

## DRIVERS MAINTENANCE



Section 4 includes information for the Driver, on the day-to-day maintenance requirements for the operation of the vehicle. The more comprehensive, 'Routine Maintenance', is described in Section 5, and should be done by trained mechanics in a suitable workshop.

In addition to the Workshop Maintenance Schedules shown in Section 5, the following checks and adjustments should be carried out by the driver or operator, to ensure that the vehicle is ready for daily use.

Many of these tasks are described and illustrated in the following pages.

Recommended lubricants, fluids and quantities are stated in Section 6.

**Daily or weekly**, depending on operating conditions, and at least every 500 km (250 miles):-

- Check/top up engine oil.

- Check/top up radiator cooling system.

- Check/top up windscreen washer reservoir.

- Drain fuel sedimenter - Diesel only (where fitted).

- Visually check the brake fluid reservoir. The fluid level must be above the 'MIN' mark.

- DO NOT top up. If the level is low, obtain advice from a Land Rover Dealer.

- Check/adjust tyre pressures.

- Check tyres for wear or damage.

- Check that the handbrake and footbrakes, operate normally.

- Check operation of all lights and horn.

### EXTERIOR LAMPS

Owners are under a legal obligation in many territories to maintain all exterior lights in good working order; this also applies to headlamp beam setting, which should be checked at regular intervals by your Distributor or Dealer.

### BATTERY

The battery is fitted under the left side front seat and is a 'Low Maintenance' type that does not require any attention from the driver.

### SPARE WHEEL

The spare wheel stowage position varies on different models as follows:

It can be mounted in a well in front of the rear wheel arch panel or on the rear door on station wagons.

It can also be fitted to the bonnet top panel on all models, using a specially adapted bonnet.

### TOOLS

The small tools are carried in a locker, under the seat cushion. On some vehicles, the lifting jack is secured in clips on the seat backrest panel and is accessible with the seat backs lowered.

**ENGINE OIL LEVEL - 4-CYLINDER PETROL AND DIESEL ENGINES EXCEPT Tdi****- Fig. ST295**

Check daily or weekly depending on operating conditions and at least every 500 km (250 miles). The oil level should not be allowed to fall below the 'L' (low) notch on the dipstick (1) located on the left-hand side of the engine.

Whenever possible, the oil level should be checked with the engine hot, as follows:

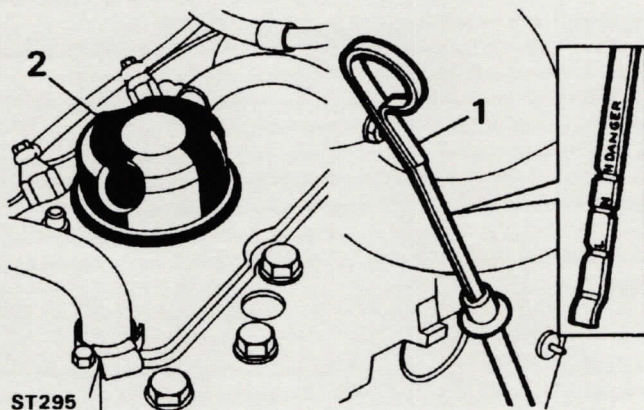
Stand the vehicle on level ground and wait at least five minutes, after the engine has stopped, for the oil to drain back into the engine sump.

Withdraw the dipstick (1) at the left-hand side of the engine, wipe it clean, re-insert it to its full depth and remove a second time to take a reading.

If oil level is between N and H (middle and upper notch) add no oil.

If oil level is between L and N (lower and middle notch) add one litre only of the correct grade oil through the push-on filler/breather cap (2) on the rocker cover.

If the oil level is below the 'L' notch, add one litre of oil and re-check the level after five minutes. Add further oil as necessary to raise the level between 'N' and 'H'. **DO NOT OVERFILL.** See DATA Section 6 for recommended engine oils.

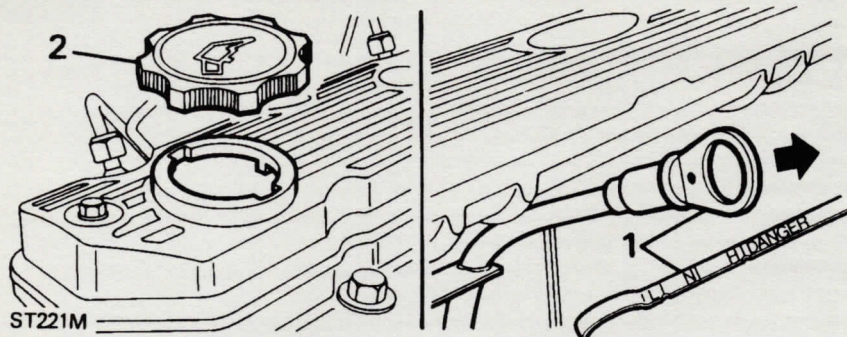
**IF THE ENGINE IS COLD:**

**DO NOT** start the engine. Ensure that the vehicle is standing on level ground and proceed as above.

If it is necessary to re-check oil, or if the engine has been started without being thoroughly warmed up, wait at least 30 minutes to confirm oil level.

