

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 Owner Information & Service Record 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 250 miles or 400 km.

- Engine oil level.
- Cooling system level.
- Screen washer reservoir level.
- Condition and pressure of tyres.
- Drain fuel sedimenter and filter - Diesel engines (if fitted).

Monthly checks

- Brake fluid level.
- Power steering fluid level.

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

The gearbox fluid level 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.

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 Owner Information & Service Record 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 (if fitted) 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 wheel change lifting jack as the only means of support.
- Ensure sparks and naked lights 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, diesel, engine oil and windscreen washer additives.

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

Used engine oil

Prolonged contact with engine oil can 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 used engine oil and toxic chemicals. If in doubt, contact your Local Authority for advice.

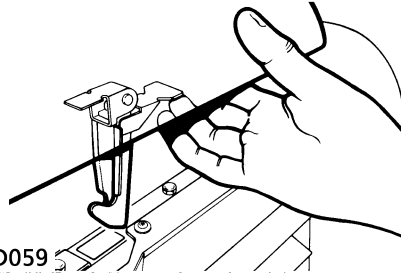
PROTECT THE ENVIRONMENT!

Bonnet opening

WARNING

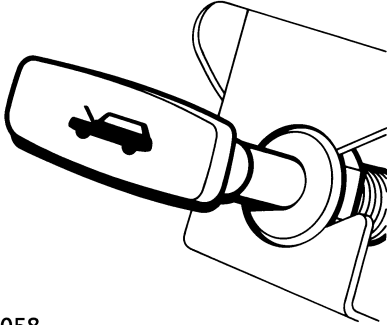
Ensure the wipers are switched off and have returned to the parked position before opening the bonnet.

On vehicles with a bonnet mounted spare wheel, the bonnet will be heavy to lift - DO NOT allow it to drop.



D059

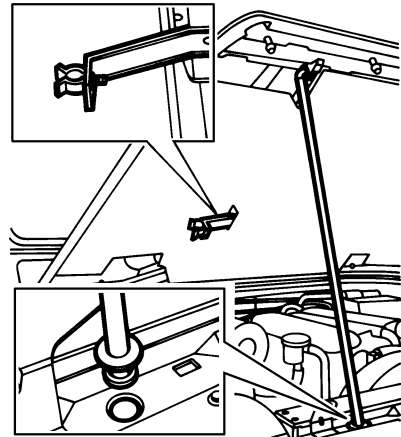
Lift the safety catch lever (as illustration) and raise the bonnet.



D058

Pull the bonnet release handle.

Prop stay

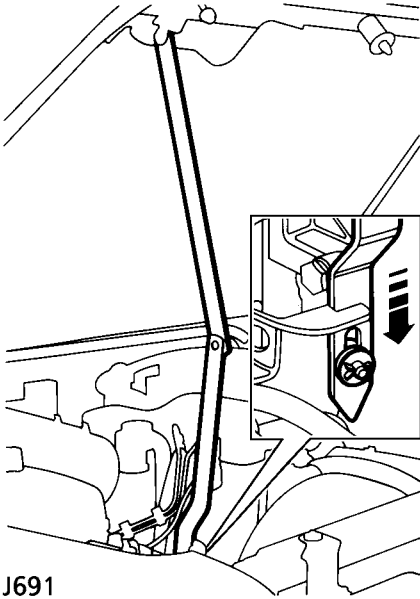


D060

Release the bonnet support stay from the underside of the bonnet and fit the stay in the corresponding hole in the bonnet locking platform.

