

SECTION 4

Owner maintenance

The long-term safety, reliability and performance of your vehicle will depend very largely on how well 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, included in the literature pack. The Service Portfolio also provides spaces for your dealer to record the completion of each service, as and when it is carried out, thus creating a valuable and comprehensive record of the maintenance history of your vehicle.

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.

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Owner maintenance

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, 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 250 miles or 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 oil level.

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

WARNING

If brake pedal travel is unusually long, or if there is any evident loss of brake fluid, contact your dealer immediately.

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

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.

Owner maintenance

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. 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 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, practised by Land Rover dealers. Contact your Land Rover dealer for further information.

Owner maintenance

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 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 are poisonous and contain carbon monoxide, which can cause unconsciousness and may even be fatal.
- DO NOT work beneath the vehicle, with the lifting jack as the only means of support.
- Ensure sparks and open flame are kept away from the engine and battery compartments.

WARNING

Remember; cooling fans and air conditioning system condenser fans (if fitted), 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 and power steering fluid, as well as petrol, 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 skin cancer. ALWAYS wash thoroughly after contact.

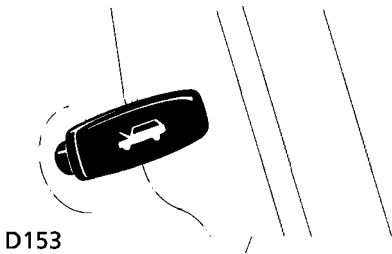
It is illegal to pollute drains, water courses or soil with toxic chemicals such as used engine oil. ALWAYS dispose of vehicle liquids and lubricants, at authorised waste disposal sites or at garages which provide facilities for the receipt of discharged batteries, used engine oil and toxic chemicals. If in doubt, contact your Local Authority for advice.

PROTECT THE ENVIRONMENT!

Bonnet opening

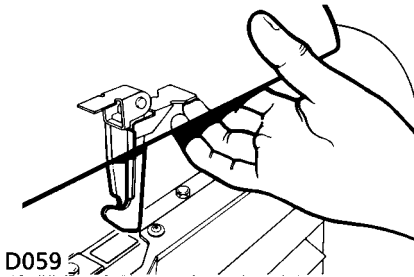
WARNING

Ensure the wipers are switched off and have returned to the parked position before opening the bonnet.



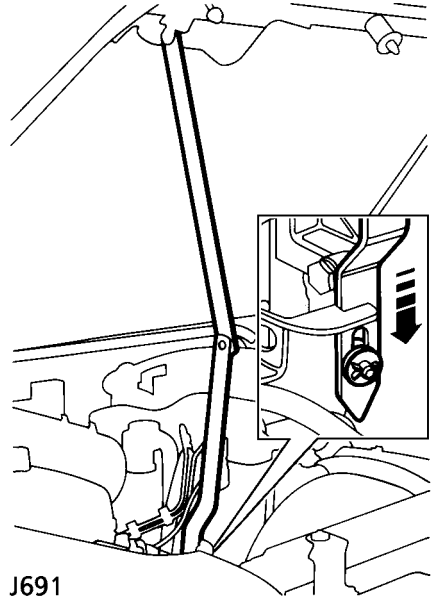
D153

Pull the bonnet release handle.



D059

Lift the safety catch lever (as illustration) and raise the bonnet.



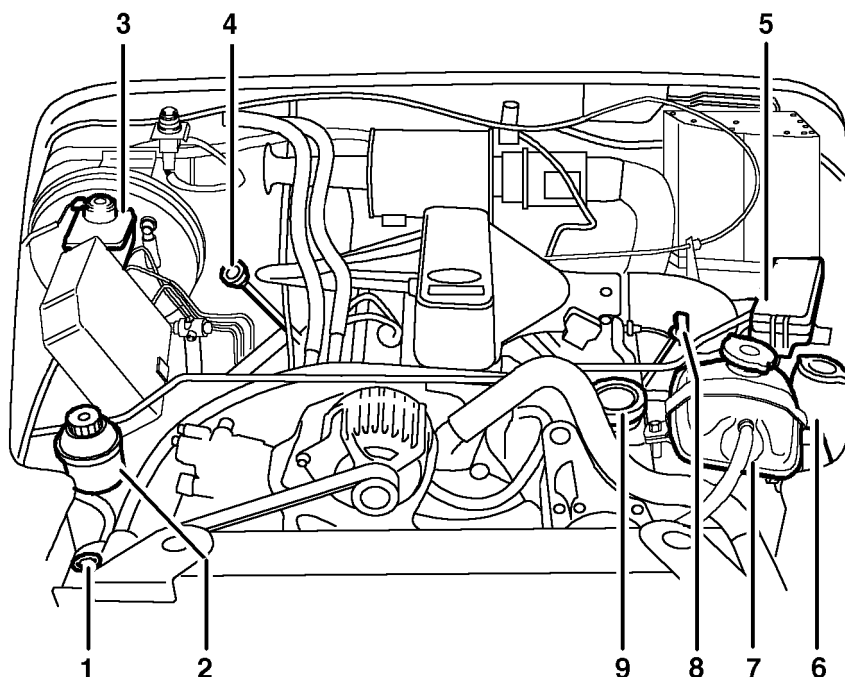
J691

Raise the bonnet until the stay fully extends. Release the bonnet, ensuring that the stay locks into position.

