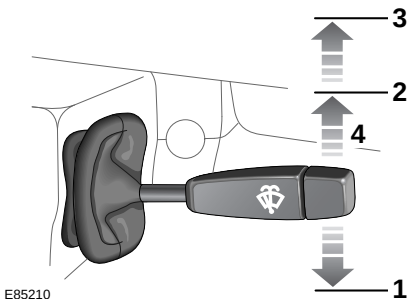
WINDSCREEN WIPERS

CAUTIONS

- ❗ Do not operate the windscreen wipers on a dry screen. The drag on the wiper mechanism may cause damage.
- ❗ In freezing or very hot conditions, ensure that the wipers have not stuck to the windscreen before operating. The drag on the wiper mechanism may cause damage.
- ❗ Remove any snow, ice or frost from the windscreen, from around the wiper arms and blades and from the screen scuttle before operating the wipers. Snow and ice can cause damage to the wiper mechanism if left uncleared.

Note: If the wiper blades do become stuck or jammed, an electronic cut-out may temporarily halt the operation of the wipers. If this happens, switch off the wipers and the starter switch. Clear any obstructions, and free the wiper blades before attempting to turn on the starter switch.

Wiper operation



1. Intermittent wipe - pull lever down.
2. Low speed wipe - push lever up to first position.
3. High speed wipe - push lever up to second position.

4. Single wipe - push up against spring pressure, then release to operate.

WINDSCREEN WASHERS

WARNING

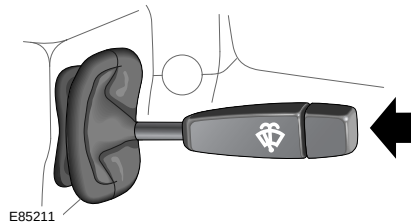


Some screenwash products are flammable, do not allow screenwash to come into contact with sources of ignition.

CAUTION



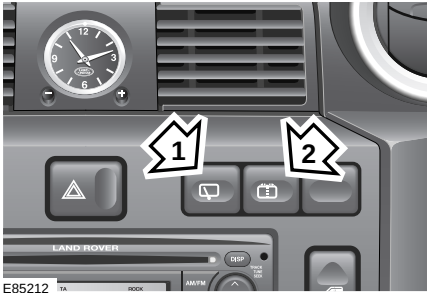
Only screenwash products which are approved for automotive use should be used, and only in accordance with the manufacturers instructions.



To operate the windscreen wash press the button on the end of the wiper stalk. When the button is released, the wipers will continue operating for four seconds, and then park.

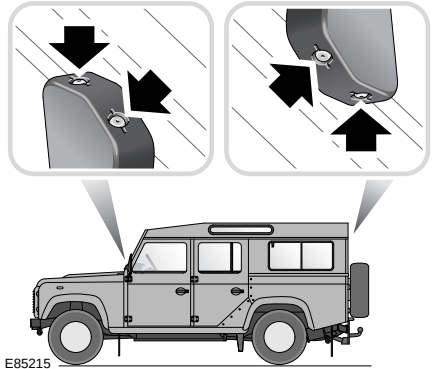
Wipers and washers

REAR WINDOW WIPER AND WASHERS



1. Rear window wiper. Press to operate - the wiper operates continuously until the switch is pressed again.
2. Rear window washer. Press and hold for the required duration of window washing. The washer jets stop as soon as the switch is released.

ADJUSTING THE WINDSCREEN WASHER JETS



If it is necessary to adjust the direction of the washer jets, insert the end of a needle into the jet and gently reposition it.

Note: Direct the water jet towards the centre of the windscreen. Take into account that when the vehicle is moving at speed the air flow over the bonnet will lower the jet.

Blocked jets

WARNING



Do not operate the washer jets during adjustment. Windscreen washer fluid may cause irritation to the eyes and skin. Always read and observe the washer fluid manufacturers instructions.

If a washer jet becomes blocked, use a thin strand of wire to unblock the jet by inserting the wire into the jet. Ensure that the wire is completely removed after unblocking.

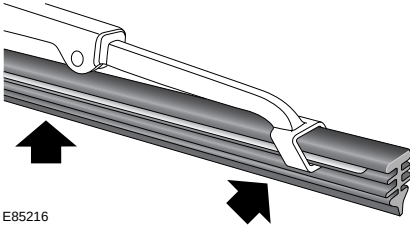
Wipers and washers

CHECKING THE WIPER BLADES

WARNING



Only use cleaning products which have been approved for use on automotive glass and rubber. Inappropriate products can cause smearing and increase glare.



E85216

The wiping edge of the blades should be checked and cleaned periodically. Check the blade rubber for cracks, splits and roughness. If any damage, wear or roughness is detected, the blade should be replaced immediately to prevent damage to the glass.

Clean the blade edge by wiping with a soft cloth or sponge, using warm soapy water.

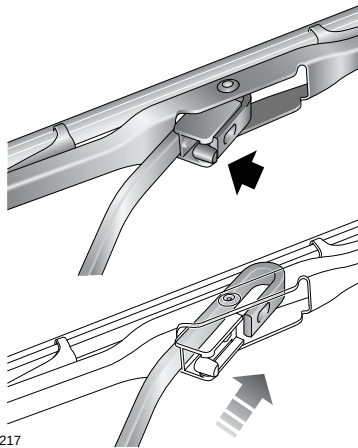
CHANGING THE WIPER BLADES

CAUTION



Only fit the correct length and type of wiper blade. Failure to do so may cause damage to the wiper system.

Note: On vehicles where the spare wheel is mounted on the taildoor, the wheel must be removed before renewing the rear wiper blade.



E85217

The removal procedure for the wiper blade is as follows:-

- Lift the wiper blade clear of the screen.
- Press the retaining clip.
- Pull the blade down the wiper arm, away from the hooked end.
- Unhook the wiper blade.

To fit the new blade, locate the new blade assembly on the arm, hook it to the swivel bracket and push into engagement, until the blade is retained by the clip.

Windows and mirrors

ELECTRIC WINDOWS

WARNING



Before closing a window, care must be taken to ensure that none of the occupants have any part of their body in a position where it could be trapped. Serious injury or death can occur.

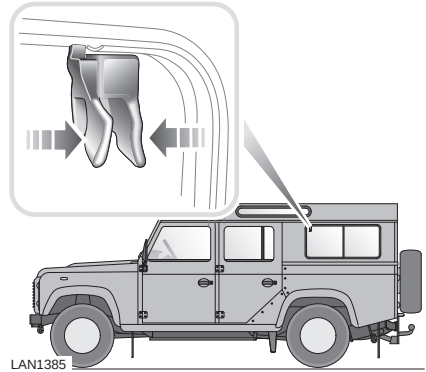


E85218

With the starter switch turned on, or engine running, press and hold the bottom of the switch to lower the window. Press and hold the top of the switch to raise the window. Release the switch at any point to stop window movement.

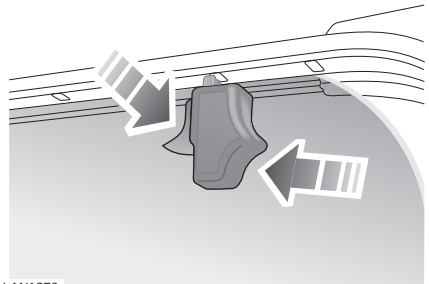
SLIDING WINDOWS

Rear side window



LAN1385

Rear cab window



LAN1376

To open, squeeze the catch, slide the window to the desired position, then release the catch. Ensure that the catch locates securely in the sockets, locking the window in position.

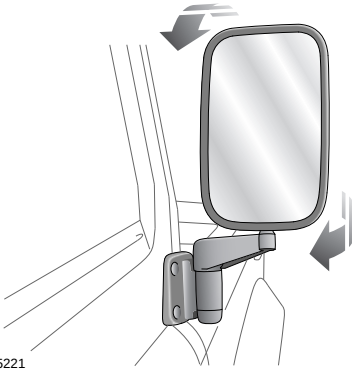
Windows and mirrors

EXTERIOR MIRRORS

WARNING



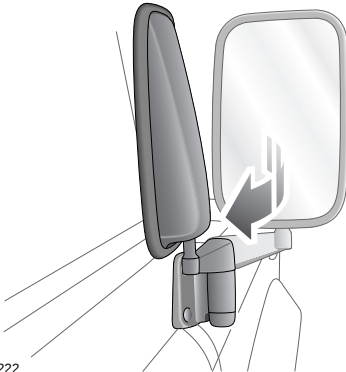
Objects viewed in exterior mirrors may appear further away than they actually are.



E85221

Adjust the mirror to the required position, so that it provides the optimum field of vision.

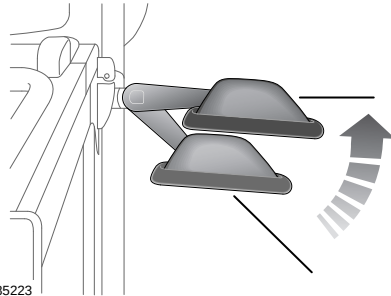
Folding the mirror body



E85222

The mirrors are designed to fold forwards or rearwards on impact. They can also be folded back towards the side windows, to enable the vehicle to negotiate narrower openings.

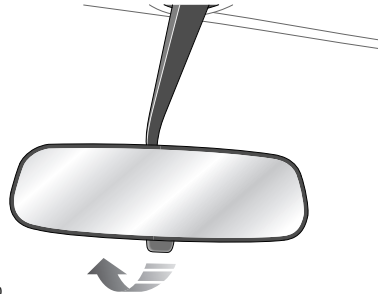
Positioning the mirror for towing



E85223

To improve rear visibility when towing, the mirrors can be pivoted outwards, so that the mirror stem is at 90 degrees to the side of the vehicle, increasing the field of vision.

INTERIOR MIRROR



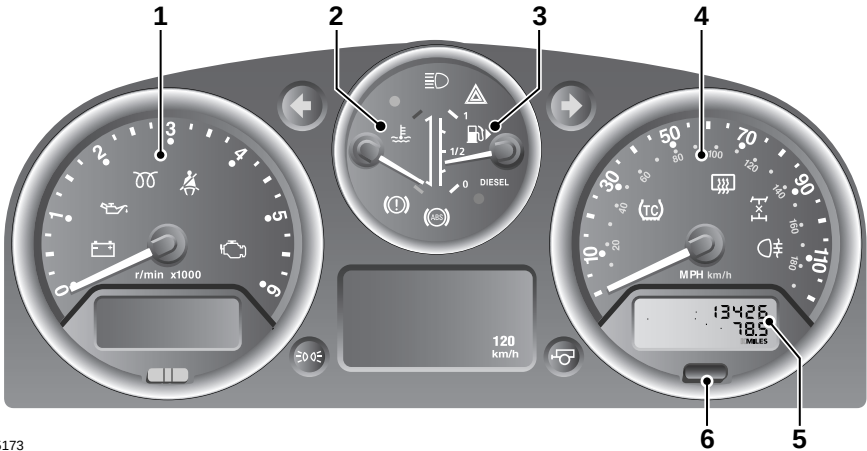
E85220

To reduce glare from the headlamps of following vehicles in dark or low light conditions, push the lever forward. To return it to normal light levels, pull the lever back.

Instruments

INSTRUMENT PANEL OVERVIEW

Instrument panel



E85173

1. Tachometer.
2. Temperature gauge.
3. Fuel gauge.
4. Speedometer.
5. Odometer and trip recorder.
6. Trip recorder reset button.

Tachometer

Indicates engine speed in revolutions per minute (RPM) x 1000.

Temperature gauge

CAUTION



Serious engine damage can occur if the vehicle is driven whilst the engine is overheating.

If the pointer moves onto the red line, severe engine damage can occur.

If the engine overheats, stop the vehicle and allow the engine to idle until the temperature lowers. Do not switch the engine off immediately, as the cooling system cannot operate with the engine switched off. If the temperature does not reduce, or the problem reoccurs, seek qualified assistance.

Note: If engine temperature rises to the point where overheating may occur, there may be a noticeable reduction in engine power, and the air conditioning may cease operation. This is a normal operating strategy to reduce load on the engine and assist with cooling.

Instruments

Fuel gauge

CAUTION



Never allow the vehicle to run out of fuel. The resulting mis-fire may cause serious damage to the catalytic convertor.

Once the fuel level has dropped to the point where the range is approximately 80 km (50 miles) the low fuel warning indicator will illuminate.

As a reminder for the location of the fuel filler, there is an arrow next to the fuel pump symbol which points to the relevant side of the vehicle.

Speedometer

Indicates road speed.

Odometer

Indicates the total distance which the vehicle has travelled.

Trip recorder

Indicates the distance travelled since the last reset, and can be used to measure the distance of individual journeys.

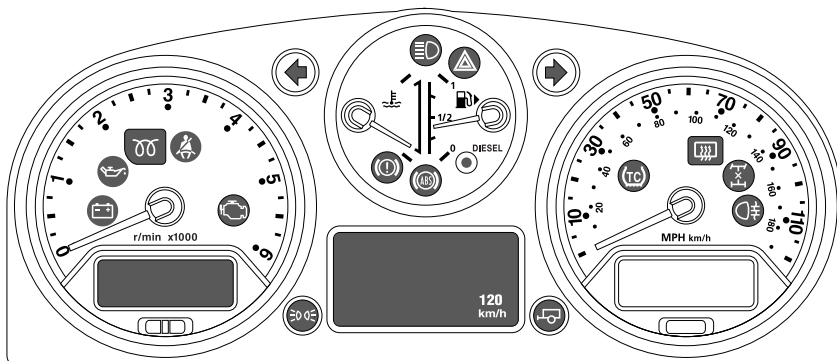
Trip recorder reset button

Resets the distance shown on the trip recorder to zero.

Note: *Once the trip recorder has been reset to zero, the previously recorded distance will be lost.*

Instruments

WARNING LAMPS AND INDICATORS



E85154

The location and specification of warning lamps and indicators may vary, according to model and market requirements.

Battery charging - Red



Illuminates as a bulb check when the starter switch is turned to position **II** and extinguishes once the engine is running. If it remains on, or illuminates when driving, a fault is indicated. Seek qualified assistance urgently.

Low oil pressure - Red



Illuminates as a bulb check when the starter switch is turned to position **II** and extinguishes when the engine is started. If the indicator remains on, flashes on and off, or illuminates when driving, stop the vehicle as soon as safety permits and **switch off the engine immediately**. Seek qualified assistance before driving.

Always check the oil level if this indicator illuminates.

Glow plug - Amber



Illuminates when the starter switch is turned to position **II**. Wait until the indicator has extinguished before starting the engine.

Seat belt - Red



Illuminates if the driver's seat belt remains unfastened when the vehicle is in motion and is accompanied by an audible warning. The warning indicator will remain illuminated until the seat belt is fastened correctly.

Check engine - Amber



Illuminates as a bulb and system check when the starter switch is turned on and extinguishes as soon as the engine starts. Illumination at any other time indicates an engine fault. If the indicator illuminates while driving, avoid high speeds and seek qualified assistance urgently.

Instruments

Direction indicators - Green



The left or right warning indicator flashes in conjunction with the relevant direction indicator. If the warning indicator fails to flash, or flashes very rapidly, this may indicate that one of the direction indicator bulbs has failed.

Both warning indicators will flash in conjunction with the direction indicators, when the hazard warning lamps are selected.

Side lamps on - Green



Illuminates whenever the side lamps are on.

Headlamp main beam - Blue



Illuminates when the headlamps are switched to main beam.

Hazard warning lamps



Flashes in conjunction with the direction indicator warning indicators when the hazard warning lamps are operating.

Brake systems - Red/Amber



This indicator shares its position and symbol with four brake system warnings and illuminates briefly as a bulb check when the starter switch is turned to position **II** (the indicator will illuminate red and amber during bulb check).

Parking brake - Red

Illuminates when the parking brake is applied with the starter switch in position **II**. The indicator should extinguish when the parking brake is fully released. If the indicator illuminates when driving (and the parking brake is not applied), a fault is indicated. Seek qualified assistance before continuing.

Brake fluid level - Red

Illuminates when the brake fluid level is low. If the indicator illuminates when driving (and the parking brake is not applied), stop the vehicle gently, as soon as safety permits. Check and top-up the brake fluid, if necessary. If the lamp remains illuminated, seek qualified assistance before continuing. Have the problem checked by your Land Rover Dealer/Authorised Repairer.

Electronic Brake Force Distribution (EBD) - Red

Illuminates when a fault with the EBD system is detected. If the indicator illuminates when driving (and the parking brake is not applied), stop the vehicle gently, as soon as safety permits. Check and top-up the brake fluid, if necessary. If the lamp remains illuminated, seek qualified assistance before continuing. Have the problem checked by your Land Rover Dealer/Authorised Repairer.

Anti-lock braking system - Amber



Illuminates as a bulb check when the starter switch is turned to position **II**. If the indicator remains on or illuminates when driving, a fault with the ABS system is indicated. Drive with extra care, avoiding heavy brake application and seek qualified assistance urgently.

Trailer direction indicators - Green



Flashes in conjunction with the direction indicator warning indicators, when a trailer is attached to the vehicle. If it does not flash, this indicates that a trailer bulb is defective.

Instruments

Traction control - Amber



The indicator illuminates for a minimum of two seconds whenever traction control is operating. If the indicator illuminates continuously, a fault with the system is indicated. Seek qualified assistance urgently.

Heated rear screen - Amber



Illuminates when the rear screen heater is operating.

Differential lock - Amber



Illuminates whenever the differential is locked. If the indicator remains illuminated after the differential lock is disengaged, transmission wind-up may be present. Reversing the vehicle a short distance and then driving forward will usually unwind the transmission. If the indicator remains on, seek qualified assistance as soon as possible.

Rear fog lamp - Amber



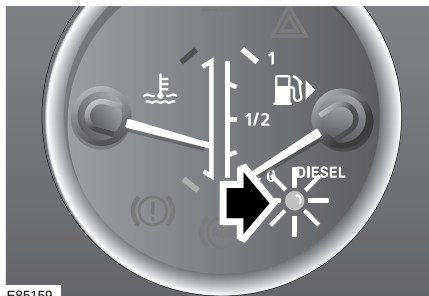
Illuminates whenever the rear fog lamps are on.

Over-speed warning - Amber (Gulf states only)



If the road speed exceeds 120 km/h (75 mph), the indicator flashes for five seconds and then, if the road speed reaches 124 km/h (77 mph), illuminates continuously. The indicator will remain illuminated until the road speed reduces to 117 km/h (73 mph). Illumination of the warning indicator is accompanied by an audible warning.

Low fuel - Amber

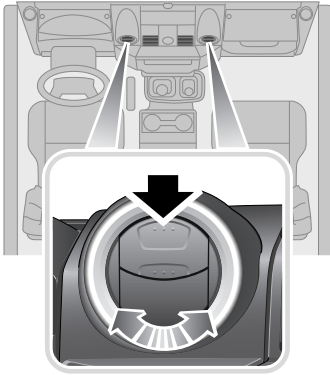


E85159

Illuminates when the fuel remaining in the tank drops to a minimum of 9 litres (2 gallons). If the indicator illuminates, refuel at the first opportunity.

Climate control

AIR VENTS



E85224

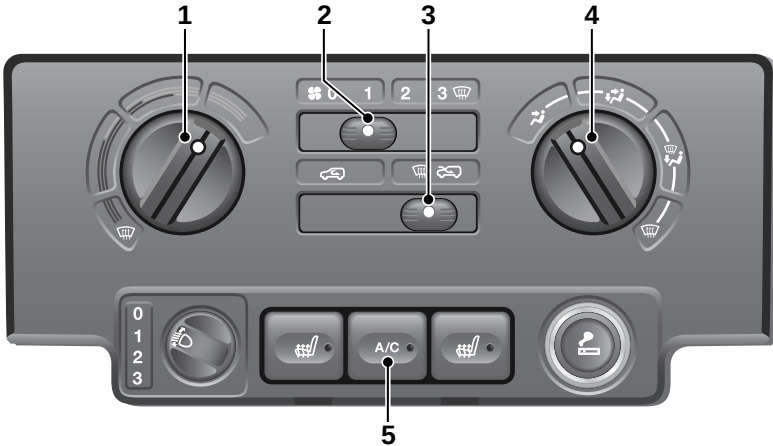
Press the upper portion of the vent to open.

Adjust the direction and volume of air flow to suit your requirements.

Climate control

MANUAL CLIMATE CONTROL

Controls



E85225

1. Temperature control, rotate counterclockwise or clockwise to increase or decrease temperature accordingly.
2. Blower speed, move the lever towards the right or left to increase or decrease blower speed.
3. Recirculation control. Move the lever to the left or right for recirculated or fresh air.
4. Air distribution. With the blower operating, rotate to direct air flow as required.
5. Air conditioning control. Press to switch on and off (switch indicator illuminates when switched on).

Note: The blower will be switched on automatically if air conditioning is selected when the blower is set to 0.

Recirculation (3)

When selected, the air is recirculated inside the vehicle. This helps to maintain a high or low temperature, and is useful for preventing fumes from entering the vehicle.

Note: Prolonged use at low temperatures may cause the windows to mist.

Air distribution (4)

Rotate the control to set the air distribution to the required points (face, face and feet, feet and windscreen, windscreen only).

- For maximum heating, set the control to feet and windscreen.
- For maximum ventilation, set the control to face only.
- For maximum demisting/defrosting, set the control to windscreen only.

Climate control

Air conditioning (5)

Air conditioning provides additional cooling to the vehicle interior and also reduces the moisture content of the air.

- In very humid conditions, slight screen misting may be experienced when air conditioning is turned on. This will clear in a few seconds.
- If the interior temperature is higher than the temperature outside the vehicle, it may take a short time for the air conditioning to be effective. It is best, in these circumstances, to fully ventilate the vehicle using the blower control, window and sunroof, prior to switching on the air conditioning.
- It is recommended that the air conditioning is operated for a short while every week, to keep the system in peak condition.

Note: Air conditioning only operates with the engine running.

Note: The air conditioning system takes power from the engine and consequently increases fuel consumption.

Defrost/demist

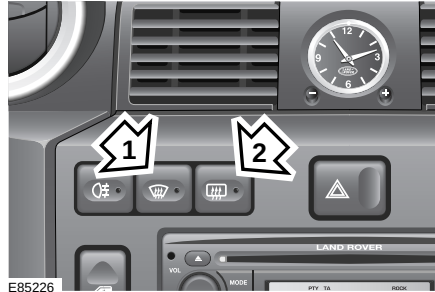
For maximum defrosting or demisting of the windows, use the following settings:

- Set the air distribution control to windscreen only.
- Set the temperature control to maximum.
- Set the blower speed to **3**.
- Set the air recirculation control to fresh air for demisting and defrosting.
- Activate air conditioning.

Heated screens

CAUTIONS

- ⚠ Do not stick labels over the heating elements on the rear screen.
- ⚠ Do not scrape or use abrasive materials to clean the inside of the rear screen.



1. Heated windscreen
2. Heated rear screen

Press the appropriate switch to operate (switch indicator illuminates), press a second time to switch off (indicator extinguishes). The heating elements will switch off automatically after approximately eight minutes.

Note: The heated windscreen only operates with the engine running.

SUNROOF

Opening and closing

WARNINGS

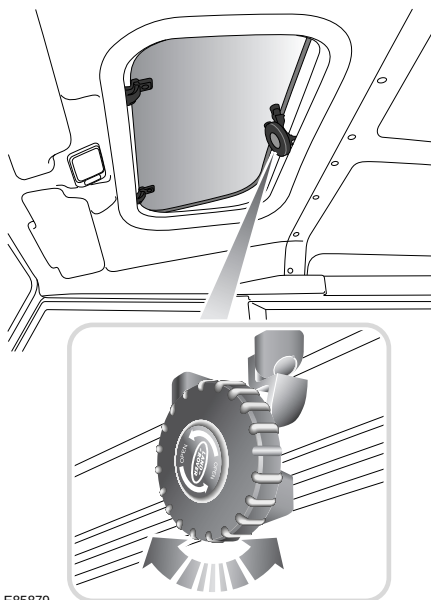
- ⚠ Ensure the sunroof is not obstructed when opening or closing.
- ⚠ Do not allow passengers to extend any part of their bodies through the sunroof aperture while the vehicle is moving. Injury from flying debris, branches of trees, etc. could occur.