Bonnet opening

Scissor action stay



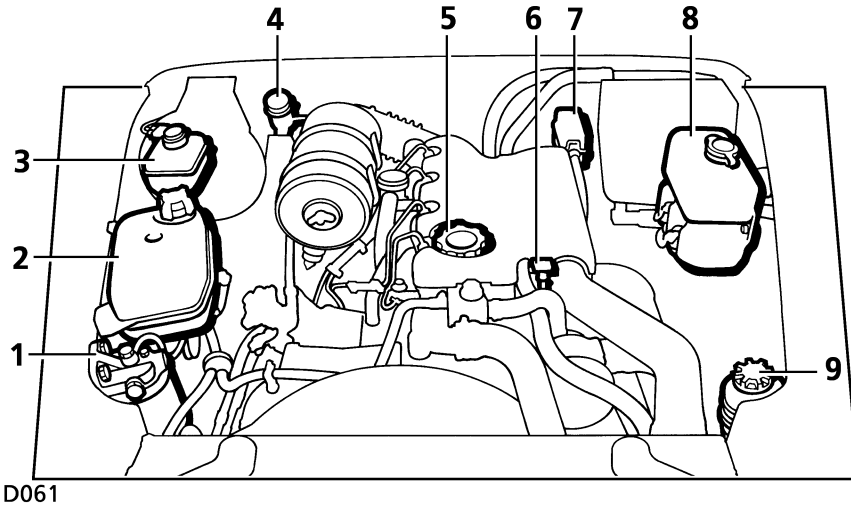
J691

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



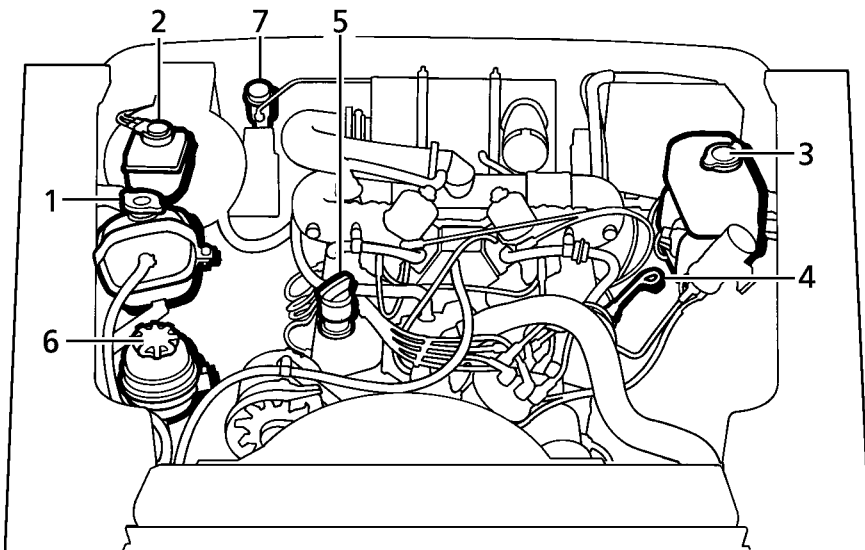
Tdi - Right hand steering

1. Diesel fuel filter.
2. Cooling system reservoir.
3. Brake fluid reservoir.
4. Clutch fluid reservoir.
5. Engine oil filler cap.
6. Engine oil dipstick.
7. Fuse box - engine compartment.
8. Washer reservoir.
9. Power steering reservoir.

WARNING

Ensure that sparks and naked lights are kept away from the engine compartment.

Engine compartment



D062

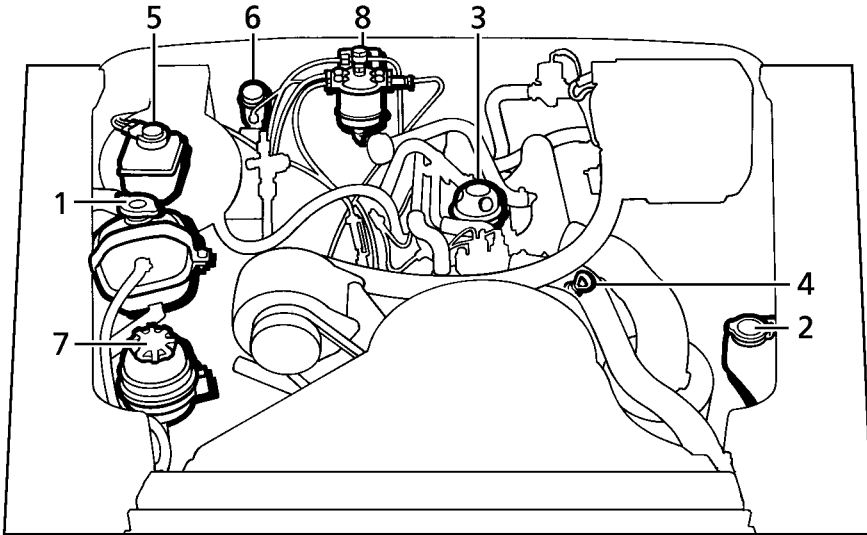
V8 - Right hand steering

1. Cooling system reservoir
2. Brake fluid reservoir.
3. Washer reservoir.
4. Engine oil dipstick.
5. Engine oil filler cap.
6. Power steering reservoir.
7. Clutch fluid reservoir.

WARNING

Ensure that sparks and naked lights are kept away from the engine compartment.

Engine compartment



D105

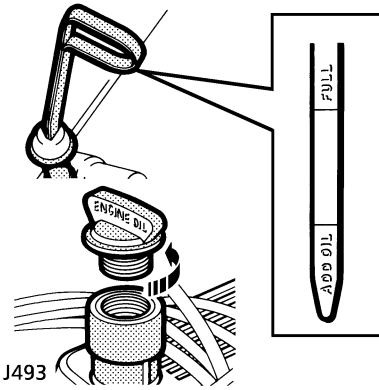
4-cylinder diesel (non turbo)

1. Cooling system reservoir.
2. Washer reservoir.
3. Engine oil filler cap.
4. Engine oil dipstick.
5. Brake fluid reservoir.
6. Clutch fluid reservoir.
7. Power steering reservoir.
8. Diesel fuel filter.

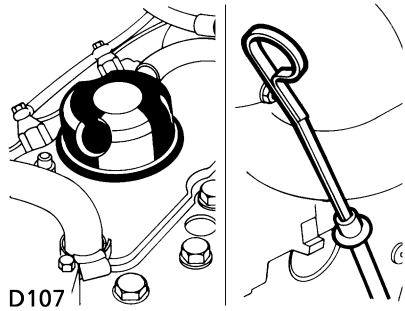
WARNING

Ensure that sparks and naked lights are kept away from the engine compartment.

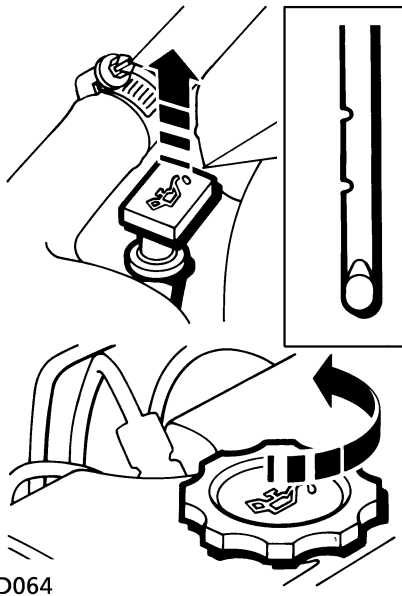
Engine compartment



V8 Petrol engine



4-cylinder petrol and diesel
(non-turbo)



Tdi Diesel engine

ENGINE OIL LEVEL-CHECK & TOP-UP

Check the oil level at least every 400 km (250 miles) 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.