Closing the bonnet

After closing the bonnet, check that the lock is fully engaged by attempting to lift the front edge of the bonnet. This should be free from all movement.

Engine compartment



D243

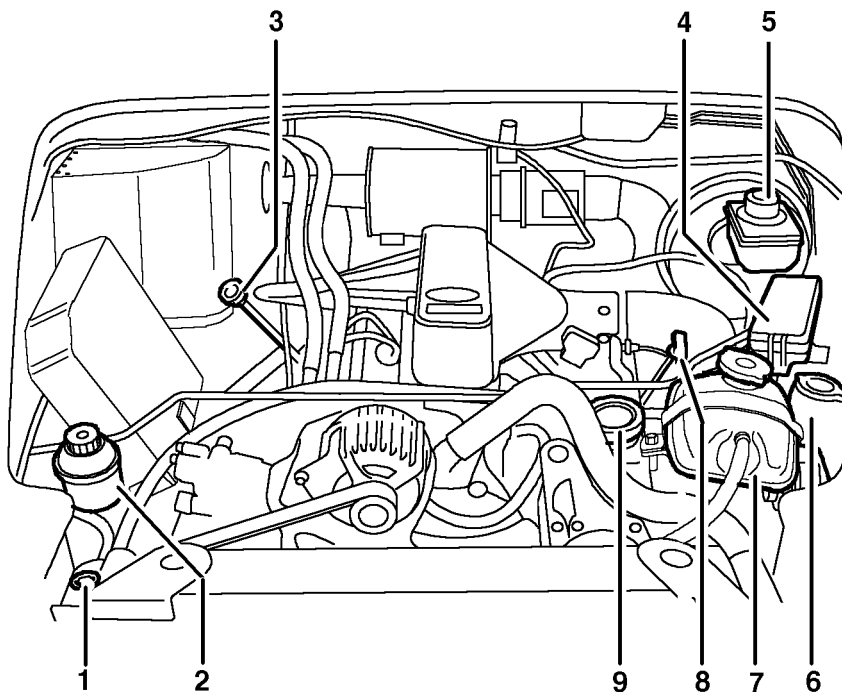
Right hand steering

1. Radiator filler cap
2. Power steering reservoir
3. Brake fluid reservoir
4. Automatic gearbox dipstick
5. Engine compartment fuse box
6. Washer reservoir
7. Cooling system reservoir
8. Engine oil dipstick
9. Engine oil filler cap

WARNING

Ensure that sparks and open flame are kept away from the engine compartment.

Engine compartment



D236

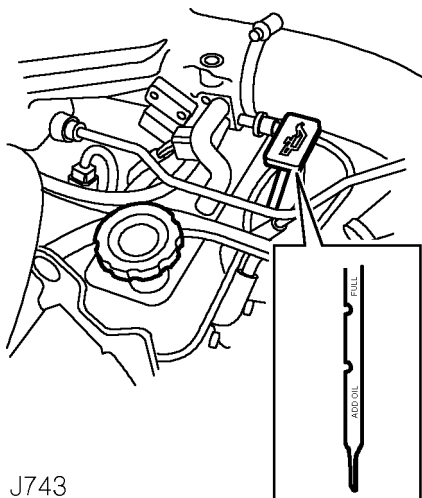
Left hand steering

1. Radiator filler cap
2. Power steering reservoir
3. Automatic gearbox dipstick
4. Engine compartment fuse box
5. Brake fluid reservoir
6. Washer reservoir
7. Cooling system reservoir
8. Engine oil dipstick
9. Engine oil filler cap

WARNING

Ensure that sparks and open flame are kept away from the engine compartment.

Engine compartment



ENGINE OIL LEVEL-CHECK & TOP-UP

Check the oil level at least every 250 miles (400 km) (or daily in arduous operating conditions), 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, 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:

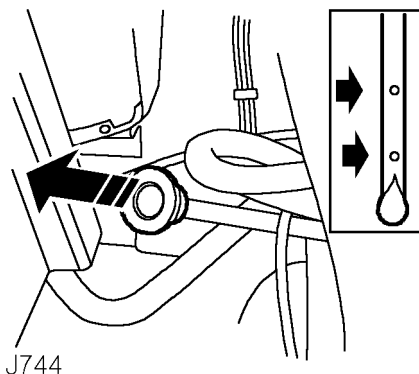
- is nearer to the upper mark than the lower, add no oil.
- is nearer to the lower mark than the upper, add half a litre of oil.
- is below the lower mark, add one litre of oil and re-check the level after a further five minutes.

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 re-check the oil level as soon as the engine has reached its normal operating temperature.

Oil specifications

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.

Engine compartment



J744

AUTOMATIC GEARBOX FLUID LEVEL CHECK & TOP-UP

The automatic gearbox fluid must only be checked when the engine and gearbox are cold (see 'Note' below).

Ensure the vehicle is resting on level ground with the handbrake applied, then start the engine and select 'P' (Park) .