Climate control

WARNINGS



Always close the sunroof when the vehicle is left unattended.



E85879

- Turn the handwheel counterclockwise until the sunroof is open to the required degree.
- Turn the handwheel clockwise until resistance is felt.

Removing the sunroof

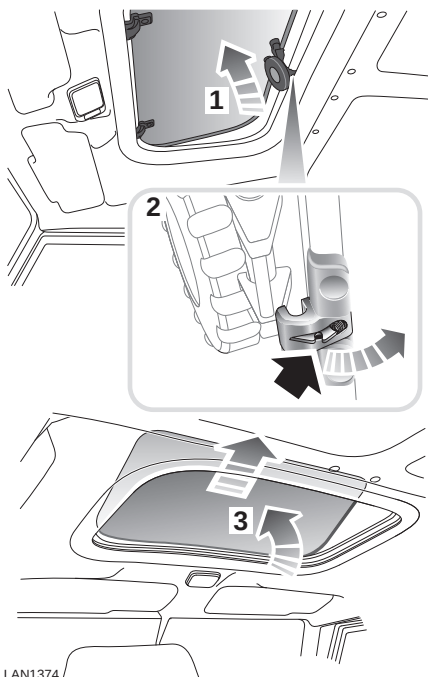
WARNINGS



Do not remove the sunroof when the vehicle is moving.



Do not store the removed sunroof loose in the vehicle.



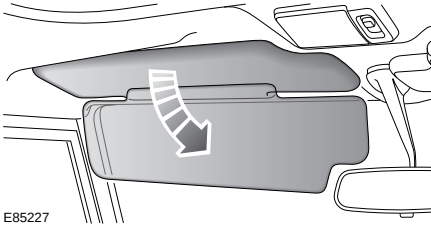
1. Fully open the sunroof.
2. Push the release catch rearwards (as arrowed) and disengage the handwheel mechanism.
3. Using both hands, tilt the sunroof upwards, then lift rearwards to disengage the two locating pins.

Rotate the sunroof so that it fits through the aperture and lower it into the vehicle.

Note: Refit the sunroof by reversing the above procedure.

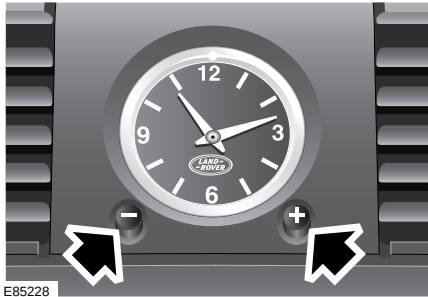
Convenience features

SUN VISORS



E85227

CLOCK

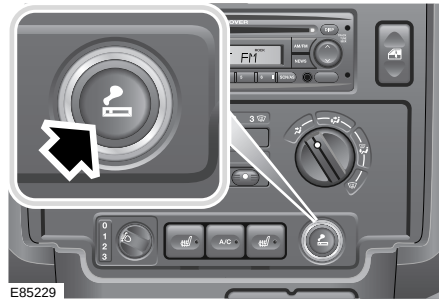


E85228

Press the + or - buttons to advance or put back the time.

Note: The clock will need to be reset if the battery is disconnected.

CIGAR LIGHTER



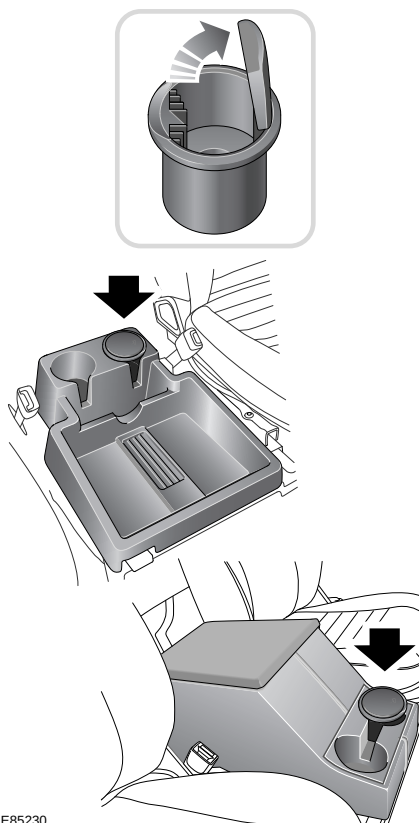
E85229

With the starter switch turned on, press in the centre of the cigar lighter. When the cigar lighter element has reached the correct temperature it will partially eject and can be withdrawn for use.

After use push the lighter back into the first position.

Convenience features

ASHTRAY



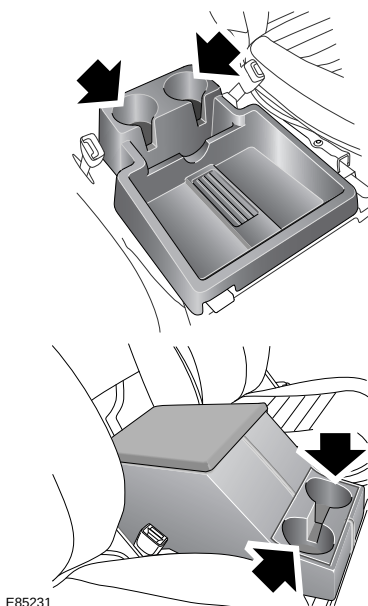
WARNING



Do not use the ashtrays for disposing of waste paper, or other combustible items. The resulting fire may cause death or serious injury.

To empty, pull out the complete ashtray.

CUP HOLDERS



WARNINGS



The cup holders should only be used for soft containers. Containers which are hard (cans, metal, ceramic, hard plastic etc.) can cause serious injury if the vehicle is involved in an accident, sudden manoeuvre or braking.



Do not carry open drinks containers. Hot liquids can cause serious injury when spilled and may damage the vehicle.

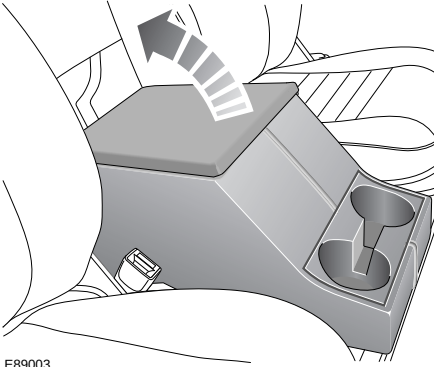


Do not drink, or use the drinks holders when driving. Doing so would break concentration, which may result in loss of control.

Convenience features

STORAGE COMPARTMENTS

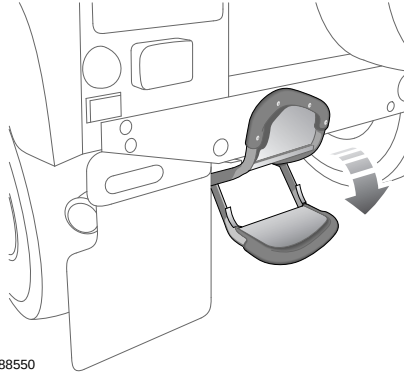
Cubby box



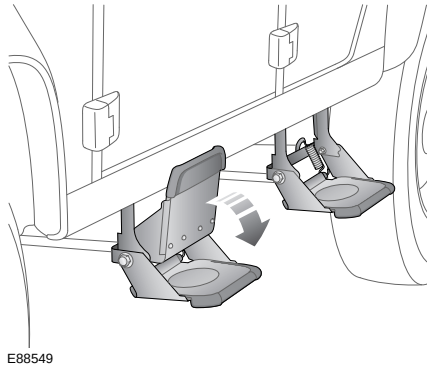
Open the lid to access the storage compartment.

STEPS

Rear step



Side steps

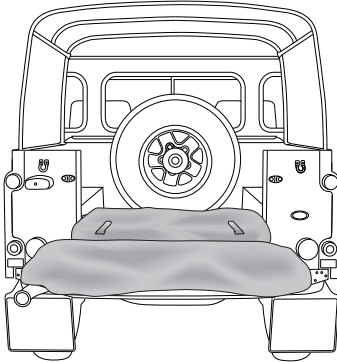


The steps are designed to be folded down for use and folded up when not required.

Detachable roof

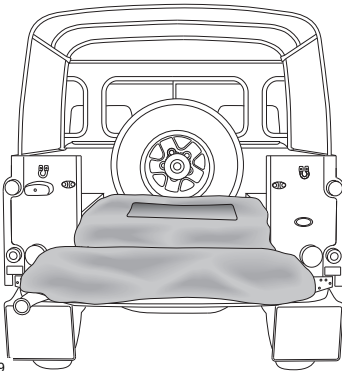
FITTING THE ROOF

Note: It is recommended that roof fitting is performed by two people.



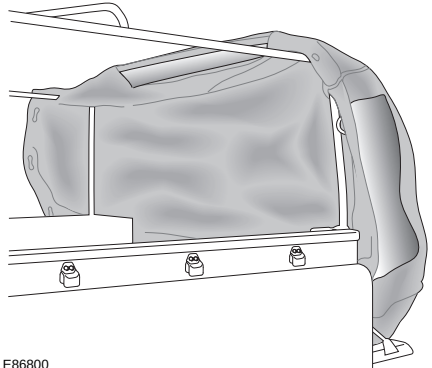
E86798

Lay the canopy on the open tailgate.



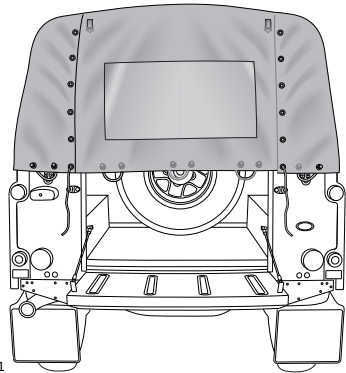
E86799

Unfold the canopy into the load area.



E86800

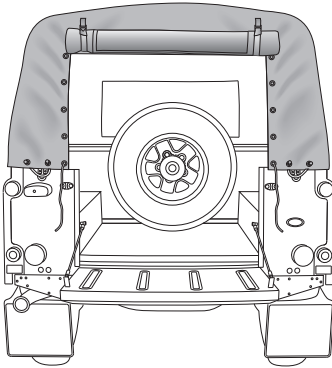
From the rear, lift the canopy over the frame, ensuring that the front window is against the window of the cab.



E86801

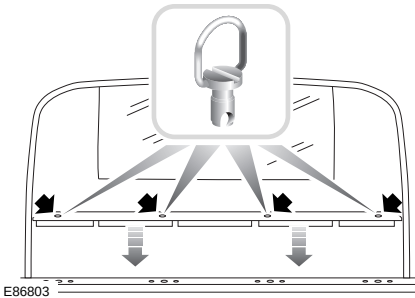
Prior to fastening the canopy to the vehicle, it should resemble the illustration above.

Detachable roof



E86802

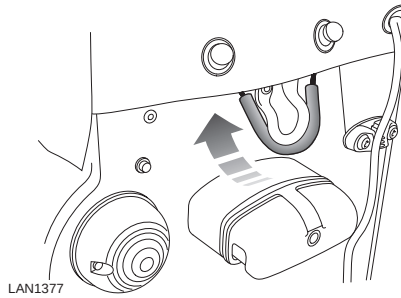
Roll up the canopy rear screen to improve access to the rear of the vehicle and secure with the tether straps.



E86803

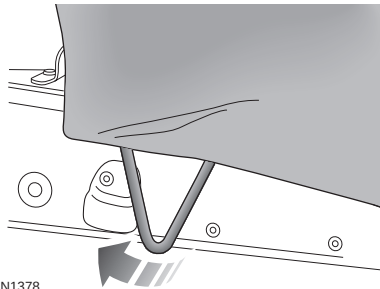
Remove the spare wheel. See **CHANGING A ROAD WHEEL** (page 108). Slot the metal retaining strip into the canvas pocket below the cab window. Align the holes in the strip with those in the body and insert the four turnbuckles. Twist the turnbuckles clockwise to secure.

Note: Refit the spare wheel.



LAN1377

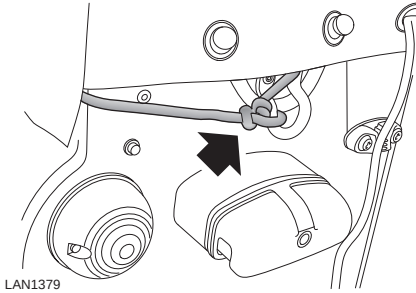
Pull and attach both rubber hoops to the hooks above the rear lamps as shown.



LAN1378

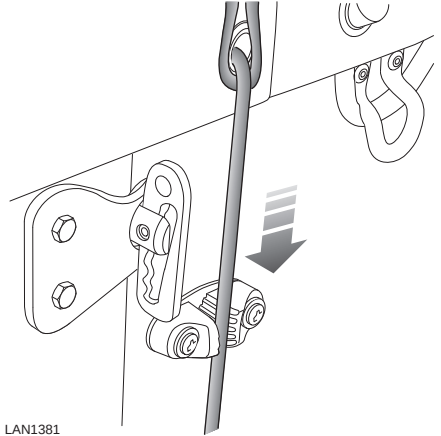
Starting at the front of the canopy, loop the tie rope over each of the hooks along the side of the vehicle. Ensure that each loop is tightened before the next loop is made.

Detachable roof



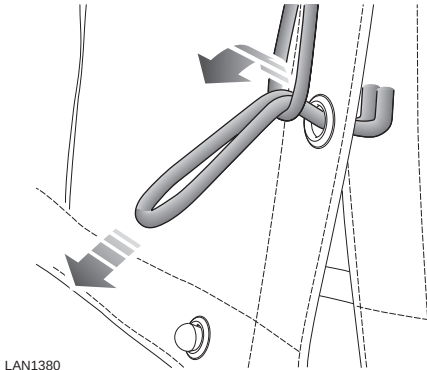
LAN1379

Fasten the tie rope to the hook above the rear lamps.



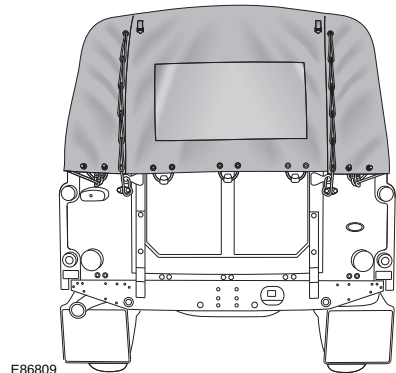
LAN1381

Close the tailgate, then pull the tie rope through the last loop and then through the gripper unit as shown. Tie off any excess rope length.



LAN1380

Unroll the canopy rear screen and secure to the rear panels by threading each rope loop through the loop above and pull downwards as shown.



E86809

The finished canopy should look as shown.

Note: The process for removing the roof is a reversal of the fitting process.

Starting the engine

STARTING A DIESEL ENGINE

WARNING

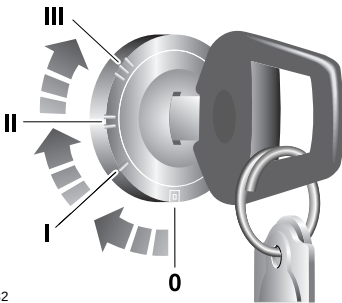


Never start the engine, or leave it running, when the vehicle is in an enclosed space. Exhaust gasses are poisonous and can cause unconsciousness and illness if inhaled.

CAUTION



You should only operate the starter for a maximum of 30 seconds at a time. If the engine fails to start, do not continue cranking as this will discharge the battery.



E85232

Note: Do not press the accelerator pedal when starting the engine.

1. Insert the black key into the starter switch and turn to position **II**.
2. Wait until the glow plug warning indicator extinguishes. The waiting time will vary according to engine temperature.
3. Fully depress the clutch pedal and turn the starter switch to position **III** to operate the starter motor. Release the key as soon as the engine starts.

If the engine stalls or fails to start, you must return the starter switch to position **I** before attempting to restart.

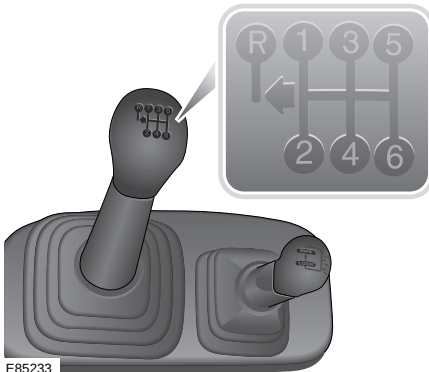
Transmission

MANUAL TRANSMISSION

CAUTIONS

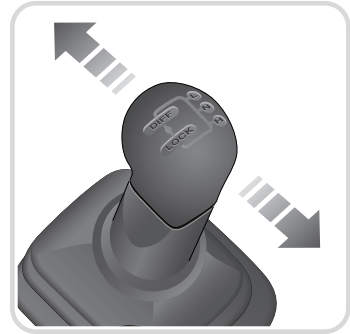
- ❗ Never attempt to engage reverse gear whilst the vehicle is in forward motion. This may result in serious transmission damage and costly repairs.
- ❗ Do not rest your hand on the gear lever while driving - this may cause premature wear to the gear selector mechanism.
- ❗ Do not rest your foot on the clutch pedal. Keep your foot clear of the clutch pedal, except when changing gear.

The transmission consists of a six-speed main gearbox and a two-speed (high and low) transfer box. A centre differential in the transfer box distributes the drive to the front and rear axles, providing permanent four-wheel drive.



The gear lever is spring loaded, and when in neutral sits between third and fourth gear positions. Extra pressure will be required to move across to reverse.

TRANSFER GEARBOX



The transfer gearbox is used to select the high or low range gears. It also has a neutral position between high and low.

High range

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

Low range

Low range should only be used in situations where low speed manoeuvring is necessary (e.g. 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 low range for normal road driving.

Transmission

Neutral

In transfer neutral, drive is not transmitted to the road wheels, regardless of the main gear lever position. Use transfer neutral when the vehicle is being towed.

Using the transfer gearbox

A gear range change can be performed with the vehicle stationary or with the vehicle on the move, as follows:

Stationary method

With the vehicle stationary and the engine running:

1. Depress the clutch.
2. Move the transfer lever from the current range setting into the neutral position (e.g. from high to neutral).
3. Move the transfer lever from neutral into the desired range setting (e.g. from neutral to low).

If there is resistance when trying to engage the gear range, do not force the lever. Instead:

1. With the clutch depressed and the transfer gearbox still in neutral, select 2nd gear in the main gearbox.
2. Release the clutch momentarily, then depress the clutch again and attempt to select the desired range.
3. Select the appropriate gear in the main gearbox to pull away.

Changing from high to low on the move

With the vehicle slowing to a stop and travelling no faster than 8 km/h (5 mph):

1. Depress the clutch and move the transfer lever into neutral.
2. Just before the road wheels stop turning (with the clutch depressed), push the lever fully forward into low range.

Note: Use positive and confident moves, but do not rush the gear change.

Changing from low to high on the move

1. Apply slight rearward pressure to the transfer lever, in preparation for the range change.
2. Then, in three simultaneous moves, depress the clutch, release the accelerator and pull the transfer lever into neutral.
3. Release the clutch pedal for approximately three seconds, before pressing it again and moving the lever firmly into the high range position.
4. Select a suitable main gear in the main gearbox, release the clutch and continue driving as normal.

The differential lock

CAUTION

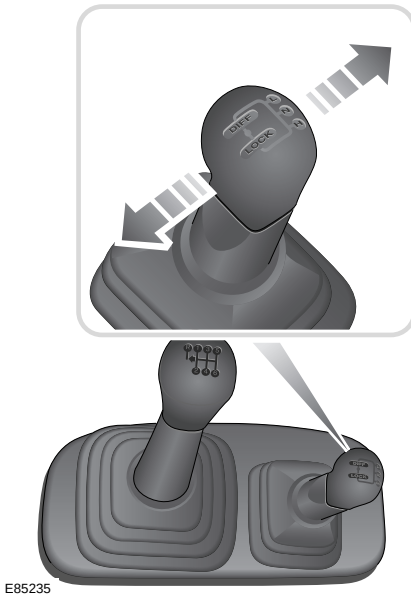


Do not engage the differential lock if one or more of the wheels is slipping - this could damage the transmission. If wheels are slipping, ease off the accelerator before engaging the lock.

Do not engage the differential lock from the transfer neutral (N) position.

If the vehicle is driven on normal road surfaces with the differential locked, the steering will feel stiff, excessive tyre wear will occur and the transmission will be wound up. This places excessive strain on the transmission.

Transmission



E85235

Your vehicle is fitted with a lockable differential between the front and rear propshafts. When the differential is locked, both axles will rotate at the same speed. The differential should be locked when driving off-road on loose and slippery surfaces.

With the differential unlocked, the different running requirements of the two axles can be accommodated, as they can rotate independently. The differential should be unlocked for all normal road driving or as soon as a hard grippy surface is reached when driving off-road.

The differential lock can be engaged or disengaged, either with the vehicle stationary, or when driving at any road speed. However, with the vehicle in motion, it is **essential** that the vehicle is travelling in a straight line, on firm ground, without wheel slip.

Locking the differential

Press the clutch pedal and move the transfer gear lever to the left from either **H** (high) or **L** (low) (the warning indicator in the instrument panel illuminates).

Unlocking the differential

Press the clutch pedal and move the transfer gear lever to the right, to either the **H** (high) or **L** (low) position, as required. The warning indicator should extinguish when the differential lock is disengaged. If the indicator does not extinguish, transmission wind-up may be present.

Differential lock warning indicator



The amber warning indicator illuminates when the differential lock is actually engaged (rather than when it has been selected). Similarly, it will only extinguish after the differential lock has actually disengaged. This accounts for a slight delay between deselection and the warning light extinguishing.

Note: *If the warning indicator does not extinguish after the differential lock has been deselected, some transmission wind-up may be present.*

Transmission wind-up

If transmission wind-up is suspected and when it is safe to do so, reverse the vehicle a short distance and then drive forward. This should unwind the transmission and the differential lock warning indicator should extinguish.

If, after two or three attempts to unwind the transmission have been made and the warning indicator remains illuminated, consult your Land Rover Dealer/Authorised Repairer as soon as possible.

Transmission

TECHNICAL SPECIFICATIONS

Transmission fluids and capacities

Transmission unit	Fluid specification	Fluid capacity
Manual gearbox	Castrol BOT 130 M	2.40 litres (4.22 pints)
Transfer gearbox	Castrol Syntrax 75W/90 or Texaco Multigear 75W/90R	2.30 litres (4.05 pints)
Final drive units	Castrol EPX 80W/90 or Texaco Geartex EP 85W/90	1.60 litres (2.81 pints)
Front axle swivel pin housings	Texaco Molytex EP00	0.38 litres (0.66 pints)

Brakes

PRINCIPLE OF OPERATION

WARNINGS



Do not rest your foot on the brake pedal whilst the vehicle is in motion. This may cause a light application of the brakes, which can result in overheating, reduced brake performance, and excessive brake wear.



Never allow the vehicle to coast (freewheel) with the engine turned off. The engine must be running to provide full braking assistance. The brakes will still function with the engine off, but far more pressure will be required to operate them.



If the red brake warning indicator illuminates, safely bring the vehicle to a stop, as quickly as possible. Seek qualified assistance before proceeding.

Brake pads

Brake pads require a period of bedding in when new. Drive with extra caution for the first 800 km (500 miles) to avoid the need for heavy braking.

Wet conditions

Driving through heavy rain or water can have an adverse effect on braking efficiency. Under those circumstances, it is recommended that you lightly apply the brakes intermittently to dry the brakes.

HINTS ON DRIVING WITH ABS

WARNINGS



ABS cannot overcome the physical limitations of braking distance. Nor can it overcome the lack of grip on a road surface, aquaplaning on water for example.



Braking distance is increased on a slippery surface. This applies to all vehicles, even those fitted with ABS.



