SECTION 4
Owner maintenance

The long-term safety, reliability and performance of your vehicle will depend very largely on how it is maintained.

Maintenance is the owner's responsibility and it is ESSENTIAL that all routine services are carried out by a Land Rover dealer at the specified intervals. These are shown in the Service Portfolio book included in the literature pack. The Service Portfolio book also includes service record dockets, which must be correctly endorsed by your Land Rover dealer at the conclusion of each service.

This section of the handbook includes information to assist the owner carry out those daily, weekly and monthly checks that are also necessary to ensure safe, reliable motoring.

Section Contents **Page**

Owner maintenance 129
Safety in the garage 131
Bonnet opening 132
Engine compartment 133
Tyres 141
Washer jet & wiper blades 143
Battery 145
Wheel changing 148
Fuses 155
Bulb replacement 159
Cleaning & vehicle care 167

OWNER MAINTENANCE

In addition to the routine services, which should be carried out by your Land Rover dealer at the intervals shown in the Service Portfolio book, a number of simple checks (listed below) must be carried out by the owner or driver on a regular basis. These are fully described on the pages that follow.

Daily checks

- Operation of lights, horn, direction indicators, wipers, washers and warning lights.
- Operation of seat belts and brakes.
- Look for deposits on the garage floor which may indicate a fluid leak.

Weekly checks

These should be carried out at least every 400 km.

- Engine oil level.
- Cooling system level.
- Screen washer reservoir level.
- Condition and pressure of tyres.

Monthly checks

- Brake fluid level.
- Power steering fluid level.
- Automatic gearbox fluid level.

NOTE: *Any significant or sudden drop in fluid levels, or uneven tyre wear should be reported to your dealer without delay.*

The fluid level on manual gearboxes should only be checked by a Land Rover dealer at the time of a routine service.

All fluid specifications and capacities are shown in *'General data'.*

IMPORTANT INFORMATION

Special operating conditions

When a vehicle is operated in extremely arduous conditions or on dusty, wet or muddy terrain, 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.

Contact a Land Rover dealer for advice.

Planned maintenance

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

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 your Land Rover dealer.

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 ensure that your vehicle complies with stringent exhaust emission regulations. Incorrect engine settings may adversely affect exhaust emissions, engine performance and fuel consumption, as well as causing high temperatures, which will result in damage to the catalytic converter and the vehicle.

Road testing on dynamometers ('rolling roads')

WARNING

Because your vehicle is equipped with anti-lock brakes and permanent 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 practiced by Land Rover dealers. Contact your Land Rover dealer for further information.

Steering

The intermediate steering shaft connecting the steering column to the steering box is designed to disconnect under certain crash conditions. This is a critical safety feature and any servicing, replacement or repair must ONLY be carried out by an authorised dealer using approved Land Rover parts.

Examination of the intermediate shaft every 40,000 km or two years is an important part of the vehicle's servicing schedule. However, you should be aware that a more thorough examination MUST be carried out if the vehicle is involved in a frontal collision.

Under no circumstances should any form of oil, grease or lubricant be applied to any part of the steering column at any time; any noise or roughness of operation should be reported to your dealer.

SAFETY IN THE GARAGE

Whenever you carry out maintenance on your vehicle, the following safety precautions should be observed at all times:

- ALWAYS keep hands, tools and items of clothing clear of all drive belts and pulleys.
- DO NOT touch the exhaust or cooling system components until they are cool.
- DO NOT touch electrical leads or components with the starter switch turned on.
- NEVER leave the engine running in an unventilated area; exhaust gases contain carbon monoxide which can cause unconsciousness and may even be fatal.
- DO NOT work beneath the vehicle with a vehicle lifting jack as the only means of support.
- ENSURE sparks and naked lights are kept away from the engine compartment.

WARNING

Remember; cooling fans may continue to operate after the engine is switched off. Always wait until the fans have completely stopped moving before working in the engine compartment.

Poisonous liquids

Most liquids and lubricants used in motor vehicles are poisonous and should not be consumed or brought into contact with open wounds. These include: battery acid, anti-freeze, brake, clutch and power steering fluids, as well as petrol, diesel, oil and windscreen washer additives.

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

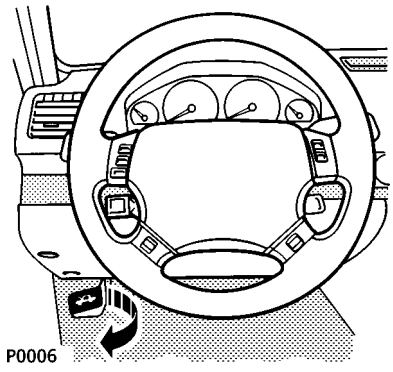
Used engine oil

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 with toxic chemicals such as used engine oil. ALWAYS dispose of vehicle fluids and lubricants at authorised waste disposal sites or at garages which provide facilities for the receipt of discharged batteries, used oil and toxic chemicals. If in doubt contact your Local Authority for advice.

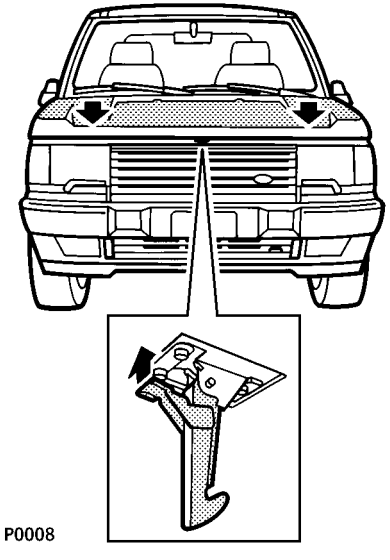
PROTECT THE ENVIRONMENT!

Bonnet opening

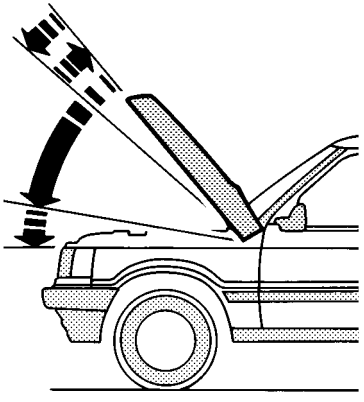


OPENING THE BONNET

Pull the bonnet release lever.



Lift the bonnet safety catch and raise the bonnet.

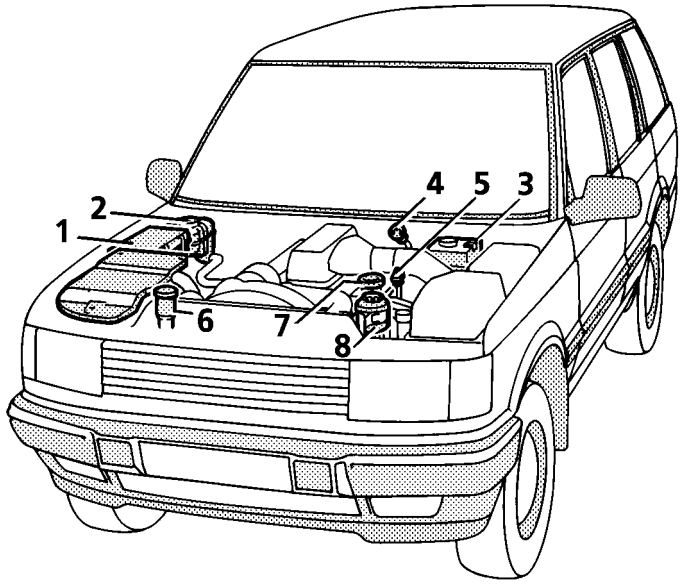


Closing the bonnet

Lower the bonnet slightly until a stop is felt. Then lift the bonnet up (to release the locking strut) before lowering fully.

When the bonnet is approximately 300 mm from its closed position, push down CAREFULLY, using the palms of both hands positioned on the leading edge of the bonnet on either side of the radiator grill (where shown in illustration). Check that the locks are FULLY engaged by attempting to lift the front edge of the bonnet, which should be free from all movement.

Engine compartment



P0004

Petrol engines

1. Fusebox - engine compartment

2. Cooling system reservoir

3. Brake fluid reservoir*

4. Automatic gearbox fluid dipstick

5. Engine oil dipstick

6. Washer reservoir

7. Engine oil filler cap

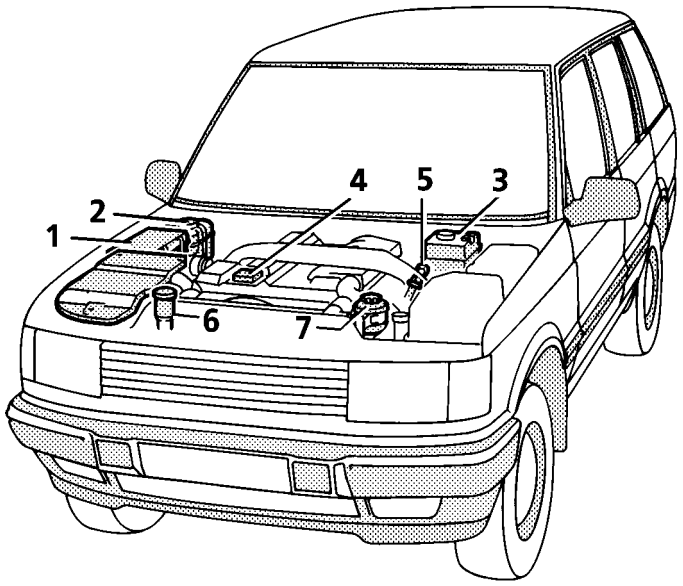
8. Power steering reservoir

* combined brake and clutch reservoir on manual gearbox vehicles

WARNING

Before carrying out maintenance checks or working in the engine compartment, ALWAYS observe the safety precautions listed under 'Safety in the garage', at the beginning of the Owner maintenance section of this handbook.

