

right hand side of the roof stowage compartment floor, and on left hand drive cars, beneath the left hand speaker trim panel. The switch may be reset by pressing down the plunger which pops up when the switch is triggered, with an access grommet provided for this purpose on left hand drive cars.

### Fuses

The two main fuseboxes are located ahead of the passenger door hinge post, and in the top of the instrument binnacle.

For access to the former, use a small coin to release the quarter turn fastener at the front lower edge of the fusebox protective cover, and unhook the cover from the top and rear edges to reveal the 25 fuses. For those in the instrument binnacle, remove the access panel on top of the binnacle, by releasing the two panel retaining screws. Eight fuses are fitted at the inboard end of the relay panel. On right hand drive cars, a further four fuses are fitted to the right of the relay panel, and on left hand drive cars, fuses are fitted above the four relays fitted on the scuttle beam.

In addition, the two fuses for the radio, together with two fuses and a connector block for a cellular telephone, are located next to the inertia switch: on RHD cars within the battery compartment; on LHD cars beneath the left hand speaker trim panel.

The fuses are coloured according to their amperage rating and may be pulled out from their slots using the fuse extractor tool clipped to the main fusebox bracket in the passenger footwell.

Fuse colours: 2A – Black; 3A – Violet; 4A – Pink; 5A – Orange; 7.5A – Brown; 10A – Red; 15A – Light Blue; 20A – Yellow; 25A – Clear.

Upgrading a fuse rating, or interchanging any of the relays or modules, could result in permanent damage to a circuit or electrical component. If in doubt, consult your Lotus dealer.

### Boot Lid

The boot lid is opened using the door key. Insert the key into the slot (smooth side to the right), turn clockwise to unlock, and raise the lid to its fully open position, where it will be supported by torsion springs. Note that in order to prevent paint damage, an interlock mechanism prevents the boot lid from opening fully unless the **roof stowage lid is closed**.

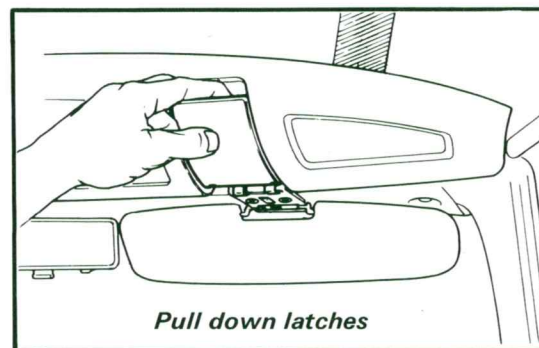
To close the boot lid, keep fingers well clear of entrapment, pull the lid down, and press firmly above the latch to ensure it is fully engaged.

### Soft Top Roof

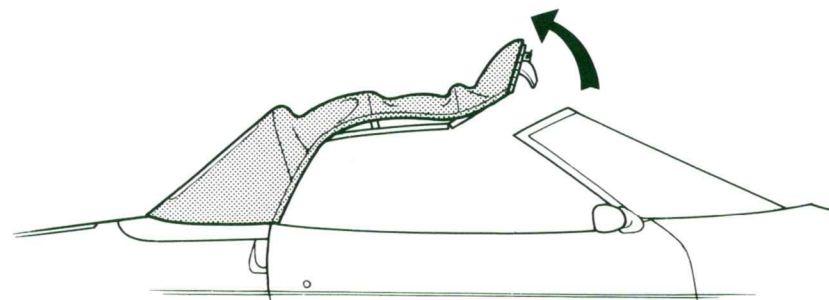
**WARNING:** Do not attempt to lower or raise the soft top whilst the vehicle is in motion. Take care not to trap fingers in the roof mechanism.

To Lower:

- Transfer any bulky items from the rear shelf to the boot, and close the boot lid. Lower the door windows.
- Release the two over centre latches at the windscreen header rail by pulling down the latch handles.

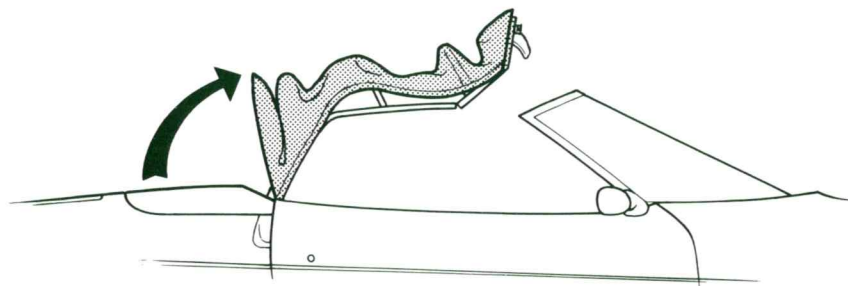


- Pull back the front of the soft top to release the tensioning mechanism.