The driver should not be tempted to take risks when driving, in the hope that ABS will correct errors of judgement. In all cases, it remains the driver's responsibility to drive with due care and attention, paying particular attention to the effects of speed, weather, road conditions etc.

ABS (Anti-Lock Braking System) allows maximum brake pressure, and thus maximum braking efficiency, to be applied, and prevents the road wheels locking. This allows the driver to retain steering control during heavy braking under most road conditions.

During emergency braking conditions ABS constantly monitors the speed of each wheel. ABS varies the brake pressure to individual wheels, according to the grip available. The constant alteration of brake pressure can be felt as a pulsing sensation through the brake pedal. This is not a cause for concern, as it is designed to demonstrate to the driver that ABS is operating.

ABS warning indicator



If this amber warning indicator illuminates, drive with extra caution, avoid heavy braking where possible, and seek qualified assistance as soon as possible.

Brakes

ABS and off-road driving

ABS will operate when driving off-road, however it may be unwise to rely on its assistance under some conditions.

Stopping distances will be increased when travelling over rough, or bumpy terrain.

Soft surfaces

On soft or deep surfaces, such as powdery snow, sand or gravel, the braking distance required will be increased. This is because the natural action of a locked wheel (which cannot happen when ABS is operating) is to form a wedge of surface material in front of the wheel, which reduces the stopping distance.

Steep slopes

If the vehicle is stationary on a steep, slippery slope, it may begin to slide even with the brakes applied. This is because without wheel rotation the ABS cannot determine vehicle movement.

To counteract this, briefly release the brakes to allow some wheel rotation. Then re-apply the brakes to allow ABS to gain control.

PARKING BRAKE

Parking on a slope

Facing uphill

If the vehicle is parked facing uphill, select first gear and turn the steering wheel so that the front wheels face away from the kerb.

Facing downhill

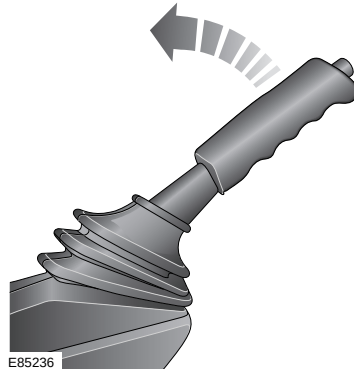
If the vehicle is parked facing downhill, select reverse gear and turn the steering wheel so that the front wheels face towards the kerb.

Applying the parking brake

WARNING



Ensure that the parking brake is applied fully before releasing the parking brake lever.



E85236

1. Firmly apply the foot brake.
2. Pull the parking brake lever upwards until the parking brake is applied.

Note: Do not press the parking brake release button when applying the parking brake.

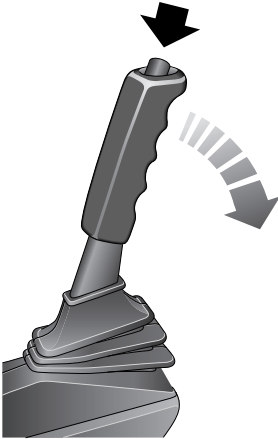
Brakes

Releasing the parking brake

WARNING



Ensure that the foot brake is applied before releasing the parking brake.



E85237

1. Firmly apply the foot brake.
2. Press the parking brake lever release button.
3. With the button pressed, lower the parking brake lever to its lowest position.

Driving hints

RUNNING-IN

The engine, gearbox, tyres and brakes, need time to bed-in. During the first 800 km (500 miles), it is essential that the vehicle is driven with consideration for the running-in process. During the running in period, the following advice should be followed.

- Limit the engine speed to a maximum of 3000 rpm and the road speed to a maximum of 80 km/h (50 mph).
- Do not use full accelerator pedal travel and use the gears to avoid over-revving or labouring the engine.
- Avoid rapid acceleration or heavy braking wherever possible.
- Ensure that servicing is carried out on time and follow any advice regarding use in arduous conditions.

Note: *The advice given for running in will aid fuel economy and should be adopted as general driving practice, even after the running in period.*

ECONOMICAL DRIVING

There are two main factors which influence fuel economy, the way the vehicle is driven, and maintenance.

Driving tips for economy

- Avoid unnecessary journeys, especially short stop-start trips.
- Accelerate smoothly and gently from a stand still.
- Use the gears to avoid labouring or over-revving the engine.
- Allow time to brake gently and smoothly.
- Be aware of traffic and road conditions ahead and take action in time to avoid hard braking or acceleration.
- When stationary apply the parking brake, and select neutral.
- Turn off the air conditioning when not needed.

Maintenance and fuel economy

Regular servicing by a Land Rover Dealer/Authorised Repairer, along with regular checks by the driver, are essential for vehicle longevity and fuel economy.

The condition of the engine (oils, filters, settings etc.), tyre pressures and wheel alignment, will all have a bearing on fuel economy. For this reason, it is essential that the vehicle is checked regularly by the driver and serviced by an approved Land Rover Dealer/Authorised Repairer at the correct intervals.

Note: *If you are in any doubt about the maintenance requirements, intervals or checks required, contact your Land Rover Dealer/Authorised Repairer for advice.*

Fuel and refuelling

SAFETY PRECAUTIONS

WARNINGS



Petroleum gasses are highly flammable, have a low flash point, and are explosive, especially in confined spaces. Avoid exposing the gasses to any potential sources of ignition as the resulting fire and explosion may cause serious injuries and/or death.



Only use containers specifically designed for carrying fuel, and always remove them from the vehicle to fill them. Failure to do so may result in spillage, and cause a fire.



Switch off the engine when refuelling, as it is both a source of extreme temperatures, and electrical sparks. The resulting fire and explosion may cause serious injury and death.



Switch off any personal electronic devices such as mobile phones, or music players. They have the potential to cause electrical sparks. The resulting fire and explosion may cause serious injury and death.



Do not smoke, use a naked flame, or cause sparks. The resulting fire and explosion may cause serious injury and death.



Do not overfill the fuel tank. Overfilling may cause spillage when the vehicle is driven. Spillage may also occur if the fuel expands in high ambient temperatures.

FUEL QUALITY

Note: Land Rover vehicles are capable of running with up to a 5% blend of bio-diesel, in accordance with European Standard EN590.

Sulphur content

The Sulphur content of diesel used in Land Rover vehicles should not exceed 0.3%.

In some countries, diesel will contain higher levels of Sulphur, which will require reduced service intervals to reduce the effects on engine components. If in doubt, contact a local Land Rover Dealer/Authorised Repairer for advice.

RUNNING OUT OF FUEL

CAUTION



Avoid running out of fuel. Doing so can cause damage to the vehicle's engine, fuel and emission control systems.

Note: If the vehicle does run out of fuel, a minimum of 4 litres (0.8 gallons) will be required to restart the engine. The vehicle will need to be driven 1.6-5 km (1-3 miles) in order to reset the engine management and monitoring systems.

Note: If the vehicle does run out of fuel, seeking qualified assistance is advisable.

Fuel and refuelling

REFUELLING

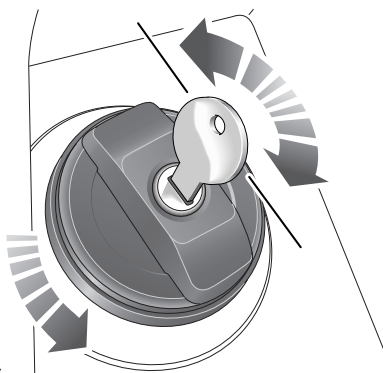
Fuel filler cap

WARNING



Do not fully remove the fuel filler cap until any captive tank pressure has been released (wait until the hissing stops).

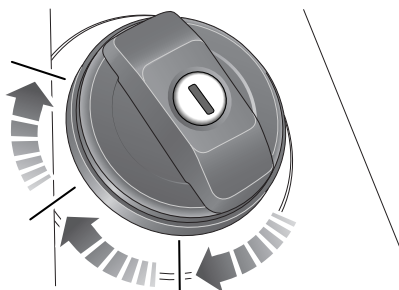
The fuel filler is located in the right-hand rear body side.



E94107

To unlock and remove the filler cap:

1. Hold the filler cap steady, insert the key and turn it a half-turn anti-clockwise.
2. Remove the key.
3. Unscrew the filler cap, gradually at first, allowing the fuel tank to vent.
4. Remove the filler cap.



E85239

To replace and lock the filler cap:

1. Replace the filler cap into the fuel filler.
2. Turn and tighten the filler cap clockwise, until it clicks three times.
3. Hold the filler cap steady, insert the key and turn it a half-turn clockwise.
4. Remove the key.
5. The filler cap is now locked, but can rotate.

Fuel filling

WARNINGS



When refuelling, ensure that all windows, doors and sunroof are fully closed, particularly if young children or animals are in the vehicle. Fuel vapour contains harmful chemical compounds, some of which may cause cancer.



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.

CAUTIONS



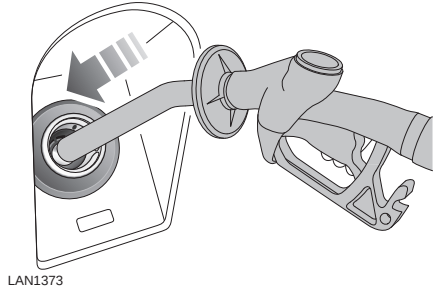
Ensure that you check the fuel pump information carefully, to ensure that you are putting the correct fuel into the vehicle. Filling a vehicle with the incorrect fuel can cause serious engine and fuel system damage.

Fuel and refuelling

CAUTIONS

⚠ If the vehicle is filled with incorrect fuel, it is essential that you seek qualified assistance before you start the engine. Running the engine can cause serious engine and fuel system damage.

Note: Filling station pumps used for diesel commercial vehicles deliver fuel at a higher rate than normal. The higher fill rate can cause premature cut-off and may cause fuel spillage. Therefore, it is recommended that only standard light vehicle pumps are used.



Filling station pumps are equipped with automatic cut-off sensing, to avoid fuel spillage. Do not attempt to fill the tank beyond this cut-off point or spillage may occur due to fuel expansion.

TECHNICAL SPECIFICATIONS

Fuel consumption

Variant	Urban	Extra-urban	Combined	CO2 emissions
	l/100 km (mpg)	l/100 km (mpg)	l/100 km (mpg)	g/km
90 Station Wagon	12.5 (22.6)	8.6 (32.9)	10.0 (28.3)	228
90 Commercial	13.3 (21.2)	8.6 (32.9)	10.3 (27.4)	229
110 Station Wagon	13.5 (20.9)	9.5 (29.7)	11.0 (25.7)	252
110 Commercial	13.6 (20.8)	9.7 (29.1)	11.1 (25.5)	295
130 Commercial	13.6 (20.8)	9.7 (29.1)	11.1 (25.5)	295

Fuel specification

Diesel
EN 590

Load carrying

GENERAL INFORMATION

CAUTIONS

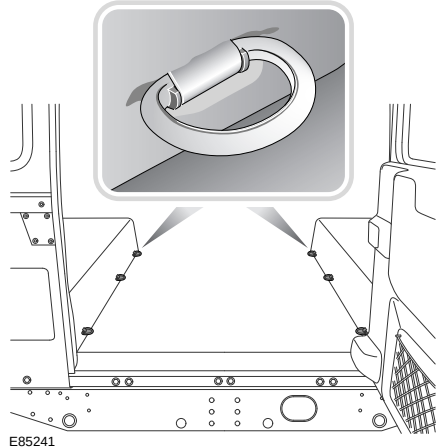
- ⚠ When transporting a load in the rear of the vehicle, ensure that the taildoor or tailgate is closed.
- ⚠ On vehicles fitted with chequer plate on the front wings, this area is not a load-bearing surface.
- ⚠ On vehicles fitted with side bars, these are not load-bearing.

LUGGAGE ANCHOR POINTS

WARNING



All items carried in the luggage area should be properly secured. Loose items can cause serious injury or death in the event of an accident or sudden manoeuvre.



On some vehicles, load securing rings are provided in the rear of the vehicle, to assist in safely securing items to be carried.

Note: A range of approved luggage retention accessories, for use in conjunction with the load securing rings, are available from your Land Rover Dealer/Authorised Repairer.

Load carrying

ROOF RACKS AND LOAD CARRIERS

CAUTION



Always use an approved roof rack and follow the manufacturer's fitting instructions carefully.

A full list of approved roof rack systems and accessories is available from your Land Rover Dealer/Authorised Repairer.

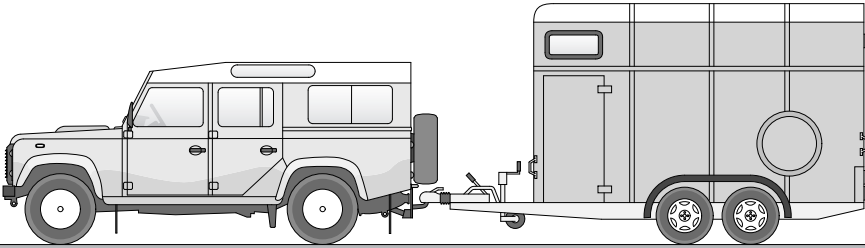
Roof rack safety

Always observe the following precautions:

- The **maximum** roof load is 150 kg (330 lb). When calculating the roof load, the weight of the roof rack and any load carrier **must** be included.
- The load ratings of Land Rover approved roof racks differ. Please check the maximum load rating for the particular roof rack system being used and do not exceed this rating.
- Ensure that maximum axle weights and the Gross vehicle Weight are not exceeded with the roof rack loaded.
- 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 roof rack.
- Always secure the load to the side rails, not just to the cross rails.
- Only fit roof racks that have been designed for your vehicle. If in doubt, consult your dealer.
- 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.

Towing

TOWING A TRAILER



E85630

WARNINGS



Never exceed the maximum weights for either the vehicle or the trailer.

Doing so can cause accelerated wear and damage to the vehicle. It can also adversely affect vehicle stability and braking, which in turn can lead to loss of control and increased braking distance resulting in a rollover or crash.



To preserve handling and stability, only fit Land Rover approved towing accessories.



Never use towing eyes, or lashing points to tow a trailer. They have not been designed for this purpose, and doing so may cause them to fail resulting in injury or death.

Note: It is the driver's responsibility to ensure that the towing vehicle, and the trailer are being used correctly, and in accordance with manufacturers recommendations and any applicable legislation.

When towing, do not exceed 100 km/h (60 mph) for Station Wagons and 80 km/h (50 mph) for all other models.

Trailer electrical connection

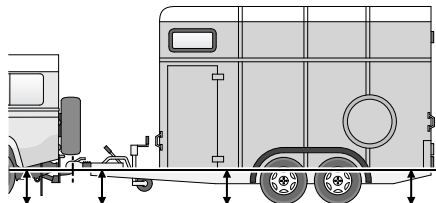
CAUTION



Only connect approved electrical circuits, which are in good condition to the trailer socket. Connecting incorrect, or faulty circuits may seriously damage the vehicle's electrical circuits.

The vehicle's electrical system has been designed to support all towing requirements, and comply with legal requirements for the specific territory in which the vehicle is first sold.

LEVELLING



E85613

To maintain vehicle stability, it is essential that the trailer is loaded so that it remains parallel to the ground. This is particularly important when towing twin axled trailers.

Towing

RECOMMENDED TOWING WEIGHTS

Maximum permissible towing weights	On-road	Off-road
Unbraked trailers	750 kg (1653 lbs)	500 kg (1102 lbs)
Trailers with overrun brakes	3500 kg (7716 lbs)	1000 kg (2205 lbs)
Trailers with fully coupled brakes	4000 kg (8818 lbs)	1500 kg (3307 lbs)
Nose weight	150 kg (330 lbs)	150 kg (330 lbs)

WARNING



Do not exceed the Gross Vehicle Weight (GVW), maximum rear axle weight, maximum trailer weight, or nose weight. Exceeding any of these limits could cause instability and loss of control. See **WEIGHTS** (page 126).

Note: When calculating rear axle loading, remember that the trailer nose weight, the load in the vehicle's luggage area, weight on the roof rack, and the weight of rear seat passengers must all be added together.

ESSENTIAL TOWING CHECKS

- The trailer should be parallel to the ground when loaded.
- When calculating the laden weight of the trailer remember to include the weight of the trailer, plus the weight of the load.
- If the load can be divided between the vehicle and trailer, loading more weight into the vehicle will generally improve stability. Do not exceed the vehicle's weight limits. See **WEIGHTS** (page 126).
- Ensure that all applicable regulations and legislation are complied with when loading and towing a trailer.

- Increase rear tyre pressures of the towing vehicle to those for maximum vehicle loading conditions. See **WEIGHTS** (page 126).
- Ensure trailer tyre pressures are set to trailer manufacturer's recommendations.
- If the vehicle is loaded to maximum Gross Vehicle Weight (GVW) the nose weight is limited to 150 kg (330 lbs).
- If it is necessary to increase the nose weight, up to a maximum of 250 kg (550 lbs) the vehicle load should be reduced accordingly. This ensures that the GVW, and maximum rear axle load are not exceeded.
- Ensure that a suitable breakaway cable or secondary coupling is used. Refer to the trailer manufacturer's instructions for guidance.
- Ensure that the tow ball is secure.
- Check the operation of all trailer lights.

WARNING

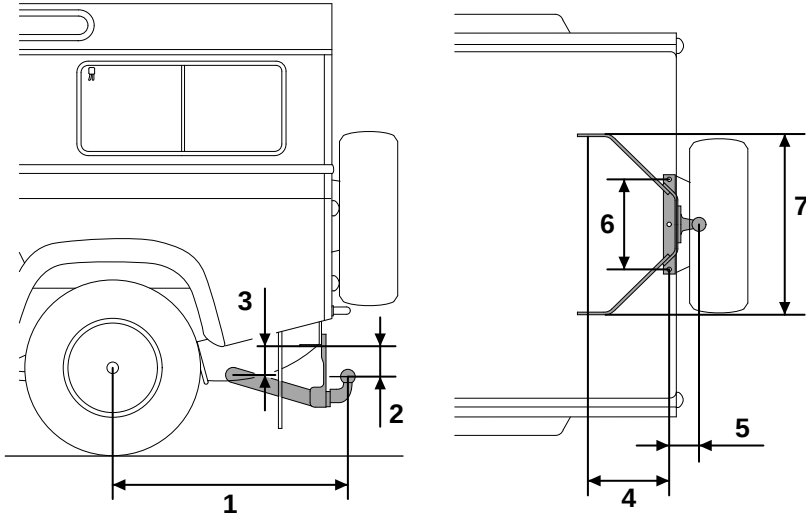


Do not loop the breakaway cable over the tow ball as it may slide off.

Towing

TOW BAR

Tow bar dimensions



E85646

		90	110/130	High Capacity Pick-Up
1	Wheel centre to centre of towball	796 mm	1005 mm	1200 mm
2	Centre of inner attachment points to centre of towball	86 mm	86 mm	86 mm
3	Centre inner attachments to centre outer attachments	86 mm	82 mm	82 mm
4	Centre inner attachments outer attachments	208 mm	301 mm	301 mm
5	Centre inner attachments to centre of towball	107 mm	107 mm	303 mm
6	Distance between centres of inner attachments	313 mm	313 mm	313 mm
7	Distance between centres of outer attachments	744 mm	635 mm	635 mm

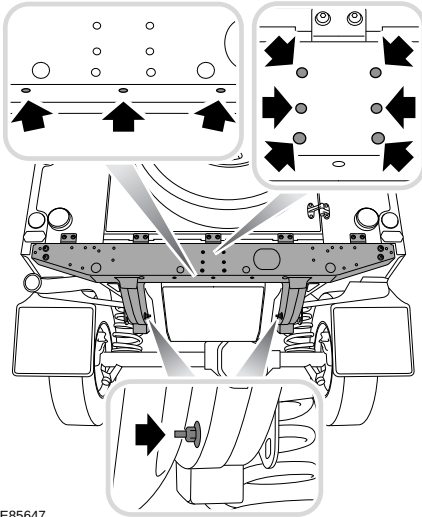
Note: Dimensions apply to towing equipment officially released by Land Rover.

Towing

Tow bar mounting points

CAUTION

⚠ If a NATO Hook or a Jaw and Pintle type towing accessory is to be fitted, do not attach them directly to the chassis rear cross-member. It is essential that an adaptor plate kit is also fitted. Consult your Land Rover Dealer/Authorised Repairer.



E85647

A variety of tow bar mounting points may be used to attach a tow hitch to the vehicle. The precise number and layout used, will vary according to the type of hitch. If unsure, consult your Land Rover Dealer/Authorised Repairer for advice.

Vehicle care

CLEANING THE EXTERIOR



CAUTIONS

- ❗ Some high pressure cleaning systems are sufficiently powerful to penetrate door and window seals, and damage trim and door locks. Never aim the water jet directly at the engine air intake, heater air intakes, body seals (doors, sunroof, windows etc.) or at any components which may be damaged (lights, mirrors, exterior trim etc.).
- ❗ Do not use a power wash system in the engine bay area as it may damage fragile components, electrical systems etc.
- ❗ Make sure you read and comply with all warnings and instructions supplied with any cleaning products.
- ❗ Never use cleaning products which are not approved for use on vehicles.

Washing the vehicle

CAUTION

- ❗ Substances which are corrosive, such as bird droppings, tree resin, dead insects, tar spots, road salt, and industrial fall out, can damage the vehicle's paintwork. Any such deposits should be removed as soon as possible to prevent damage to the vehicle's paintwork.

Remove heavy deposits of mud and dirt with a hose before washing the vehicle.

Wash the vehicle frequently using a sponge and generous quantities of cold or lukewarm water containing a suitable car shampoo. Rinse thoroughly, and dry with a chamois leather, or synthetic substitute.

Removing tar spots

Use white spirit to remove tar spots and stubborn grease stains from paintwork. Make sure that after using white spirit, the area is washed immediately with soapy water to remove all traces of spirit.

Underbody maintenance

Corrosive materials used on highways to control snow and ice, as well as accumulations from off-road driving or wading in salt water, can collect on the vehicle's underbody. If these materials are not removed accelerated corrosion can occur. Regularly flush the underbody with plain water, and pay particular attention to areas where mud and debris collect.

If damage or corrosion are detected, have the vehicle checked by a Land Rover Dealer/ Authorised Repairer as soon as possible.

Glass and mirrors

The rear screen, and mirror glass should only be cleaned using soapy water and a soft cloth. This will avoid damaging the reflective surface of the mirror, and the heating elements and antenna in the rear screen.

Never use abrasive cleaning products, or metal ice scrapers on the mirrors or the front and rear screens.

Vehicle care

Canopy

CAUTION

 If the canopy is stained, this should be cleaned within 24 hours of the incident occurring, otherwise the stain may become permanent.

- Use a soft brush to remove dust and flaking dirt from the canopy (not the windows), then soak with a mild soap and water solution to soften encrusted dirt and remove stains, prior to washing.
- Wash using a mild soap and water solution, before rinsing the canopy with clean lukewarm or cold water. Rinse until all traces of soap are removed.
- Never use spirit, petrol or chlorine based cleaning agents, or wash/wax compounds to clean the canopy and windows - wax polishes will become ingrained in the textured finish.
- Never use an automatic car wash, or a high pressure hose.
- Do not aim jets of water at zips or seals.
- Ensure the canopy is dry before folding or removing.
- Improper cleaning and lack of care may cause damage to the canopy and window panels, resulting in water penetration.

Cleaning after off-road driving

CAUTION

 Make sure that the areas around air intakes and the front grille are clean and clear of debris. Failure to do so may cause the engine to overheat, leading to severe engine damage.

Make sure that the vehicle underside is cleaned as soon as possible, after driving off-road. Further information on cleaning after off-road use is available in the off-road driving handbook. This can be found on-line at <http://www.ownerinfo.landrover.com>.

CLEANING THE INTERIOR

WARNING

 Make sure you read all of the information and instructions for use provided with cleaning products.

Some products contain substances that are harmful, and can cause health problems if used incorrectly.

CAUTION

 Some products, if used incorrectly can cause damage to the interior surfaces of the vehicle.