**CAUTION:** Oil level must never be above the 'H' notch as engine damage may be caused.





### ENGINE OIL LEVEL - Tdi ENGINES - Fig. ST221

Check daily or weekly depending on operating conditions and at least every 500 km (250 miles). The oil level should not be allowed to fall below the 'L' notch on the dipstick (1) located on the left-hand side of the engine. Whenever possible, the oil level should be checked with the engine hot, as follows:

Stand the vehicle on level ground and wait for at least five minutes, after the engine has stopped, for the oil to drain back into the engine sump.

Withdraw the dipstick (1) at the left-hand side of the engine, wipe it clean, re-insert it to its full depth and remove a second time to take a reading.

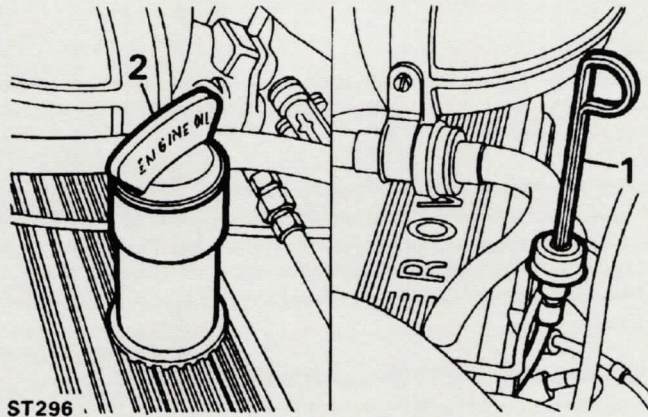
If oil level is between 'N' and 'H' (middle and upper notch) add no oil.

If oil level is between 'L' and 'N' (lower and middle) notch add one litre only of the correct grade oil through the twist off filler cap (2) on the rocker cover. If the oil level is below the 'L' notch, add one litre of oil and re-check the level after five minutes. Add further oil as necessary to raise the level between 'N' and 'H' **DO NOT OVERFILL**. See Data Section 5 for recommended engine oils.

### IF THE ENGINE IS COLD:

**DO NOT** start the engine. Ensure that the vehicle is standing on level ground and proceed as above. If it is necessary to re-check oil, or if the engine has been started without being thoroughly warmed up, wait at least 30 minutes to confirm oil level.

**CAUTION:** Oil level must never be above the **MAX** notch as engine damage may be caused.



ST296

**ENGINE OIL LEVEL - V8 CYLINDER PETROL ENGINES - Fig. ST296**

Check daily or weekly, depending on operating conditions and at least every 500 km (250 miles).

Whenever possible, the oil level should be checked with the engine hot, as follows:

Stand the vehicle on level ground and wait at least five minutes, after the engine has stopped, for the oil to drain back into the engine sump.

Withdraw the dipstick (1) at the left-hand side of the engine, wipe it clean, re-insert it to its full depth and remove a second time to take a reading. The oil level should not be allowed to fall below the 'LOW' mark.

Add the correct grade of oil, as necessary, through the screw-on filler cap (2) marked 'ENGINE OIL' on the right-hand front rocker cover. Never fill above the 'HIGH' mark.

See DATA Section 6 for recommended engine oils.

**IF THE ENGINE IS COLD:**

**DO NOT** start the engine.

Stand the vehicle on level ground.

Withdraw the dipstick (1) at the left-hand side of the engine, wipe it clean, re-insert it to its full depth and remove a second time to take a reading. The oil level should not be allowed to fall below the 'LOW' mark.

Add the correct grade of oil, as necessary, through the screw-on filler cap (2) marked 'ENGINE OIL' on the right-hand front rocker cover. **Never fill above the 'HIGH' mark.**



**ENGINE COOLANT**

The coolant level should be checked daily or weekly depending upon the operating conditions.

**DIESEL MODELS**

Never run the engine without coolant, not even for a very brief period, otherwise the injectors may be seriously damaged. This is due to the very high rate of heat transfer in the region of the injector nozzles.

**ENGINE PROTECTION - DIESEL AND PETROL MODELS**

To prevent frost damage or corrosion of engine parts it is imperative that the cooling system is filled with a solution of clean water and the correct type of anti-freeze, winter and summer.

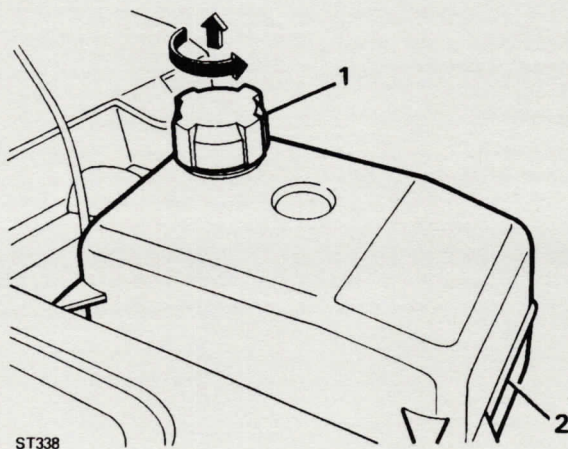
**NEVER** use salt water, not even with anti-freeze otherwise corrosion will occur. In certain countries where the only available water supply may have some salt content, use only clean rainwater or distilled water.