Engine compartment



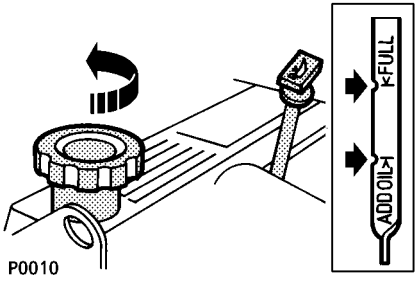
P0002

Diesel engines

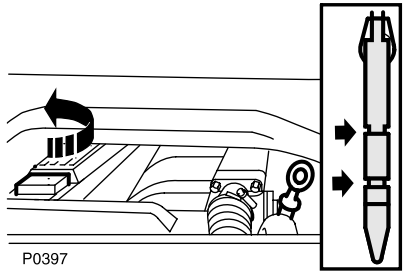
1. Fusebox - engine compartment
2. Cooling system reservoir
3. Brake and clutch fluid reservoir
4. Engine oil filler cap
5. Engine oil dipstick
6. Washer reservoir
7. Power steering reservoir
8. Automatic gearbox fluid dipstick

WARNING

Before carrying out maintenance checks or working in the engine compartment, ALWAYS observe the safety precautions listed under 'Safety in the garage', at the beginning of the Owner maintenance section of this handbook.



Petrol engine



Diesel engine

ENGINE OIL LEVEL CHECK & TOP-UP

Check the oil level at least every 400 km when the engine is HOT and with the vehicle resting on level ground.

Switch off the engine and let the vehicle stand for five minutes to allow the oil to drain back into the sump. Withdraw the dipstick and wipe the blade clean and then fully reinsert the dipstick and withdraw again to check the level, which should NEVER be allowed to fall below the lower mark on the dipstick.

To top-up, unscrew the oil filler cap and add oil to maintain the level between the UPPER and LOWER marks on the dipstick.

DO NOT OVERFILL!

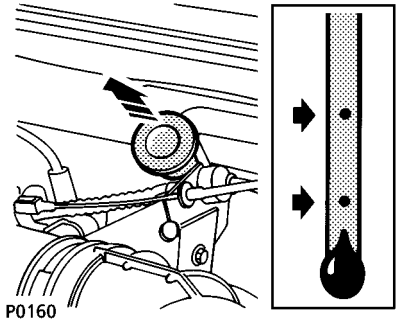
As a general guide, if the level on the dipstick:

- is nearer to the upper mark than the lower, add no oil.
- is nearer to the lower mark than the upper, add half a litre of oil.
- is below the lower mark, add one litre of oil and re-check the level after a further five minutes.

NOTE: *If it is necessary to check the oil level when the engine is cold, DO NOT start the engine. Follow the procedure detailed above, but recheck the oil level as soon as the engine has reached its normal operating temperature.*

Oil Specification

It is essential to use an oil suitable for the climatic conditions in which the vehicle is to be operated. Precise specifications are shown in 'General data'. If in doubt, contact your Land Rover dealer.



AUTOMATIC GEARBOX FLUID LEVEL CHECK & TOP-UP

Check the fluid level ONLY when the engine and gearbox are COLD (see 'note' below). Ensure the car is resting on level ground, then select 'P' (park) and start the engine.

With the engine running at idle speed and both footbrake and handbrake applied, move the selector lever to position '1' and then back to position 'P'.

Still with the engine running, withdraw the dipstick from the filler tube and wipe the blade clean. Reinsert the dipstick fully and withdraw again to check the level. Top-up to maintain the level between the upper and lower markings on the dipstick with a fluid meeting the minimum specification defined in 'General data'.

NOTE: *In extreme ambient temperatures, the level of fluid showing on the dipstick will vary. To ensure an accurate reading, the level should be checked at an ambient temperature of 20° C.*

DO NOT OVERFILL!

NOTE: *Approximately 0.25 litre of fluid will be required to raise the level from the lower to the upper mark on the dipstick.*

COOLING SYSTEM TOP-UP

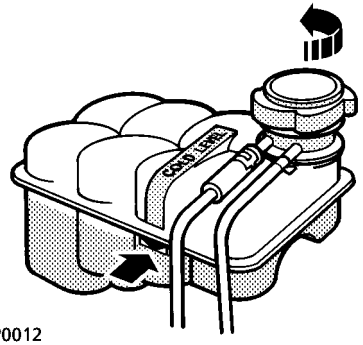
WARNING

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

The coolant level in the expansion tank should be checked at least weekly (more often in high mileage or arduous operating conditions). Always check the level WHEN THE SYSTEM IS COLD.

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

NEVER run the engine without coolant.



P0012

Top-up to the arrowhead (next to the seam) on the side of the tank with a 50% mixture of anti-freeze and water. Ensure the cap is tightened fully after top-up is completed.

If the level has fallen appreciably, suspect leakage or overheating and arrange for your dealer to examine the vehicle.

DO NOT OVERFILL!

Anti-freeze

Anti-freeze contains important corrosion inhibitors. The anti-freeze/water solution must be maintained at 50% ± 5% all year round (not just in cold conditions). If the anti-freeze content is allowed to exceed 55%, or reduces to less than 45%, then either the cooling performance or anti-corrosion properties of the coolant will be adversely affected.

Use an ethylene glycol based anti-freeze (containing no methanol) with non-phosphate corrosion inhibitors suitable for use in aluminium engines. The specific gravity of a 50% anti-freeze solution at 20° C is 1.075 and protects against frost down to -36° C.

WARNING

- ***Prevent anti-freeze coming in contact with the skin or eyes. If this occurs, rinse immediately with copious amounts of water.***
- ***Anti-freeze is poisonous and can be fatal if swallowed. If swallowing is suspected, seek medical advice immediately.***
- ***Anti-freeze will damage painted surfaces.***
- ***NEVER top up with salt water. Even when travelling in territories where the water supply contains salt, always ensure you carry a supply of fresh (rain or distilled) water.***



P0015

WINDSCREEN WASHER TOP-UP

The windscreen washer reservoir also supplies the rear screen and headlight washer jets.

The message 'LOW SCREEN WASH' appears on the message centre whenever the washer is operated and the reservoir fluid level is low. To reset the message centre, top-up the reservoir ONLY when the starter switch is turned off.

Top-up with a mixture of water and an approved screen washer solvent. In cold weather, to prevent freezing, use the recommended quantity of screenwash shown in the table below to help disperse ice and snow.

Reservoir capacity: 6.0 litre			
-3° C 600 ml	-6° C 1200 ml	-12° C 2400 ml	-18° C 3000 ml

WARNING

Do not use an anti-freeze solution in the washer reservoir. Anti-freeze will damage painted surfaces.

WARNING

Contact your dealer immediately if brake pedal travel is unusually long or if there is any appreciable drop in brake fluid level.

BRAKE FLUID CHECK

The fluid level will fall slightly during 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 contact your dealer.

With the vehicle on level ground, check the fluid level at least every month (more frequently in high mileage or arduous operating conditions) as follows:

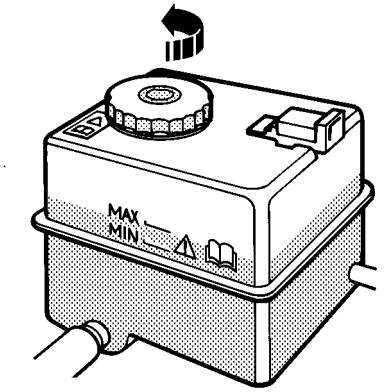
1. Turn the starter switch to position 'II' to activate the pump (brake warning light illuminates).
2. If the pump cannot be heard to operate, press the brake pedal several times.
3. Wait until the pump has stopped operating and the warning light has extinguished before checking the fluid level.

WARNING

DO NOT drive if the reservoir fluid level is below the 'MIN' mark.

Brake/clutch fluid will damage painted surfaces: soak up any spillage with an absorbant cloth immediately and wash the area with a mixture of car shampoo and water.

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



P0013

Topping-up

Wipe the filler cap before removing to prevent dirt from entering the reservoir, then top-up to the 'MAX' mark using a recommended fluid (see *'General data'*).

Use only new fluid from a sealed container (old fluid from opened containers or fluid previously bled from the system must NOT be used).

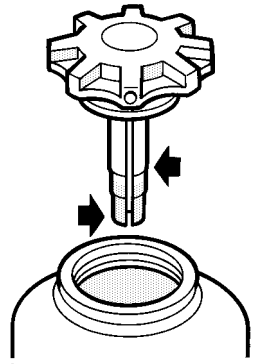
DO NOT OVERFILL!

NOTE: *Vehicles with manual gearboxes use the same reservoir for brake and clutch.*

WARNING

It is vital that the hydraulic brake fluid is completely renewed at 60,000 km intervals or every 36 months, whichever is sooner.