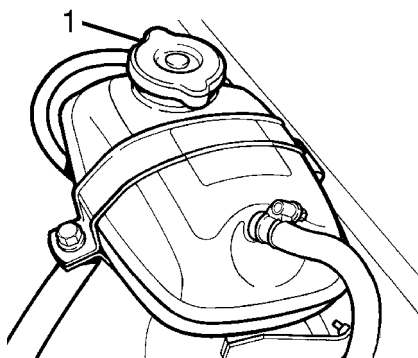
With the engine running, withdraw the dipstick from the filler tube and wipe the blade clean. Reinsert the dipstick fully and withdraw again to check the level. Top-up to maintain the level between the UPPER and LOWER markings on the dipstick, with a fluid meeting the minimum specification defined in '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 68°F (20°C).

DO NOT OVERFILL!

Engine compartment

COOLING SYSTEM TOP-UP



D244

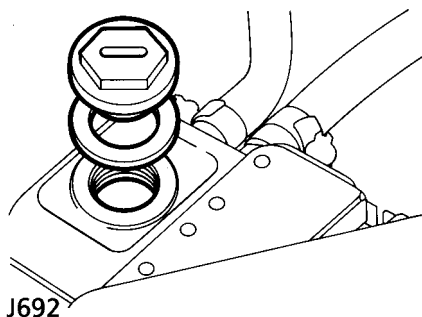
WARNING

NEVER remove the filler cap (1), or radiator filler plug, when the engine is hot - escaping steam or scalding water could cause serious injury.

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

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

Never run the engine without coolant.



As well as removing the reservoir cap (1), carefully unscrew the radiator filler plug, allowing pressure to escape before removing completely.

Top the coolant reservoir and the radiator up, if necessary, with a 50% mixture of anti-freeze and water to maintain the level at approximately 0.5 in (12 mm) below the radiator filler neck and up to the level indicator in the coolant reservoir. Ensure the filler cap and plug are tightened fully after top-up is completed.

DO NOT overfill. This may result in damage to the radiator.

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

Engine compartment

Anti-freeze

Anti-freeze contains important corrosion inhibitors. Ensure the 50% anti-freeze/water solution is maintained and topped up all year round (not just in cold conditions). Failure to do so may cause corrosion of the radiator and engine components.

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 68° F (20° C), is 1.075 and protects against frost down to -33° F (-36° C).

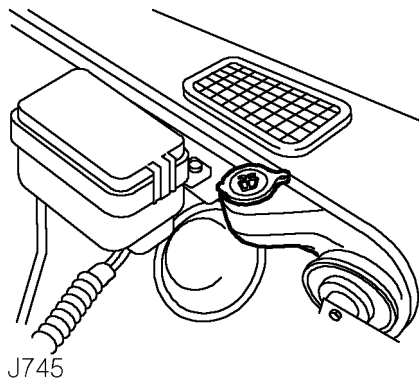
WARNING

Anti-freeze is poisonous and can be fatal if swallowed. If accidental consumption of anti-freeze is suspected, seek medical attention immediately.

Prevent anti-freeze coming in contact with the skin or eyes. If this occurs, rinse immediately with plenty of water.

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.



WINDSCREEN WASHER TOP-UP

The windscreen washer reservoir also supplies the rear screen (if fitted).

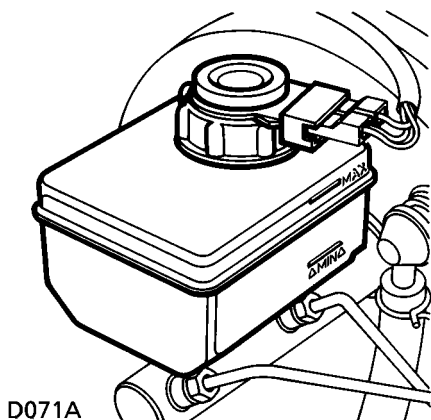
Check the reservoir level and top-up with a mixture of water and an approved screen washer solvent, to approximately 1 in (25 mm) below the bottom of the filler neck. In cold weather, to prevent freezing, use a screen washer solvent containing isopropanol.

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

WARNING

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

Engine compartment



WARNING

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

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 week (more frequently in high mileage or arduous operating conditions). Check the level visually through the side of the transparent container, without removing the filler cap.

Topping-up

Wipe the filler cap clean before removing, to prevent dirt from entering the reservoir, then top up to the 'MAX' mark using *FMVSS 116 DOT 4* fluid.

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

DO NOT OVERFILL!

WARNING

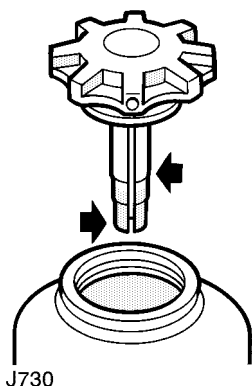
DO NOT drive the vehicle with the fluid level below the 'MIN' mark.

Brake fluid is poisonous and can be fatal if swallowed. If accidental consumption of brake fluid is suspected, seek medical attention immediately.

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

Engine compartment



WARNING

DO NOT start the engine if the fluid level has dropped below the dipstick - severe damage to the steering system could result.

POWER STEERING TOP-UP

ONLY check the fluid level with the engine switched off and when 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 cap fully and remove it again to check the fluid level. Ensure the fluid level is between the UPPER mark and the end of the dipstick. If necessary, top up with a fluid meeting *Dexron II or III* specification, ensuring no dirt enters the reservoir.

DO NOT fill above the UPPER mark on the dipstick.