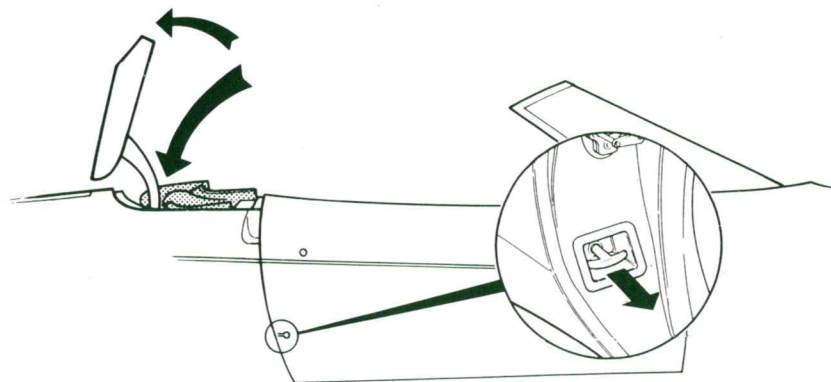




- iv) Lift up the rear edge of the soft top whilst assisting the rear window to fold inwards in one smooth fold.

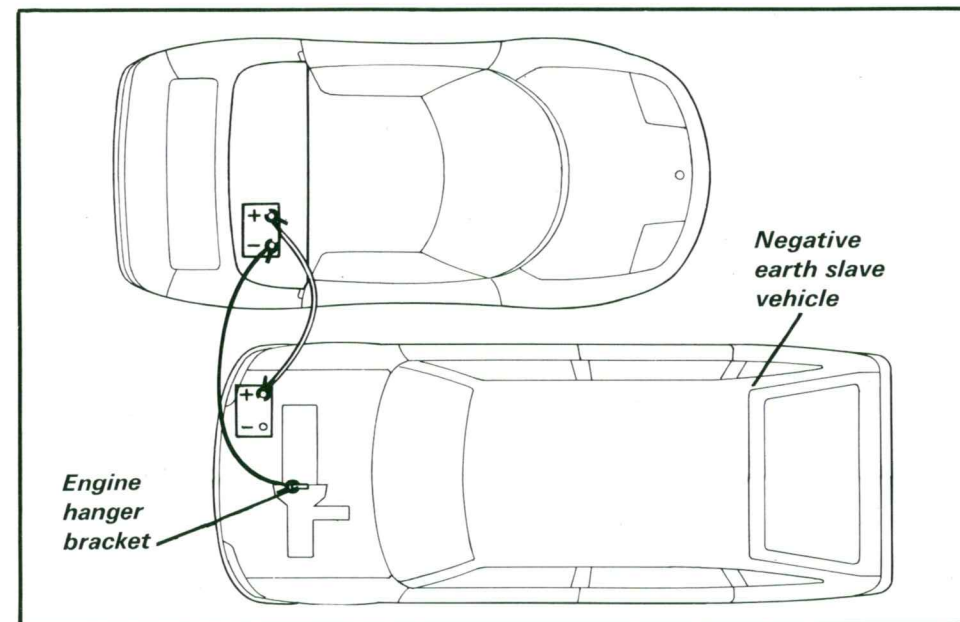


- v) Release the roof stowage lid by pulling the release handle in the right hand door jamb and raise the lid fully.  
vi) Fold the soft top down into the stowage compartment by pushing back on the front edge.



- vii) Close the stowage lid, pressing firmly on the front edge to fully engage both catches.

- i) With the engine of the slave vehicle running at a fast idle, use one jumper cable (red) to connect the positive (+) terminals of both batteries.  
ii) Connect one end of the other jumper cable (black) to the negative (-) terminal of the discharged battery.  
iii) A spark will occur when the other end of this cable (the final connection) is connected to an earth on the slave vehicle. This connection should therefore be made to a point away from the battery, and away from any fuel vapour area or moving parts. An engine hanger bracket is often ideal.



- iv) Start the car in the usual way and run at a fast idle.  
v) A spark will occur at the first disconnection of a jumper cable, so it is essential that the first disconnection is made from the slave vehicle earth. Both batteries (especially the discharged one) will be 'gassing' heavily at this time, and if the first disconnection is made at a battery terminal, there is a danger that the hydrogen gas may be ignited by the spark with a resultant explosion.  
vi) Have the cause of the flat battery investigated and rectified.