At 120,000 km intervals or every 6 years, whichever is sooner, all hydraulic brake fluid, seals and flexible hoses should be renewed. All working surfaces of the caliper cylinders should be examined and the components renewed where necessary. Under arduous operating conditions, these intervals must be reduced. Please consult your Land Rover Dealer.



J730

POWER STEERING TOP-UP

ONLY check the fluid level when the engine is switched off and the system is cold and ensure that the steering wheel is not turned after stopping the engine.

Wipe the filler cap to prevent dirt from entering the reservoir.

Remove the filler cap and, using a lint-free cloth, wipe the dipstick clean. Refit the filler cap fully and remove it again to check the fluid level. Add fluid to the reservoir until the level is between the upper mark and the bottom of the dipstick (see *'General data'* for recommended fluid).

- DO NOT fill above the UPPER mark on the dipstick.

WARNING

The engine must NOT be started if the fluid level has dropped below the bottom of the dipstick - severe damage to the pump could result.

WARNING

- ***Never drive your vehicle if the tyres are badly worn, cut or damaged, or if the pressures are incorrect.***
- ***Incorrectly inflated tyres wear rapidly and seriously affect the vehicle's safety and road handling characteristics.***

Caring for your tyres

Always drive with consideration for the condition of the tyres and frequently inspect the tread and side walls for signs of distortion or damage (in particular, look for lumps, cuts and bulges).

Tyre pressures

Tyre pressures should be checked at least once a week with normal road use, but should be checked DAILY if the vehicle is used off-road.

Check the pressures, including the spare, when the tyres are cold (air pressure naturally increases in warm tyres). The recommended pressures are given in the *'General data'* section.

WARNING

If the vehicle has been parked in strong sunlight or is used in high ambient temperatures, DO NOT reduce tyre pressures; instead, move the vehicle into shade and allow the tyres to cool before checking.

Tyre wear

Some tyres fitted as original equipment have wear indicators moulded into the tread pattern. When the tread has worn down to 1.6 mm the indicators start appearing on the surface of the tread pattern, producing the effect of a continuous band across the width of the tyre.

A tyre MUST be replaced as soon as an indicator band becomes visible or the tread depth reaches the minimum permitted by legislation.

Tread depth must be checked regularly (at every maintenance service, or more frequently). Always replace a tyre before the tread reaches a remaining depth of 1.6 mm. DO NOT drive with tyres worn to this limit; the safety of the vehicle and its occupants will be adversely affected.

NOTE: *After off-road use, check to make sure there are no lumps or bulges in the tyres or exposure of the ply or cord structure.*

Valve caps

Keep the valve caps screwed down firmly to prevent dirt from entering the valve.

Replacement tyres

Wheel rims and tyres are matched to suit the handling characteristics of the vehicle. For safety, ALWAYS check that replacement tyres comply with the manufacturer's original specification and that the load rating shown on the side wall is the same as that of the original equipment. Contact your Land Rover dealer for further information or assistance.

WARNING

Do not replace wheels with any type other than genuine Land Rover parts. Wheels and tyres are designed for both off-road and on-road use and have a very important influence upon the correct operation of the suspension systems and vehicle handling. Alternative wheels which do not meet original equipment specifications should not be fitted.

NOTE: *Tyre sizes and pressure are shown in 'General data'.*

Snow chains

Snow chains are designed for on-road use in extreme snow conditions only, and are not recommended for off-road use. It is recommended that only Land Rover approved snow chains are fitted and that the following recommendations are always observed:

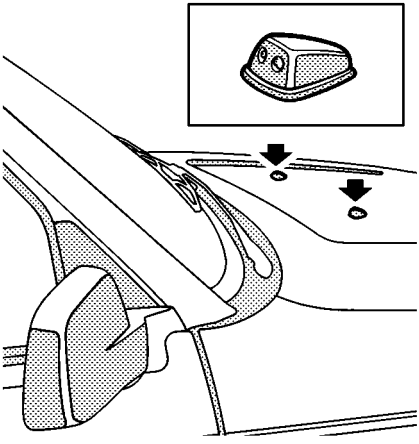
- Only Land Rover approved snow chains can be fitted to the front wheels.
- Only fit snow chains in pairs.
- Always adhere to the snow chain fitting and retensioning instructions and the speed limit recommendations for varying road conditions. Never exceed 50 km/h.
- Avoid tyre damage by removing snow chains as soon as the road is free of snow.
- If only non-approved snow chains are available, they MUST only be fitted to the REAR wheels.

For more information or assistance, consult your Land Rover dealer.

WARNING

DO NOT fit non-approved snow chains to the FRONT wheels - this could damage brake components.

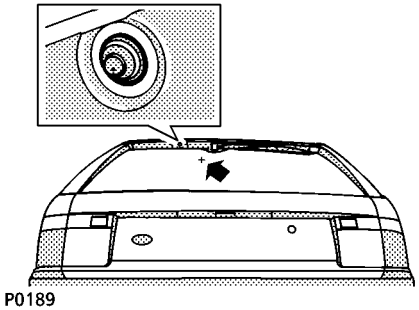
NOTE: *If a full set of four chains is to be used, they MUST be Land Rover approved.*



P0188

WASHER JETS

To adjust the front screen washer jets, insert a needle into the jet orifice and lever gently to position each jet so that the spray is directed at two points midway between the top and bottom of the windscreen.



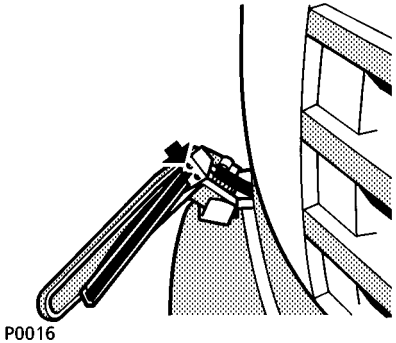
P0189

To adjust the rear screen washer jet, insert a long needle-like probe into the jet orifice and lever gently to position the jet so that the spray is directed towards the cross symbol on the screen.

HEADLIGHT WIPERS

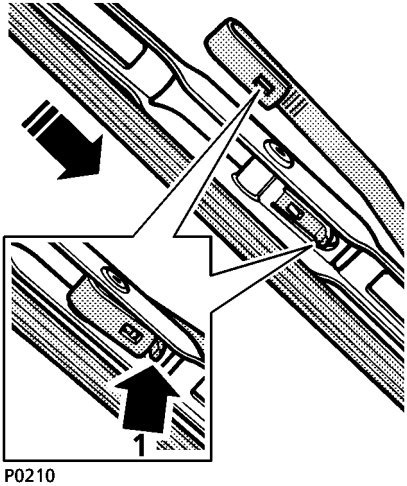
(if fitted)

Each headlight wiper arm has two jets (arrowed in illustration) which direct wash fluid on to the headlight lens as the wiper arm passes over it. These jets are set during manufacture and must NOT be adjusted.



P0016

Should any jet become obstructed, insert a needle or a strand of wire into the orifice to clear it.



P0210

FRONT WIPER BLADE REPLACEMENT

To renew a wiper blade, lift the wiper arm away from the windscreen, press the retaining clip (1) and slide the wiper blade down the arm to remove.

Locate the new blade assembly on the arm and push into engagement until the blade is retained by the clip.

Always fit replacement wiper blades that are identical to the original specification.

REAR WIPER BLADE REPLACEMENT

The rear wiper arm is inaccessible in its stowed position (under a cover at the top of the tailgate). To change the wiper blade, it is necessary to stop the wiper arm during its travel as follows:

Set the rear screen wiper operating, then open the upper tailgate when the wiper is in a near-vertical position. The wiper will stop as soon as the tailgate is opened.

Turn the starter switch to the '0' position to prevent the wiper from operating, lower the upper tailgate and then replace the wiper blade (as described for front wiper blade overleaf). The wiper will continue operating as soon as the starter switch is returned to position 'I'.

WARNING

- ***Batteries contain sulphuric acid. If the acid comes into contact with the eyes or skin, wash immediately with cold water and seek medical advice.***
- ***During normal operation batteries emit explosive hydrogen gas; ensure sparks and naked flames are kept away from the engine compartment.***
- ***To reduce the risk of a short circuit, remove all metal wrist bands and jewellery before working in the engine compartment and NEVER allow the battery terminals or vehicle leads to make contact with tools or metal parts of the vehicle.***
- ***ALWAYS remove the starter key before disconnecting the battery. Failure to do this could cause a failure of the airbag SRS.***

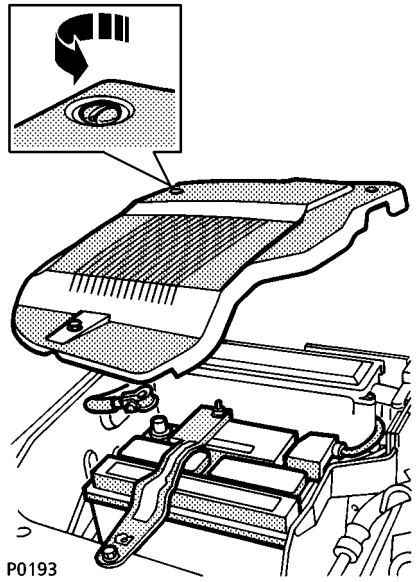
BATTERY MAINTENANCE

In temperate climates the battery is maintenance free and no topping-up is necessary. However, in conditions of high ambient temperature, the electrolyte level MUST be checked periodically and topped-up with distilled water as necessary.