Tyres

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 shown in 'General data'.

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 1/16 in (1.6 mm), the indicators start appearing at the surface of the tread pattern, producing the effect of a continuous band of rubber 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 1/16 in (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.

Tyres

WARNING

ALWAYS use the same make and type of radial-ply tyres front and rear. DO NOT use bias-ply tyres, or interchange tyres from front to rear.

- *If the wheel is marked 'TUBELESS', an inner tube must NOT be fitted.*
-

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

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 system and vehicle handling.

Alternative wheels which do not meet original equipment specifications should not be fitted.

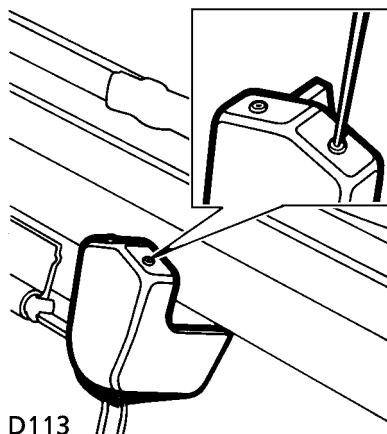
Snow chains

WARNING

DO NOT fit snow chains - this could damage the vehicle.

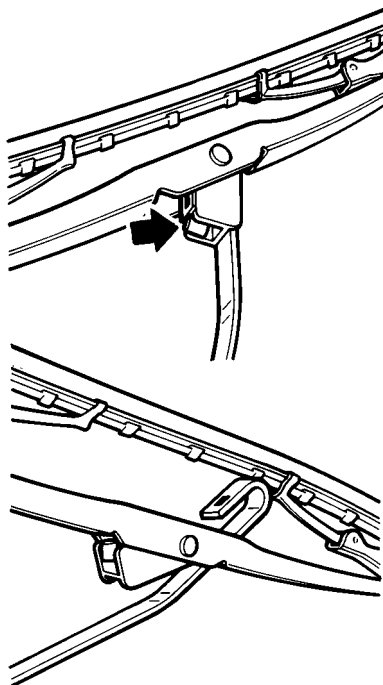
For more information or assistance, consult your Land Rover dealer.

Washer jets & wiper blades



WASHER JETS

To adjust a washer jet, insert a needle into the jet orifice (see inset) and lever gently to position the jet.



D096

WIPER BLADE REPLACEMENT

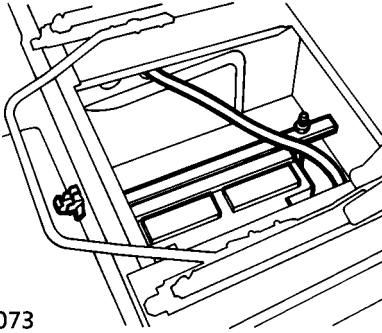
To renew a front or rear wiper blade, lift the wiper arm away from the screen, press the retaining clip (arrowed), push the blade away from the arm and then unhook the wiper blade.

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.

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

NOTE: Before renewing the rear wiper blade, it is necessary to remove the spare wheel from its mounting position on the rear door.

Battery



D073

The battery is located underneath the left-hand front seat. Pull up the front of the seat base to release it from its retaining clips and pull it forward. Release the buckle on the front of the battery compartment and slide off the lid.

When refitting the seat base, insert the rear of the base first and then push down firmly on the front to re-engage the retaining clips - ENSURE the seat base is secure before driving.

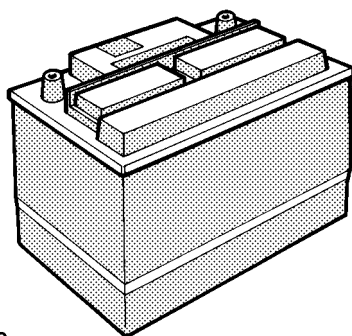
WARNING

Batteries contain sulphuric acid. If the acid comes in 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 open flame are kept away from the battery compartment.

To reduce the risk of a short circuit, remove all metal wrist bands and jewellery before working in the battery compartment and NEVER allow the battery terminals or vehicle leads, to make contact with tools or metal parts of the vehicle.

Battery



J480

The battery fitted to your vehicle requires minimal attention, as follows:

- In temperate climates, check the electrolyte level once every 3 years. In hot climates, check the level annually.
- Occasionally wipe the battery casing, to remove dirt and grease.
- Keep the battery terminals clean and free from corrosion, by occasionally smearing them with petroleum jelly.

Checking the electrolyte level

Gently prise off the vent covers (or unscrew if vent plugs are fitted) and inspect the electrolyte level of each cell. This should be no lower than 0.04 in (1 mm) above the top of the plates. If necessary, top up with distilled water to a maximum of 0.12 in (3 mm) above the plates.

Battery removal and replacement

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

If it is necessary to remove the main vehicle battery, it is essential to adopt the following procedure before disconnecting the terminals, in order to prevent the siren from sounding.

1. Turn the starter switch 'on' and then 'off', then remove the key.
2. Disconnect the vehicle battery **WITHIN 15 SECONDS** (if it is not disconnected within 15 seconds, the back-up siren will sound immediately the battery terminals are disconnected).

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

If the siren sounds when the battery is reconnected, it **CANNOT** be turned off in the normal way (ie. by operating the handset buttons). To deactivate the siren, disarm the alarm with the handset and turn the starter switch to position 'II'.