Plastic and cloth

WARNING

 Do not polish the instrument pack. Polished surfaces are reflective, and may interfere with the driver's view.

Clean plastic or cloth faced surfaces with warm water and non-detergent soap. Then wipe clean with a soft cloth.

Vehicle care

Carpets and fabrics

Only clean with a dilute solution of an approved upholstery cleaner. Test all cleaners on a concealed area before use.

Instrument pack, clock, and audio equipment

Only use a soft dry cloth to clean the instrument pack, clock, and audio equipment. Do not use cleaning fluids or sprays.

Seat belts

WARNING



Do not allow any water, cleaning products, or fabric from cloths to enter the seat belt mechanism. Any substance which enters the mechanism may affect the performance of the seat belt in an impact.

Extend the seat belts fully, then use warm water and a non-detergent soap to clean. Allow the seat belts to dry naturally while fully extended.

Note: When cleaning the seat belt, take the opportunity to examine the webbing for damage or wear. Any wear or damage should be reported to, and rectified by, a Land Rover Dealer/Approved Repairer.

REPAIRING MINOR PAINT DAMAGE

Regularly inspect the paintwork for damage. Any stone chips, fractures, or deep scratches, in the paint/bodywork should be repaired promptly. Bare metal will corrode quickly, and if left untreated can result in expensive repairs.

Minor chips and scratches can be touched up using materials and advice available from a Land Rover Dealer/Authorised Repairer. Larger areas of damage will require professional repair, and you should consult a Land Rover Dealer/Authorised Repairer.

Maintenance

GENERAL INFORMATION

Regular systematic maintenance is the key to ensuring the continued reliability and efficiency of your vehicle.

Maintenance is the owner's responsibility and you must make sure that owner maintenance operations, oil services, inspections and brake fluid and coolant changes are carried out when required and according to the manufacturer's recommendations.

The routine maintenance requirements for your vehicle are shown in the Service Portfolio book. Most of this necessary workshop maintenance requires specialised knowledge and equipment, and should preferably be entrusted to a Land Rover Dealer/Authorised Repairer.

Service Portfolio

The Service Portfolio book includes a Service Record section, which enables a record to be kept of all the servicing and inspections that are carried out on the vehicle. This section of the book also has an area for brake fluid changes to be recorded.

Make sure your service provider signs and stamps the book after each service and inspection.

Owner maintenance

CAUTION



Any significant or sudden drop in fluid levels, or uneven tyre wear, should be reported to a qualified technician without delay.

In addition to the routine maintenance, a number of simple checks must be carried out more frequently. Advice is given on the pages that follow.

Daily checks

- Operation of lamps, horn, direction indicators, wipers, washers and warning indicators.
- Operation of seat belts and brakes.
- Look for fluid deposits underneath the vehicle that might indicate a leak.

Weekly checks

- Engine oil level. See **ENGINE OIL CHECK** (page 87).
- Engine coolant check. See **ENGINE COOLANT CHECK** (page 88).
- Brake fluid level. See **BRAKE FLUID CHECK** (page 91).
- Clutch fluid level. See **CLUTCH FLUID CHECK** (page 92).
- Power steering fluid level. See **POWER STEERING FLUID CHECK** (page 90).
- Screen washer fluid level. See **WASHER FLUID CHECK** (page 93).
- Tyre pressures and condition.
- Operate air conditioning.

Note: The engine oil level should be checked more frequently if the vehicle is driven for prolonged periods at high speeds.

Maintenance

Driving in arduous conditions

When a vehicle is operated in extremely arduous conditions, more frequent attention must be paid to servicing requirements.

For example, if your vehicle experiences deep wading conditions, even daily servicing could be necessary to ensure the continued safe and reliable operation of the vehicle.

Arduous driving conditions include:

- Repeated short distance driving up to 10 km (6 miles), stop-start driving or idling for long periods.
- Driving in dusty and/or sandy conditions.
- Driving on rough and/or muddy roads and/or wading.
- Driving in extremely hot conditions.
- Towing a trailer or driving in mountainous conditions.

Contact a Land Rover Dealer/Authorised Repairer for advice.

Emission control

Your vehicle is fitted with various items of emission and evaporative control equipment, designed to meet specific territorial requirements. You should be aware that unauthorised replacement, modification or tampering with this equipment by an owner or repair shop, may be unlawful and subject to legal penalties.

In addition, engine settings must not be tampered with. These have been established to make sure your vehicle complies with stringent exhaust emission regulations. Incorrect engine settings may adversely affect exhaust emissions, engine performance and fuel consumption. They may also cause high temperatures, which will result in damage to the catalytic converter and the vehicle.

Road testing dynamometers (rolling roads)

Because your vehicle is equipped with anti-lock brakes and four wheel drive, it is essential that any dynamometer testing is carried out only by a qualified person, familiar with the dynamometer testing and safety procedures practised by Land Rover Dealers/Authorised Repairers.

Safety in the garage

WARNINGS



If the vehicle has been driven recently, do not touch exhaust and cooling system components until the engine has cooled.



Never leave the engine running in an unventilated area - exhaust gases are poisonous and extremely dangerous.



Do not work beneath the vehicle with the wheel changing jack as the only means of support.



Keep your hands and clothing away from drive belts and pulleys.



Remove metal wrist bands and jewellery, before working in the engine compartment.



Do not touch electrical leads or components while the engine is running, or with the starter switch turned on.



Do not allow tools or metal parts of the vehicle to make contact with the battery leads or terminals.

Maintenance

Fuel system

WARNINGS



Under no circumstances should any part of the fuel system be dismantled or replaced by anyone other than a suitably qualified vehicle technician. Failure to comply with this instruction, may result in fuel spillage with a consequent serious risk of fire.



Make sure sparks and naked lights are kept away from the engine compartment.



Wear protective clothing, including, where practicable, gloves made from an impervious material.

Poisonous fluids

Fluids used in motor vehicles are poisonous and should not be consumed or brought into contact with open wounds. These include; battery acid, antifreeze, brake, clutch and power steering fluid, petrol, diesel, engine oil and windscreen washer additives.

For your own safety, always read and obey all instructions printed on labels and containers.

Used engine oil

Prolonged contact with engine oil may cause serious skin disorders, including dermatitis and cancer of the skin. Always wash thoroughly after contact.

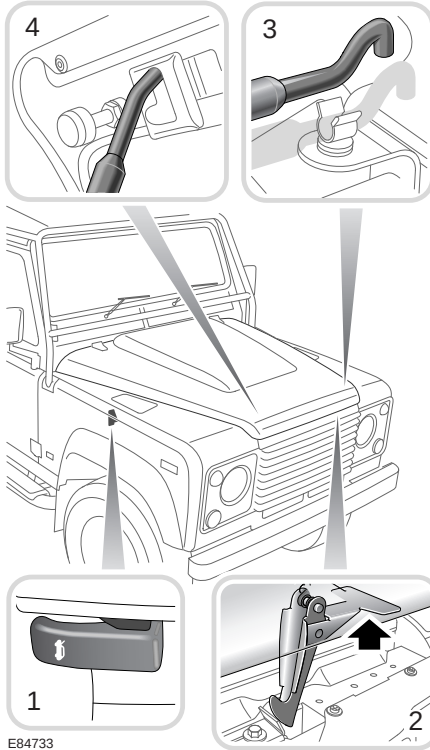


It is illegal to pollute drains, water courses or soil. Use authorised waste disposal sites to dispose of used oil and toxic chemicals.

Maintenance

OPENING AND CLOSING THE BONNET

Opening the bonnet



E84733

1. Pull the bonnet release handle located on the right-hand side of the vehicle.
2. Lift the bonnet safety catch lever and raise the bonnet.
3. Release the bonnet support stay from the bonnet locking platform.
4. Fit the support stay into the slotted hole in the underside of the bonnet.

Closing the bonnet

WARNING



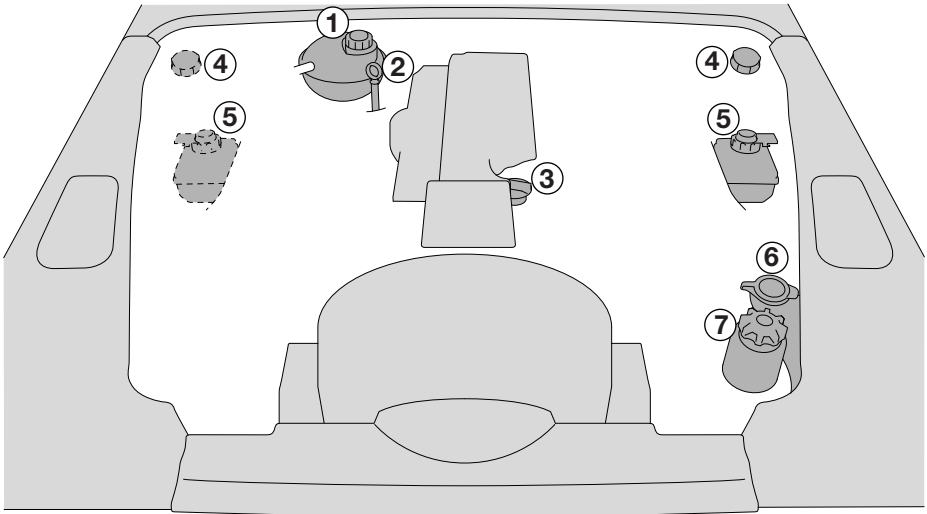
Do not drive with the bonnet retained by the safety catch alone.

Replace the support stay in its retaining clip, lower the bonnet, allowing it to drop the last 12 inches (30 cm).

Check that the catch is fully engaged by attempting to lift the front edge of the bonnet. This should be free from all movement.

Maintenance

ENGINE COMPARTMENT OVERVIEW



E84742

WARNINGS

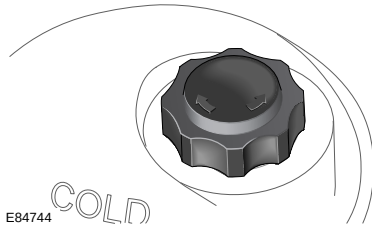


While working in the engine compartment, always observe the safety precautions listed under Safety in the garage. See **GENERAL INFORMATION** (page 81).

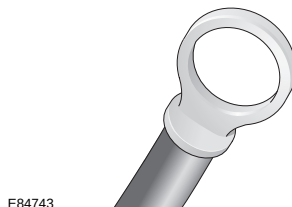


Do not drive the vehicle if there is a possibility that leaked fluid will come into contact with a hot surface, such as the exhaust. A resulting fire may cause death or serious injuries.

1. Coolant reservoir cap (Black)

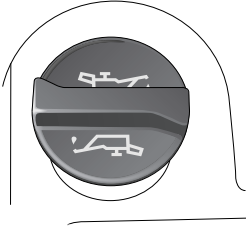


2. Engine oil dipstick (Yellow)



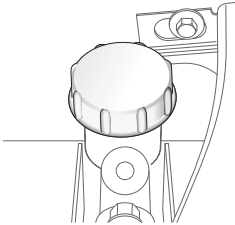
Maintenance

3. Engine oil filler cap (Black)



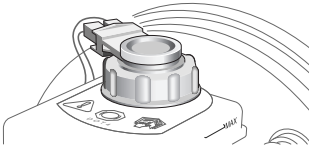
E84748

4. Clutch fluid reservoir cap (Grey)



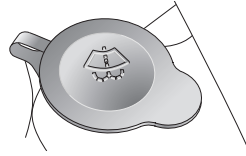
E84745

5. Brake fluid reservoir cap (White)



E84746

6. Washer fluid reservoir cap (Blue)



E84749

7. Power steering fluid reservoir cap (Black)



E84747

Maintenance

ENGINE OIL CHECK

WARNING



Driving the vehicle with the engine oil level above the upper mark, or below the lower mark on the dipstick, can damage the engine.

The oil consumption of an engine is influenced by many factors. Under high loads an engine will consume more oil than usual. Diesel engines consume slightly more oil than petrol engines.

Check the oil level weekly, when the engine is cold and with the vehicle resting on level ground.

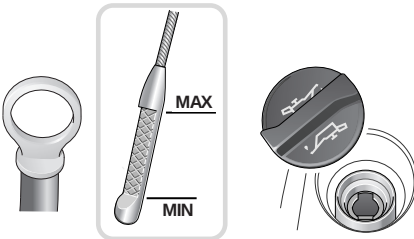
Checking the oil level

CAUTION



Before driving the vehicle off-road, ensure the oil level is at least half way between the **MIN** and **MAX** mark on the dipstick.

Note: If it is necessary to check the oil level when the engine is hot, switch off the engine and let the vehicle stand for five minutes to allow the oil to drain back into the sump. Do not start the engine.



E84815

2. Fully re-insert the dipstick and withdraw again to check the oil level. Never allow the oil level to fall below the **MIN** mark on the dipstick.

As a general guide, if the level on the dipstick:

- Is nearer to the **MAX** mark than the **MIN** mark, add no oil.
- Is nearer to the **MIN** mark than the **MAX**, add half a litre (one pint) of oil.
- Is below the **MIN** mark, add one litre (two pints) of oil and re-check the level after a further five minutes.

1. Withdraw the dipstick and wipe the blade clean with a lint free cloth.

Maintenance

Topping up the oil

CAUTIONS

- ❗ Take care to avoid spilling engine oil onto a hot engine - a fire may result. Wipe up any spillage immediately.
- ❗ Your vehicle warranty may be invalidated if damage is caused by using oil that does not meet the required specification.
- ❗ Failure to use an oil that meets the required specification could cause excessive engine wear, a build up of sludge and deposits, and increase pollution. It could also lead to engine failure.
- ❗ Overfilling with oil could result in severe engine damage. Oil should be added in small quantities and the level re-checked to ensure that the engine is not overfilled.

1. Unscrew the oil filler cap.
2. Add oil to maintain the level between the **MIN** and **MAX** marks on the dipstick. Clean up any oil spilled during topping-up.
3. Check the oil level again after five minutes.

It is essential to use the correct specification oil, and to ensure it is suitable for the climatic conditions in which the vehicle is to be operated.

Note: The approximate quantity of oil required to raise the level from the **MIN** mark to the **MAX** mark on the dipstick is 2 litres (3.52 pints).

Engine oil specification

Model	Specification
Diesel engine	Use only 5W-30 oil meeting Land Rover specification WSS-M2C913-B.

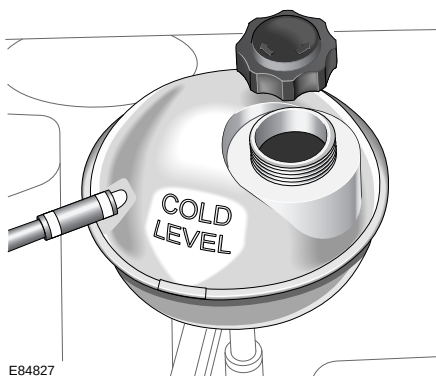
ENGINE COOLANT CHECK

Checking the coolant level

CAUTION

- ❗ Running the engine without coolant will cause serious engine damage.

The coolant level in the expansion tank should be checked at least weekly (more frequently in high mileage or arduous operating conditions). Always check the level when the system is cold.



Make sure the coolant level is maintained to the **COLD LEVEL** indicated on the side of the expansion tank.

If the level has fallen appreciably, suspect leakage or overheating and arrange for the vehicle to be examined by a qualified technician.

Topping up the coolant

WARNINGS



Never remove the filler cap when the engine is hot - escaping steam or scalding water could cause serious personal injury.

Maintenance

WARNINGS



Avoid spilling antifreeze onto a hot engine - a fire may result.



Unscrew the filler cap slowly, allowing the pressure to escape before removing completely.

CAUTION



When travelling in territories where the water supply contains salt, always make sure you carry a supply of fresh (rain or distilled) water. Topping up with salt water will cause serious engine damage.

Top-up so that the surface of the coolant is level with the **COLD LEVEL** indicator on the side of the expansion tank. Use only a 50% mix of water and Texaco XLC antifreeze.

Note: *In an emergency - and only if the approved antifreeze is unavailable - top-up the cooling system with clean water, but be aware of the resultant reduction in frost protection. Do not top-up or refill with conventional antifreeze formulations. If in doubt consult a qualified technician.*

Make sure the cap is tightened fully after top-up is completed.

Antifreeze

WARNINGS



Antifreeze is poisonous and can be fatal if swallowed - keep containers sealed and out of the reach of children.

If accidental consumption is suspected, seek medical attention immediately.



If the fluid comes into contact with the skin or eyes, rinse immediately with plenty of water.

CAUTIONS



The use of non-approved antifreeze will have an adverse effect on the engine cooling system and therefore engine durability.



Antifreeze will damage painted surfaces; soak up any spillage with an absorbent cloth immediately and wash the area with a mixture of car shampoo and water.

Antifreeze contains important corrosion inhibitors. The antifreeze content of the coolant must be maintained at 50% $\pm$ 5% all year round (not just in cold conditions). To make sure that the anti-corrosion properties of the coolant are retained, the antifreeze content should be checked once a year and completely renewed every ten years, regardless of distance travelled. Failure to do so may cause corrosion of the radiator and engine components.

The specific gravity of a 50% antifreeze solution at 20°C (68°F) is 1.075 and protects against frost down to -36°C (-33°F).

Maintenance

POWER STEERING FLUID CHECK

WARNINGS



Power steering fluid is highly toxic. Keep containers sealed and out of reach of children. If accidental consumption of fluid is suspected, seek medical attention immediately.



If the fluid comes into contact with the skin or eyes, rinse immediately with plenty of water.



Do not spill power steering fluid onto a hot engine - a fire may result.

Checking the fluid level

CAUTIONS



The engine must not be started if the fluid has dropped below the lower level mark. Severe damage to the steering pump could result.

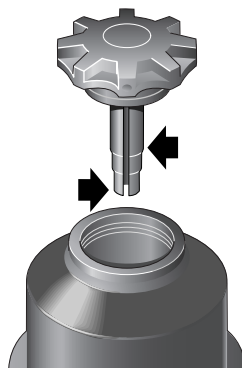


Seek qualified assistance immediately if there is a noticeable drop in the fluid level. Severe damage to the steering pump could result.



If fluid loss is slow, the reservoir may be topped-up to the upper level mark to enable the vehicle to be driven to a repair facility for examination. However, it is recommended that you seek qualified assistance before driving the vehicle.

Check and top-up the fluid with the vehicle on level ground, engine switched off, and the system cold. Ensure that the steering wheel is not turned after stopping the engine.



E84846

Clean the filler cap before removing to prevent dirt from entering the reservoir.

Remove the filler cap, and using a lint-free cloth, wipe the dipstick clean. Refit the cap fully and remove again to check the fluid level. The fluid should be between the upper mark and the bottom end of the dipstick (arrowed in illustration).

Topping up the fluid

CAUTIONS



Power steering fluid will damage painted surfaces. Soak up any spillage with an absorbent cloth immediately and wash the area with a mixture of car shampoo and water.



Do not fill the reservoir above the upper mark on the dipstick.

1. Remove the filler cap.
2. Top up with Texaco Cold Climate 33270, making sure no dirt enters the reservoir.
3. Replace the filler cap.

Note: The colour of the specified power steering fluid may differ from that used to fill the system during manufacture. This is not cause for concern.

Maintenance

BRAKE FLUID CHECK

WARNINGS



Brake fluid is highly toxic - keep containers sealed and out of the reach of children. If accidental consumption of fluid is suspected, seek medical attention immediately.



If the fluid comes into contact with the skin or eyes, rinse immediately with plenty of water.



Take care not to spill the fluid onto a hot engine - a fire may result.



Do not drive the vehicle with the fluid level below the **MIN** mark.

The fluid level may fall slightly during normal use as a result of brake pad wear but should not be allowed to fall below the **MIN** mark.

Any substantial drop in fluid indicates a leak in the system, in which case the vehicle must not be driven and you should seek qualified assistance.

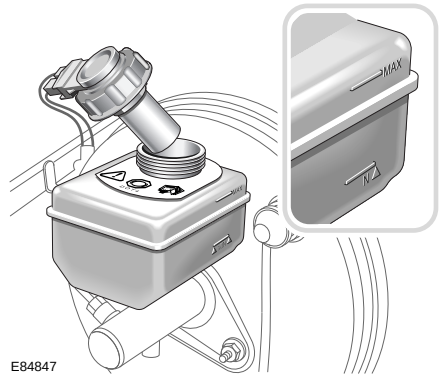
Checking the fluid level

WARNING



Seek qualified assistance immediately if brake pedal travel is unusually long or if there is any significant loss of brake fluid. Driving under such conditions could result in extended stopping distances or complete brake failure.

With the vehicle on level ground, check the fluid level at least every week (more frequently in high mileage or arduous operating conditions).



E84847

Check the level visually through the side of the transparent reservoir without removing the filler cap.

The brake fluid level should be between the **MIN** and the **MAX** marks.

Do not allow the fluid level to fall below the **MIN** mark.

Topping up the fluid

CAUTIONS



Brake fluid will damage painted surfaces. Soak up any spillage with an absorbent cloth immediately and wash the area with a mixture of car shampoo and water.



Only use new fluid from an airtight container (fluid from opened containers or fluid previously bled from the system will have absorbed moisture, which will adversely affect performance, and must not be used).

1. Clean the filler cap before removing to prevent dirt from entering the reservoir.
2. Unscrew the cap and remove, making sure the electrical leads do not become taut.

Maintenance

3. Top-up the reservoir to the **MAX** mark using Shell ESL Donax EB brake fluid. If Shell ESL Donax EB is not available, a brake fluid with a minimum boiling point of 260°C and complying with FMVSS 116 DOT4 may be used.
4. Replace the cap, making sure the electrical leads do not become trapped.

Brake fluid must be completely renewed every 38 600 km (24 000 miles) or 24 months, whichever is sooner.

CLUTCH FLUID CHECK

WARNINGS



Clutch fluid is highly toxic - keep containers sealed and out of the reach of children. If accidental consumption of fluid is suspected, seek medical attention immediately.



If the fluid comes into contact with the skin or eyes, rinse immediately with plenty of water.

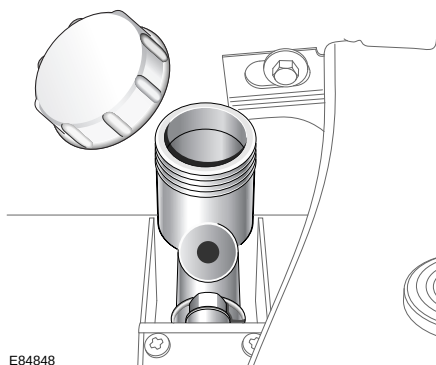


Take care not to spill the fluid onto a hot engine - a fire may result.

If significant topping-up is required, a leak is indicated, seek qualified assistance.

Checking the fluid level

With the vehicle on level ground, check the fluid level at least every week (more frequently in high mileage or arduous operating conditions).



Wipe the filler cap before removing to prevent dirt from entering the reservoir. Check the fluid level, the level should be approximately 10 mm (0.4 inches) below the top of the reservoir.

Topping up the fluid

CAUTIONS



Clutch fluid will damage painted surfaces. Soak up any spillage with an absorbent cloth immediately and wash the area with a mixture of car shampoo and water.



Only use new fluid from an airtight container (fluid from opened containers or fluid previously bled from the system will have absorbed moisture, which will adversely affect performance, and must not be used).

1. Clean the filler cap before removing to prevent dirt from entering the reservoir.
2. Unscrew the cap and remove.
3. Top-up the reservoir to approximately 10 mm (0.4 inches) below the top of the reservoir with Shell ESL Donax EB fluid or a fluid meeting FMVSS 116 DOT 4 specification.
4. Replace the cap.

Maintenance

WASHER FLUID CHECK

WARNINGS



Some screen washer products are inflammable, particularly if high or undiluted concentrations are exposed to sparking. Do not allow screen washer fluid to come into contact with naked flames or sources of ignition.



If the vehicle is operated in temperatures below 4°C (40°F), use a washer fluid with frost protection. In cold weather, failure to use a washer fluid with frost protection, could result in impaired vision and increase the risk of a vehicle crash.