**RADIATOR COOLANT LEVEL - Fig. ST338 and ST340**

The expansion tank filler cap (1) is in the engine compartment.

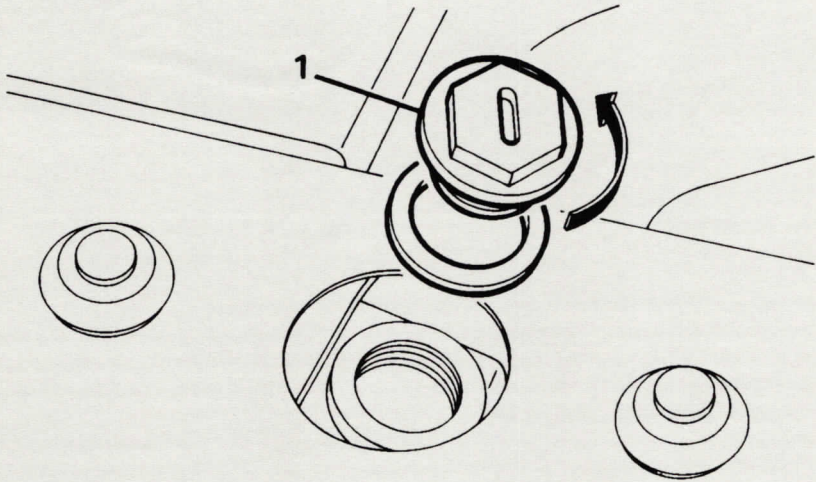
When removing the filler cap (1), first turn it anti-clockwise slowly and allow all pressure to escape, before turning further in same direction to lift it off. When replacing the filler cap it is important that it is tightened down fully. Failure to tighten the filler cap properly may result in water loss, with possible damage to the engine through overheating.

With a cold engine, the fluid in the expansion tank should be approximately level with the rib (2) on the side of the tank. If required, top up with correct mixture of water and anti-freeze. **DO NOT** overfill.



**WARNING:** Do not remove the filler cap or radiator filler plug when the engine is hot because the cooling system is pressurised and personal scalding could result.

## PETROL ENGINE COOLANT

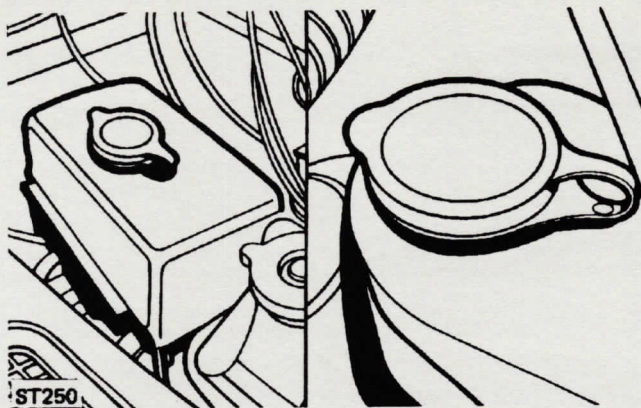


## ST340

On V8 models, it is important to remove the filler plug in the top of the radiator as well as in the expansion tank.

With a cold engine, the fluid in the radiator should be approximately 12mm (0.5 inch) below the filler neck. If required, top up with the correct mixture of water and anti-freeze or water.  
**DO NOT overfill**

When removing the filler plug (1), first turn it anti-clockwise slowly and allow all pressure to escape, before turning further in the same direction to lift it off. When replacing the filler plug it is important that it is tightened down fully. Failure to tighten the filler plug properly may result in water loss, with possible damage to the engine through overheating.

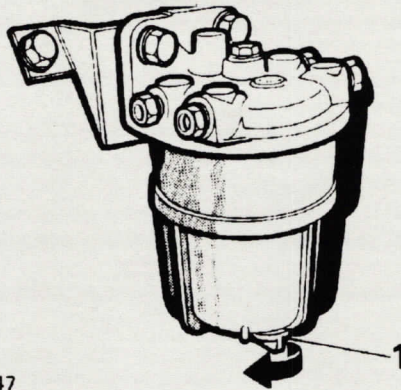


#### WINDSCREEN AND REAR DOOR WASHER RESERVOIRS - Fig. ST250

The windscreen washer reservoir (illustrated), is located in the engine compartment. If a rear screen washer is fitted, the reservoir has a large capacity and is fitted with two pumps, one for the front windscreen and one for the rear. If headlamp washers (option) are also fitted, an additional separate reservoir may also fitted.

Open/reservoir cap. Top-up reservoir to within approximately 25 mm (1 in) below bottom of filler neck. Use a screen washer solvent in the container; this will assist in removing mud, flies and road film. In cold weather, to prevent freezing of the water, add a screen washer solvent containing isopropanol, where this is not available it is permissible to use methylated spirits.