Wipe the battery casing periodically to remove any dirt, and smear petroleum jelly on both terminals to keep them free from corrosion.

Checking the electrolyte level

Gently prise off the vent covers (or unscrew if vent plugs are fitted) and inspect the electrolyte level in each cell. This should be no lower than 1 mm above the top of the plates. If necessary, top-up with distilled water to a maximum of 3 mm above the plates.



WARNING

BEFORE disconnecting the vehicle battery, you are advised to read the information overleaf under 'Battery removal & replacement'.

Battery

Battery removal & replacement

Your vehicle may be fitted with a battery backed-up sounder, which operates as an anti-theft siren if the main battery is disconnected. If the main vehicle battery is to be removed, it is ESSENTIAL to adopt the following procedure before disconnecting the terminals, in order to prevent the alarm from sounding:

1. Turn starter switch 'on' and then 'off'.
2. Disconnect battery WITHIN 17 SECONDS (if the battery is not disconnected within 17 seconds, the alarm will sound). ALWAYS switch off all electrical equipment and remove the key before disconnecting the battery.

Turn the three turnbuckles anti-clockwise to release the battery cover.

ALWAYS disconnect the negative (-) terminal first (when replacing, connect the positive (+) first).

If the siren sounds when the battery is reconnected, it can NOT be turned off in the normal way (ie. by operating the handset buttons). To deactivate the alarm, turn the starter switch to position '1'.

WARNING

- ***To avoid damaging the vehicle's electrical system, ensure correct polarity when refitting the battery.***
- ***ONLY fit a replacement battery of the same type and specification as the original. Other batteries may vary in size and have different terminal positions, capable of creating a potential fire hazard if the terminals or leads were to come into contact with the battery clamp assembly.***
- ***DO NOT use a high speed battery charger as a starting aid.***
- ***DO NOT let the engine run without the battery connected.***
- ***NEVER allow the battery terminals or vehicle leads to make contact with tools or metal parts of the vehicle.***

BATTERY CHARGING

Batteries generate explosive gases, contain corrosive acid and supply levels of electric current high enough to cause serious burns. Before charging, ensure the battery is properly topped up, and removed from the vehicle. ALWAYS observe the following precautions while charging the battery:

- Make sure the battery charger is disconnected from its power supply before connecting the leads to the battery terminals.
- Make sure the charging leads are securely clamped before switching on the charger, and DO NOT move the clamps while the charger is switched on.
- Shield your eyes or avoid leaning over the battery.
- Keep the area around the top of the battery well ventilated.
- Keep naked flames clear of the battery (batteries emit inflammable hydrogen during and after charging).
- When charging is complete, switch off the charger before disconnecting the charging leads, and then leave the battery for an hour BEFORE reconnection to the vehicle.

EFFECTS OF BATTERY DISCONNECTION

Following disconnection and reconnection of the battery, a number of the vehicle's electronic control systems will fail to operate. These are listed below, together with the symptoms and action you should take to restore full operation. References are made to the appropriate section in this handbook for remedial action.

Radio/cassette & CD player

The unit will fail to operate. To restore operation, re-enter the security code (see *'In-car entertainment').*

Windows & sunroof

Operation of the windows and the sunroof will be accompanied by messages from the message centre to inform you that the 'one-touch' and 'anti-trap' functions are not set. (see *'Electric windows'* and *'Sunroof').*

Trip computer

(where fitted)

All data entered will be lost. Reset as described in *'Trip computer'.*

Trip odometer (trip 1)

This resets to zero.

Handsets

Both handsets will require to be resynchronised to the vehicle (see *'Locks & alarm'*).

WARNING

Do not let the engine run without the battery connected.

Do not use a high-speed battery charger as a starting aid.

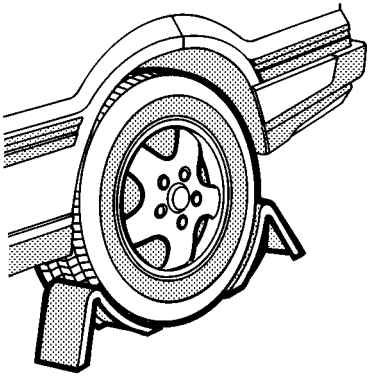
WARNING

To prevent personal injury, before jacking the vehicle the air suspension system must be 'frozen' - this will prevent the suspension from self-levelling or the ride height from changing while the vehicle is supported by the wheel changing jack.

To freeze the suspension:

1. Before freezing the suspension, ensure that either Standard or High ride height are engaged - this will provide sufficient space beneath the vehicle to locate and operate the jack.
2. Open the tailgate
3. Switch on the hazard warning lights

The hazard warning lights MUST remain flashing and the tailgate open THROUGHOUT THE WHOLE wheel changing process.



Using the wheel chocks

WARNING

Before raising the vehicle, it is ESSENTIAL to chock one of the road wheels; the handbrake acts on the transmission, not on the rear wheels, and therefore may not hold the vehicle when raised.

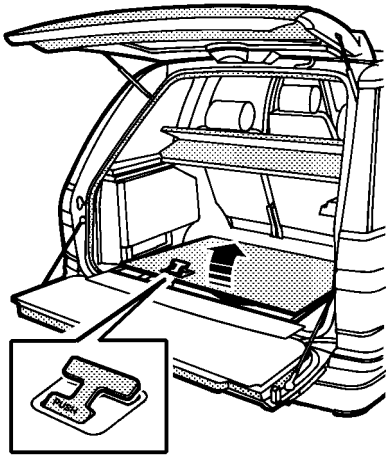
Always chock the front and back of the wheel diagonally opposite the one to be removed.

The wheel chocks are stowed with the jack, jack lever, wheel brace and steel spare wheel beneath the loadspace floor.

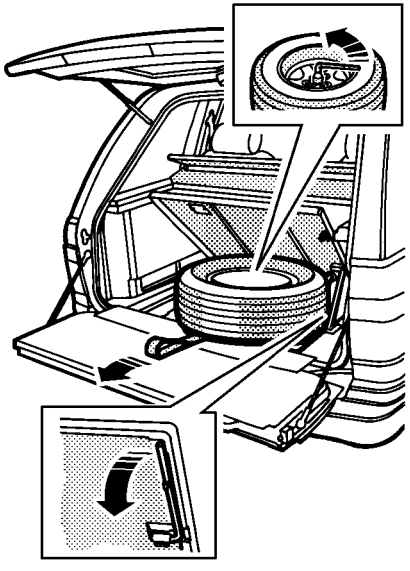
IMPORTANT INFORMATION

Before jacking the vehicle always observe the following precautions!

- Park your vehicle away from the thoroughfare, and make your passengers wait in a safe area AWAY from the vehicle.
- Apply the handbrake and engage first gear (select 'P' for automatic gearboxes) in Low or High range.
- Ensure the air suspension system is frozen, and remove the starter key.
- NEVER jack the vehicle with passengers inside, or with a caravan or trailer connected!
- NEVER work beneath the vehicle with the jack as the only means of support. The jack is designed for wheel changing only!



P0078A



P0079A

Removing the spare wheel

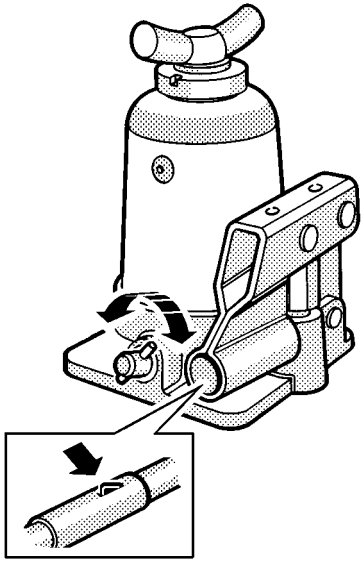
Fully open the tailgate and hinge the rear portion of the parcel shelf forward.

Unlatch and raise the loadspace floor panel and then secure the panel in a raised position by engaging the stay (as shown).

Using the wheel brace, remove the spare wheel retaining nut. Pull the loop of the webbing rearward; the wheel will be raised up and lifted onto the rear tailgate.

WARNING

The wheels are extremely heavy. Take care when lifting and particularly when removing the spare wheel from the loadspace.



P0080

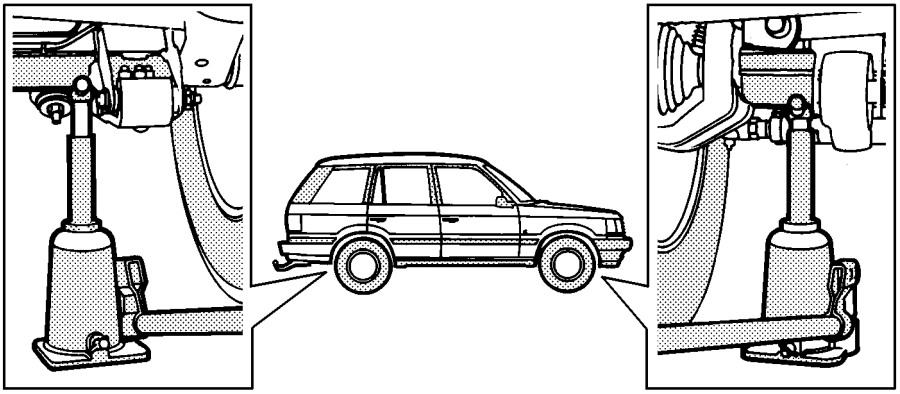
Operating the jack

Slot the jack lever together, ensuring that the spring clip protrudes from the engagement slot where the two parts join (see inset). Close the jack release valve by turning it fully clockwise and insert the lever into the socket where shown. Pump the lever up and down to raise the jack.