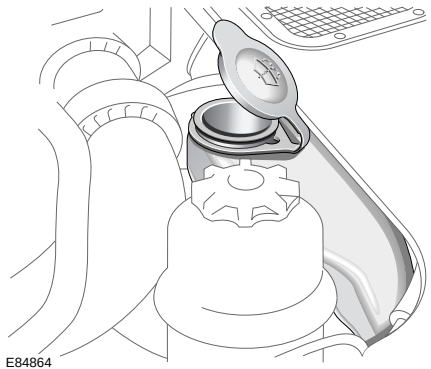
CAUTIONS



Do not use an antifreeze or vinegar and water solution in the washer reservoir - antifreeze will damage painted surfaces, while vinegar can damage the windscreen washer pump.



Body panels may suffer discolouration as a result of screen washer fluid spillage. Take care to avoid spillage, particularly if an undiluted or high concentration is being used. If spillage occurs, wash the affected area immediately with water.



The washer reservoir supplies both front and rear screen washer jets.

Check and top-up the reservoir level at least every week. Always top-up with screen washer fluid to prevent freezing.

Operate the washer switches periodically to check that the nozzles are clear and properly directed.

Topping up the fluid

1. Clean the filler cap before removing to prevent dirt from entering the reservoir.
2. Remove the filler cap.
3. Top-up the reservoir until the fluid is visible in the filler neck.
4. Replace the filler cap.

Maintenance

TECHNICAL SPECIFICATIONS

Lubricants and fluids

Item	Specification
Fuel	Diesel to EN590 specification.
Engine oil	Use only 5W-30 oil meeting Land Rover specification WSS-M2C913-B.
Main gearbox oil	Castrol BOT 130M
Front differential oil	Texaco Geartex EP 85W/90
Rear differential oil	Texaco Geartex EP 85W/90
Front axle swivel pin housings	Texaco Molytex EP00
Gearbox extension shaft to transfer gearbox	Weicon Anti Seize Standard Grade
Wheel hubs	Castrol Optimal Olista Long Time 2 grease
Power steering fluid	Texaco Cold Climate 33270 PAS fluid
Brake fluid	Shell ESL Donax EBL ¹
Clutch fluid	Shell ESL Donax EB ¹
Screen washer	Screen wash with frost protection
Coolant	50% mixture of Texaco XLC antifreeze and water.

¹ If Shell ESL Donax EBL is not available, brake fluid having a minimum boiling point of 260°C and complying with FMVSS 116 DOT4 may be used.

Capacities

CAUTION



The quoted capacities are approximate and provided as a guide only. All oil levels must be checked using the dipstick or level plugs, as applicable.

Item	Capacity
Fuel tank:	
90 models	57 litres (12.54 gallons)
110 models	73 litres (16.06 gallons)
Engine oil refill and filter change	7 litres (12.32 pints)
Engine oil MIN to MAX on dipstick	2 litres (3.52 pints)
Manual gearbox (from dry)	2.4 litres (4.2 pints)
Manual gearbox (refill)	2.2 litres (3.9 pints)
Differentials (all models)	1.60 litres (2.81 pints)
Front axle swivel pin housings	0.38 litres (0.66 pints)
Cooling system	11.5 litres (20.24 pints)

Vehicle battery

BATTERY WARNING SYMBOLS



Do not allow any naked flames, or other sources of ignition near the battery as the battery may emit explosive gasses.



Ensure that when working near, or handling the battery, suitable eye protection is worn. This will reduce the risk of eye damage caused by acid splashes.



To prevent risk of injury, do not allow children near the battery.



Be aware that the battery may emit explosive gasses.



The battery contains acid which is extremely corrosive, and toxic.

BATTERY CARE

WARNINGS



Do not allow the battery electrolyte (fluid) come into contact with your skin or eyes. It is both corrosive and toxic, and the resulting injuries can be severe. If any electrolyte does come into contact with your skin or eyes, immediately rinse the affected area with clean, cold water. Immediate medical advice will be required.



If battery electrolyte comes into contact with your skin and/or clothes you should remove the affected clothing and flush the skin with copious amounts of water. Seek medical assistance immediately.



If battery electrolyte comes into contact with your eyes, flush with copious amounts of clean cold water. Seek medical assistance immediately, and continue to flush with water.



If swallowed, battery electrolyte can be fatal. If electrolyte is swallowed seek medical assistance immediately.



Do not connect any 12 volt equipment directly to the battery terminals. Doing so may cause a spark, which can result in an explosion.



The cell plugs and vent pipe must be in place at all times when the battery is connected to the vehicle. Ensure that the vent pipe is clear of obstructions and not kinked. Failure to do so may cause a pressure build up in the battery, resulting in an explosion.



Do not expose the battery to a naked flame or spark as the battery produces explosive, flammable gas.

Vehicle battery

WARNINGS

 Never jump start (boost) or charge, a frozen battery. Doing so can result in an explosion.

 Remove all metal jewellery before working on, or near, the battery, and never allow metal tools or vehicle components to come into contact with the battery terminals. Metal objects can cause sparks, and/or short circuits, resulting in an explosion.

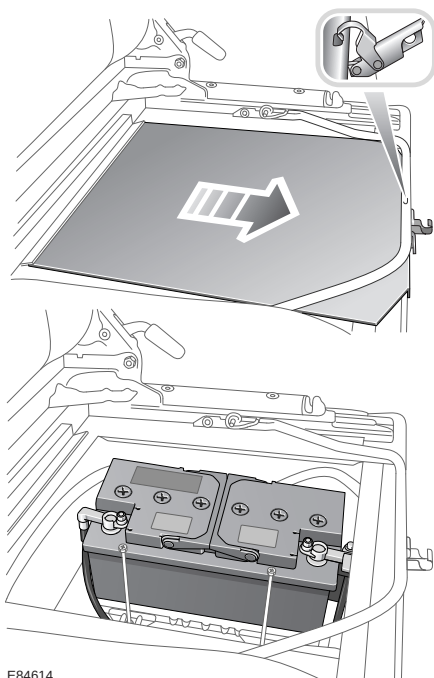
 Do not allow the battery posts or terminals to come into contact with your skin. They contain lead, and lead compounds which are toxic. Always wash your hands thoroughly after handling the battery.

CAUTION

 Do not allow battery electrolyte to come into contact with fabrics or painted surfaces. If battery electrolyte comes into contact with any surface, the surface should be washed down immediately with copious amounts of clean water. Battery electrolyte is both corrosive and toxic, and can damage a wide range of materials if left.

A low maintenance battery is fitted underneath the left hand front seat.

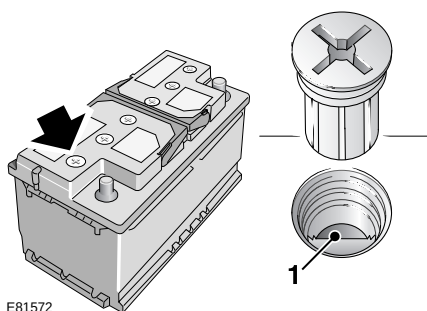
Topping-up will usually be required annually but, if the vehicle is operated in a hot climate the electrolyte will need to be checked every three months. If necessary, the battery cells can be topped up using distilled water.



E84614

1. Remove the left hand front seat. See **MANUAL SEATS** (page 19).
2. Release the buckle on the front of the battery compartment and slide the lid in the direction shown.
3. Clean dirt or grease from the exterior of the battery.
4. Unscrew the six cell plugs.

Vehicle battery

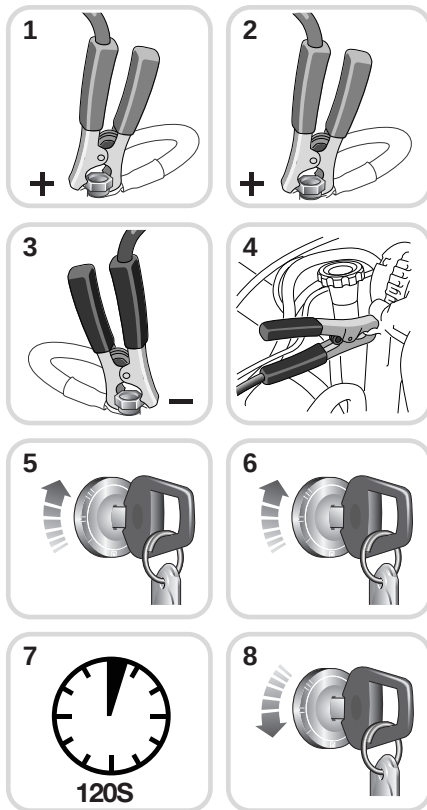


E81572

5. Check that the electrolyte is level with the plastic level indicator 1.
6. Top-up with distilled water, if necessary, but do not overfill.
7. Refit the six cell plugs.
8. Fit the battery lid and secure with the buckle.
9. Fit the left hand front seat. See **MANUAL SEATS** (page 19).

USING BOOSTER CABLES

Note: Before connecting booster cables ensure that the battery connections on the disabled vehicle are correct, and that all electrical equipment has been switched off.



E84607

1. Connect one end of the positive booster cable to the positive terminal on the donor vehicle's battery.
2. Connect the other end of the positive booster cable to the positive terminal on the disabled vehicle's battery.

Vehicle battery

3. Connect one end of the negative booster cable to the negative terminal on the donor vehicle's battery.
4. Connect the other end of the negative booster cable to a suitable earth point on the disabled vehicle. The earth point should be at least 0.5 metres (20 inches) away from the battery, and as far as possible from any fuel or brake pipes.
 - Check that all cables are clear of any moving components, and that all four connections are secure.
5. Start the engine of the donor vehicle, and allow it to idle for a few minutes.
6. Start the engine of the disabled vehicle.
7. Allow both vehicles to idle for two minutes.
8. Switch off the donor vehicle.

Disconnecting the cables

WARNING



To avoid serious injury use extreme caution when removing the booster cables as the engine will be running on the previously disabled vehicle. This means that you will be working close to components which are moving at high speed, carry high voltage, or may be hot.

Note: Do not switch any electrical equipment on until after the cables have been disconnected.

The engine should be running on the previously disabled vehicle, and the engine switched off on the donor vehicle. Disconnect the booster cables in the exact reverse order of that used for connection.

CHARGING THE VEHICLE BATTERY

WARNINGS



Ensure that the charger used is of the correct type and rating for the battery.

Using an unsuitable charger may damage the battery, and could cause the battery to explode.



Always charge the battery in a well ventilated area away from any naked flames, sparks or other ignition sources. During charging the battery can produce a highly explosive and flammable gas.

CAUTIONS



The battery must be disconnected and removed from the vehicle before charging. Failure to do so could result in damage to the vehicle's electrical system.



Always follow the instructions supplied with the battery charger. Failure to do so may result in damage to the battery.

1. Disconnect the battery and remove it from the vehicle. Remember to disconnect the battery vent pipe before attempting to pull the battery clear.
2. Connect the battery charger in accordance with the charger manufacturer's instructions.
3. Once the charge is complete switch off the power to the charger.
4. Disconnect the charger cables from the battery.
5. Allow the battery to stand for an hour before connecting to the vehicle. This will allow any explosive gasses to dissipate, and reduce the risk of explosion.

Vehicle battery

CHANGING THE VEHICLE BATTERY

Disconnecting

WARNINGS



Use caution when lifting the battery out of, or into, the vehicle. It is heavy, and may cause injury when lifting, or if dropped.



Do not tip the battery when lifting or moving as tilting the battery more than 45 degrees may damage the battery, and may cause the electrolyte to leak out. Battery electrolyte is highly corrosive, and toxic.

CAUTIONS



Do not rest the battery on any part of the vehicle as it may cause damage due to its weight.

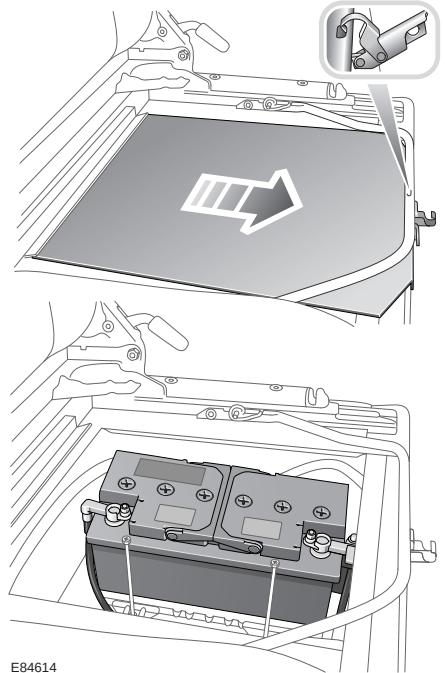


Do not run the engine with the battery disconnected. Doing so may damage the charging system.

Note: If you are in any doubt about fitting a battery seek qualified assistance.

Your vehicle may be fitted with a battery backed-up siren, which operates as an anti-theft siren if the vehicle battery is disconnected.

It is essential to disconnect the battery within 15 seconds of removing the starter key, in order to prevent the siren from sounding.



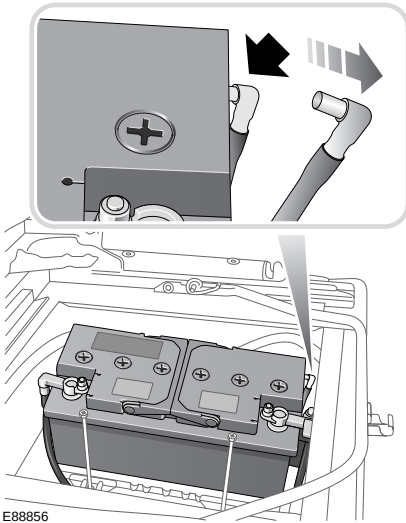
E84614

1. Remove the left hand front seat. See **MANUAL SEATS** (page 19).
2. Release the buckle on the front of the battery compartment and slide the lid in the direction shown.
3. Ensure that all electrical circuits are switched off, all windows are closed, and the alarm is disarmed.
4. Turn the starter switch on and then off.
5. Remove the starter key.
6. Undo the negative clamp, and lift the cable and clamp clear of the battery terminal.

Note: If the battery is not disconnected within 15 seconds, the siren will sound when it is disconnected.

Vehicle battery

7. Undo the positive clamp, and lift the cable and clamp clear of the battery terminal.



8. At the side of battery near the positive terminal, disconnect the battery vent pipe.
9. Undo the battery clamp and lift the battery clear of the vehicle.

Effects of disconnecting

After reconnecting the battery, a number of the vehicle systems will be reset automatically. This may take a few minutes. Some systems have to detect certain conditions while the vehicle is being driven before full operability returns. This in no way affects the safe operation of the vehicle.

Replacement batteries

WARNING



Only fit a battery of the correct type and rating. Fitting an incorrect battery may result in a fire, or damage to the electrical system. If you are in any doubt when fitting a battery seek qualified assistance.

Battery disposal

Note: Used batteries must be disposed of correctly as they contain a number of harmful substances. Seek advice on disposal from your Land Rover Dealer/Authorised Repairer, or your local authority.

Refitting

WARNING



When refitting the battery ensure that no metal objects, or vehicle components, come into contact with the battery terminals. Metal objects can cause a spark or short circuit, both of which may result in an explosion.

CAUTIONS



Ensure that when fitting a battery to the vehicle, the terminals and battery clamps are clean, and lightly coated with petroleum jelly. This will ensure good electrical connections are made, and help to prevent corrosion.



Always follow the battery manufacturer's instructions. Failure to do so may result in damage to the vehicle or the electrical system.

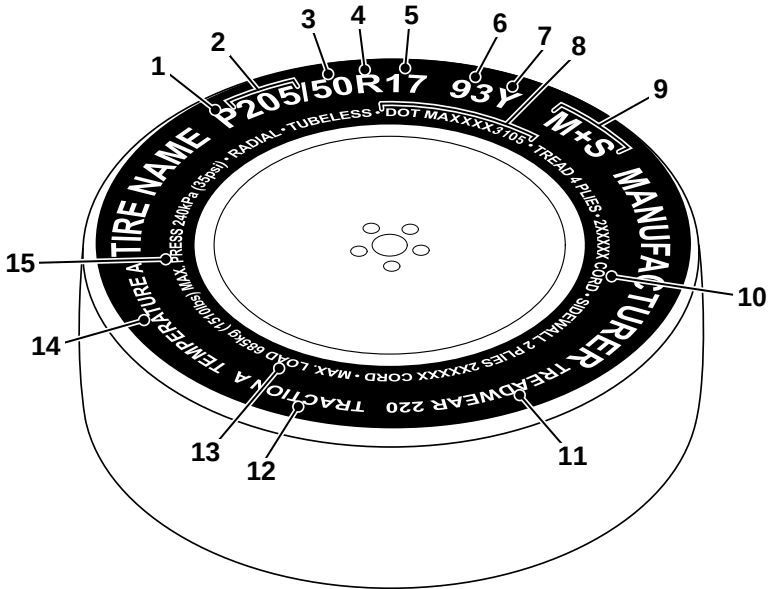
A new battery should be supplied with plastic terminal covers. Leave the covers in place when fitting the battery, and remove them one at a time to fit the battery cable clamps.

Refitting is an exact reversal of the removal procedure.

Wheels and tyres

GENERAL INFORMATION

Tyre markings



E80640

1. P indicates that the tyre is for passenger vehicle use.
2. The width of the tyre from sidewall edge to sidewall edge in millimetres.
3. The aspect ratio, also known as the profile, gives the sidewall height as a percentage of the tread width. So, if the tread width is 205 mm, and the aspect ratio is 50, the sidewall height will be 102 mm.
4. R indicates that the tyre is of Radial ply construction.
5. The diameter of the wheel rim given in inches.
6. The load index for the tyre. This index is not always shown.
7. The speed rating denotes the maximum speed at which the tyre should be used for extended periods. †
8. Tyre manufacturing standard information, which can be used for tyre recalls and other checking processes. Most of this information relates to the manufacturer, place of manufacture etc. The last four numbers are the date of manufacture. For example, if the number was 3106, the tyre was made in the 31st week of 2006.
9. M+S or M/S indicates that the tyre has been designed with some capability for mud and snow.

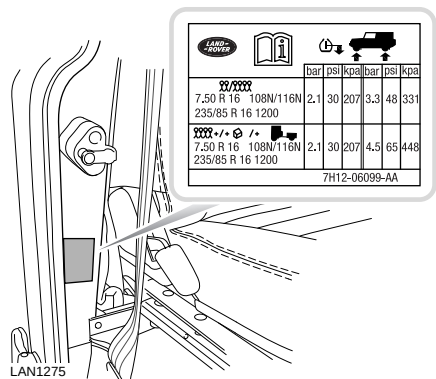
Wheels and tyres

- 10. The number of plies in both the tread area, and the sidewall area, indicates how many layers of rubber coated material make up the structure of the tyre. Information is also provided on the type of materials used.
- 11. Wear rate indicator. A tyre rated at 400 for example, will last twice as long as a tyre rated at 200.
- 12. The traction rating grades a tyres performance when stopping on a wet road surface. The higher the grade the better the braking performance. The grades from highest to lowest are, AA, A, B, and C.
- 13. The maximum load which can be carried by the tyre.
- 14. Heat resistance grading. The tyres resistance to heat is grade A, B, or C, with A indicating the greatest resistance to heat. This grading is provided for a correctly inflated tyre, which is being used within its speed and loading limits.
- 15. The maximum inflation pressure for the tyre. This pressure should not be used for normal driving. See **TECHNICAL SPECIFICATIONS** (page 116).

† Speed ratings

Rating	Speed kmh (mph)
Q	160 (99)
R	170 (106)
S	180 (112)
T	190 (118)
U	200 (124)
H	210 (130)
V	240 (149)
W	270 (168)
Y	300 (186)

Tyre information label (Australia only)



A label providing information on the vehicle's tyre specifications, tyre pressures, rim size and maximum allowable loading weights is located on the right-hand 'B' post.

Wheels and tyres

TYRE CARE

WARNINGS



Defective tyres are dangerous. Do not drive the vehicle if a tyre is damaged, excessively worn, or incorrectly inflated. Doing so may lead to premature tyre failure.



Avoid contaminating the tyres with vehicle fluids as they may cause damage to the tyre.



Avoid spinning the wheels. The forces released can damage the structure of the tyre, and cause it to fail. Doing so may lead to premature tyre failure.



If wheel spin is unavoidable due to a loss of traction (in deep snow for example) do not exceed the 50 km/h (30 mph) point on the speedometer. Doing so may lead to premature tyre failure.

Note: Tyre condition should be checked after the vehicle has been used off-road. As soon as the vehicle returns to a normal, hard road surface stop the vehicle and check for damage to the tyres.

All of the vehicle's tyres (including the spare) must be checked regularly for damage, wear and distortion. If you are in any doubt about the condition of a tyre, have it checked immediately by a tyre repair centre, or your Land Rover Dealer/Authorised repairer.

Tyre wear

Good driving practise will increase the life of your tyres, and avoid unnecessary damage.

- Always ensure that the tyre pressures are correctly adjusted.
- Always observe the posted speed limits, and advisory speeds for bends.
- Avoid pulling away quickly, or hard acceleration.
- Avoid making fast turns or braking sharply.
- Wherever possible, avoid potholes, or obstacles on the road.
- Do not drive up kerbs, or rub the tyres against them when parking.

Wear indicators

WARNING



Wear indicators show the minimum tread depth recommended by the manufacturers. Tyres which have worn to this point will have reduced grip and poor water displacement characteristics.

CAUTION



If tread wear is uneven across a tyre, or the tyre wears excessively, the vehicle should be checked by your Land Rover Dealer/Authorised Repairer as soon as possible.

Wheels and tyres



When the tread has worn down to approximately 2 mm, wear indicators start to appear at the surface of the tread pattern. This produces a continuous band of rubber across the tread as a visual indicator.

To maintain performance and grip the tyre must be replaced as soon as the wear indicator becomes visible. Sooner, if legislation requires replacement at a greater tread depth.

Note: *Tread depth should be checked regularly, in some cases more frequently than the service intervals. For advice on checking tyres contact your Land Rover Dealer/Authorised repairer, or a tyre dealer.*

Age degradation

Tyres degrade over time due to the effects of ultraviolet light, extreme temperatures, high loads, and environmental conditions. It is recommended that tyres are replaced at least every six years, but they may require replacement more frequently.

Land Rover recommends that even if unused, the spare tyre be replaced at the same time as the four road tyres.

Punctured tyres

WARNING



Do not drive the vehicle with a punctured tyre. Even if the punctured tyre has not deflated, it is unsafe to use as the tyre may deflate suddenly at any time.

No matter how carefully you drive, there is always the possibility of a puncture. Your vehicle is fitted with tubeless tyres, which may not leak if penetrated by a sharp object, provided the object remains in the tyre.

If, however, you feel a sudden vibration or ride disturbance while driving, or you suspect your tyre or vehicle has been damaged, immediately reduce your speed. Drive slowly, while avoiding heavy braking or sharp steering inputs, to the closest safe area out of the traffic. This may further damage the flat tyre, but your safety is more important.

Stop and inspect the tyres for damage. If a tyre is under-inflated or damaged, remove the tyre and wheel and replace it with the spare wheel. See **CHANGING A ROAD WHEEL** (page 108). If you cannot detect a cause, have the vehicle recovered to the nearest tyre dealer to have the vehicle inspected.

A puncture will eventually cause the tyre to lose pressure, which is why frequent checking of tyre pressures is important. Punctured or damaged tyres must be permanently repaired or replaced as soon as possible.

Tyre checks

Not all punctures result in the tyre deflating immediately. Therefore, it is important to check the tyres for damage and foreign objects, regularly.

Inspect the tyres for signs of punctures, damage, or under inflation. If any damage or deformity is detected, the tyre should be replaced. If a spare tyre is not available, then the vehicle should be recovered to a tyre repair centre, or Land Rover Dealer/Approved repairer.

Note: *The tyres should be checked immediately after any off-road use, and prior to using the vehicle on a public highway.*

Wheels and tyres

Replacement tyres

WARNINGS



Do not fit cross-ply tyres.