Engine compartment

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.

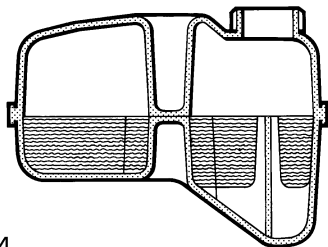
NOTE: *If it is necessary to check the oil level when the engine is cold, DO NOT start the engine. Follow the procedure detailed above, but re-check the oil level as soon as the engine has reached its normal operating temperature.*

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

COOLING SYSTEM TOP-UP



J484

WARNING

NEVER remove the filler cap 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 slowly, allowing the pressure to escape before removing completely.

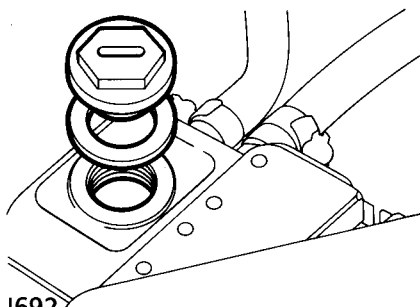
Never run the engine without coolant.

Top-up with a 50% mixture of anti-freeze and water so that the surface of the coolant is level with the seam on the side of the tank. Ensure the cap is 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.

V8 models



J692

On V8 models, as well as removing the reservoir cap, carefully unscrew the radiator filler plug (illustrated above), allowing pressure to escape before removing completely.

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

DO NOT OVERFILL!

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.

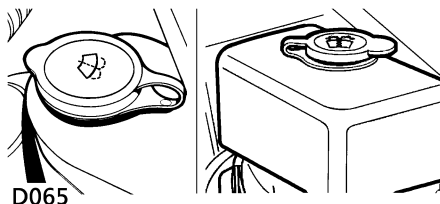
Use an ethylene glycol based anti-freeze (containing no methanol) with non-phosphate corrosion inhibitors suitable for use in aluminium engines. The specific gravity of a 50% anti-freeze solution at 68° F (20° C) is 1.075 and protects against frost down to -33° F (-36° C).

WARNING

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.



D065

WINDSCREEN WASHER TOP-UP

The windscreen washer reservoir also supplies the rear screen.

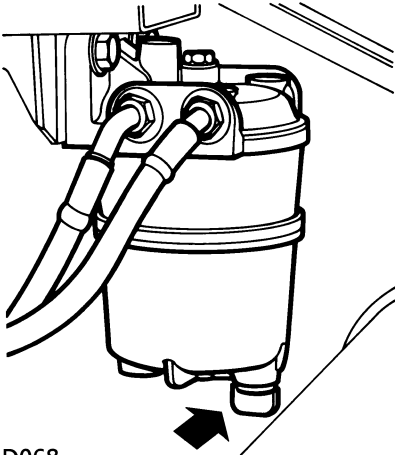
Check the reservoir level and top-up with a mixture of water and an approved screen washer solvent to approximately 25 mm (1 in) below the bottom of the filler neck. In cold weather, to prevent freezing, use a screen washer solvent containing isopropanol.

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



D068

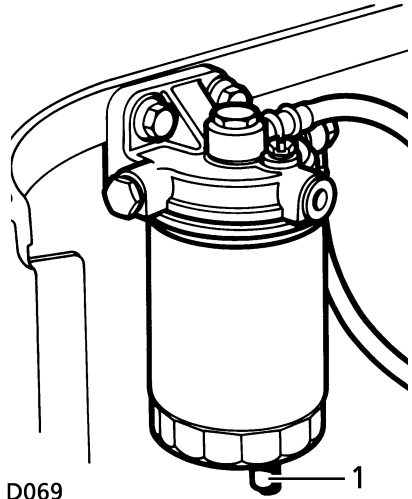
FUEL SEDIMENTER - diesel engines (if fitted)

The sedimenter is located on the chassis side member, near the rear wheel.

To drain:

Slacken off the drain plug (arrowed in illustration), to allow any water to drain off. Retighten the plug as soon as pure diesel is emitted.

NOTE: If your vehicle is fitted with two fuel tanks, it may have two sedimenters - one on each side of the vehicle.



D069

FUEL FILTER - diesel engines

The filter is located at the front of the engine compartment.

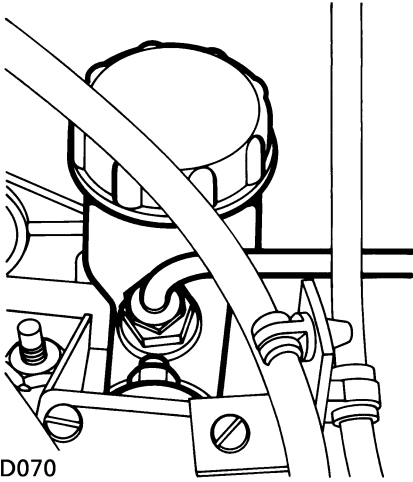
To drain:

Slacken off the drain plug (1), to allow any water to drain off. Retighten the plug as soon as pure diesel is emitted.