Battery

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.

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 ALWAYS observe the following precautions while charging the battery:

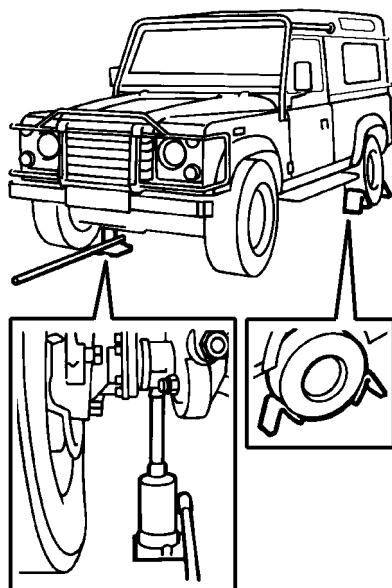
- Always remove the battery from the vehicle.
- Make sure the battery charger is disconnected from its power supply, before connecting the leads to the battery terminals.
- Make sure the charging leads are securely clamped, before switching on the charger, and DO NOT move the clamps while the charger is switched on.
- Shield your eyes, or avoid leaning over the battery.
- Keep the area around the top of the battery well ventilated.
- Keep open flame 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.

Wheel changing

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.
- Switch on the hazard warning lights to alert other road users.
- ALWAYS engage the differential lock before jacking (warning light on fascia illuminates).
- Apply the handbrake and select 'P' in the main gear box and select 'L' in the transfer box. Turn off the starter switch and remove the 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!



D237

WARNING

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

Using the Wheel Chock

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.

NOTE: The bottle jack and wheel chocks are stowed in a compartment under the left-hand front seat (see 'Battery' for details of access). The jack handle and tools are stowed in a tool bag behind the front seats.

WARNING

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

Wheel changing

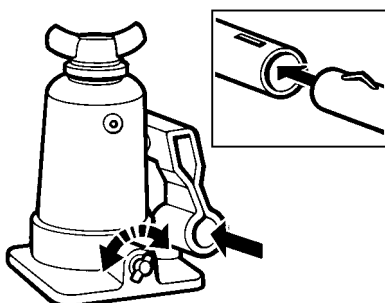
Removing the spare wheel

Remove the nuts securing the spare wheel to the carrier and lift off the wheel.

WARNING

DO NOT use the spare wheel securing nuts in place of the road wheel nuts.

The wheels are extremely heavy. Take care when lifting and particularly when removing the spare wheel from its mounting position on the rear door.



D114

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 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.

Wheel changing

Positioning the jack

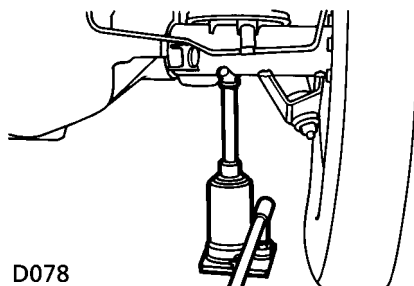
Always position the jack from the front or rear of the vehicle, directly in line with the jacking points.

WARNING

NEVER use the jack from the side of the vehicle.

Always use the complete, two piece, jack lever throughout, to minimise any accidental contact with a hot exhaust system.

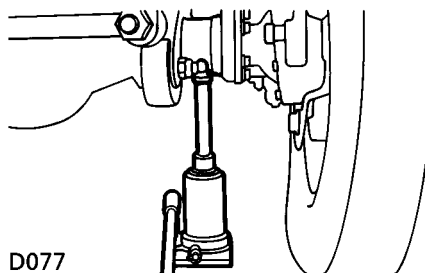
ONLY jack the vehicle using the jack location points described, or damage to the vehicle could occur.



D078

Rear jacking point:

Position the jack so that, when raised, it engages with the rear axle casing, immediately below the coil spring and as close as possible to the shock absorber mounting bracket.



D077

Front jacking point:

Position the jack so that, when raised, it engages with the front axle casing, immediately below the coil spring. The jack cradle must locate between the flange at the end of the axle casing and the large bracket to which the front suspension members are mounted.

Care of the jack

Occasionally, clean and grease the moving parts (particularly the ram/pillar) to prevent corrosion.

The bottle jack oil level should be checked at normal servicing intervals and if necessary, topped up with an hydraulic oil with a viscosity to BS 4231 grade 32 and ISO proof 32.

To avoid contamination, the bottle jack should always be returned to its fully closed position and must always be stowed upright.

Wheel changing

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 chock is correctly positioned, as described previously.

In some markets, vehicles fitted with alloy wheels have one locking wheel nut fitted to each wheel. Refer to 'Locking wheel nuts' later in this section, before changing an alloy wheel.

- Use the wheel nut wrench to slacken the wheel nuts half a turn counter-clockwise.
- 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).
- On alloy wheels, 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 corrosion - an accumulation of dirt or corrosion could cause the wheel nuts to become loose and result in an accident.

- Lower the vehicle and remove the jack and wheel chock.
- Fully tighten the wheel nuts. DO NOT OVERTIGHTEN by using foot pressure or extension bars on the wheel nut wrench, as this could overstress the wheel studs.
- REMEMBER to disengage the differential lock and change to 'H' (high range) before driving.
- Finally, check the tyre pressure and wheel nut torque at the earliest opportunity, see 'General data'.