Do not fit tubed tyres.



Do not swap tyres around the vehicle. Tyres bed in to the specific characteristics of each wheel position.

Swapping them around may affect the vehicle's handling and traction.



Always fit replacement tyres of the same type, and wherever possible of the same make and tread pattern.



Replacement wheels should be genuine Land Rover parts. This will maintain the designed driving characteristics both on and off road.



If the use of tyres not recommended by Land Rover is unavoidable, ensure that you read, and fully comply with the tyre manufacturers instructions. Failure to do so may lead to tyre failure due to incorrect fitment or use.

Ideally, tyres should be replaced in sets of four. If this is not possible, replace the tyres in pairs (front and rear). When tyres are replaced, the wheels should always be re-balanced, and alignment checked.

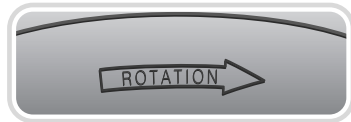
The correct tyre specification for your vehicle can be found later in this book. See

TECHNICAL SPECIFICATIONS (page 116).

Directional tyres

Directional tyres are designed to operate correctly when rotating forwards (when the vehicle is travelling forwards).

Typical direction indicators



E80237

Wheels and tyres

Tyre pressures

WARNINGS



Never drive your vehicle if the tyre pressures are incorrect.

Under-inflation causes excessive flexing and uneven tyre wear. This can lead to sudden tyre failure. Over-inflation causes a harsh ride, uneven tyre wear and poor handling.



Only perform pressure checks when the tyres are cold, and the vehicle has been stationary for more than three hours. A hot tyre at or below recommended cold inflation pressure is dangerously under-inflated.



If the vehicle has been parked in strong sunlight, or used in high ambient temperatures do not reduce the tyre pressures. move the vehicle into the shade and allow the tyres to cool before re-checking the pressures.

You should check your tyre pressures (including the spare) at least once a week with normal on-road use, but check daily if the vehicle is used off-road. Always check the tyre pressures before setting off on a long journey. Use a reliable gauge to check the pressures when the tyres are cold. Driving as short a distance as 3 km (1 mile) can warm the tyres up sufficiently to affect the tyre pressures.

If it is necessary to check tyre pressures when the tyres are warm, you should expect the pressures to have increased by up to 30 - 40 kPa (0.3 - 0.4 bar) (4 - 6 lbf/in²). Do not reduce the tyre pressures to the cold inflation pressure under these circumstances. Allow the tyres to cool fully before adjusting the pressures.

Checking the tyre pressures

WARNING



Tyre pressures should be checked regularly using an accurate pressure gauge, when the tyres are cold. Failure to properly maintain your tyre pressures could increase the risk of tyre failure resulting in loss of vehicle control and personal injury.

The following procedure should be used to check and adjust the tyres pressures. See **TECHNICAL SPECIFICATIONS** (page 116).

1. Remove the valve cap.
2. Firmly attach a tyre pressure gauge and inflator to the valve.
3. Read the tyre pressure from the gauge, and add air if required.
4. If air is added to the tyre, remove the gauge and re-attach it before reading the pressure. Failure to do so may result in an inaccurate reading.
5. If the tyre pressure is too high, remove the gauge and allow air out of the tyre by pressing the centre of the valve. Refit the gauge to the valve and check the pressure.
6. Repeat the process adding or removing air as required until the correct tyre pressure is reached.
7. Refit the valve cap.

Note: It is an offence in certain countries to drive a vehicle with incorrect tyre pressures.

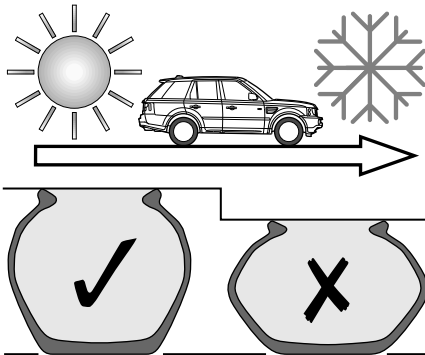
Note: It is the driver's responsibility to ensure that the tyre pressures are correct.

Tyre valves

Keep the valve caps screwed down firmly to prevent water or dirt entering the valve. Check the valves for leaks when checking the tyre pressures.

Wheels and tyres

Pressure compensation for ambient temperature changes



E80321

If the ambient temperature drops, the tyre pressures will decrease, which may cause under inflation. This should be borne in mind when travelling to, or through, areas of lower temperature.

Under inflation causes the tyre side wall height to reduce, which in turn results in uneven tyre wear, and a risk of tyre failure.

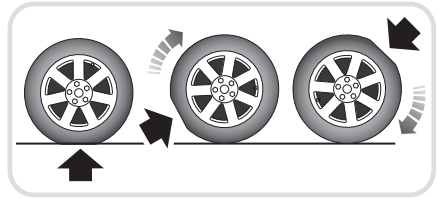
Tyre pressures may be adjusted before setting off on a journey to, or through, areas of low temperature. Alternatively, the tyre pressures can be adjusted when low temperature areas are reached.

Note: *If the tyre pressures are to be adjusted in the lower temperature area, the vehicle should be left standing for at least one hour prior to adjustment.*

Tyre pressures should be increased by 0.14 bar/14 kPa (2 lbf/in²) for each 10°C (20°F) temperature decrease.

Flat spots

If the vehicle is stationary for a long period when the ambient temperature is high, the tyres may form flat spots. When the vehicle is driven these flat spots will cause a vibration which will steadily disappear as the tyres warm up and regain their original shape.



E80322

In order to minimise flat spotting, you can increase the tyre pressures.

Tyre pressures can be increased by 0.14 bar/14 kPa (2 lbf/in²) for each 10°C (20°F) temperature increase above 20°C (68°F).

Long term storage

You can minimise flat spotting during long term storage by increasing the tyre pressures to the maximum indicated on the tyre sidewall.

Note: *Before you drive the vehicle again after a period of storage, you must check the tyre pressures and reduce them to the correct pressure if necessary.*

Wheels and tyres

USING WINTER TYRES

If winter tyres are fitted to the vehicle, the tyre manufacturers instructions should be followed. Pay particular attention to instructions regarding the maximum speed that the vehicle can be driven, and the correct pressures for the tyres.

CHANGING A ROAD WHEEL

Jack and tool kit

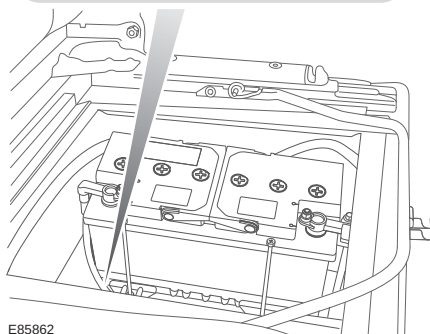
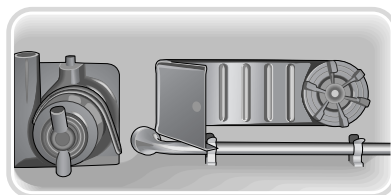
WARNING



After wheel changing, always secure tools, chock and jack and spare wheel in their correct storage positions.

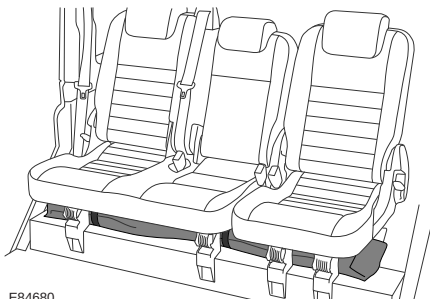
Your vehicle will be equipped with either a bottle jack or a pillar jack. It is important to read the operating instructions for the type of jack fitted to your vehicle.

The jack is stowed in one of the following positions:



E85862

- Under the left-hand front seat. See **MANUAL SEATS** (page 19).
- Behind the front seats.
- Beneath the rear seats.



E84680

The wheel brace and wheel chock are stored underneath the left-hand front seat.

Wheels and tyres

Care of the jack

Examine the jack occasionally, clean and grease the moving parts, particularly the ram (or pillar).

Check the oil level in a bottle jack at the normal servicing intervals. Top-up with hydraulic oil with viscosity to BS4231 grade 32 and ISO proof 32.

The bottle jack should always be returned to its fully-lowered position and must always be stored upright.

Spare wheel

WARNINGS



The spare wheel is heavy and if handled incorrectly may cause injury. Use extreme caution when lifting or manoeuvring the wheels.



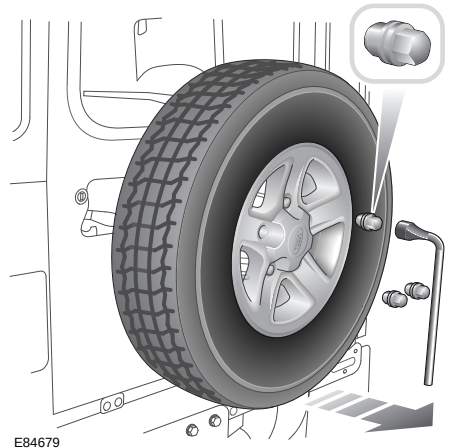
Do not use the spare wheel securing nuts in place of the road wheel nuts, or use the road wheel nuts to secure the spare wheel - the nuts are not interchangeable.

Note: In some markets, alloy wheels will have a locking wheel nut fitted to each road wheel.

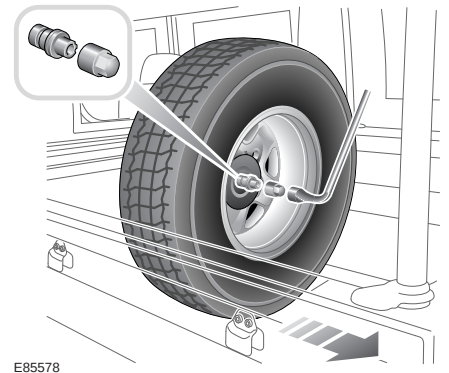
In other markets, there is a locking wheel nut securing the spare wheel.

Note: The location of the spare wheel differs dependant on body style.

Spare wheel - Station wagon



Spare wheel - Pick-up



1. Using the wheel brace supplied, remove the nuts securing the wheel cover.
2. Remove the nuts securing the spare wheel to the carrier and lift off the wheel.

Wheels and tyres

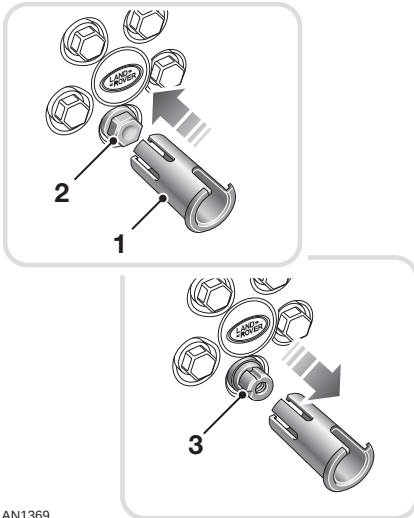
Locking wheel nuts

Locking wheel nuts can only be removed using the extractor tool and adapter.

Note: Store the adapter and extractor tool in a secure place, out of sight, in the vehicle.

Note: A code letter is stamped onto the face of the adapter. This letter must be recorded on the security card supplied with the literature pack. If a replacement adapter is required you will be asked to quote this number. The security card must be kept safe, but should not be kept with the vehicle.

Releasing locking wheel nuts

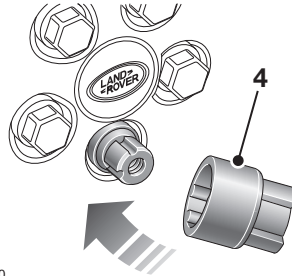


LAN1369

1. Push the extractor tool **1** over the locking wheel nut cover **2**, ensuring that it is fully engaged.

Note: If the extractor tool is inadvertently fitted to a standard wheel nut, it can only be released by removing the wheel nut. The wheel brace will fit inside the extractor tool and onto the wheel nut.

2. Pull the extractor tool squarely away from the wheel to remove the nut cover and reveal the locking wheel nut **3**.



LAN1370

Note: After use, store the wheel nut adapter correctly within the tool kit.

3. Fit the adapter **4** on to the locking wheel nut. The wheel nut can now be removed using the wheel brace.

Wheel changing safety

Before raising the vehicle, or changing a wheel ensure that you read, and comply with the following warnings.

WARNINGS



Always find a safe place to stop, off the highway and away from traffic.



Disconnect trailer or caravan from vehicle.



Switch on the hazard warning lamps.



Make sure that all passengers, and animals, are out of the vehicle, and in a safe place away from the highway.



Place a warning triangle at a suitable distance behind the vehicle, facing towards oncoming traffic.

Wheels and tyres

WARNINGS



Make sure that the front wheels are in the straight ahead position, engage the steering lock and apply the parking brake.



Engage 1st or reverse gear.



Make sure that the jack is on firm level ground. Never position on soft ground, or over metal gratings or manhole covers.



Never place anything between the jack and the ground, or the jack and the vehicle.



Always chock the wheels using wheel chocks from the tool kit. Place the chocks on both sides of the wheel diagonally opposite the wheel to be changed.



If jacking the vehicle on a slight slope is unavoidable, place the chocks on the downhill side of the two opposite wheels.



Remove the spare wheel prior to jacking the vehicle. To avoid destabilising the vehicle when raised.



No person should place any portion of their body under a vehicle supported by a jack. Always use vehicle support stands.



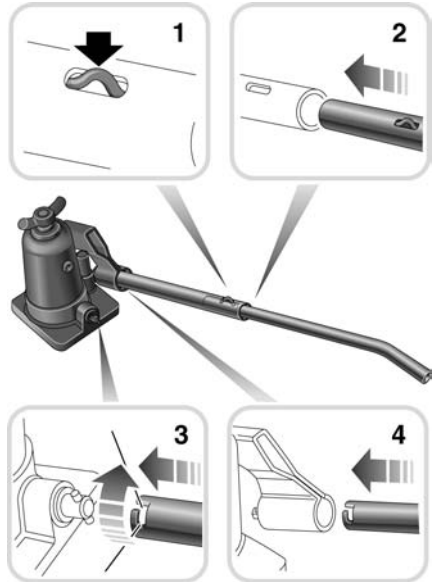
Take care when lifting the spare wheel, and removing the punctured wheel. The wheels are heavy, and can cause injuries if not handled correctly.



Take care when loosening the wheel nuts. The wheel brace may slip off if not properly attached, and the wheel nuts may give way suddenly. Either of these unexpected movements may cause an injury.

Note: The wheel chock is stowed in a compartment under the left-hand front seat. See **MANUAL SEATS** (page 19).

Operating the bottle jack



E84681

Before you position the bottle jack under the vehicle, make sure you are familiar with its mode of operation.

1. Slot the two parts of the jack lever together **1**, ensuring that the spring clip protrudes from the engagement slot where the two parts join **2**.
2. Close the jack release valve by using the notched end of the jack lever to turn the valve fully clockwise **3**.
3. Insert the lever into the socket as shown **4** and twist the lever to lock it into the socket.
4. Pump the lever up and down to raise the jack.

Wheels and tyres

5. To lower the jack, detach the lever (twist and pull) and then slot the notched end over the pegs on the release valve. Slowly turn the release valve counterclockwise allowing the weight of the vehicle to lower the jack

WARNING



Do not fully unscrew the release valve.

Positioning the bottle jack

WARNINGS



Never work beneath the vehicle with the bottle jack as the only means of support.



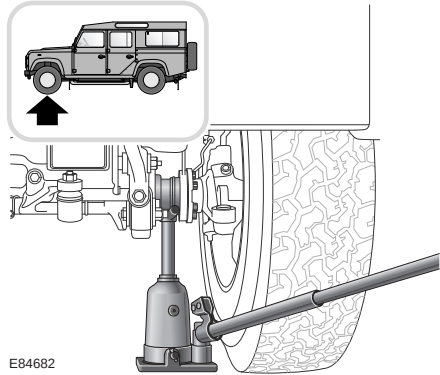
Never use the bottle jack from the side of the vehicle.



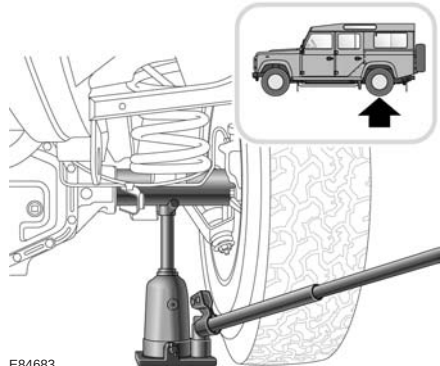
Always use the jack lever throughout, to minimise any accidental damage, injury from underbody parts or contact with a hot exhaust system.



Make sure that the bottle jack is always correctly located onto one of the jacking points illustrated below, or personal injury or damage to the vehicle could occur.



E84682



E84683

Wheels and tyres

Positioning the pillar jack

WARNINGS



Make sure that you are familiar with operating the pillar jack before using it to raise a vehicle.



Do not use the jack without the base fitted - the vehicle would not be properly supported and could cause personal injury.

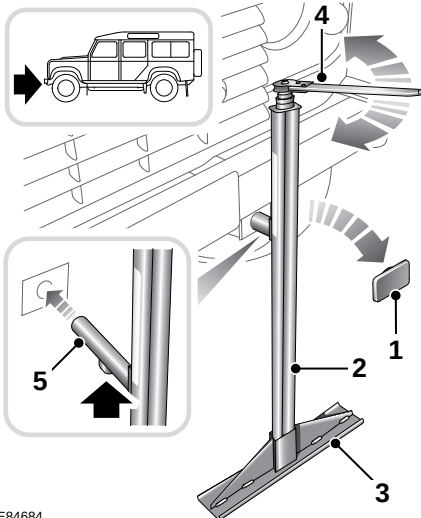


Make sure that the jacking peg is engaged in the jacking tube fully, as far as the shoulder (arrowed in illustration below).



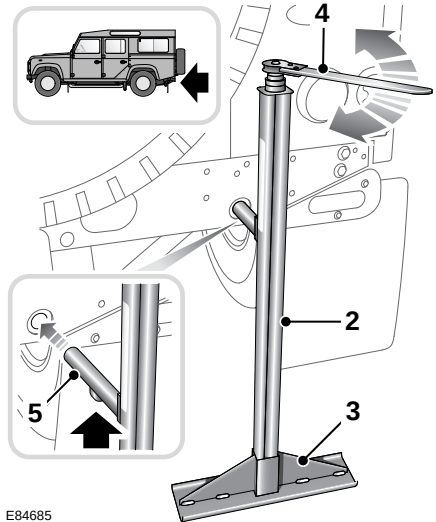
Only jack the vehicle using the jacking points indicated below, or personal injury or damage to the vehicle could occur.

Front jacking point



E84684

Rear jacking point



E84685

1. If changing a front wheel, remove the rubber plug **1** from the jacking tube nearest the wheel to be changed.
2. Fully insert the jack pillar **2** into the base **3**.
3. Fit the ratchet handle **4** to the top of the pillar and adjust the height of the jacking peg **5** so that it can be inserted fully into the jacking tube.

Note: The jack handle operates as a ratchet - one side raises the jack, then turn the handle over to lower the jack.

Wheels and tyres

Changing a wheel

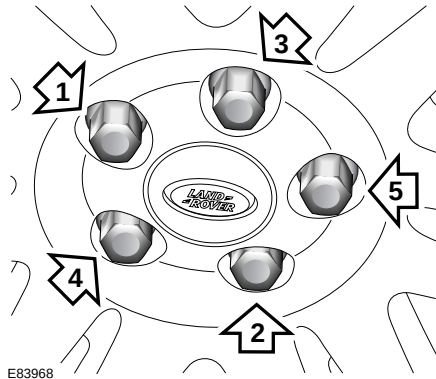
1. Read and observe all the warnings in **Wheel changing safety**.
2. Loosen the wheel nuts half a turn (counterclockwise).
3. Position the jack beneath the relevant jacking point by following the relevant instructions above.
4. Raise the vehicle using the jack with a slow steady operation. Avoid rapid, jerky actions as they may cause the vehicle or the jack to become unstable.
5. Remove the wheel nuts and place them together where they cannot roll away.
6. Remove the wheel and place to one side. Do not lay the wheel on its face, as this may damage the finish.

WARNING



When fitting a wheel, make sure that the mating faces of the hub and wheel are clean and free from rust or anti-seize compound - any accumulation of dirt or rust could cause the wheel nuts to become loose and result in an accident.

7. Fit the spare wheel, making sure that the wheel is making contact with the hub evenly. Refit the wheel nuts, and lightly tighten them.
8. Ensure that the space under the vehicle is clear of obstructions, and lower the vehicle slowly and smoothly.



E83968

Note: If it is not possible to torque the wheel nuts when a wheel is replaced, the wheel nuts should be tightened to the correct torque as soon as possible.

9. With all wheels on the ground and the jack removed, fully tighten the wheel nuts in the sequence indicated above to the correct torque of 133 Nm (98 lb.ft).
10. If an alloy spare wheel is to be fitted, using a suitable blunt tool, knock the centre cap out of the removed wheel. Using hand pressure only, press the centre cap into the newly fitted spare.
11. Return jack, tools, chock and spare wheel to their correct storage positions.
12. Check and adjust the tyre pressure as soon as possible. See **TECHNICAL SPECIFICATIONS** (page 116).

Wheels and tyres

USING SNOW CHAINS

WARNINGS



Only use snow chains in heavy snow conditions, on hard road surfaces.



Never exceed 50 km/h (30 mph) when snow chains are fitted.



Do not fit non-approved snow chains to the front wheels - this could damage brake components.

Land Rover approved snow chains may be used to improve traction on a hard road surface in heavy snow conditions. They should not be used in off-road conditions.

If it becomes necessary to fit snow chains, the following points should be observed:-

- **Rear wheels:** Snow chains can be fitted to the rear wheels of any vehicle provided that standard size wheels and tyres are fitted. See **TECHNICAL SPECIFICATIONS** (page 116).
- Ensure the gearbox differential is locked.
- If snow chains are to be fitted to the front wheels only, or to all four wheels, then only Land Rover approved snow chains should be used. Only Land Rover approved chains have been tested to ensure that they do not cause damage to the vehicle. Contact your Land Rover Dealer/Authorised repairer for information.
- Non-approved snow chains can be fitted to the rear wheels only.
- Always read, understand, and follow the snow chain manufacturer's instructions. Pay particular attention to the maximum speed, and tensioning instructions.
- Avoid tyre or vehicle damage by removing the snow chains as soon as the conditions allow.

TYRE GLOSSARY

Terms used

lbf/in² or psi

Pounds per square inch, an imperial unit of measure for pressure.

kPa

Kilo Pascal, a metric unit of measure for pressure.

Cold tyre pressure

The air pressure in a tyre which has been standing in excess of three hours, or driven for less than one mile.

Maximum inflation pressure

The maximum pressure to which the tyre should be inflated. This pressure is given on the tyre side wall in lbf/in² (psi) and kPa.

Note: *This pressure is the maximum allowed by the tyre manufacturer. It is not the pressure recommended for use. See **TECHNICAL SPECIFICATIONS** (page 116).*

Kerb weight

The weight of a standard vehicle, including a full tank of fuel, any optional equipment fitted, and with the correct coolant and oil levels.

Gross vehicle weight

The maximum permissible weight of a vehicle with driver, passengers, load, luggage, equipment, and towbar load.

Accessory weight

The combined weight (in excess of those items replaced) of items available as factory installed equipment.

Wheels and tyres

Production options weight

The combined weight of options installed which weigh in excess of 1.4 kg (3 lb) more than the standard items that they replaced, and are not already considered in kerb or accessory weights. Items such as heavy duty brakes, high capacity battery, special trim etc.

Vehicle capacity weight

The number of seats multiplied by 68 kg (150 lb) plus the rated amount of load/luggage.

Maximum loaded vehicle weight

The sum of kerb weight, accessory weight, vehicle capacity weight, plus any production option weights.

Rim

The metal support for a tyre, or tyre and tube, upon which the tyre beads are seated.