To lower the jack, withdraw the lever and slot the notched end over the pegs on the release valve. Slowly turn the release valve anti-clockwise, allowing the weight of the vehicle to lower the jack.

WARNING

- ***Ensure the jack is positioned on firm, level ground.***
- ***DO NOT use the jack to raise the vehicle until you have carefully read and understood 'Positioning the jack' later in this section. If in doubt, consult your dealer.***
- ***Care must be taken to avoid accidental contact with any underbody parts, especially the hot exhaust system components, likely to cause personal injury during raising or lowering of the vehicle.***
- ***Ensure that the space under and around the vehicle is free from obstruction as it is lowered.***



P0082

Positioning the jack

Before positioning the jack, ensure that the air suspension system is frozen (key removed from starter switch, hazard lights switched on, and tailgate open). If the vehicle had previously settled to Low ride height (or Access), it will be necessary to improve access beneath the vehicle by starting the engine and raising the vehicle to Standard or High ride height before positioning the jack. Always position the jack from the front or rear of the vehicle directly in line with the jacking points.

WARNING

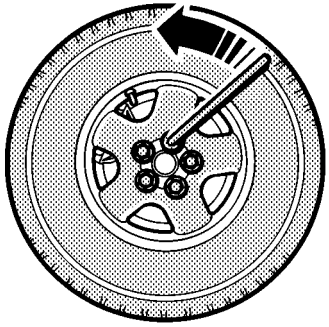
- ***NEVER use the jack from the side of the vehicle.***
- ***ALWAYS use the complete, two piece, jacking lever throughout to minimise any accidental contact with a hot exhaust system.***
- ***ONLY jack the vehicle using the jack location points described or damage to the vehicle could occur.***

Rear jacking point:

Push the mud flap (if fitted) up over the tyre to allow clear access. Position the jack so that, when raised, it engages with the rear axle casing immediately below the air spring and as close as possible to the shock absorber mounting bracket (see illustration).

Front jacking point:

Position the jack so that, when raised, it will engage with the front axle casing immediately below the air spring (see illustration). The cradle of the jack must locate between the end of the axle and the point where the radius arm attaches to the axle (see illustration).



P0142

Changing a wheel

Before raising the vehicle, ensure that all the precautions listed at the beginning of this section have been observed.

Also, ensure that the wheel chocks are correctly positioned (as described previously) and that the air suspension system is 'frozen' at Standard or High ride height.

WARNING

To prevent any accidental change in the ride height or automatic levelling of the suspension, the air suspension system must remain inhibited during the WHOLE wheel changing process - to achieve this, ALWAYS remove the key from the starter switch and ensure that the tailgate remains open and the hazard lights are operating throughout.

- Use the wheel brace to slacken the wheel nuts half a turn anti-clockwise (see *'Locking wheel nuts').*
- Raise the vehicle until the tyre is clear of the ground and remove the wheel nuts and wheel (DO NOT damage the surface of alloy wheels by placing them face down on the road).
- Use an approved anti-seize compound to treat the wheel-mounting spigot to minimise the tendency for adhesion between the wheel and the spigot. Ensure that no oil or compound comes into contact with the brake components. If, due to an emergency situation, this treatment is not practicable; refit the spare wheel for the time being, but remove and treat the wheel at the earliest opportunity.
- Fit the spare wheel and lightly tighten the wheel nuts, ensuring they are firmly seated. DO NOT fully tighten whilst the tyre is clear of the ground.

WARNING

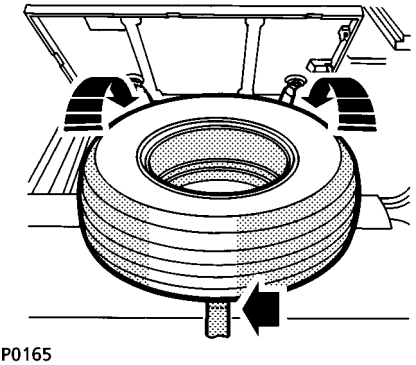
When fitting a wheel, ensure that the mating faces of the hub and wheel are clean and free from rust - an accumulation of dirt or rust could cause the wheel nuts to become loose and result in an accident.

- Lower the vehicle and remove the jack and wheel chocks.
- Fully tighten the wheel nuts and replace the locking wheel nut cover. DO NOT OVERTIGHTEN by using foot pressure or extension bars on the wheel brace. Check the wheel nut torque at the earliest opportunity (see *'General data'*).
- REMEMBER to change to 'H' (high range) before driving.
- Finally, check the tyre pressure (see *'General data'*).

Care of the jack

Examine the jack occasionally; clean and grease the moving parts, particularly the ram, to prevent corrosion.

To avoid contamination, the jack should always be stowed in its fully closed position.



P0165

Replacing the spare wheel

Preferably clean and dry the wheel before stowing it in the vehicle.

Lay the webbing flat across the lower tailgate and place the wheel face down with the rear edge of the tyre in line with the mark on the webbing.

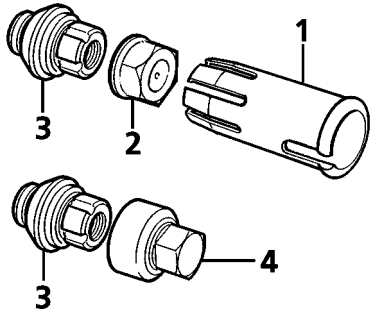
Grasp the webbing loop, raise the wheel from the tailgate, and lower into position, then fit and tighten the wheel securing nut.

WARNING

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

LOCKING WHEEL NUTS

In some markets, vehicles are equipped with a locking wheel nut on each wheel (excluding the spare). The locking wheel nut covers are visually very similar to standard wheel nuts but can be identified by a concave indent on the surface. The locking wheel nut and cover can only be removed using the special tools provided, as follows:



J723

- Push the extractor tool (1) firmly over the stainless steel nut cover (2).
- Pull the extractor tool **squarely** away from the wheel to remove the nut cover and reveal the locking wheel nut (3).
- Fit the metal key socket (4) securely over the locking wheel nut (3).
- Fit the wheel nut wrench onto the key socket and unscrew the nut in the normal way.

A code letter is stamped on the face of the key socket. Ensure the code letter is entered in the space provided on your Security Information card - you will need to quote this letter if replacement components are required. Keep the card in a safe place away from the vehicle.

For security reasons, store the key socket and extractor tool in the glovebox and keep the glovebox locked.

NOTE: *If the extractor tool has been inadvertently pushed onto a standard wheel nut, it can be removed ONLY by first undoing and removing the nut; slide the wheel nut wrench down the centre of the extractor and onto the wheel nut.*

Fuses

Fuses are simple circuit breakers which protect electrical equipment by preventing the electrical circuits from being overloaded. Always remove the starter key and switch off the affected circuit before removing a fuse.

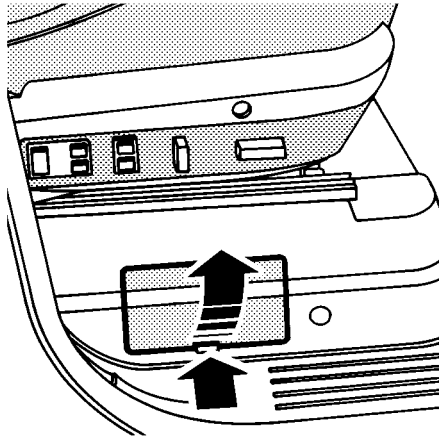
Press the fuse removal tweezers (located in the engine compartment fuse box) onto the head of the fuse and pull to remove. Fit a new fuse of the same rating. If the replacement fuse fails immediately, contact your local Land Rover dealer and have the circuit checked.

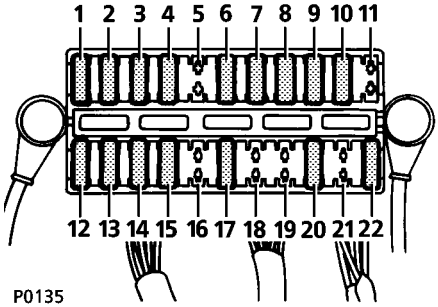
Fuses are colour-coded to help identify their amperage, as follows:

VIOLET	3
TAN	5
BROWN	7.5
RED	10
BLUE	15
YELLOW	20
WHITE	25
GREEN	30

WARNING

Fit only replacement fuses of the same rating and type. Always rectify the cause of a failure before replacing a fuse. Seek qualified assistance if necessary.





RIGHT HAND SEAT FUSE BOX

The failure of fuses 2 to 22 inclusive is reported by the vehicle message centre.

Fuses 1 to 22 inclusive are located behind a cover on the side of the right hand seat.