WARNING

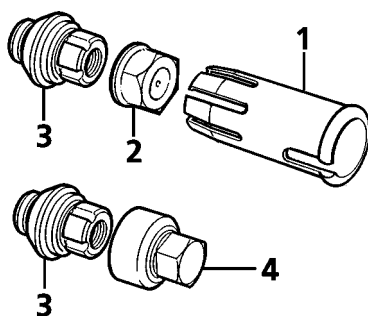
After wheel changing, always secure tools, chock, jack and spare wheel in their correct storage positions.

Wheel changing

LOCKING WHEEL NUTS

In some markets, vehicles fitted with alloy wheels are equipped with a locking wheel nut on each wheel. 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:

- 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.



J723

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 out of sight, in a secure place in the vehicle.

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.

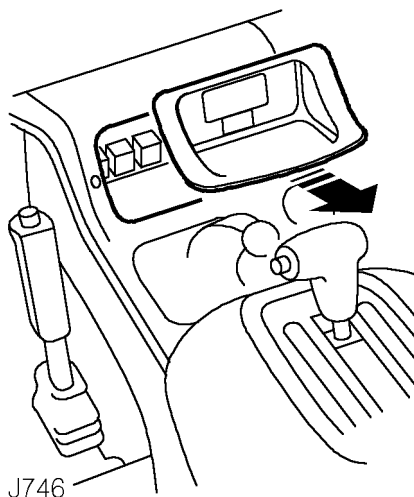
Always fit a new fuse of the same rating. If the replacement fuse fails immediately, contact your local Land Rover dealer and have the circuit checked.

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.

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

TAN	5
BROWN	7.5
RED	10
BLUE	15
YELLOW	20
GREEN	30



The main fuse box is located behind an access panel in front of the transfer box gear lever. Pull the panel away from the console to gain access to the fuses. The fuse ratings and the circuits they protect are listed on the following page.

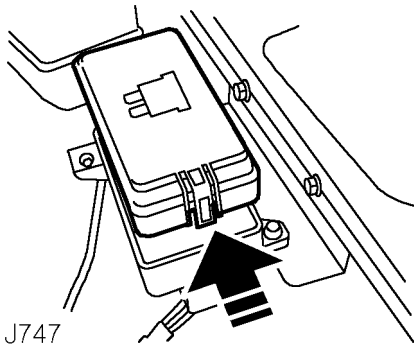
After changing a fuse, ensure the access panel is firmly secured by the velcro fixings.

Fuses

MAIN FUSE BOX

Fuse No.	Value (amps)	Electrical circuit
1	7.5	Headlight - LH, main beam
2	7.5	Headlight - RH, main beam
3	7.5	Headlight - LH, dipped beam
4	7.5	Headlight - RH, dipped beam
5	10	Rear fog guard lights
6	7.5	Radio/cassette player
7	15	Heater
8	15	Alarm sounder
9	10	Front interior light, alarm, radio
10	15	Warning lights, headlight, heated rear screen, gear selector illumination
11	20	Engine
12	20	Cigar lighter, auxiliary connector
13	15	Front wash/wipe, stop & reverse lights
14	15	Rear wash/wipe, alarm, direction indicators
15	20	Air conditioning
16	30	Air conditioning
17	-	Spare
18	20	Trailer, rear interior light
19	5	Sidelights - RH, Headlight levelling
20	5	Sidelights - LH

Fuses



ENGINE COMPARTMENT FUSE BOX

A second fuse box is located on the left side of the engine compartment. Press the catch (arrowed) and lift the lid to open.

The circuits protected and their locations are shown on a printed diagram on the inside of the fuse box cover and are also listed below.

The circuits protected and their ratings are as follows:

Value (amps)	Electrical circuit
30	Auxiliary
20	Horn, headlight flash
30	Heated rear screen
20	Diagnostics
30	Hazard lights
15	Fuel pump
20	Fuel injection

NOTE: Six main circuit fuses are also located in the engine compartment fuse box. If a fault is suspected in one of the main circuit fuses, 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.