Bead

The inner edge of a tyre that is shaped to fit to the rim and form an air tight seal. The bead is constructed of steel wires which are wrapped, or reinforced, by the ply cords.

TECHNICAL SPECIFICATIONS

Wheel specifications

Wheel type	Wheel size	Tyre size
Alloy	7.0J x 16	235/85 R 16
Steel	6.5J x 16	7.50 R16C 7.50 R16
Steel	6JK x 16	205/80 R 16
Steel	5.5F x 16	7.50 R16C 7.50 R16
Steel	5.5J x 16	205/80 R 16 7.50 R16

Tyre pressures

Loading conditions		Tyre size	Pressure KPa/bar/psi
90 models All operating conditions.	Front	All	207/2.1/30
	Rear	All	262/2.6/38
110 models Normal conditions	Front	All	207/2.1/30
	Rear	All	331/3.3/48
110 models Vehicle loaded to gross maximum weight, and/or when towing	Front	All	207/2.1/30
	Rear	All	448/4.5/65
130 models All operating conditions	Front	All	310/3.1/45
	Rear	All	448/4.5/65

Fuses

CHANGING A FUSE

CAUTIONS

! Fit Land Rover approved replacement fuses of the same rating and type, or fuses of matching specification. Using an incorrect fuse may result in damage to the vehicle's electrical system, and can result in a fire.

! If the replacement fuse blows after installation the system should be checked by your Land Rover Dealer/Authorised Repairer.

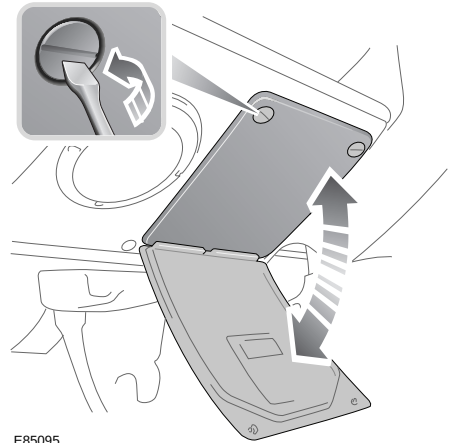
Note: Land Rover recommend that owners do not remove or replace relays. It is recommended that you seek qualified assistance in the event of a relay failure.

Always switch off the ignition, and the affected electrical circuit before replacing a fuse.

FUSE BOX LOCATIONS

There are two fuse boxes in the vehicle, the main fuse box and the secondary fuse box. A label in each fuse box cover shows the circuits protected, the fuse values and their locations. See **FUSE SPECIFICATION CHART** (page 118).

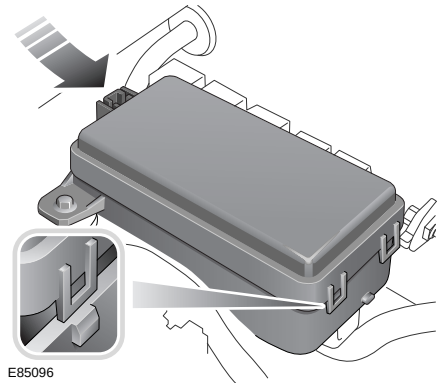
Main fuse box



E85095

The main fuse box is fitted below and to one side of the steering column; to access the fuses, remove the cover by turning the fixing screws fully counterclockwise.

Secondary fuse box



E85096

The secondary fuse box is located under the right front seat. See **MANUAL SEATS** (page 19).

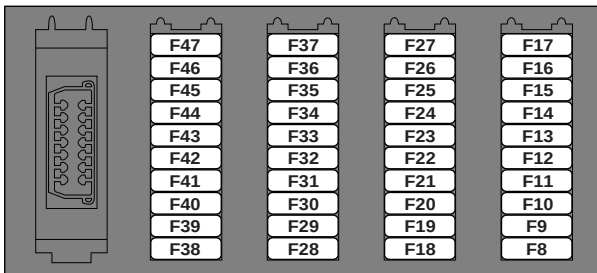
Fuses

To access the fuses, press the catch on the fuse box (arrowed in illustration) and lift the cover. See **FUSE SPECIFICATION CHART** (page 118).

FUSE SPECIFICATION CHART

Fuse positions and specifications

Main fuse box



E85097

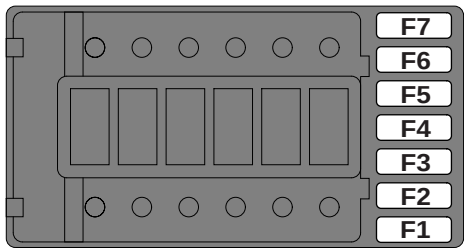
Fuse number	Rating (Amps)	Fuse colour	Circuits protected
F8	10	Red	Alarm system
F9	10	Red	Anti-lock brakes
F10	10	Red	Rear wipers/wash
F11	15	Blue	Front wipers/wash
F12	10	Red	Speed transducer
F13	10	Red	Brake lamps
F14	10	Red	Reverse lamps
F15	5	Tan	Ignition
F16	-	-	Not used
F17	-	-	Not used
F18	10	Red	Side lamps (left)
F19	10	Red	Side lamps (right)
F20	10	Red	Illumination/clock illumination
F21	10	Red	Hazard switch
F22	10	Red	Headlamp dipped beam (right)
F23	10	Red	Headlamp dipped beam (left)

Fuses

Fuse number	Rating (Amps)	Fuse colour	Circuits protected
F24	10	Red	Headlamp main beam (right)
F25	10	Red	Headlamp main beam (left)
F26	10	Red	Rear fog lamps
F27	10	Red	Alarm sounder
F28	20	Yellow	Heated rear window
F29	20	Yellow	Cooling fan/A/C clutch link
F30	10	Red	Audio/clock/diagnostic socket
F31	15	Blue	Hazard switch
F32	-	-	Not used
F33	20	Yellow	Seat heater
F34	20	Yellow	Electric window (right)
F35	20	Yellow	Electric window (left)
F36	30	Green	Heated front screen
F37	30	Green	Spare fuse
F38	10	Red	Engine ECU/PCM
F39	5	Tan	Engine ECU/PCM
F40	-	-	Not used
F41	5	Tan	Engine ECU/PCM
F42	10	Red	Air conditioning switch
F43	20	Yellow	Cigar lighter
F44	5	Tan	Audio unit
F45	30	Green	Blower motor
F46	-	-	Not used
F47	-	-	Not used

Fuses

Secondary fuse box

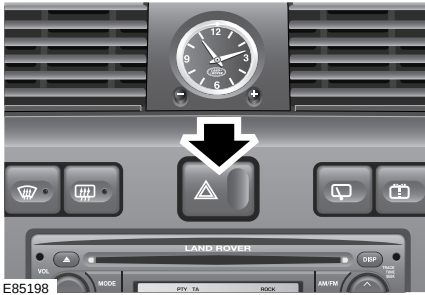


E85098

Fuse number	Rating (Amps)	Fuse colour	Circuits protected
F1	30	Green	Anti-lock braking
F2	20	Yellow	Accessory socket
F3	20	Yellow	Headlamp flash/horn
F4	-	-	Not used
F5	30	Green	Main relay
F6	15	Blue	Alarm system
F7	20	Yellow	Alarm system

Emergency equipment

HAZARD WARNING FLASHERS



If the vehicle is stationary in an unsafe location, or may cause a hazard to other road users, switch on the hazard warning flashers. Press the switch to turn the hazard warning lamps on.

Note: Hazard warning lamps can be used when the starter switch is turned on or off.

Status after a collision

DRIVING AFTER A COLLISION

Before starting or driving

WARNING



If the vehicle is involved in a collision it should be checked by a Land Rover Dealer/Authorised repairer, or suitably qualified persons before starting or driving.

If the vehicle has been involved in an accident it should be checked thoroughly before attempting to start the engine or drive the vehicle.

Check for:-

- Fuel leaks.
- Fluid leaks.
- Battery damage.
- Damage to wiring.
- Damage to lamps.
- Damage to steering, suspension, wheels or tyres.
- Sharp or protruding bodywork.
- Operation of doors and locks.
- Condition and operation of seat belts.
- Condition of child seats and their mounting/attachment points.

Note: This list is not exhaustive.

When driving

When driving a vehicle which has been involved in a collision use caution and pay extra attention to the operation of the vehicle. If any changes in vehicle operation after the collision are noted when compared to it's operation before the collision, do not continue to drive the vehicle. Stop the vehicle as soon as it is safe to do so, and have the vehicle recovered.

Pay particular attention to changes in:-

- Steering.
- Braking.
- Unusual noises.
- Warning indicators.
- Problems with electrical systems.

INSPECTING SAFETY SYSTEM COMPONENTS

Following a collision the seat belts should be inspected for damage and/or deformity. The inspection and any subsequent repair work should only be carried out by a Land Rover Dealer/Authorised Repairer, or other suitably qualified persons.

Components which require inspection include:-

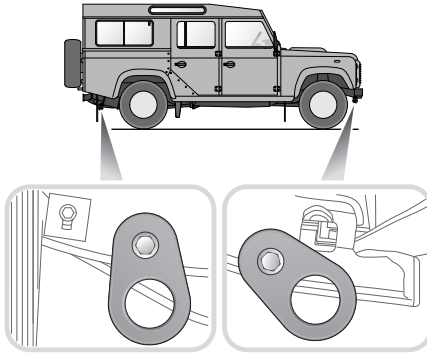
- Seat belt webbing and mechanisms.
- Seat frames and mounting points.
- Child seats.

Note: This list is not exhaustive.

Vehicle recovery

TOWING POINTS

Front and rear towing eyes



E84845

WARNINGS



The towing eyes at the front and rear of the vehicle are designed for on-road recovery only. If they are used for any other purpose it may result in vehicle damage and serious injury.



Never use the towing eyes to tow a trailer, caravan etc. Doing so may result in vehicle damage and serious injury.

LASHING POINTS

WARNING



The front and rear lashing points must only be used for securing the vehicle during transportation. Use for any other purpose may result in damage to the vehicle, and serious injury.

Use the towing eyes on the front and rear cross members as lashing points. Do not secure lashing hooks or trailer fixings to any other part of the vehicle. See **TOWING POINTS** (page 123).

TRANSPORTING THE VEHICLE

The recommended method for recovery or transportation of the vehicle is on a transporter or trailer designed for that purpose.

Ensure that transportation is carried out by suitably qualified persons, and that the vehicle is secured correctly.

TOWING THE VEHICLE ON FOUR WHEELS

WARNINGS



Do not attempt to tow the vehicle unless the starter switch is turned to position **I**.



Do not remove the key or turn the starter switch to position **0** while the vehicle is in motion; the key must remain in position **I**.



If the engine cannot be run when the vehicle is being towed, there will be no power assistance for the steering or brakes. This will result in greater effort being required to steer or slow the vehicle and greatly increased stopping distances.

CAUTIONS



The vehicle should only be towed with four wheels on the ground. Towing with two wheels on the ground will result in serious damage to the transmission.



The vehicle should only be towed for a maximum of 50 km (30 miles), at a maximum speed of 50 km/h (30 mph). Towing for a greater distance, or at a higher speed may result in serious damage to the transmission.

Note: The recommended recovery method is to raise all four wheels.

Vehicle recovery

Towing procedure

1. The vehicle should be parked on firm level ground, with the parking brake on.
2. Secure the towing attachment from the recovery vehicle to the front towing eye.
See **TOWING POINTS** (page 123).
3. Turn on the starter switch.

CAUTION



Leaving the starter switch turned on for extended periods will cause the battery to drain.

4. Apply the foot brake and select neutral.
5. With the foot brake still applied, release the parking brake.
6. The vehicle can now be towed a maximum of 50 km (30 miles) at a maximum speed of 50 kmh (30 mph).
7. Upon arrival at the destination, ensure wherever possible that the vehicle is parked on firm level ground.
8. Apply the parking brake.
9. Turn off the starter switch.

WARNING

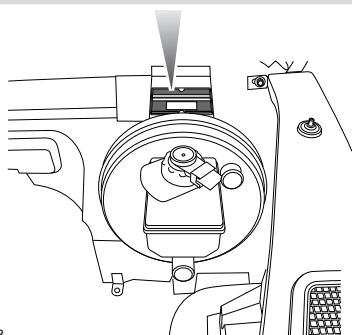
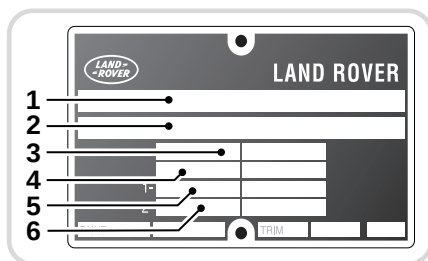


Use extreme caution when detaching towing equipment. Vehicle movement is possible which can result in serious injuries.

10. Remove the towing attachment from the towing eye.

Vehicle identification

VEHICLE IDENTIFICATION PLATE



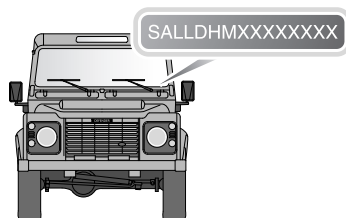
E84828

1. Type approval (where required)
2. Vehicle Identification Number (VIN)
3. Gross vehicle (where required)
4. Gross train weight (where required)
5. Maximum front axle load (where required)
6. Maximum rear axle load (where required)

Note: In the interests of safety, it is essential that the gross vehicle weight, gross train weight and axle loads are **not** exceeded. See **WEIGHTS** (page 126).

The Vehicle Identification Number (VIN) and recommended maximum vehicle weights, are stamped on a plate riveted to the top of the brake pedal box in the engine compartment. The VIN should match the VIN recorded in the Service Portfolio and the VIN visible through the front windscreen.

VEHICLE IDENTIFICATION NUMBER (VIN)



E84826

As a deterrent to thieves, and to assist the Police, the VIN is stamped on a plate which is visible through the lowest part of the left side of the windscreen.

Note: If you need to communicate with a Land Rover Dealer/Authorised Repairer, you may be asked to quote the VIN number.

Technical specifications

ENGINE SPECIFICATIONS

Specification	Data
Fuel	Diesel (biodiesel: maximum 5% RME content)
Number of cylinders	4
Capacity	2402 cm ³
Firing order	1-3-4-2
Compression ratio	19:1
Bore	89.9 mm
Stroke	94.6 mm
Idle speed	900 rpm
Power output	90 kW (122 PS) @ 3500 rpm
Maximum torque	360 Nm @ 2000 rpm

WEIGHTS

Axle weights and gross vehicle weights

90 models	Heavy duty including Station Wagon	Standard duty
Maximum front axle weight	1250 kg (2756 lbs)	1250 kg (2756 lbs)
Maximum rear axle weight	1500 kg (3307 lbs)	1380 kg (3042 lbs)
Gross vehicle weight	2550 kg (5622 lbs)	2400 kg (5291 lbs)

110 models	Standard duty	Standard duty Station Wagon	1-ton Station Wagon
Maximum front axle weight	1250 kg (2756 lbs)	1250 kg (2756 lbs)	1250 kg (2756 lbs)
Maximum rear axle weight	1850 kg (4079 lbs)	1750 kg (3858 lbs)	1940 kg (4277 lbs)
Gross vehicle weight	3050 kg (6724 lbs)	2950 kg (6504 lbs)	3050 kg (6724 lbs)

Heavy duty 110 and 130 models	Weights
Maximum front axle weight	1580 kg (3483 lbs)
Maximum rear axle weight	2200 kg (4850 lbs)
Gross vehicle weight	3500 kg (7716 lbs)

Note: Maximum gross vehicle weight is not calculated by adding together maximum front and rear axle loads. The individual maximum axle weights and gross vehicle weight must not be exceeded.

Technical specifications

EEC kerb weights (unladen vehicle + 90% fuel + 75 kg driver)

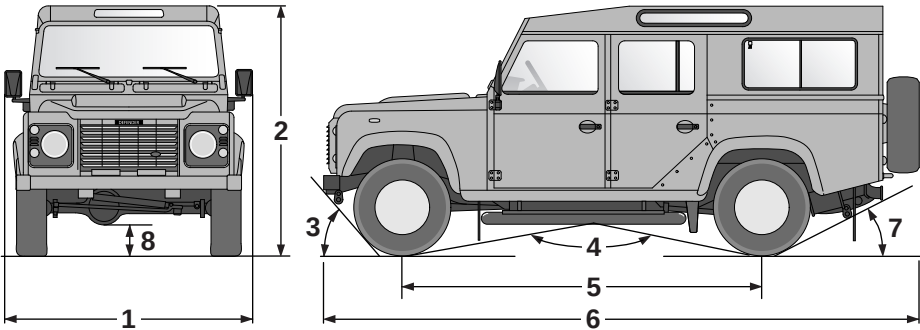
90 models	No options	All options
Pick-up	1745 kg (3847 lbs)	1820 kg (4012 lbs)
Hard top	1790 kg (3946 lbs)	1865 kg (4112 lbs)
Soft top	1735 kg (3825 lbs)	1805 kg (3979 lbs)
Station Wagon	1900 kg (4189 lbs)	1965 kg (4332 lbs)

110 models	No options	All options
Pick-up	1880 kg (4145 lbs)	1975 kg (4354 lbs)
High capacity pick-up (HCPU)	1915 kg (4222 lbs)	2010 kg (4431 lbs)
Hard top	1915 kg (4222 lbs)	1990 kg (4387 lbs)
Soft top	1900 kg (4189 lbs)	1980 kg (4365 lbs)
5-seat Station Wagon	2045 kg (4508 lbs)	2110 kg (4431 lbs)
7-seat Station Wagon	2110 kg (4652 lbs)	2175 kg (4795 lbs)
Crew cab pick-up	2010 kg (4431 lbs)	2120 kg (4674 lbs)

130 models	No options	All options
Double cab pick-up	2110 kg (4652 lbs)	2180 kg (4806 lbs)

Technical specifications

DIMENSIONS



E85184

110 Station Wagon dimensions illustrated

90 models	Description	mm/inches	Degrees
1	Width excluding mirrors	1790/70	-
	Width including mirrors	1992/78	-
2	Max overall height (Standard & Heavy Duty):		
	Soft top and pick-up	2000/78.7	-
	Hard top and Station Wagon	2128/83.8	-
3	Approach angle		
	205 tyres	-	47
	235 tyres	-	51
4	Breakover angle		
	205 tyres	-	147
	235 tyres	-	144
5	Wheelbase	2360/93	-
6	Overall length:		
	Soft top and pick-up	3649/144	-
	Hard top and Station Wagon	3894/153	-
7	Departure angle without tow hitch		
	205 tyres	-	47
	235 tyres	-	49

Technical specifications

90 models	Description	mm/inches	Degrees
8	Ground clearance		
	205 tyres:	260/10	-
	235 tyres:	323/13	-

110 models	Description	mm/inches	Degrees
1	Width excluding mirrors	1626/64	-
	Width including mirrors	1790/70	-
2	Max overall height (Standard & Heavy Duty):		
	High capacity pick-up	2035/80.1	-
	Soft top and pick-up	2079/81.9	-
	Hard Top, Station Wagon and Double cab pick-up	2181/85.9	-
	Chassis cab	2400/94.5	-
3	Approach angle	-	49
4	Breakover angle	-	150
5	Wheelbase	2794/110	-
6	Overall length:		
	Soft top and pick-up	4370/172	-
	Hard top and Station Wagon	4639/183	-
7	Departure angle without tow hitch	-	36
8	Ground clearance	314/12	-

Technical specifications

130 models	Description	mm/inches	Degrees
1	Width excluding mirrors	1626/64	-
	Width including mirrors	1790/70	-
2	Max overall height (Standard & Heavy Duty):		
	Double cab pick-up	2181/85.9	-
	Chassis cab and Double cab chassis cab	2400/94.5	-
3	Approach angle	-	49
4	Breakover angle	-	153
5	Wheelbase	3225/127	-
6	Overall length	5170/204	-
7	Departure angle without tow hitch	-	35
8	Ground clearance	314/12	-

Note:

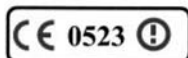
The stated maximum heights assumes the largest specified tyres and a Land Rover approved roof rack is fitted (if applicable) with no driver, passengers or luggage. Vehicle height is dependent on the number and type of options/accessories fitted, number of passengers, and load being transported which will reduce the height. If in doubt measure your vehicle.

Type approvals

TYPE APPROVALS

Declarations of conformity

DECLARATION OF CONFORMITY



This declaration is the responsibility of the manufacturer / authorised representative within the Community:

TRW Automotive Electronics
45, College Road Perry Bar Birmingham, B44 8DU UNITED KINGDOM
(Name / Address)

This certifies that

The 433,92MHz Transmitter designated: 17TN
and The 125KHz Immobilizer designated: 10AS
(Product identification)

complies with the essential protection requirements of R&TTE Directive 1999/5/EC on the approximation of the laws of the Member States relating to **Radio Spectrum Matters, EMC and Electrical Safety.**

This declaration applies to all specimens manufactured in accordance with the technical documentation described in the annex II. TRW Automotive Electronics keep this documentation at the proposal of the relevant national authorities of any Member State for inspection purpose.

Assessment of compliance of the product with the requirements relating 'to the essential requirements acc. to Article 3 R&TTE was based on Annex II and Annex IV of the Directive 1999/5/EC and the following standards:

Radio Spectrum:

EN 300220-1 & EN 300 330
(Identification of regulations / standards)

EMC:

EN 300 683 & EN 300 489 Part 1 & 3
(Identification of regulations / standards)

Safety:

EN 60950, ISO 3795 (based on FMVSS 302)
(Identification of regulations / standards)

ⓘ The designated products 17TN and 10AS are not submitted to harmonised standards. These devices are licence exempt and distributed in the European countries which will apply the R&TTE directive: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and UK.

(Place, date)

Birmingham, England

20/02/2001

(Signature)



JOHN BURGESS

EB5680			
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Audio introduction

RADIO RECEPTION

Some interference is to be expected from time to time during a journey. Occasionally it may be necessary to retune the audio unit to offset the effects of moving from one transmitter area to another.

While Radio Data System (RDS) automatic retuning helps to reduce the effects of signal changes, some manual retuning may still be required (especially for local stations) in areas of weak reception.

FM Signals travel in a straight line so large obstacles, such as tall buildings, can shield the vehicle from the signal, causing distortion or loss of reception (known as dead spots).

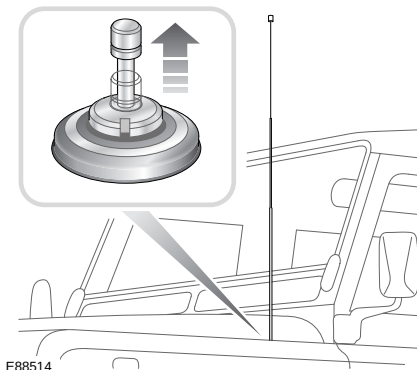
Distortion can also occur if FM signals received directly from the transmitter, mix with signals deflected by obstructions such as mountains, hills and tall buildings. This is known as multi-path distortion.

Note: *Although distortion, interference and lack of signal clarity are sometimes attributed to a fault in the radio, this is rarely the case.*

Radio aerial

CAUTION

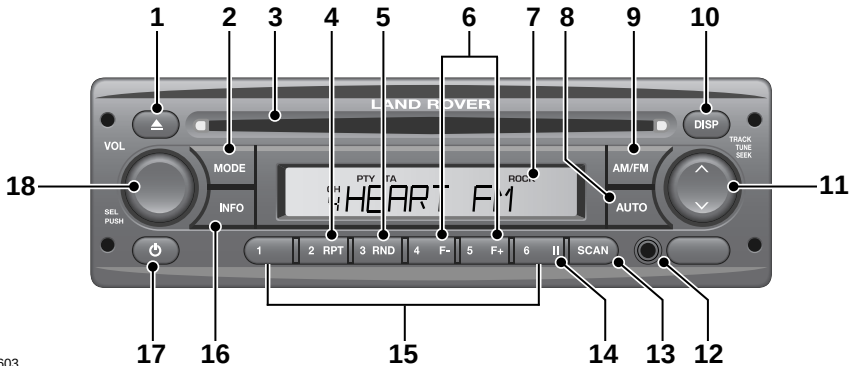
⚠ The radio aerial should be fully lowered, before the vehicle enters an automated car wash.