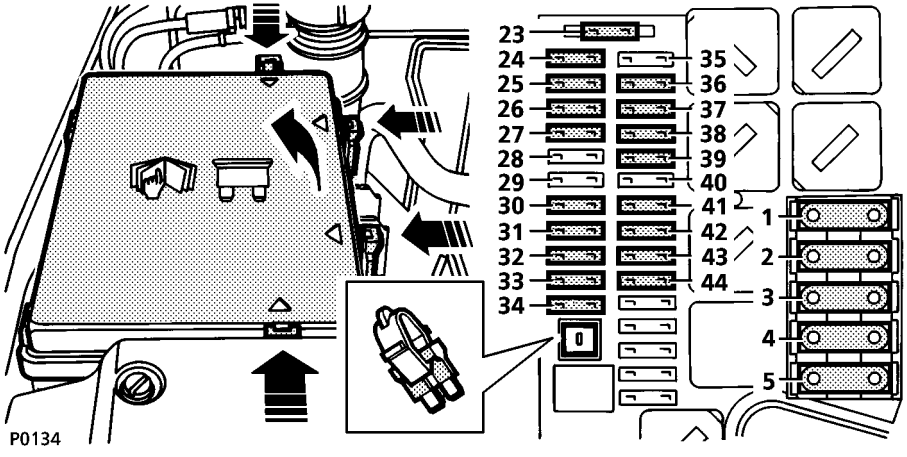
Lift the catch (arrowed) to disengage the cover. A label on the rear of the cover identifies the fuses and their ratings. The following list supports the information on the cover.

NOTE: *The applicability of fuses will vary from model to model, depending on the features fitted to the vehicle.*

RIGHT HAND SEAT FUSE BOX

Fuse number	Rating (AMPS)	Circuit protected
1	10A	Instrument pack, clock, radio, centre console
2	30A	RH rear window, seat heaters
3	5A	Automatic gearbox ECU
4	30A	Transfer box ECU
5	-	Not used
6	10A	Rear view mirror dip, automatic gearbox ECU, sun visor illumination, transfer box ECU
7	10A	Airbag SRS
8	30A	Car phone, aerial amplifier, cigar lighter, radio, heating, ventilation and air-conditioning
9	20A	Front audio system amplifiers, front doors
10	30A	RH seat
11	-	Not used (insert fuse - 5 amp or more - to select transfer neutral)
12	30A	Heated rear screen and LH rear window
13	20A	Shift interlock solenoid, key inhibit solenoid, sunroof
14	20A	Rear central door locking, fuel flap solenoid, trailer socket, tailgate central door locking
15	20A	Courtesy lights, handset receiver, loadspace light, rear wiper, sub-woofer, rear audio system amplifiers
16	-	Not used
17	10A	Brake switch, heating, ventilation and air-conditioning, air suspension switches
18	-	Not used
19	-	Not used
20	30A	LH seat
21	-	Not used
22	30A	LH and RH front doors (windows only)

This fuse box contains five spare fuses, one each of 5A, 10A, 20A and two 30A.



ENGINE COMPARTMENT FUSE BOX

WARNING

Batteries emit explosive hydrogen gas; ensure that sparks and naked lights are kept away from the engine compartment.

Fuses 23 to 44 inclusive, listed on the following page, are located in the engine compartment fuse box.

Press each of the four latches in the direction of the arrows (moulded into the lid) and pivot the lid upward to disengage the three side location posts.

A label on the underside of the cover identifies the fuses and their ratings. The following list supports the information on the cover.

A fuse puller (red tweezers) is provided for extracting the fuses. To remove a fuse, press the fuse puller on to the head of a fuse and pull.

Refit the cover by engaging the three side posts in the slots in the fuse box. Close the cover and then push the four side catches away from the fuse box until they can be heard to 'snap' into position.

ENGINE COMPARTMENT FUSE BOX

Fuse number	Rating (AMPS)	Circuit protected
23	10A	Airbag SRS
24	5A	ABS & Air suspension
25	20A	Front wiper system
26	20A	Engine management system (EMS)
27	30A	ABS
28	10A	Not used
29	10A	Not used
30	30A	Heated front screen
31	30A	Air-conditioning
32	30A	Heated front screen
33	5A	Diagnostics
34	25A	Heater blower
35	5A	Not used
36	30A	Air-conditioning
37	20A	Engine management system (EMS)
38	10A	Headlight wash
39	10A	Fuel pump
40	30A	Not used
41	20A	Horn
42	10A	Heating & ventilation
43	25A	Heater blower
44	10A	Air suspension

Spare fuses 5A, 10A, 20A, 25A, 30A

Maxi 1	60A	*
Maxi 2	30A	Air suspension
Maxi 3	40A	ABS pump
Maxi 4	60A	*
Maxi 5	60A	*

* Failure of one of these fuses will result in the message centre displaying various messages simultaneously. Do not attempt to replace the fuse; contact your Land Rover dealer.

WARNING

Fit only replacement fuses of the same rating and type. Always rectify the cause of a failure before replacing a fuse. Seek qualified assistance if necessary.

Bulb replacement

REPLACEMENT BULBS	Watts
Headlight units	
Front sidelight	5
Front direction indicator	21
Inboard main beam headlight	55
Dip/main headlight	60/55
Front fog lights	55
Rear clusters:	
direction indicator	21
tail light	5
stop light	21
Tailgate clusters:	
rear fog guard light	21
reversing light	21
High mounted stop light	5
Side repeater lights	5
Puddle lights	3
Number plate lights	5
Loadspace light	10
Front courtesy & reading lights:	
courtesy light	10
map reading light	5
Rear courtesy & reading lights:	
courtesy light	5
map reading light	4
Rear footwell courtesy lights	5
Vanity mirror lights	1.2
Glovebox light	5

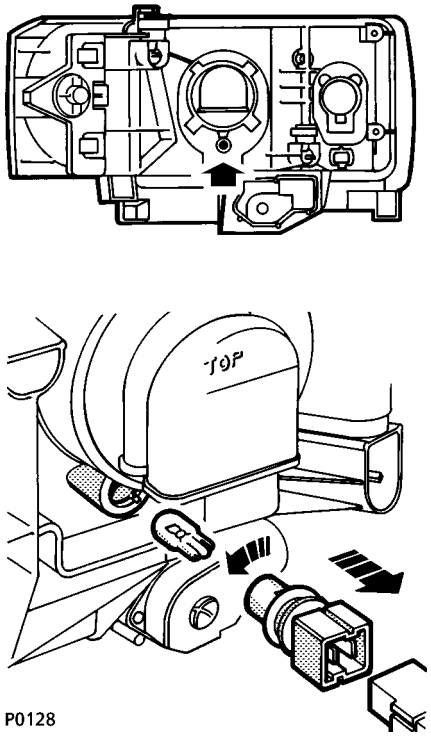
NOTE: *All bulbs must be rated at 12 volts.*

IMPORTANT INFORMATION

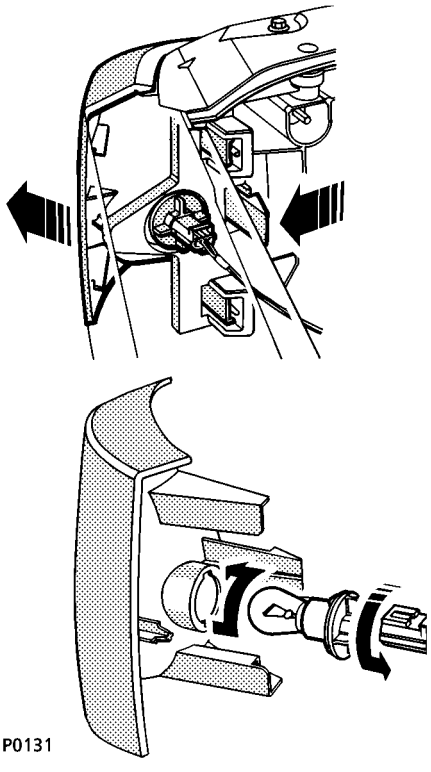
Before replacing a bulb, always switch off the starter switch and appropriate lighting switch to prevent any possibility of causing a short circuit. Only use new bulbs of the same type and with the same specification.

Halogen bulbs

Halogen bulbs are used for dipped/main, supplementary main beam and front fog lights. Take care NOT to touch this type of bulb with your fingers; always use a cloth to handle them. If necessary, clean the bulb with methylated spirits to remove fingerprints.



P0128



P0131

Front sidelights

Detach the plug from the rear of the bulb, twist the bulb holder (arrowed) to release, then pull to remove bulb.

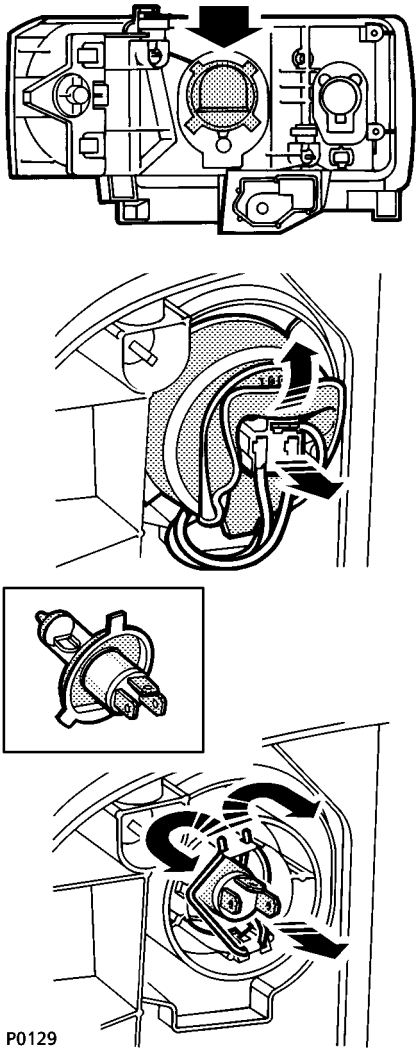
Front direction indicators

For right hand indicator: remove the battery cover.