Engine compartment

WARNING

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



CLUTCH FLUID TOP-UP

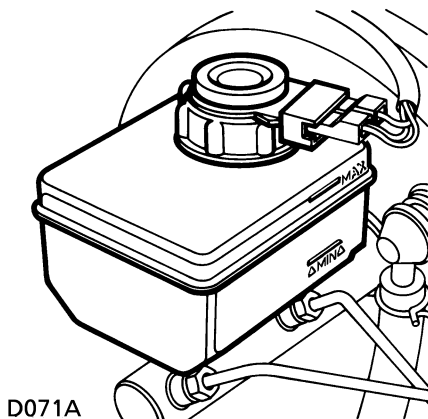
Wipe the filler cap before removing, to prevent dirt from entering the reservoir. Check the fluid level and top up if necessary, maintaining the level approximately 10 mm below the top of the reservoir, using fluid meeting *FMVSS 116 DOT 4* specification. Ensure dirt does not enter the reservoir while filling.

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!

If significant topping up is required, a leak is indicated - consult your dealer immediately.

Engine compartment



D071A

WARNING

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

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 will damage painted surfaces; clean up any spillage immediately and rinse with plenty of water.

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

BRAKE FLUID CHECK

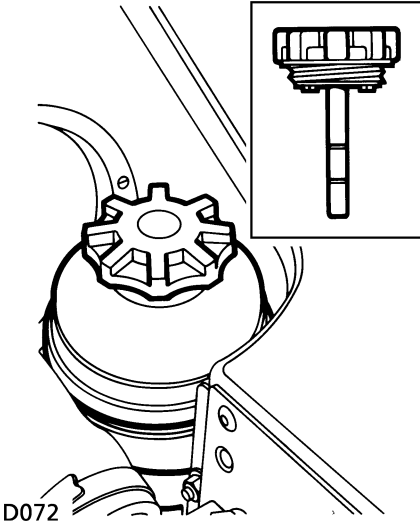
The fluid level will fall slightly during use as a result of brake pad wear, but should not be allowed to fall below the 'MIN' mark. Any substantial drop in fluid indicates a leak in the system, in which case the vehicle must NOT be driven and you should contact your dealer.

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.

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 the system 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 D* 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 1.6 mm (1/16 in) 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 1.6 mm (1/16 in). **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 for a particular territory. 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 cross-ply tyres, or interchange tyres from front to rear.

- **If the wheel is marked 'TUBED' an inner tube MUST be fitted, even with a tubeless tyre.**
 - **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

Land Rover approved snow chains are designed for on-road use in extreme snow conditions only, and are not recommended for off-road use. Always observe the following recommendations:

- ONLY Land Rover approved chains may be fitted to the front wheels, or fitted to all four wheels. Non-approved chains can be fitted to the rear wheels ONLY.
- Ensure the gearbox differential is locked.
- Always adhere to the snow chain fitting and retensioning instructions and the speed limit recommendations for varying road conditions. Never exceed 30 mph (50 km/h).
- Avoid tyre damage by removing snow chains as soon as the road is free of snow.

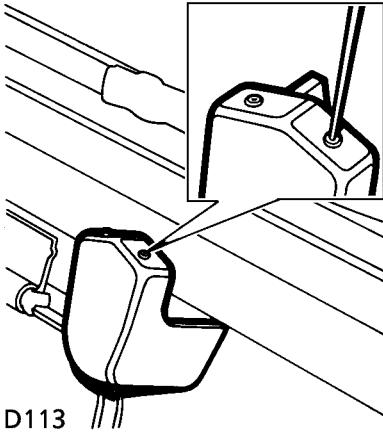
NOTE: Snow chains are not available for 265/75 R16 tyres.

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

WARNING

DO NOT fit unapproved snow chains to the front wheels - this could damage brake components.

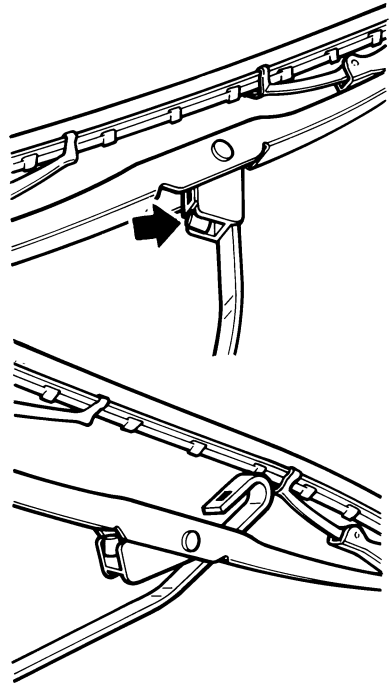
Washer jets & wiper blades



D113

WASHER JETS

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



D096

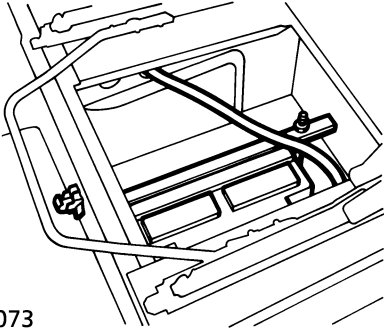
WIPER BLADE REPLACEMENT

To renew a windscreen or rear screen wiper blade, lift the wiper arm away from the windscreen, press the retaining clip (1), 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.