LR2147

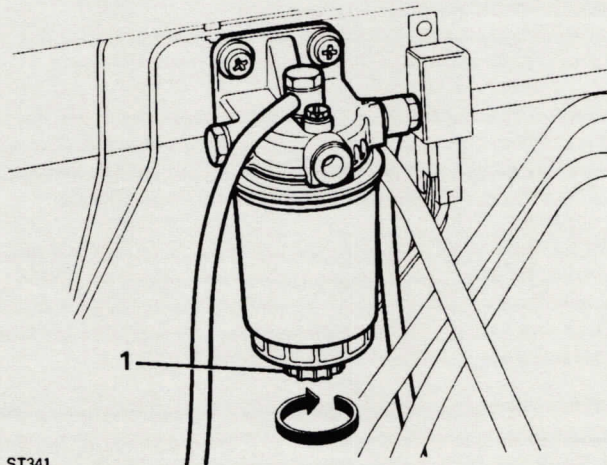
### DRAIN FUEL SEDIMENTER - DIESEL ENGINES (WHERE FITTED) Fig. LR2147

The sedimenter increases the working life of the fuel filter by removing the larger droplets of water and larger particles of foreign matter from the fuel. The sedimenter is mounted on the chassis side member, near the rear wheel.

### DRAIN OFF WATER

Slacken off drain plug (1) to allow water to run out.  
When pure diesel fuel is emitted, tighten drain plug.

**NOTE:** If the vehicle is fitted with an extra fuel tank (option), it may have two sedimenters, one on each side.



ST341

### FUEL FILTER, PAPER ELEMENT TYPE (DIESEL MODELS) - Fig. ST341

The filter is mounted at the rear of the engine compartment. Once a month drain off the water as follows:

Slacken off drain plug (1) to allow water to run out.  
When pure diesel fuel is emitted, tighten drain plug.

### TYRE PRESSURES

Tyre pressures should be checked at least every month for normal road use and at least weekly, preferably daily, if the vehicle is used off the road. See tyre pressure chart at the end of DATA, Section 6.

1. Always check with the tyres cold as the pressure is about 0,2 kgf/cm<sup>2</sup> (3 lbf/in<sup>2</sup>) 0,21 bar higher at running temperature.
2. Always replace the valve caps as they form a positive seal on the valves.
3. Any unusual pressure loss in excess of 0,05 to 0,20 kgf/cm<sup>2</sup> (1 to 3 lbf/in<sup>2</sup>) 0,07 to 0,21 bar per week should be investigated and corrected.
4. Always check the spare wheel so that it is ready for use at any time.
5. Maximum tyre life and performance will only be obtained if the tyres are maintained at the correct pressure.

**Check tyres for tread depth and visually for external cuts in the fabric, exposure of ply or cord structure**

The tread should be measured at every maintenance inspection and when the tread has worn to a remaining depth of 1,6 mm (1/16 in), new tyres should be fitted. Do not continue to use tyres that have worn to the recommended limit or the safety of the vehicle could be affected and legal regulations governing tread depth may be broken. At the same time remove embedded flints etc. from the tyre threads with the aid of a penknife or similar tool and check that the tyres have no breaks in the fabric or cuts to sidewalls etc. Clean off any oil or grease on the tyres using white spirit sparingly. Check that there are no lumps or bulges in the tyres or exposure of the ply or cord structure. 'Butyl' synthetic innertubes are fitted and all repairs must be vulcanised.

It is illegal in the UK and many other countries to continue to use tyres with excessively worn tread. Tyre wear should be checked at every maintenance inspection.

### BEFORE JACKING THE VEHICLE

It is most important that the jacking procedure, described in this manual, is followed. Wheels should be chocked in all circumstances.



**WARNING: The handbrake acts on the transmission, not the rear wheels and may not hold the vehicle when jacking unless the following procedure is used. If one front wheel and one rear wheel are raised no vehicle holding or braking effect is possible. Wheels should be chocked in all circumstances.**

The jack should be used on level and firm ground. Always engage the differential lock before jacking. The differential lock is only engaged if the warning light is illuminated with the ignition/starter switch switched on. No person should remain in a vehicle being jacked. Apply the handbrake. Engage first gear in the main gearbox. Engage low gear in the transfer box. Turn off the ignition/starter switch and remove the key.



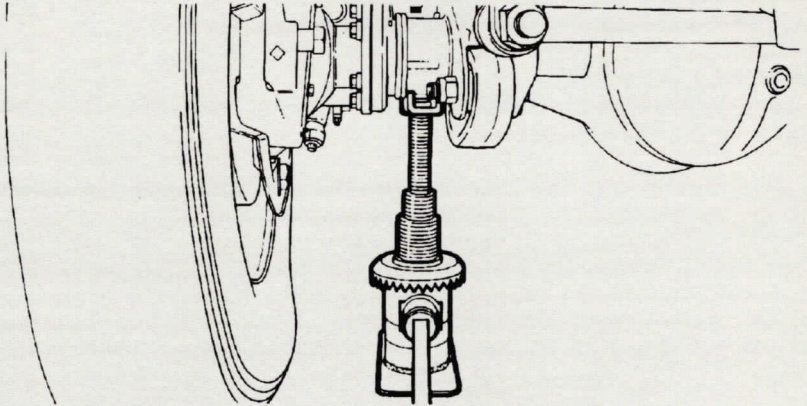
**WARNING: If the vehicle is coupled to a trailer, disconnect the trailer from the vehicle before commencing jacking. This is to prevent the trailer pulling the vehicle off the jack and causing personal injury.**