For both indicators: press the plastic lever (arrowed in top picture) to release the light unit from the front of the vehicle. Hold the light unit and rotate the bulb holder (see lower picture), then pull bulb holder to remove. Press and twist bulb to remove.

Refitting the lens is a reversal of this procedure. However, ensure the light unit is correctly located into the front wing and ensure that the plastic lever is securely engaged before driving.

Bulb replacement



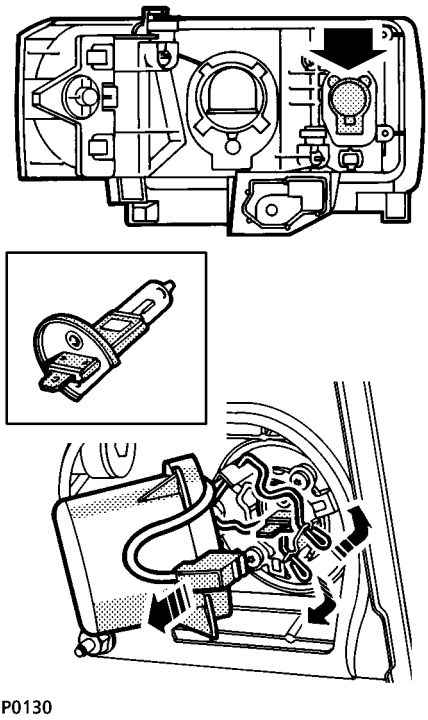
P0129

Dipped and main beam

To gain access to the right hand headlight, first remove the battery cover.

Detach the multi-plug and remove the rubber cover (the rubber cover has four tabs which will assist removal and refitting). Unhook the spring clip and withdraw the bulb.

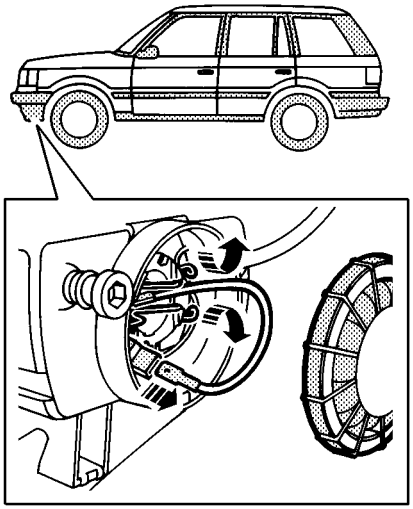
Replace the bulb (the larger of the three tabs uppermost) and spring clip. Fit the rubber cover, ensuring that the three connectors pass through the slots in the cover, then refit the multi-plug.



P0130

Inboard main beam

Detach the plastic cover from rear of unit, then unhook the spring clip and withdraw the bulb and connector. Pull bulb to remove.



P0136

Front fog lights

Twist the plastic cap at rear of the light unit to release, then squeeze the spring clip and withdraw the bulb holder. Disconnect the bulb holder electrical lead connector and then remove.

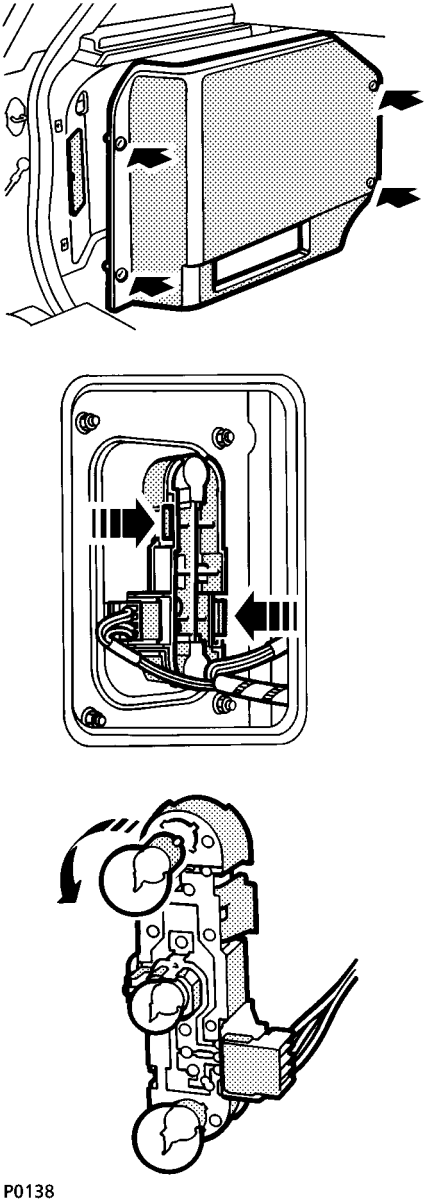
Replace the bulb and bulb holder as one assembly.

Stop, direction indicator & tail lights

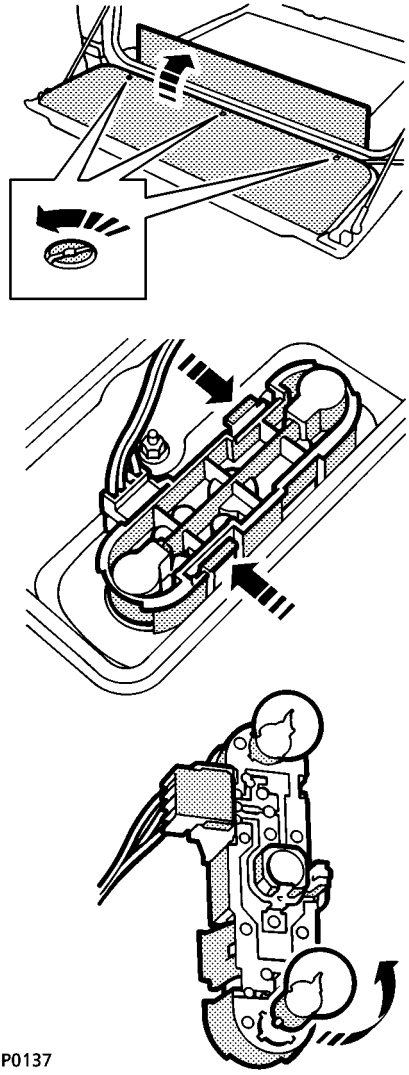
NOTE: *If your vehicle is fitted with a CD autochanger, to access the left hand cluster, it will be necessary to remove the rear trim panel by releasing the four fasteners.*

Press the latch to remove the access panel, then squeeze the two clips (one on each side of the light unit) and withdraw the unit through the access aperture. Press and twist the appropriate bulb to remove.

Top - direction indicator
Centre - tail light
Bottom - stop light.



P0138



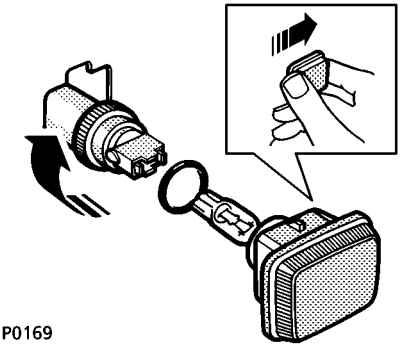
P0137

Reversing & fog guard lights

Open the tailgate and raise the plastic hinge cover on the lower tailgate to expose the three fasteners. Turn the fasteners a quarter turn to release and then remove the tailgate trim panel.

To release either light unit, squeeze the two levers (one on each side), then press and twist the appropriate bulb to remove.

Top - reversing light
Bottom - fog light.

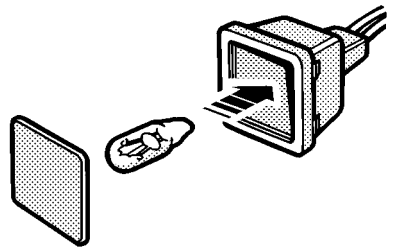


P0169

Side repeater lights

(if fitted)

Push the lens firmly to the right (arrowed) and withdraw light unit from the wing. Twist the bulb holder to release and pull out bulb.



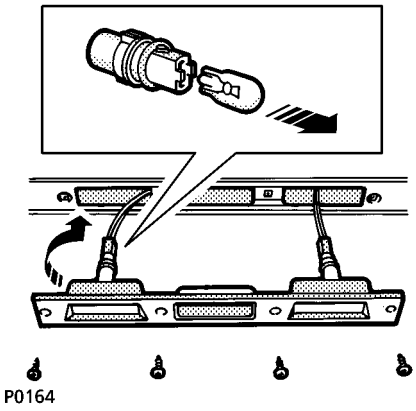
P0139

Puddle lights

(if fitted)

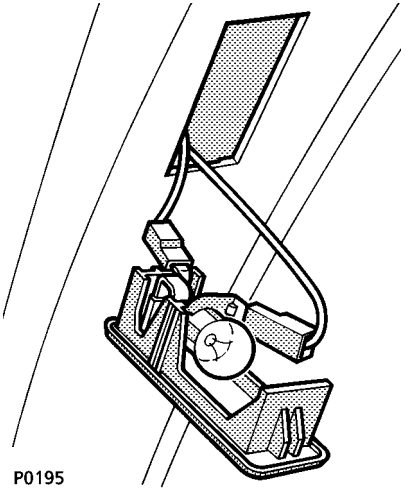
Using a plastic implement, prise the light unit from the door, pulling out as far as the electrical leads will permit, then prise the lens from the light unit. Pull the bulb from holder.