## Inertia Switch

The safety inertia switch is designed to operate on impact, such as will occur in an accident, to cut out the fuel pump, and minimise any fire hazard. The central door locking system is also activated to unlock both doors.

On right hand drive cars, the switch is located in the battery compartment beneath the





**Green dot visible** within dark area – battery is sufficiently charged for normal use.



**Dark with no green dot** – battery is in a low state of charge and should be re-charged before use.



**Clear or light yellow** – electrolyte level is low due to battery or charging system fault. See your dealer.

### Battery Charging

If the hydrometer indicates that the battery needs recharging, the battery should first be removed to a well ventilated area to avoid a build up of fumes in the battery compartment. Observe the safety precautions at the beginning of this section, before disconnecting first the negative battery cable, and then the positive cable. Use a socket wrench to release the clamp plate at the base of the battery front side, and carefully lift the battery out. Take care when handling the battery to avoid sharp knocks or shocks, and keep as upright as possible.

Charge the battery following the charger manufacturers instructions while observing these basic rules:

- If the green dot shows in the hydrometer, there is no need to charge the battery. Charging attempts will only increase the possibility of undesirable overcharge effects.
- Do not attempt to charge the battery if the hydrometer is clear or light yellow and there has been a cranking problem – replace the battery.
- Depending on state of charge, temperature and charger capacity, the battery will accept a charging rate of between 3 and 50 amps. However, at high rates the battery may eject electrolyte through the vents, and/or become hot – over 52°C (125°F). Reduce the charging rate and/or stop for a time to allow the battery to cool.
- Continue charging until the green dot is visible in the hydrometer.

When the battery is fully charged, replace in its compartment and secure with the clamp plate. Re-connect the positive lead first and the negative last.

### 'Jump' Starting

If the battery becomes discharged to the extent that the engine cannot be started, proprietary good quality 'jumper cables' may be used to connect with the battery of a second vehicle in order to provide the energy necessary for starting.

**WARNING:** It is most important that the correct procedure is followed in order to avoid damage to either car's electrical system, and most importantly, to minimise the danger of a spark induced battery explosion. Check that the slave vehicle also has a NEGATIVE EARTH electrical system.

It is not recommended that the soft top be stowed for long periods when wet, as degradation of the fabric will be accelerated. Before stowing a wet soft top, wipe over with a soft cloth or sponge to remove most of the water, and raise the roof after the journey to allow the material to dry off.

For instructions on the care and cleaning of the soft top, see 'Bodycare' section.

### To Raise:

- i) Close the boot lid and lower the door windows.
- ii) Release the roof stowage lid by pulling the release handle in the right hand door jamb.
- iii) Raise the lid fully and pull out the soft top in its folded state, from the stowage compartment.
- iv) Raise the rear edge of the soft top and close the stowage lid, pressing firmly on the front edge to fully engage both catches.
- v) Push down the back edge of the soft top, and pull the front edge to the windscreen header rail.
- vi) At both of the header rail latches, engage the hooks of the latch into the recesses on the header rail brackets, and push the latch handle fully upwards and back.

## BODYCARE

### Body Features

The body structure comprises a moulded composite floorpan reinforced with steel in key areas to form stiff box sections. The floorpan is bolted at sixteen points to the box section steel backbone chassis, with further rigidity and occupant protection provided by a high strength aluminium alloy windscreen frame, a tubular steel scuttle beam, and steel beams in the doors and rear bulkhead. Most composite exterior panels are bonded to this structure using a flexible polyurethane adhesive, but the frontal panels are secured by threaded fasteners for ease of service access and collision repair. The front bumper/spoiler and rear bumper/valance, are flexible reinforced polyurethane mouldings resistant to damage from minor knocks.

Composite structures have the ability to absorb high impact loads by progressive collapse, with impact damage being localised. In accident situations this feature protects the occupants from injurious shock loads and greatly reduces the danger of entrapment by deformation of body panels. This behaviour also facilitates repair by either replacing the damaged bolt on or bonded on panels, and/or integrating replacement body sections with the undamaged area, using recognised approved methods which restore the body to its original condition without residual strain or distortion.

The outer surface of a composite panel is sealed by a thin layer of 'gel coat'. If the panel is deflected beyond its level of flexibility the gel coat will be overstressed and



cracks will result, although the panel will return to its original shape. A steel panel similarly treated would become permanently dented. The cracking may be confined to the surface gel coat, with no reduction in panel strength, but if damage is more severe the composite structure below the gel coat may be weakened. Localised repairs can be made in either case. Gel cracks may not appear immediately after overstressing because the effect can be masked by the flexibility of the paint finish which covers the gel coat. In some instances gel cracks can take as long as three months to appear.