### LIFTING JACK TYPES

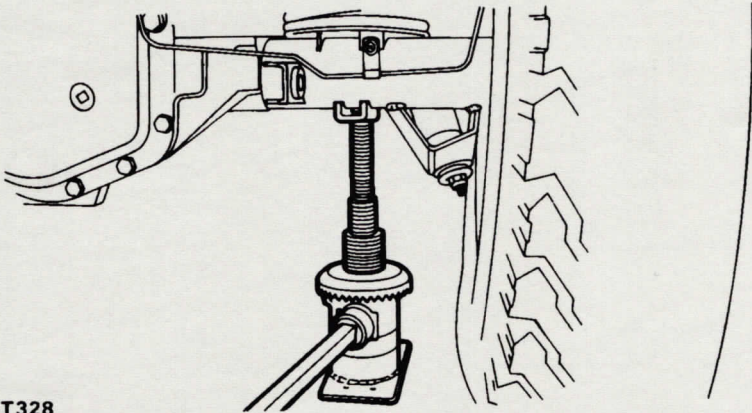
Two different types of lifting jack are described in the following instructions. Refer to the instructions applicable to the jack being used.



ST297

**BOTTLE JACK - Fig. ST297 - SUITABLE FOR ALL MODELS**

**To jack up a front wheel:** See 'BEFORE JACKING THE VEHICLE' on previous page then, Jack up the corner of the vehicle by positioning the jack so that when raised, it will engage with the front axle casing immediately below the coil spring where it will be located between the flange at the end of the axle casing and a large bracket to which front suspension members are mounted.



ST328

**To jack up a rear wheel - Fig. ST328:** See 'BEFORE JACKING THE VEHICLE' on the previous page then, Jack up the corner of the vehicle by positioning the jack so that when raised, it will engage with the rear axle casing immediately below the coil spring and as close to the shock absorber mounting bracket as possible.



**WARNING:** It is unsafe to work under the vehicle using only the jack to support it. Always use heavy duty stands or other suitable supports to provide adequate safety. Neglect of the jack may lead to difficulty in a roadside emergency.

Examine the jack occasionally, clean and grease the thread to prevent the formation of rust. When the jack is not in use, it should be retained in its stowage position with the clips provided.

Care must be taken to avoid accidental contact with any underbody parts, but especially the hot exhaust system components, likely to cause personnel injury during raising or lowering the vehicle.

**PILLAR JACK - Fig. ST329**

- suitable for all models except High Capacity Pick-up rear end

**TO JACK UP ANY WHEEL:**

Remove the rubber plug (1) from the jacking tube in the chassis at the corner to be raised. Locate the jack pillar (2) into the base.

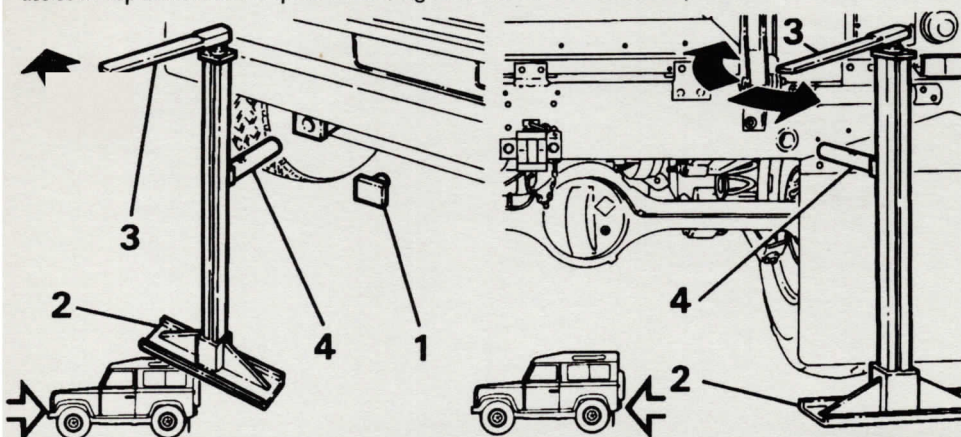


**WARNING: DO NOT use the jack without the base fitted, as it would not support the vehicle properly and could cause personal injury.**

Fit the handle (3) to the jack and adjust the height of the jacking peg until it can be lifted into the jacking tube. Note that the jack handle has a ratchet, use one side to raise the jack, turn the handle over to lower the jack. Ensure that the jack peg (4) is pushed into the jacking tube as far as the stop and that the pillar is upright, then operate the jack handle to raise the vehicle.

**WHEEL CHANGING**

See 'BEFORE JACKING THE VEHICLE' earlier page then, using the wheel nut wrench supplied in the tool kit, initially slacken the nuts on the wheel to be removed before jacking the vehicle. Jack up the corner of the vehicle. When the wheel is clear of the ground, remove wheel nuts and lift off wheel. If available, place a drop of oil or grease on the wheel studs to assist in replacement. Fit spare wheel; tighten the nuts as much as possible.