Fit lens to the light unit before refitting.


P0164

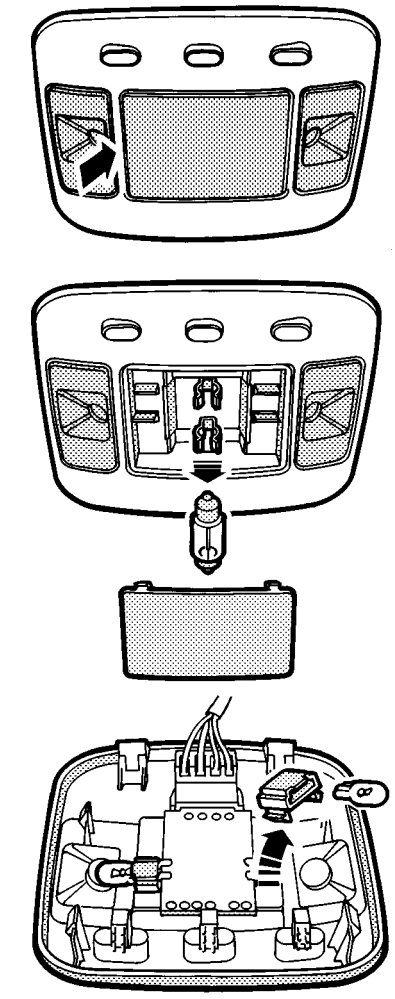
Number plate lights

Open the upper tailgate, remove the screws and withdraw the light unit. Twist bulb holders to remove and pull out the bulbs.


P0195

Loadspace light

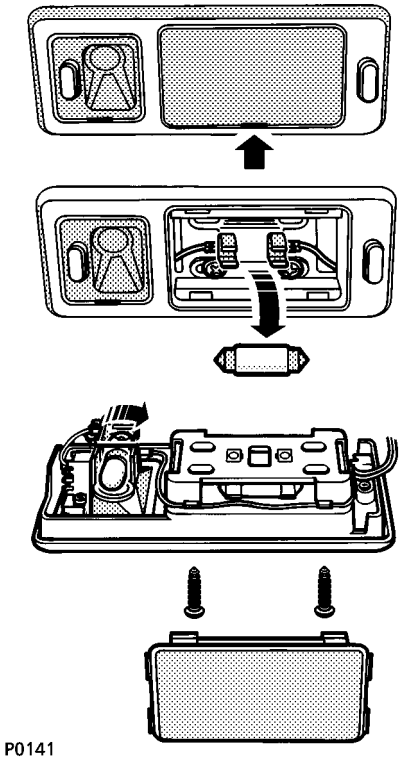
Push lamp assembly to one side and prise from the upper tailgate. Press and twist the bulb to release.


P0140

Front courtesy & reading lights

Courtesy light bulb: prise the centre lens from the light unit, then pull the bulb out from the clips.

Reading light bulbs: prise the courtesy light unit from the headlining, then pull the bulbs to remove.

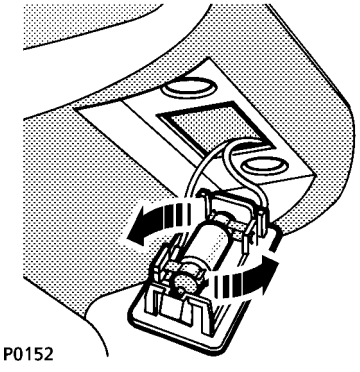


P0141

Rear courtesy & reading lights

Rear passenger courtesy light bulb: prise the lens from the courtesy light unit, then pull the bulb to remove.

Rear passenger reading light bulb: prise the lens from the courtesy light unit (as above). Unscrew both retaining screws and withdraw light unit from the roof. The bulb can be reached from the rear of the unit.

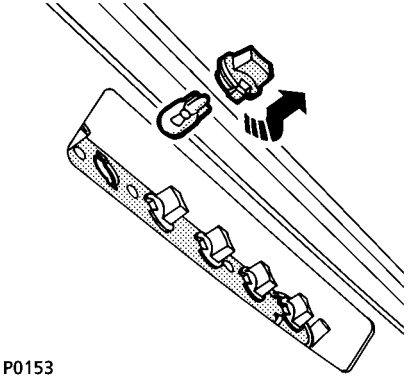


P0152

Rear footwell light

Prise the combined lens and holder assembly from the rear of the centre console and remove bulb from clips.

Replace the bulb then refit assembly to the centre console.

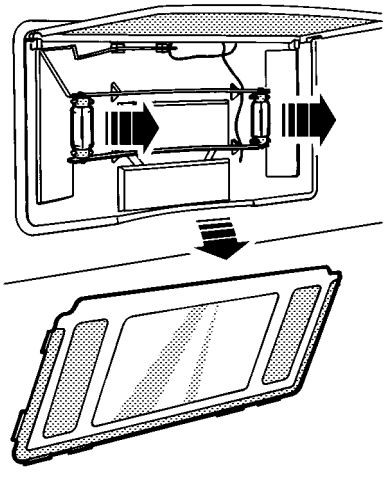


P0153

High mounted stop light

(if fitted)

Unclip the light cover from the inside of the upper tailgate. Twist to release the bulb holders, and pull to remove the bulbs.

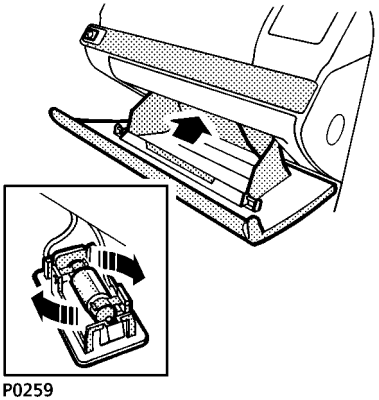


P0191

Vanity mirror illumination

Using a small, flat bladed screwdriver (at extreme top, left and right corners - just below the hinge), prise the lens and mirror panel from the light unit. 'Spring' the bulbs free from their connectors to remove.

Replace the bulbs then refit the lens and mirror panel to the sun visor.



P0259

Glovebox illumination

Prise the complete assembly from the underside of the top edge of the glovebox and remove the bulb from its holder.

Replace the bulb then refit assembly to the glovebox.

NOTE: *Glovebox illumination is available only when the side lights are on.*

WASHING YOUR VEHICLE

Wash your vehicle frequently using a clean, grit free sponge and generous quantities of cold or lukewarm water containing a car shampoo. Rinse and dry off with a chamois leather.

- Do not use hot water!
- Do not use detergent soap products or washing-up liquid!

During winter months when salt has been used on the roads, use a hose to wash the underside of the vehicle. Pay particular attention to wheelarches and panel seams, and to removing accumulations of mud.

Similarly, after off-road driving or wading in muddy or salt water conditions, use a hose to wash underbody components and other exposed parts of the vehicle.

When using a hose, do not direct the jet into the heater air intake ducts, or through the wheel trim apertures onto the brake components, or at the door, window or sunroof seals, where water pressure could penetrate the seals.

WARNING

Some high pressure cleaning systems are sufficiently powerful to penetrate door and window seals and damage rubbing strips and locking mechanisms. Never aim the water jet directly at heater air intakes, body and sunroof seals, or at any components that might easily be damaged.

Getting rid of tar spots

Use white spirit to remove tar spots and stubborn grease stains from the paintwork. Then wash immediately with soapy water to remove all traces of spirit.

Body protection

After washing, inspect the paintwork for damage. Treat paint chips and scratches with touch-up paint to prevent corrosion, and occasionally protect the paint surface with an application of car polish.

NOTE: *DO NOT apply car polish to the moulded bumpers - polish will become ingrained in the textured finish of the mouldings.*

Glass & mirrors

Clean the rear screen with a soft cloth to avoid damaging the heater elements. DO NOT scrape the glass or use an abrasive cleaning fluid.

Mirror glass is particularly susceptible to damage; DO NOT use abrasive cleaning compounds or metal scrapers.

LOOKING AFTER THE INTERIOR

Clean plastic-faced or cloth covered surfaces with diluted upholstery cleaner.

Leather seats, steering wheel and trim features should be cleaned with a damp cloth moistened with undiluted upholstery cleaner. Leave for five minutes, and then repeat the operation using a clean, cloth and water, but avoid flooding the area! Dry and polish the leather with a dry, clean, lint-free cloth.

DO NOT use petrol, detergents, furniture creams or polishes.

Instrument pack, clock & radio

Clean with a dry cloth. DO NOT use cleaning fluids or sprays.

Seat belts

Extend belts, then use warm water and a non-detergent soap to clean. Allow to dry naturally, and do not retract until completely dry.

Airbag SRS

To prevent airbag SRS damage, the steering wheel centre pad and area of the fascia panel containing the passenger side airbag should ONLY be cleaned sparingly with a damp cloth and upholstery cleaner.

DO NOT allow these areas to be flooded with liquid, and DO NOT use petrol, detergent, furniture cream or polishes.