Gel cracks can be caused by:

- sitting or leaning heavily on the bonnet or any other flexible panel;
- knocking doors against obstructions when opening;
- dropping a sharp or heavy object on a panel;
- allowing unsecured items to slide about in the boot;
- closing the bonnet or boot lid onto projecting objects, e.g. luggage or tools;
- applying excessive force to parts attached to composite panels e.g. mirrors, locks, aerial etc., (action by vandals).

Note that the bumpers are elastomeric components, which by absorbing light shock loads, protect the body from damage. Exceeding the bumper design loads however may cause gel crazing of the body panels.

#### Paint Care

The finish of your Lotus is extremely resistant to all normal forms of atmospheric attack. Provided the simple maintenance procedure summarised below is followed, it will retain its gloss, colour and protective properties throughout the life of the vehicle.

However, car finishes are not chemically resistant. Severe local contamination of an acid or an alkaline character can occur. If it is left in contact with the paint film for any length of time it may cause pitting and colour change.

#### Washing:

**Caution:** Lotus does NOT recommend that the Elan is subjected to a mechanical (automatic) car wash. Some types of brushes used in these devices may cause scratching of the flexible rear window, and accelerated ageing of the roof fabric. The car should be hand washed, using the following instructions:

Many contaminants which will attack a paint film are water soluble. They will be removed before any harm occurs through washing with plenty of water, to which is added a few drops of liquid detergent. Frequent washing is the best safeguard against unseen contaminants; at the same time ensuring the regular removal of dirt, dust and traffic film.

If washing with cold water is not effective, warm water and detergent will remove the gummy deposits exuded by some trees in the summer months. Petrol or white spirit will remove stains of the tar, bitumen and grease type.

- iii) After battery re-connection, a change in the engine performance characteristics may be noted for a period whilst the computer controlled engine management system 're-learns' some of its settings. The duration of this period will depend on driving style, but may be shortened by steady cruising in 4th gear at about 40 mph.
- iv) Whenever the battery is re-connected, or a 'jump' start attempted, first ensure that the keys are removed from the vehicle, since under certain circumstances the central door locking may operate and lock both doors.
- v) If fitting electrical accessories of any description, note that these also must be of **negative earth** polarity.

The battery is located beneath the floor of the roof stowage compartment on the right hand side, and is accessible as follows:

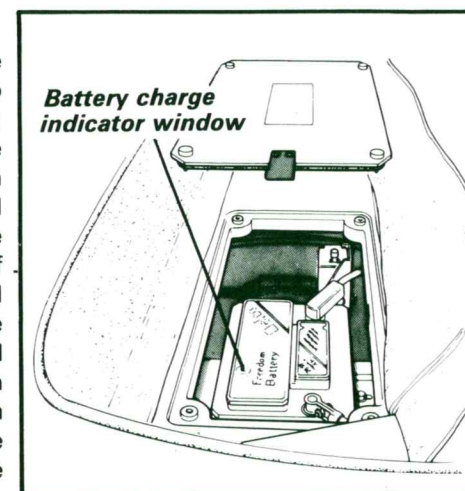
If the soft top is raised –

1. Release the two over-centre latches at the windscreen header rail, and pull back the front of the soft top to release the roof tensioning mechanism.
2. Raise the rear edge of the soft top sufficiently to enable the roof stowage lid to be raised (pull release handle in the right hand door jamb).
3. At the right hand side of the roof stowage compartment, pull back the rear edge of the carpet to reveal the battery access cover. Use the tag provided to pull the cover from its four corner fasteners.

If the soft top is down –

1. Open the roof stowage lid (pull release handle in the right hand door jamb), and pull out the folded soft top assembly.
2. At the right hand side of the roof stowage compartment, pull back the rear edge of the carpet to reveal the battery access cover. Use the tag provided to pull the cover from its four corner fasteners.

A Delco Remy 'Freedom' maintenance free battery is fitted, which requires no routine topping up of the electrolyte; and no such provision is made. The battery is equipped with a built in hydrometer which provides a visual indication of the state of charge of the battery. This need be referred to only if engine cranking, or other electrical problems arise. Incorporated into the top of the battery casing, is a small round window, which should be wiped clean and viewed vertically with the aid of a lamp in poorly lit conditions (do NOT use a naked flame!). One of three possible conditions will be observed:





their pressure at other times is dependent on how warm the tyres are. It is usual for pressures to increase by 0.3–0.5 bar (4–8lb/in<sup>2</sup>) when the tyres are warmed to normal running temperature. Always replace the tyre valve dust cap to prevent the ingress of dirt and moisture into the valve, which could cause leakage.