**ST329**

Lower the vehicle to the ground and finally tighten the nuts to the following torque: 10,4 to 11,7 kgf m (75 to 85 lbf ft). Remember to disengage the differential lock after road wheel has been replaced.

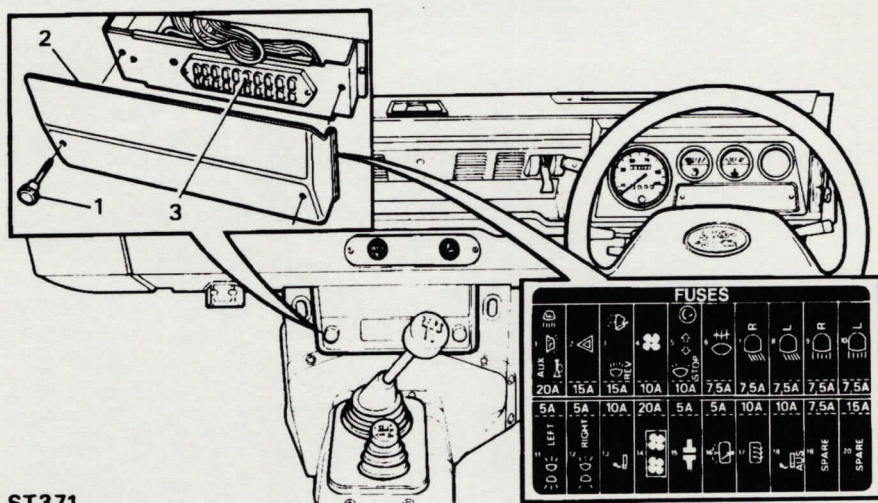


**WARNING: Always secure tools, jack and spare wheel in their proper storage positions after wheel changing.**

**ROAD WHEEL NUTS**

Check road wheel nuts for tightness, torque 10,4 to 11,7 kgf m (75 to 85 lbf ft). DO NOT overtighten. When using the wheelbrace from the vehicle tool kit apply hand pressure only. DO NOT use foot pressure or extension tubes as this could overstress the wheel studs.





ST371

**FUSE BOX - Fig. ST371**

The fuse box is located in the centre of the dash in front of the main gear change lever. The fuses are colour coded with their amp rating, as follows;

TAN	5 A
BROWN	7.5 A
RED	10 A
BLUE	15 A
YELLOW	20 A
GREEN	30 A (AIR CONDITIONED MODELS ONLY)

A label in the fuse box cover shows the circuits protected, the fuse colours and their fitted position.

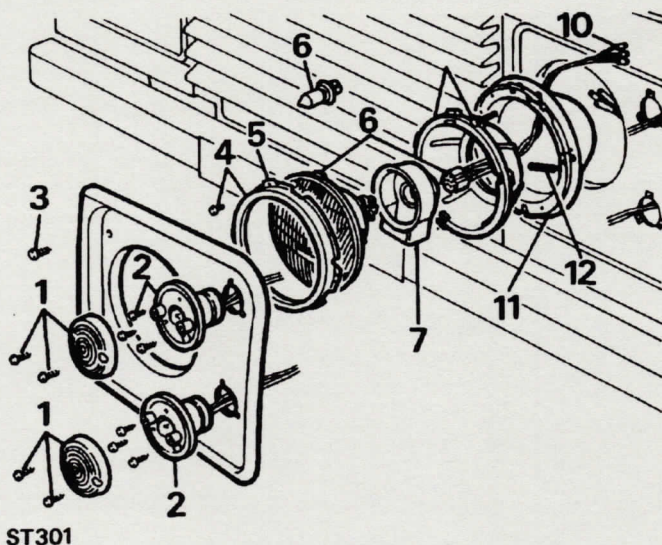
**TO REPLACE A FUSE**

Unscrew the two knobs (1).

Pull off the fuse box cover(2).

Replace fuse (3) as required.

A fuse extractor on the inside of the cover allows easy removal and replacement of any fuse.  
Refit the fuse box cover.



#### HEADLAMPS - Fig. ST301

To replace light unit or bulb:

**CAUTION:** DO NOT touch the glass on "Halogen" bulbs with the fingers, as this could damage the bulb. If contact is accidentally made, wipe the glass gently with methylated spirits. Remove the screw and lens (1) from the side and flasher lamps.

Remove the screws and pull the lamp back plates (2) forward, as far as the leads allow.

Remove the screws retaining the plastic finisher (3) for the headlamp and move the finisher aside.

Remove the three recessed head screws (4) retaining the headlamp rim.

Remove the rim (5).

Lift out light unit (6) and pull off electrical connector.

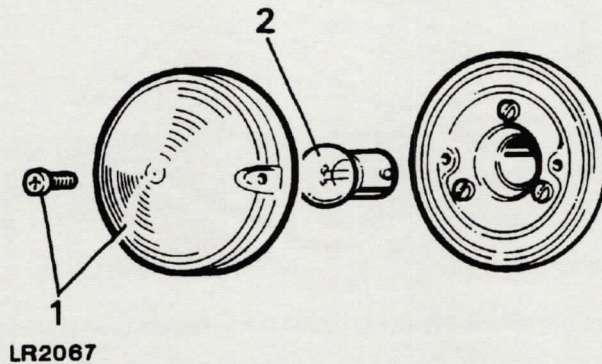
Remove from connector the rubber grommet (7).