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 to re-engage the retaining clips - ENSURE the seat base is secure before driving.

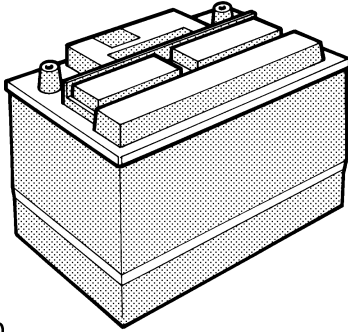
WARNING

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 naked lights 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

Battery maintenance

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 the centre cell. This should be no lower than 1 mm (0.04 in) above the top of the plates. If necessary, top up with distilled water to a maximum of 3 mm (0.12 in) above the plates.

Battery removal and 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 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 system 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.

Cold climates

Where ambient temperatures are consistently below freezing point, a heater should be used to keep the battery warm while the vehicle is not in use. Consult your Land Rover dealer for recommendations.

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:

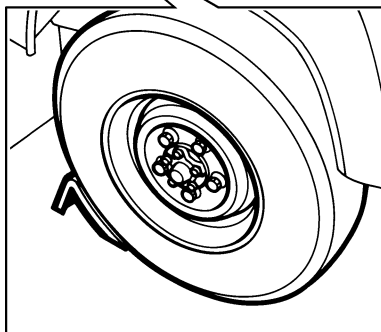
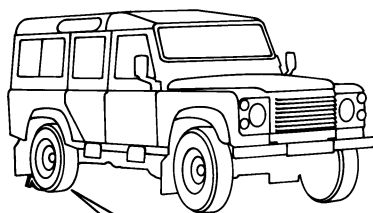
- Always remove the battery from the vehicle.
- Make sure the battery charger is disconnected from its power supply before connecting the leads to the battery terminals.
- Make sure the charging leads are securely clamped before switching on the charger, and DO NOT move the clamps while the charger is switched on.
- Shield your eyes or avoid leaning over the battery.
- Keep the area around the top of the battery well ventilated.
- Keep naked lights 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 engage 1st gear 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!



D074

WARNING

Always chock the wheel diagonally opposite the one to be removed - chocking the front of a front wheel or the back of a rear wheel, using the chock provided.

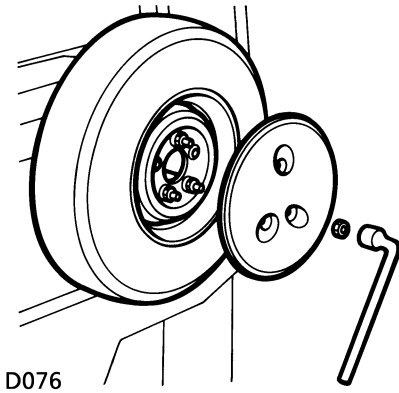
Using the Wheel Chock

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 chock are stowed in a compartment under the left-hand front seat (see 'Battery' for details of access). The jack handle and tools (or pillar jack - if fitted) are stowed in a tool bag behind the front seat in 'Pick-up' and 'Hard-top' models and under the bench seat in 'Soft-top' and 'Station Wagon' models.

Wheel changing



Removing the spare wheel

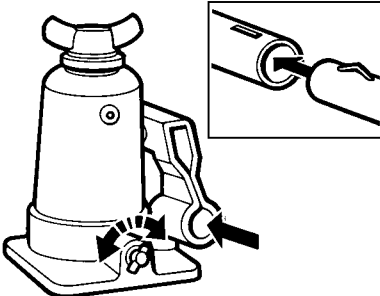
1. Remove the nuts securing the wheel cover using the wheel brace supplied in the tool kit.
2. Remove the nuts securing the spare wheel to the carrier and lift off the wheel.

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 bonnet or rear door.

Wheel changing



D114

Operating the bottle 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 bottle jack

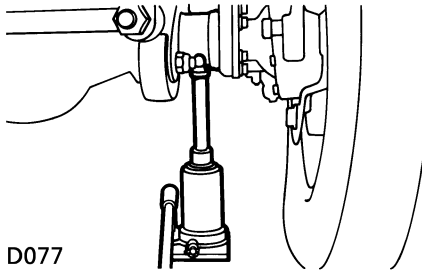
Always position the jack from the front or rear of the vehicle directly in line with the jacking points.

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.

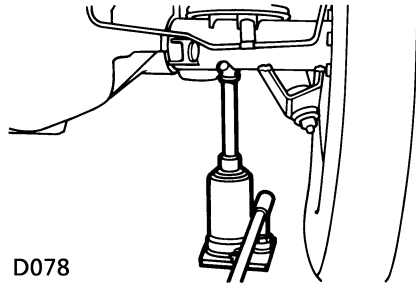
ONLY jack the vehicle using the jack location points described or damage to the vehicle could occur.



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.



D078

Rear jacking point:

Push the mud flap up over the tyre to allow clear access (return it to its correct position when the wheel change is complete). 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.