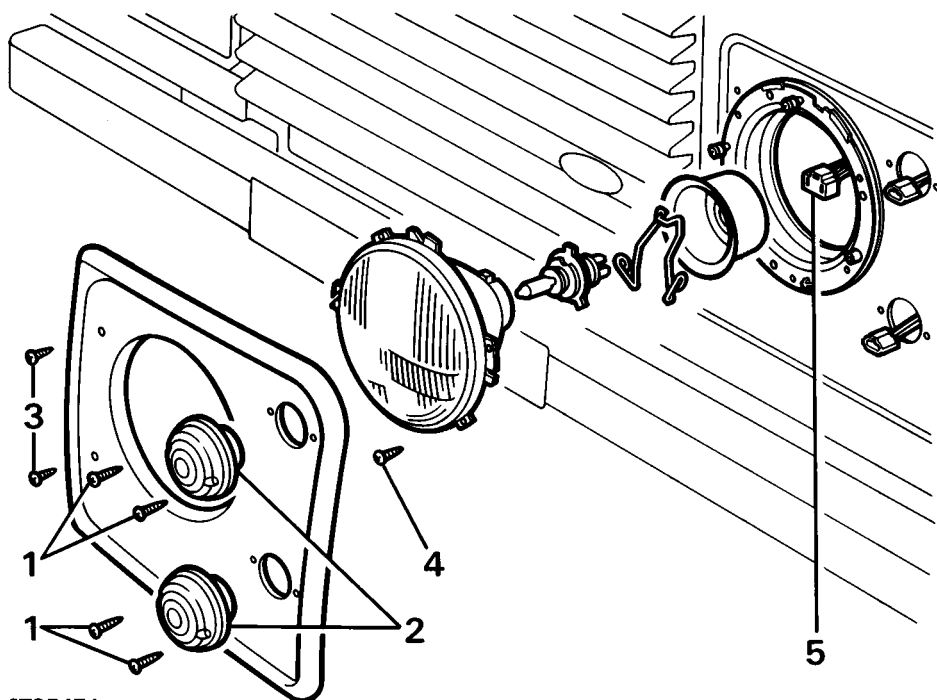
Bulb replacement

REPLACEMENT BULBS	Watts
Headlights	60/55 (Halogen sealed beam)
Front side lights	5
Side repeater lights	3.5
Stop lights	21
Tail lights	5
Direction indicator lights	21
Number plate lights	4
Reversing lights	21
Interior lights	10
Warning lights	1.2
Instrument illumination	2
High level stop light	21

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 a short circuit. Only use new bulbs of the same type and with the same specification.

Bulb replacement



ST3547A

HEADLIGHT UNIT

Light unit removal

To replace the headlight bulb, remove the light unit as follows:

- Remove the screws (1) retaining the side and direction indicator lights (2), release them forward and disconnect the plugs.
- Remove the screws (3) and withdraw the plastic finisher.
- Remove the headlight retaining screw (4), rotate the headlight clockwise to disengage and lift out the headlight.

Bulb replacement

Headlight bulb

Disconnect the multi-plug (5) and remove the rubber cover. Unhook the spring clip and withdraw the bulb.

Replace the bulb (the larger of the three tabs uppermost) and secure the spring clip.

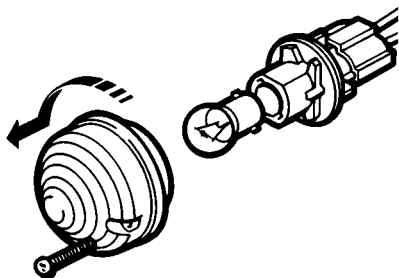
Replace the rubber cover, pressing the centre firmly to seal around the electrical contacts of the bulb, then refit the multi-plug.

NOTE: *Do not touch the bulb glass with your fingers. If necessary, clean the bulb with methylated spirits.*

WARNING

ALWAYS fit headlight bulbs and light units with the same Watt value as the original specification (see 'Replacement bulbs').

Bulb replacement



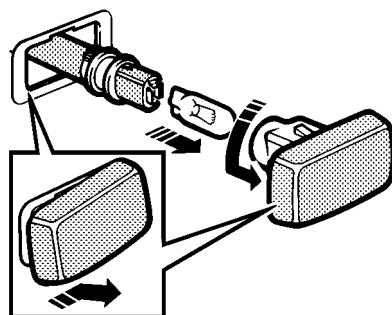
D087

Side, tail, stop and direction indicator bulbs

Remove the retaining screws and withdraw the unit.

Twist the lens anti-clockwise to release the bulb unit.

Push and twist the bulb to remove.



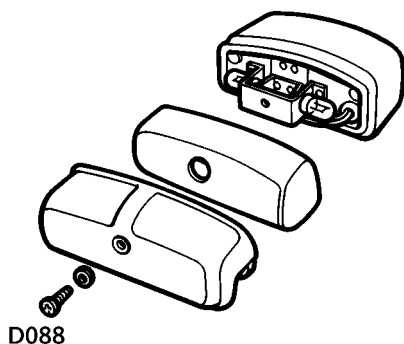
J445

Side repeater light

Push the lens firmly to the right, lift the left edge and withdraw the light unit from the wing.

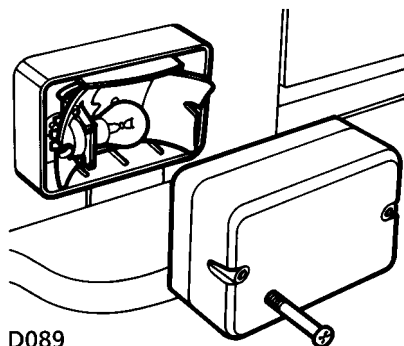
Twist the bulb holder to release and pull out bulb.

Bulb replacement



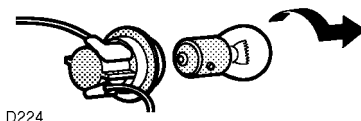
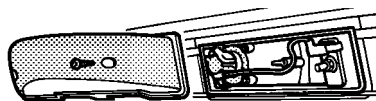
Number plate lights

Remove the securing screw, remove the cover and pull out bulb.