Bulb or light unit as applicable can now be replaced.

Refit rim and headlamp finisher.

**CAUTION:** Fitting headlamp bulbs or light units with a higher watt value than the Specification in the Data Section, will result in damage to the 'Dim Dip' unit (if fitted), wiring and switches.





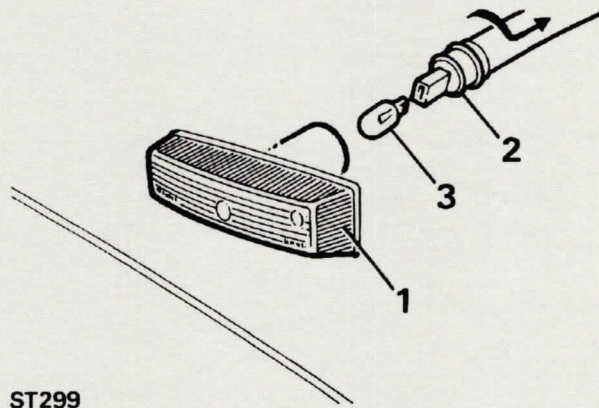
### SIDE, TAIL, STOP AND FLASHER LAMP - Fig. LR2067

To replace a bulb:

Remove the retaining screws (1) and withdraw the lens.

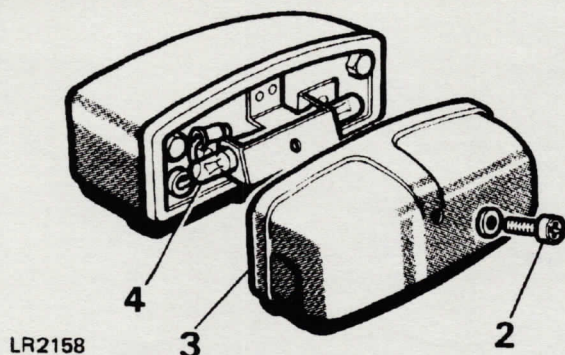
Renew the bulb (2).

Replace the lens and retaining screws.



### DIRECTION INDICATOR SIDE REPEATER LAMPS, ON FRONT WINGS (WHEN FITTED) - Fig. ST299

Pull the complete lamp (1) from the wing. Twist the bulb header (2) anti-clockwise to release it from the lamp and pull the bulb (3) from the holder. Fit a new bulb and reassemble the lamp.

**REAR NUMBER PLATE LAMP (WHERE APPLICABLE) - Fig. LR2158**

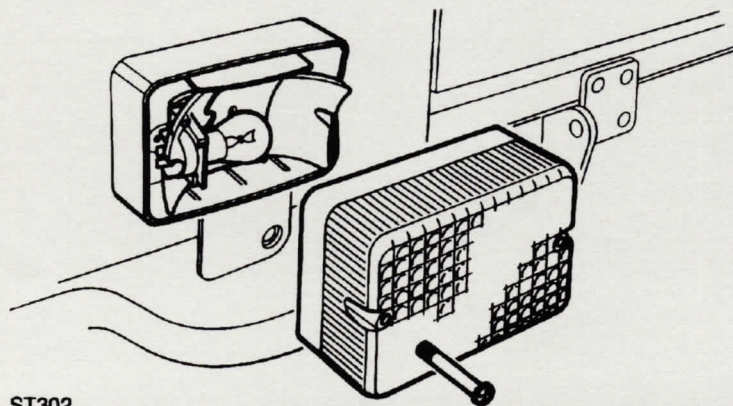
To replace the bulbs:

Slacken the securing screw (2).

Remove cover (3).

Bulbs (4) are then accessible in the lamp body.

Replace bulbs and refit cover.

**REVERSING AND REAR FOG GUARD LAMP - Fig. ST302**

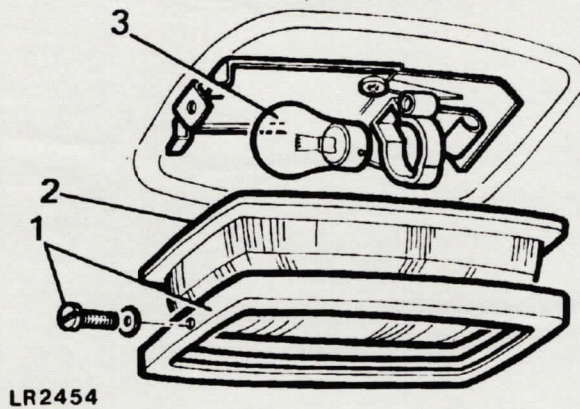
To replace the bulb:

Remove the retaining screws (1) and withdraw the lens.

Renew the bulb (2).

Replace the lens and retaining screws.