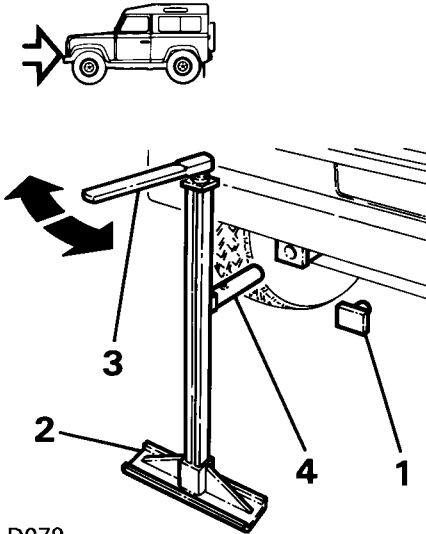
Care of the jack

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

The bottle jack oil level should be checked at normal servicing intervals and if necessary topped up with a 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



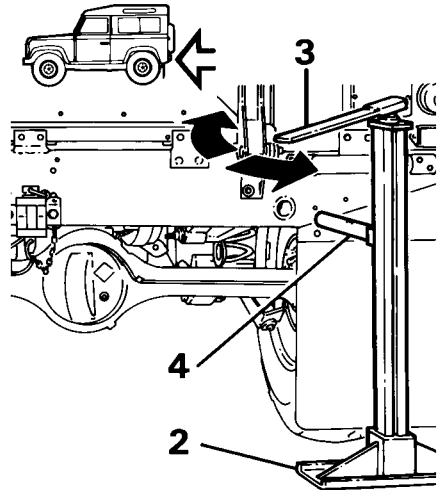
D079

Operating the pillar jack (if supplied)

For any wheel:

1. Remove the rubber plug (1) from the jacking tube corresponding to the wheel to be changed.
2. Insert the jack pillar into the base (2).
3. Fit the handle (3) to the pillar and adjust the height so the jacking peg (4) can be inserted into the jacking tube.

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



D080

WARNING

ENSURE that you are familiar with operating the jack **BEFORE** using it to raise a vehicle.

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

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

ENSURE that the peg is **FULLY** engaged in the jacking tube.

ENSURE that the pillar is vertical **NOT** at an angle.

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.

- Use the wheel brace to slacken the wheel nuts half a turn anti-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 (if fitted) by placing them face down on the road).
- Lightly oil or grease the wheel studs to assist in wheel replacement, ensuring that no oil or grease comes into contact with the brake components.
- On vehicles fitted with alloy wheels, lightly oil or grease (using an approved anti-seize compound) 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 chock.
- Fully tighten the wheel nuts. DO NOT OVERTIGHTEN by using foot pressure or extension bars on the wheel brace, 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.

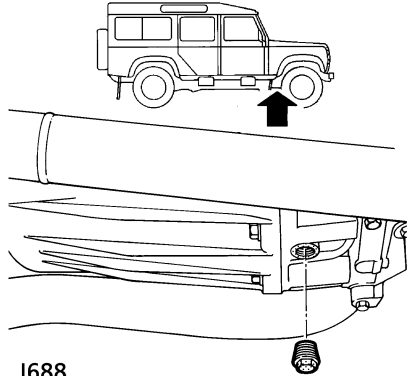
Wading plugs

WADING PLUGS

WARNING

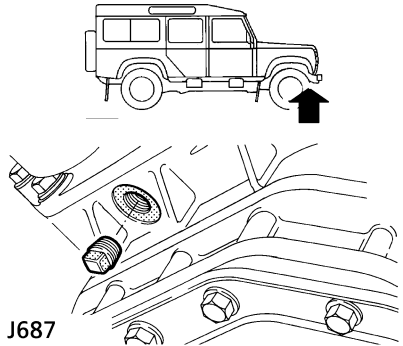
For safety, DO NOT work underneath the vehicle unless it is safely parked with the wheels chocked, or is supported by heavy duty stands.

Under severe wading conditions, the timing cover and flywheel housing must be sealed to prevent the ingress of mud and water. Fit the plugs, supplied in the tool kit, as illustrated. Remove the plugs immediately after wading, or periodically if the vehicle is required to do prolonged wading or very muddy work.



J688

Flywheel housing - 300 TDi



J687

Engine front timing cover - 300 TDi

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 extractor (located on the inside of the main fuse box cover) 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.

WARNING

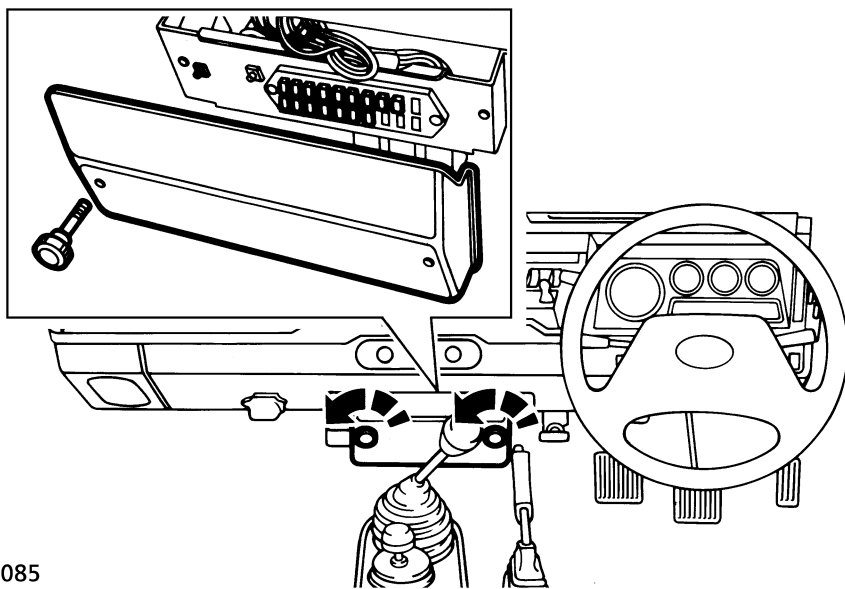
Fit only replacement fuses of the same rating and type. Always rectify the cause of a failure before replacing a fuse. Seek qualified assistance if necessary.