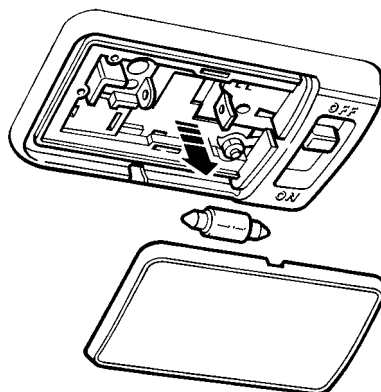
Reverse and rear fog guard lights

Remove the retaining screws and withdraw the lens, then push and twist to release the bulb.



High mounted stop light

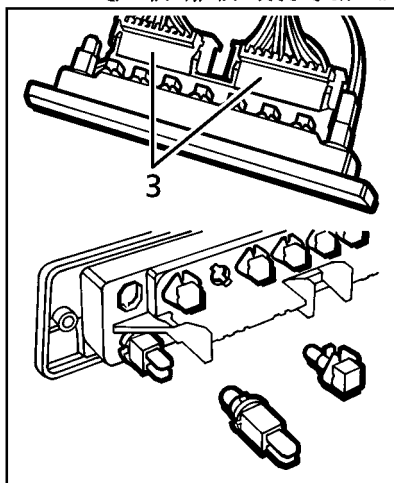
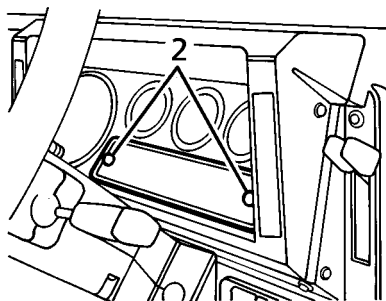
Remove the screws from the cover, withdraw the cover and twist to remove the bulb holder. Push and twist to release the bulb.



Interior light

Prise the lens from the unit. Spread the bulb holders to release the bulb.

Bulb replacement



D091

Right hand steering illustrated

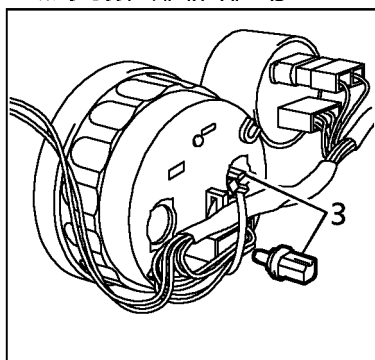
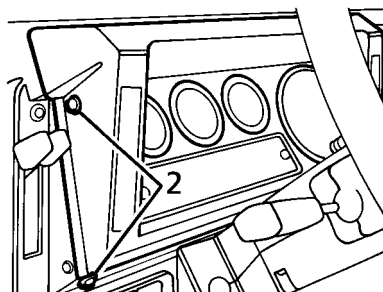
Warning lights

Disconnect the battery (see 'Battery removal and replacement').

Remove the screws (2) and withdraw the warning light module from the instrument panel.

Disconnect the appropriate multi-plug (3), twist and pull out the bulb holder and pull out bulb.

NOTE: Remember to reconnect the battery after replacing a bulb.



J748

Left hand steering illustrated

Instrument illumination lights

Disconnect the battery (see 'Battery removal and replacement').

Remove the four screws (2) and ease the instrument panel out.

If necessary, the speedometer drive cable can be disconnected to improve access.

Twist and pull out the bulb holder (3) and pull out bulb.

NOTE: Remember to reconnect the battery after replacing a bulb.

Cleaning & vehicle care

WASHING YOUR VEHICLE

Wash your vehicle frequently using a 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!

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 or window seals and damage rubbing strips and locking mechanisms. Never aim the water jet directly at components that might easily be damaged.

Underbody maintenance

Corrosive materials, used for snow and ice removal and dust control, can collect on underbody parts. If these materials are not removed, accelerated corrosion can occur on underbody parts, such as the frame, floor pan and exhaust system. Regularly flush these materials from the underbody with fresh water. Take care to thoroughly clean any areas where mud and debris can collect.

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.

Getting rid of tar spots

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

Body protection

After washing, inspect the paintwork for damage. Any stone chips, fractures, or deep scratches in the body work should be repaired promptly. Bare metal can corrode quickly and can develop into major repair expense. Some exterior panels of your vehicle are made of Aluminium, which will not corrode in the same manner as sheet steel. However, any damage should still receive prompt attention. Minor chips and scratches can be repaired with touch up materials, available from your dealer. Larger areas of damage need to be corrected to professional standards immediately.

Occasionally protect the paint surface with an application of car polish.

Glass & mirrors

Clean the inside of the rear window with a soft cloth, to avoid damaging the heating 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.

Cleaning & vehicle care

LOOKING AFTER THE INTERIOR

WARNING

DO NOT use water to clean the dashboard and fascia area, damage to fuses and switches could occur. Instead, clean sparingly with a damp cloth and approved upholstery cleaner.

Soak up any spilt liquids immediately.

Clean the centre console with a damp cloth and a non-detergent soap. DO NOT use upholstery cleaner. Dry with a clean lint-free cloth.

Clean plastic-faced or cloth covered surfaces and carpets (after sweeping) with diluted upholstery cleaner.

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, damp cloth. Dry and polish the trim with a dry, lint-free cloth.

***NOTE:** Avoid flooding any area, but especially around the gear selector lever, and soak up any spillage immediately.*

DO NOT use petrol, detergents, cleaning fluids, solvents, furniture creams or polishes!

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.

DO NOT bleach or dye the webbing.