Raise the aerial, as shown, to improve radio reception.

Audio unit overview

AUDIO UNIT OVERVIEW



E84603

1. Compact disc eject button
2. MODE button
 - Press to scroll through CD, Tuner and Auxiliary modes (if available).
3. Compact disc entry slot
4. RPT button
 - Press to repeat the current CD track.
5. RND button
 - Press to play CD tracks in a random order.
6. F-/F+ buttons
 - Press to move to the previous (F-) or next (F+) folder of an MP3 data disc.
7. Information display screen
8. AUTO button
 - Press and release to store the six strongest stations automatically.
 - Press once, twice or three times to activate searching functions for MP3 data discs.
9. AM/FM button
 - Press to select AM or FM wavebands.
10. DISP button
 - Press to scroll through information displayed on the screen.
11. Search button: press the up or down arrow
 - Short press to search up or down for radio stations.
 - Long press to activate manual tuning of radio stations.
 - Short press to find next or previous CD track.
 - Long press to fast forward or rewind through current CD track.
12. Auxiliary audio input socket (if function is available)
13. SCAN button
 - Press to search available preset radio stations (1-6); press again to select a station.
 - Press to search all CD tracks; press again to play a track.
14. Pause button
 - Press to pause a CD track.
15. 1-6 preset buttons
16. INFO button
17. Power button
18. Volume knob

Audio unit overview

15. Keypad

- Short press to access any preset radio stations.
- Long press to store the current radio station.

16. INFO button

- Short press for traffic announcements (TA).
- Long press for news broadcast function (PTY).

17. On/off button

18. Volume control

- Rotate to adjust volume level.
- Short press for settings menu 1.
- Long press for settings menu 2.

Audio system security

SECURITY CODE

The security code is entered into the head unit during manufacture; it is not necessary to enter the code during normal vehicle usage.

However, in the event of a battery reset, e.g. subsequent to a flat battery or head unit change, the head unit will prompt for a security code by displaying **CDE 0000**. Following an interruption in power supply (battery disconnect for example) if **CDE 0000** is not displayed, pressing button **5** will display the code entry screen.

In the event that the head unit code card is lost, the user should seek advice from the dealer to retrieve the code for their head unit. The user will be required to produce some form of proof that they are the rightful owner of the vehicle e.g. the log book or a purchase receipt (if bought second hand, for example) before the dealer is authorised to issue the code. This condition is imposed to prevent stolen head units being used.

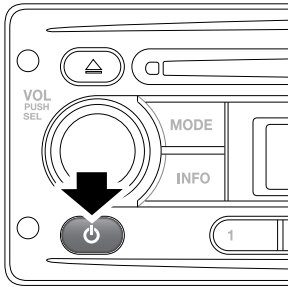
Entering a security code

The vehicle is delivered to the user with a security code card; the user must enter the code using the numeric (radio preset) buttons to resume operation of the head unit. Preset buttons 1, 2, 3 and 4 correspond to each digit of the security code. For example, if the code is 6789 the user must press the number 1 button six times, the number 2 button seven times, the number 3 button eight times and the number 4 button nine times followed by a single press of the number 5 button to complete the code input process.

If an incorrect code is entered **1CDE ERR** will be displayed and you will be asked to re-enter the code correctly. If the code is entered incorrectly three times **3CDE ERR** will be displayed after the third incorrect entry, followed by **SAFE**. The audio unit will be locked into safe mode for one hour during which time it will not operate. The audio unit must be left switched on for one hour. Once an hour has past with the audio unit switched on, the correct code can be entered.

Audio unit operation

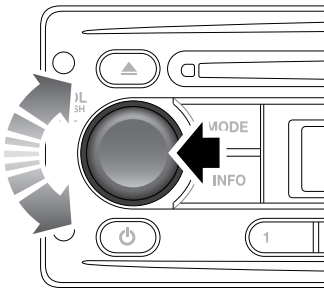
ON/OFF BUTTON



E84868

Press the on/off button to switch the audio unit on. Press again to switch off.

VOLUME CONTROL



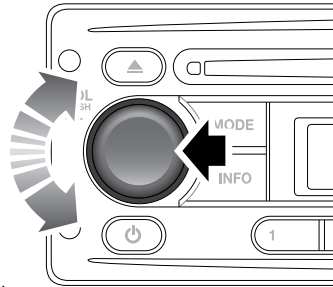
E85374

Rotate the volume control to increase or decrease the audio unit volume. The volume can be set between **0** and **32**.

Note: The audio unit can be used with the ignition off, but will be switched off automatically after one hour.

Press the volume control to access and change the settings on menus 1 and 2. See **AUDIO CONTROL** (page 137).

AUDIO CONTROL



E85374

You can change a number of settings using the volume control.

Press and release (short press) the volume control to access menu 1. Press and hold (long press) the volume control to access the more advanced settings on menu 2. Press the volume control repeatedly to scroll through the available menu options and then rotate the volume control to change a setting. Press and release the volume control to confirm a setting.

Note: If you do not press the volume control for a period of three seconds, you will exit the current menu automatically.

Settings menu 1 contains basic settings that control sound quality or its distribution between the speakers in the vehicle.

Bass response adjustment

1. Short press the volume control repeatedly until **BAS** is displayed.
2. Rotate the volume control to increase or decrease the bass level from **-6** to **+6**.

Treble response adjustment

1. Short press the volume control repeatedly until **TRE** is displayed.
2. Rotate the volume control to increase or decrease the treble level from **-6** to **+6**.

Audio unit operation

Balance adjustment

1. Short press the volume control repeatedly until **BAL** is displayed.
2. Rotate the volume control to adjust sound level to the right (R) or left (L) of the vehicle.

Fader adjustment

1. Short press the volume control repeatedly until **FAD** is displayed.
2. Rotate the volume control to adjust the sound level to the front (F) or rear (R) of the vehicle.

Settings menu 2 contains more advanced settings that you will not normally change, as described below.

Traffic announcement (TA) volume adjustment

You can adjust the volume level of traffic announcements.

1. Long press the volume control and then short press it repeatedly until **TAVOL** is displayed.
2. Rotate the volume control to set the TA volume level between **0** and **32**. The default setting is 10.

Note: This setting also applies to the volume of PTY news announcements.

Alternative frequencies

As the audio unit receives information about the frequencies being used by nearby transmitters, it can choose the strongest signal for the selected station. With the Alternative Frequencies (AF) feature enabled, you will not need to retune the radio as you drive between different transmitter areas.

1. Long press the volume control and then short press it repeatedly until **AF** is displayed.
2. Rotate the volume control to turn the **AF** setting on or off.

Note: The AF switch status will be displayed briefly and the AF indicator is displayed if AF is active.

Regional mode

As you drive into different radio reception areas, the Radio Data System (RDS) automatically retunes the audio unit to the strongest signal. Regional mode is an RDS feature that stops the audio unit from tuning to another local radio station with a stronger signal. With this feature enabled, your selected local radio station will remain tuned.

1. Long press the volume control and then short press it repeatedly until **REG** is displayed.
2. Rotate the volume control to turn the **REG** setting on or off.

Loudness setting

You can turn the loudness setting on or off.

1. Long press the volume control and then short press it repeatedly until **LOUD** is displayed.
2. Rotate the volume control to turn the setting on or off.

Audio unit operation

Audible beeps

You can choose to change when audible beeps are heard.

1. Long press the volume control and then short press it repeatedly until **BEEP** is displayed.
2. Rotate the volume control to choose from the following options: **All** (beep on every button press), **2nd** (beep on long button press only), **Off** (no beeps).

Default volume adjustment

You can adjust the volume level at which the audio unit is set when it is switched on (default volume).

1. Long press the volume control and then short press it repeatedly until **D-Vol** is displayed.
2. Rotate the volume control to set the volume level between **0** and **32**. The default setting is 10.

Telephone setting

If you choose to fit a hands-free telephone to the vehicle, you can switch on this setting to ensure that the audio unit is muted when a call is made or received.

1. Long press the volume control and then short press it repeatedly until **TEL** is displayed.
2. Rotate the volume control to turn the setting on or off.

Area settings

You only need to change this setting if you intend to move the vehicle to another continent, for example from Europe to Asia.

1. Long press the volume control and then short press it repeatedly until **AREA** is displayed.
2. Rotate the volume control to choose from the following options: **Latin** (Central and South America), **Asia**, **USA** and **Europe**.

Long wave

You can use this setting to enable or disable Long Wave.

1. Long press the volume control and then short press it repeatedly until **LW** is displayed.
2. Rotate the volume control to turn the setting on or off.

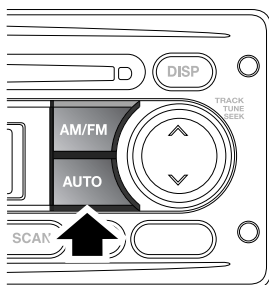
WAVEBAND BUTTON

To select a waveband, press and release the **AM/FM** button. Repeated presses will scroll through **FM1**, **FM2**, **FM3**, **MW1**, **MW2** and **LW** (if available).

Audio unit operation

AUTOSTORE CONTROL

Autostoring radio stations

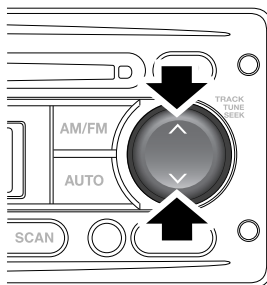


E84816

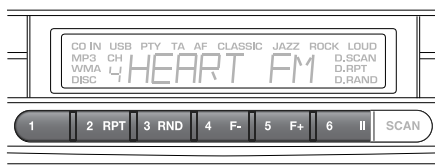
To autostore stations, select the required waveband, then press the **AUTO** button. The word **SEARCH** will be shown in the information display and the six stations with the strongest signals will be located and stored under the preset numbers in the order in which they are found.

To recall an autostored station, press and release the required preset number.

STATION PRESET BUTTONS



E84859



E84817

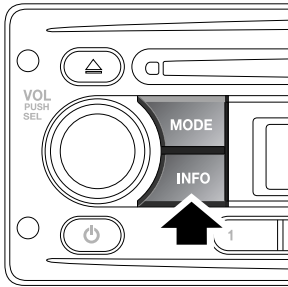
To store a station, press and release either the up or down arrow on the search button to find the next available station. If you want to tune to a station manually, then press and hold either the up or down arrow on the search button and then use the search button to tune into the frequency you require. Having tuned to the desired station, press and hold the preset number under which you would like the station stored.

The audio output will be muted when the button is pressed and an audible beep will indicate that the station has been stored.

To access stored stations, press and release the required preset number.

Audio unit operation

TRAFFIC INFORMATION CONTROL



E85375

The Information function locates and plays local travel announcements and news bulletins.

Traffic announcements

Short press the **INFO** button to toggle traffic announcements on or off (**TA** is displayed on the screen). As soon as a traffic announcement is detected, radio reception or CD play will be interrupted for the duration of the announcement. At the end of the traffic announcement, radio or CD play will resume.

During a traffic announcement, you can cancel it and return to the station you were previously listening to, by short pressing the **INFO** button. This does not turn off the traffic announcement function, only the current announcement.

PTY news announcements

Long press the **INFO** button to toggle PTY news announcements on or off (**PTY** is displayed on the screen). As soon as a PTY news announcement is detected, radio reception or CD play will be interrupted for the duration of the announcement. At the end of the news announcement, radio or CD play will resume.

During a news announcement, you can cancel it and return to the station you were previously listening to, by long pressing the **INFO** button. This does not turn off the PTY news function, only the current announcement.

Compact disc player

LOADING COMPACT DISCS

CAUTIONS

- ❗ Do not force the disc into the slot.
- ❗ Only use clean, undamaged discs. Do not use discs with paper labels, Dual Discs, DVDPlus discs or discs that are not circular or are warped. The CD player may load and play this type of disc; however, it is likely that the disc will not eject and will block the CD mechanism. Such damage to a CD player will not be covered under warranty.

Note: *Some music CD manufacturers are using data encryption to copy-protect their recordings and prevent the production of counterfeit copies. These CDs differ from the internationally agreed CD audio standard, RedBook, a standard that serves as the operating basis for all CD players and changers. Copy-protected CDs may fail to play or may be played subject to various limitations, e.g. sound quality may be impaired. If you do experience a problem, try the CD in other players before contacting the CD vendor.*

Low quality audio playback

Original recordings employ industry standard software to ensure high quality reproduction. Home recordings and pirated copies of original recordings are unlikely to be of the same standard; therefore quality of audio playback is likely to be adversely affected.

Original recordings display the 'Compact Disc Digital Audio' logo. However, pirated copies may also bear this logo. To ensure your enjoyment of high quality sound reproduction, always purchase original recordings.

Loading a CD

To insert a disc into the player, make sure that the label side of the disc is facing upwards when you present the disc to the slot. Ease the disc into the slot a short distance, until the mechanism takes over and draws the disc in fully.

Error messages

When there is a problem with the CD player the head unit may display one of four error codes:

- **Error 00** - CD player cannot load the CD.
Possible causes:
 - A damaged CD was inserted.
 - A CD that does not conform to the Redbook CD standard was inserted e.g. wrong shape or size.
 - A foreign object was inserted and has damaged the CD mechanism.
- **Error 01** - CD player mechanism fault.
Possible causes:
 - The CD player is damaged and can no longer function.
- **Error 02** - CD player reading fault. The CD player cannot read data from the CD.
Possible causes:
 - Dirty or scratched CD.
 - CD has been inserted upside down.
- **Error 03** - The CD player cannot read data from the CD.
 - The CD is unreadable, or of an unsupported type.



Redbook is the specification that controls the CD standard - look for the "Compact Disc Digital Audio" logo. The head unit is designed to play Redbook CDs and may not play CDs that do not conform to this standard e.g. a disc that has multiple content including video that may be played on a Personal Computer PC or Macintosh machine.

Compact disc player



Orangebook is the specification that controls the CDR standard - look for the "Compact Disc Recordable" logo. The MP3 and WMA compatible head unit is designed to play Orangebook CDRs and may not play unbranded CDRs or CDRs with corrupted or incorrect formats and data types present (see **Error 03** causes).

EJECTING COMPACT DISCS

To eject the disc, press and release the eject button. After a short pause, the compact disc will emerge and you can then remove it.

Note: *If the disc is not removed from the slot within ten seconds, it will be drawn back into the player automatically.*

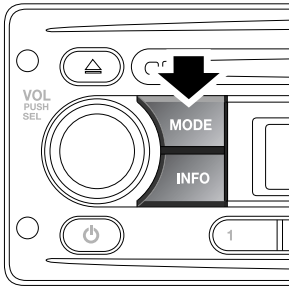
Note: *If you eject a CD during playback, the audio unit will switch to tuner mode automatically.*

CD is hot when ejected

CDs will become hot when played for extended periods - this is normal. This condition may occur when the vehicle is excessively heated by the vehicles heating system e.g. when the user selects a maximum heating setting and drives with the windows open to cool the cabin temperature; heat will build up in the centre console and the CD player which cannot be dissipated adequately to ensure CD playback. This condition may cause CD playback to falter or stop altogether. The user should reduce heating and allow the CD player to cool down.

Compact disc player

COMPACT DISC PLAYBACK



E85379

If you insert a compact disc into the compact disc slot, play will start automatically.

To start playing a compact disc that is already inserted, press and release the **MODE** button repeatedly until CD mode is selected. Playback will begin at one of two places:

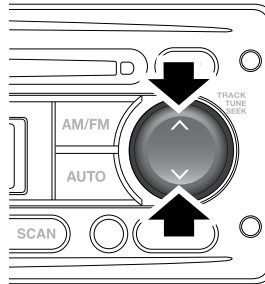
- If the disc has not been removed since its last use, playback will begin from the point at which it was stopped previously.
- If the disc is being inserted for the first time, playback will begin at the first track.

Note: Driving on very uneven or bumpy ground may cause the sound to skip during playback.

Note: If the vehicle is very cold or damp when the CD is first loaded, moisture in the audio unit may interfere with playback.

TRACK SELECTION

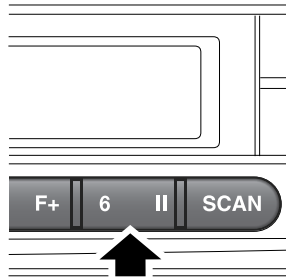
CD track selection



E84859

To skip to the next track or return to the start of the current track during playback, press and release either the up or down arrow on the search button.

COMPACT DISC PAUSE



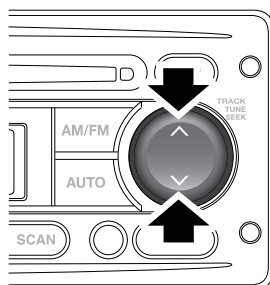
E84863

To pause or stop compact disc playback, briefly press the pause button. If you press and release the **MODE** button to move to the Tuner or Auxiliary modes, CD playback will be paused until you return to CD mode.

Compact disc player

FAST FORWARD/REVERSE

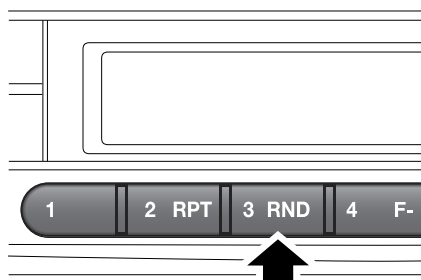
Search button



E84859

To move forwards or backwards through the current CD track, press and hold down either the up or down arrow on the search button. To continue playback, release the search button.

RANDOM TRACK SELECTION

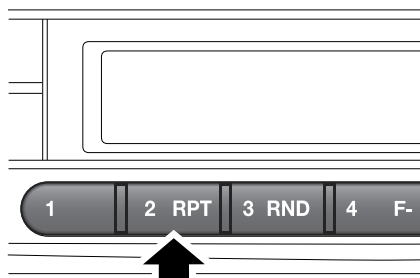


E85376

The Random function alters the playback sequence for the loaded compact disc. If the Random function is switched on, the track playback sequence is selected randomly.

To activate the random selection of tracks during playback, press the **3 RND** button. To turn random track selection off, press the **3 RND** button again.

REPEAT COMPACT DISC TRACKS

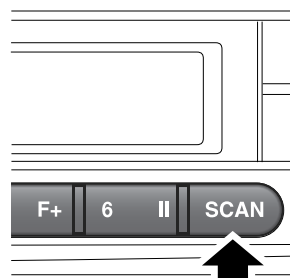


E85377

Repeat allows the current track to play repeatedly until it is stopped or cancelled.

To repeat the current track, press and release the **2 RPT** button. Press the button again to turn the Repeat function off and continue playing any remaining tracks.

COMPACT DISC TRACK SCANNING



E85378

Compact disc track scan allows you to sample the music on a compact disc. This feature plays the first ten seconds of each track in numerical order. Play will then begin at the start of track one.

To activate CD track scanning, press and release the **SCAN** button.

Compact disc player

Note: While in CD scan mode, pressing the previous track button will resume normal play of the current track. Pressing the next track button will move to the next track and resume normal play.

MP3 FILE PLAYBACK

When a data disc (containing MP3-encrypted music data) is inserted into the compact disc slot, **MP3** will appear at the top left of the display. If your audio unit is not able to play MP3 discs, then the disc will not be recognised. If your disc contains WMA-encrypted files, then the display shows **WMA**.

Note: To make sure that the best sound quality is achieved, you need to read and adhere to the instructions or information provided with the recording software.

Note: Some CD-R and CD-RW discs are more susceptible to damage by heat and condensation than standard audio CDs. Do not leave data discs in the audio unit for long periods of time.

Note: Some discs recorded in CD-R or CD-RW mode may not be usable.

Compact disc player

Searching an MP3 data disc

When you insert the disc, the audio unit will play all the tracks in the order they appear. The tracks are numbered as they are ordered in a folder. Press the **DISP** button repeatedly to scroll through the file information shown on the display.

If you want to move to another folder on the disc, press the **4 F-** or **5 F+** buttons to move to the next or previous folder.

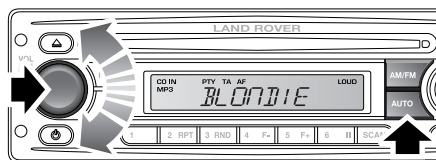
To select from a list of MP3 files, do the following:

1. Press and release the **AUTO** button. The information display will show **MP3 T***.
2. Rotate the volume control to scroll through the track list.
3. Press and release the volume control to select and play your chosen track.

To search for specific MP3 track titles, do the following:

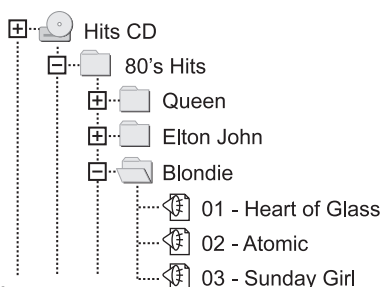
1. Press and release the **AUTO** button twice. The information display will show _ _ _ _ _.
2. Rotate the volume control to scroll through the letters **A** to **Z** to find the first letter of the track title you are searching for.
3. Press and release the volume control once to select the first letter of the track title.
4. Repeat steps 2 and 3 to select the second and any subsequent letters of the track title.
5. When you have selected as many letters as required to find the track, press the up or down arrows on the search button to locate and select it.

To browse a folder structure on an MP3 disc, do the following:



E88679

1. Press and release the **AUTO** button three times.
2. Rotate the volume control to scroll through the list of folders at that level.
3. Press and release the volume control to select a folder and move down to that folder level. Rotate the volume control again to scroll through the files and/or folders in that folder. A typical folder structure is illustrated below:



E88700

4. Press and release the volume control to play a selected file.

Note: Select the **..** entry in a list to move up a folder level.

Auxiliary input (AUX IN) socket

AUXILIARY INPUT SOCKET

WARNINGS



Make sure that any auxiliary devices are stored securely while the vehicle is in motion. Any loose objects can present a serious hazard during sudden manoeuvres, emergency braking or an accident.



Do not place any item connected to the auxiliary input socket or the auxiliary power socket on the vehicle's seats, carpets, or other upholstery. The heat generated by these devices may cause damage to the upholstery, or in extreme cases, a vehicle fire.



Do not leave any auxiliary input devices connected while the vehicle is left unattended. There is a risk of heat damage or fire, in addition to the risk of theft.

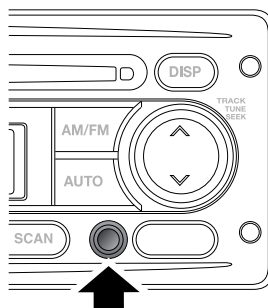
CAUTION



Read the manufacturer's instructions for any device before it is connected to the vehicle's audio system. Keep to any instructions about connection and operation and make sure that the device is suitable. Failure to do so may result in damage to the vehicle's audio system or the auxiliary device.

AUX (Auxiliary Input) mode allows extra equipment to be connected to the vehicle's audio system. Items such as a personal stereo, MP3 player, hand-held navigation unit etc., can be plugged in to the vehicle's audio system.

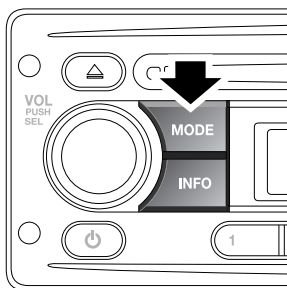
Note: The volume levels and sound quality available from devices connected to the auxiliary inputs may vary widely. If the connected audio device is equipped with a line out socket as well as a headphone socket, the line out socket should be used.



E84604

Auxiliary audio devices are connected via the 3.5 mm stereo jack socket. If fitted, the auxiliary audio socket is situated at the bottom right of the audio unit.

Auxiliary mode



E85379

To listen to an auxiliary input source, switch on and connect the device to the jack socket. Press and release the **MODE** button repeatedly until **AUX** mode is displayed on the screen. The audio unit will start playback automatically.

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