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

TAN	5
BROWN	7.5
RED	10
BLUE	15
YELLOW	20
GREEN	30 (air conditioned models only)

The main fuse box is fitted in the centre of the dashboard, in front of the main gear lever. Remove the cover by releasing the fixing screws.

A label in the fuse box cover shows the circuits protected, the fuse ratings and their locations. They are also listed on the following page.



D085

Fuses

MAIN FUSE BOX

Fuse No.	Value (amps)	Electrical circuit
1	15	Hazard warning lights
2	20	Interior light, horn
3	15	Wipers & washers - rear
4	10	Wipers & washers - front
5	15	Heater
6	7.5	Rear fog guard lights
7	5	Radio/cassette player
8	15	Heated rear window
9	10	Cigar lighter
10	20	Alarm sounder
11	7.5	Headlight - RH, dipped beam
12	7.5	Headlight - LH, dipped beam
13	7.5	Headlight - RH, main beam
14	7.5	Headlight - LH, main beam
15	5	Side lights - LH
16	5	Side lights - RH
17	15	Stop & reverse lights
18	20	Air conditioning
19	5	Air conditioning
20	5	Alarm system

Fuses

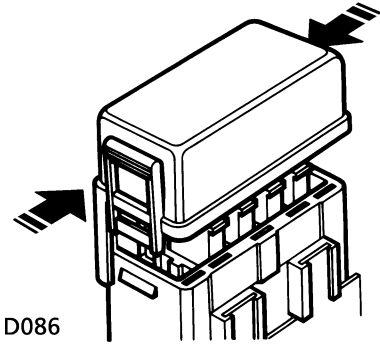
ENGINE COMPARTMENT FUSE BOX

A second fuse box, containing four main fuses is located on the left side of the engine compartment attached to the bulkhead.

The circuits protected, their locations and their ratings will vary from model to model in the vehicle range.

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.



D086

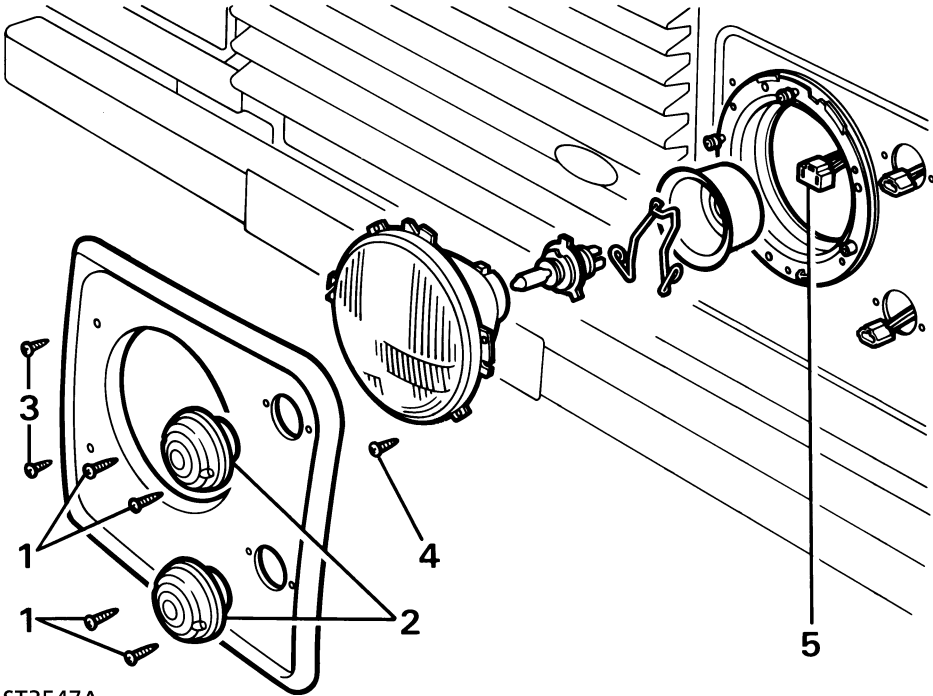
Bulb replacement

REPLACEMENT BULBS	Watts
Headlights	60/55 (Halogen H4)
Front side lights	5
Side repeater lights	5
Stop lights	21
Tail lights	5
Direction indicator lights.....	21
Number plate lights	4
Reversing lights	21
Rear fog guard lights	21
Interior lights	10

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.

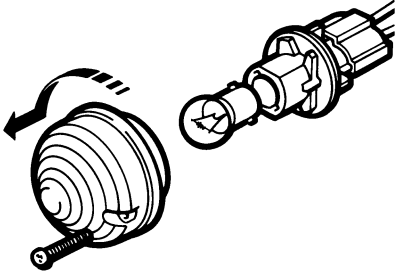
Replace the rubber cover, pressing the centre firmly to seal around the electrical contacts of the bulb, then refit the multi-plug.

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'). Fitting a higher rated bulb may result in damage to the 'dim-dip' system.