**INTERIOR LIGHT (WHERE APPLICABLE) - Fig. LR2454**

To replace the bulb:

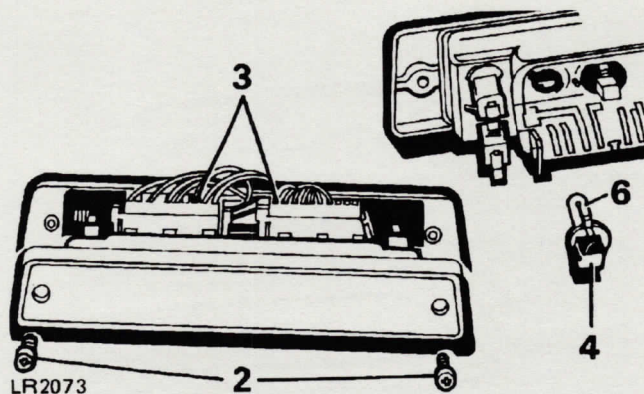
Remove screw (1) retaining rim and cover.

Remove the rim.

Remove retaining cover (2).

Replace bulb (3).

Refit cover and trim.

**WARNING LIGHTS - Fig. LR2073**

To replace a bulb:

Disconnect the battery.

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

Pull off plug connector (3) to give access to warning light bulbs.

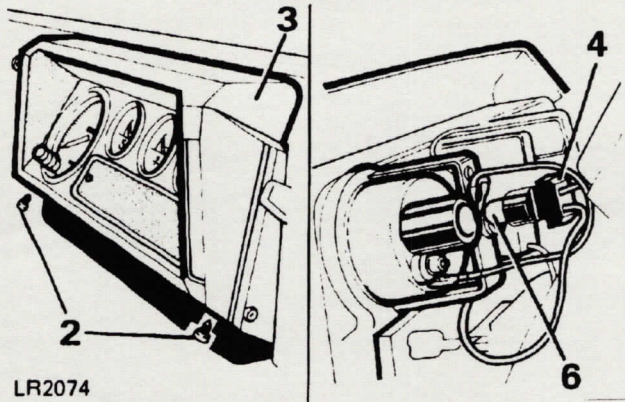
Twist the bulb holder (4) and pull it from its socket.

Pull the bulb (6) from the holder.

Fit a new bulb and refit holder and plug connector.

Refit module and reconnect battery.



**INSTRUMENT ILLUMINATION - Fig. LR2074**

To replace a bulb:

Disconnect the battery.

Remove four screws (2) retaining the instrument panel.

The instrument panel (3) can now be eased forward for access to the bulbs. If necessary, disconnect the drive cable from the back of the speedometer.

Twist the bulb holder (4) and pull it from its socket.

Pull the bulb (6) from the holder.

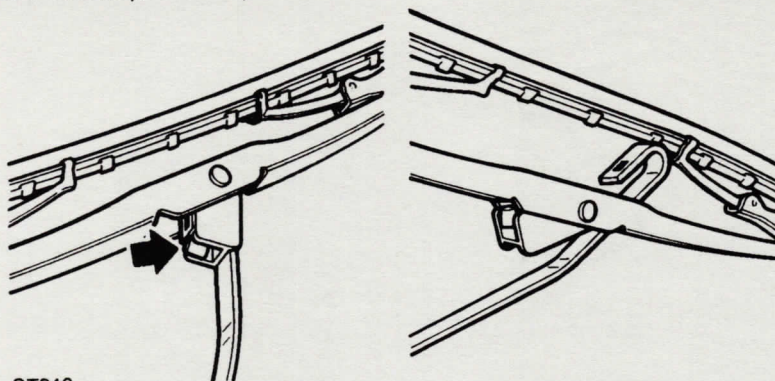
Fit new bulb and refit holder.

Replace instrument panel.

Reconnect the battery.

**WINDSCREEN AND REAR DOOR WIPER BLADES - Fig ST346**

Check, and if necessary, renew wiper blades.



ST346

Lift the wiper arm away from the windscreen.

Squeeze the spring clip and push the wiper blade towards the windscreen and unhook it from the wiper arm.

To fit a new blade, push it over the arm and hook the arm into the swivel bracket ensuring that the retaining clip is engaged.



**CLEANING THE VEHICLE**

Use a sponge and plenty of water to clean the exterior.

**STEAM CLEANING**

To prevent consequential rusting, any steam cleaning within the engine bay must be followed by careful re-waxing of the metallic components affected. Particular attention should be given to the steering column, engine water pipes, hose clips and the ignition coil clamp.

**CAUTION: DO NOT** use water to clean the dash panel, as it could enter the fuse box and switches causing damage.

**WINTER CONDITIONS WHERE SALT IS USED ON ROADS.**

Wash the vehicle regularly during the winter, and thoroughly at the end, to remove all traces of salt from the exterior and underneath. Also, clean off any salt deposits from the engine compartment.

**HEATED REAR SCREEN, AS APPLICABLE**

The following precautions must be taken to avoid irreparable damage being caused to the printed circuit which is 'fired' on to the interior of the screen.

- (a) Do not remove labels or stickers from the screen with the aid of sharp instruments or similar equipment which are likely to scratch the glass.
- (b) Care should be taken to avoid inadvertently scratching the glass with a ringed finger etc. when cleaning or wiping the screen.
- (c) Do not clean the screen with harsh abrasives.