Bulb replacement



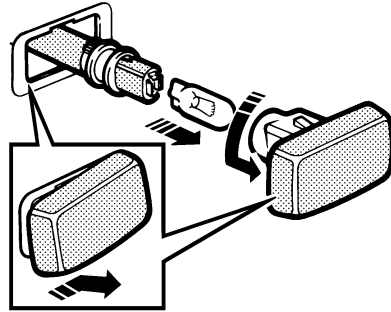
D087

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.



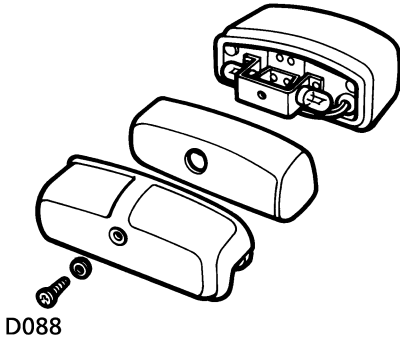
J445

Side repeater light

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

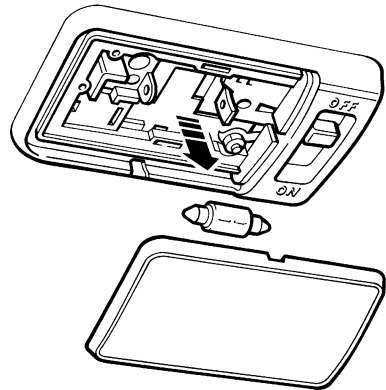
Twist the bulb holder to release and pull out bulb.

Bulb replacement



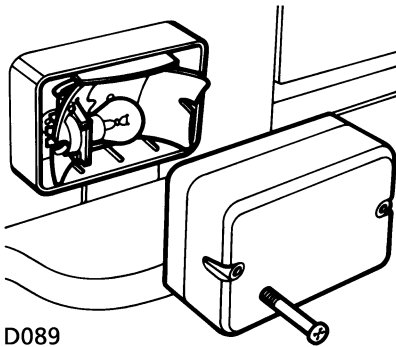
Number plate lights

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



Interior light

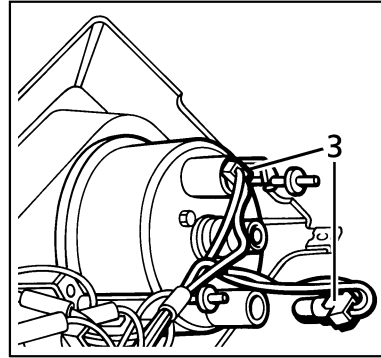
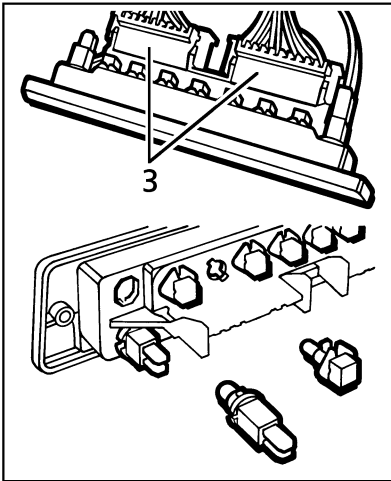
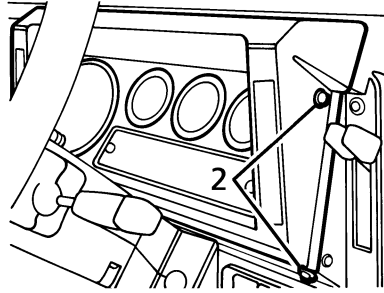
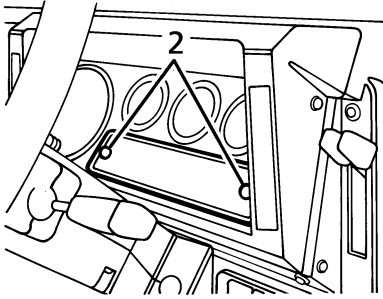
Pprise the lens from the unit. Spread the bulb holders to release the bulb.



Reverse and rear fog guard lights

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

Bulb replacement



D092

D091

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.

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!

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.

When using a hose, do not direct the jet into the Turbo air intake (if fitted), 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.

Steam cleaning

Before steam cleaning the engine compartment, cover the power steering reservoir (if fitted) to prevent contamination. After steam cleaning, ensure that metallic components are carefully rewaxed, especially the steering column, engine water pipes, hose clips and the ignition coil clamp to prevent corrosion.

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. Treat paint chips and scratches with touch-up paint to prevent corrosion, and occasionally protect the paint surface with an application of car polish.

Glass & mirrors

Clean 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, damage to the fuses and switches could occur. Instead, clean sparingly with a damp cloth and approved upholstery cleaner.

- Clean plastic-faced or cloth covered surfaces 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 cloth and water - but avoid flooding the area! Dry and polish the trim with a dry, lint-free cloth. DO NOT use petrol, detergents, furniture creams or polishes!
- Sweep carpets with a brush or vacuum cleaner and clean with diluted nylon upholstery cleaner.

Clock and radio

- Clean with a dry cloth only! 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.

RECOMMENDED CARE PRODUCTS

(Available in the UK)

De icer	STC 717
Alloy wheel cleaner	STC 718
Glass cleaner	STC 719
Shampoo	STC 722
Wax polish	STC 723
Screen wash	STC 8249

SECTION 5

Workshop maintenance

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