At specified service intervals, the wheel and tyre assemblies should be balanced with the wheel located by the centre spigot – NOT by the wheel bolt holes. In order to maintain the correct handling feel and minimum steering wheel shake, it is very important that the radial and lateral run out of the tyres are to the high standard required by Lotus Cars. If any difficulty is experienced with replacement tyres, refer to the tyre manufacturer.

### Winter Tyres

Winter tyres provide enhanced performance in snow and in icy conditions, but cannot be expected to match the exceptional performance levels of the standard fitment tyres under all other conditions which may be encountered. Winter tyres should not therefore be used as a 'year round' fitment.

Michelin X M + S 185/60 x 14 winter tyres, with or without studs, may be fitted only in complete car sets, using approved 14 in. steel wheels **together with alternative wheel bolts** (see your dealer). For tyres without studs, a maximum speed of 118 mph (190 km/h) must be observed. If studded tyres are fitted, in countries that permit their use, further speed restrictions will apply, and a warning sticker must be applied to the back of the vehicle by the tyre fitting depot. Details of the speed restrictions for studded tyre usage in European countries, are listed in 'Technical Data'.

### Battery

#### WARNING:

**POISON/DANGER – CAUSES SEVERE BURNS – KEEP OUT OF REACH OF CHILDREN.** Contains sulphuric acid – avoid contact with skin, eyes or clothing.

Antidote: External – flush with water; Internal – drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately; Eyes – flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flames and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.

#### CAUTION:

- i) Disconnect the **negative** (earth; black; '–') battery cable first, and re-connect last, to minimise the possibility of an accidental short to earth of the battery positive connection.
- ii) Before disconnecting the battery, wait for at least ten seconds after switching off the ignition to allow the engine management system to adjust the setting of some components ready for re-starting.

**Polishing:** Eventually some loss of gloss, and an accumulation of traffic film, will occur. At this stage, after normal washing, a polish with a good quality liquid polish will restore the original lustre of the paint film.

Higher gloss of the paint film, and added protection against contamination, can be obtained by wax polishing. But it must be remembered that a wax polish can only be used successfully on a clean surface, and that the previous application must first be removed with white spirit or a liquid polish cleaner before re-waxing.

**Ventilation:** Water lying on the paint surface for lengthy periods will penetrate the paint film. Although the effects will not be visible immediately, this will in fact cause a deterioration in the protective properties of the paint film.

If a car is garaged, good ventilation must be provided. Otherwise storage outside on a hard standing or under a carport is preferable.

### Summary:

1. Wash frequently, using cold water with a few drops of liquid detergent added.
2. Inspect after a normal washing, and remove any local contamination with warm water, petrol or white spirit as appropriate.
3. Use a good quality liquid polish infrequently – say twice a year – to restore high gloss and to remove accumulated traffic film and scum.
4. Park on a hard standing, and under conditions of good ventilation if a covered area is used.

### Windscreen Cleaning

When washing the windscreen, the wiper arms may be pivoted forwards to clear the wipers from the glass and provide unrestricted access to the windscreen. Wash the wiper blade with clean water.

### Alloy Wheels Cleaning

It is recommended that these are washed with the preparation as is used to wash the bodywork. Use a brush having only nylon bristles. During the winter months, particularly when salt has been used on the roads for the dispersal of snow and ice, remove all the wheels, and wash thoroughly to remove all accumulated road filth from the wheels and tyres.

### Registration Plate Cover

Keep the clear acrylic cover over the rear number plate clean at all times (in accordance with traffic law) using a soap and water solution, and replace the cover if it becomes damaged or excessively scratched. If necessary, the cover can be removed for cleaning of the inside surface, by releasing the four fixing screws along the top edge (from outside), and the four screws along the bottom edge (from inside the boot).



### Soft Top Roof

The soft top and rear window should be washed using only warm soapy water. Do **NOT** use any sort of proprietary cleaner or rub with a dry cloth. Rinse with clean water and wipe with a soft cloth or sponge to remove the surface water. Allow to dry off before stowing.

### Upholstery Cleaning

Normal cleaning consists of an occasional light wipe over with a cloth dampened in a mild soap and water solution; it is important that the cloth is only dampened, not soaked.

### Leather Upholstery

The leather should be wiped over occasionally with a cloth dampened in warm soapy water. Repeat the operation using a fresh cloth and water only – avoid flooding the leather – finish by drying and polishing with a soft dry cloth.

It is important to use a mild, non caustic toilet soap (or soap flakes), and to avoid the use of petrol or detergents, furniture creams and polishes.

The occasional use of a hide food is recommended after the leather has been in use for a year or two.

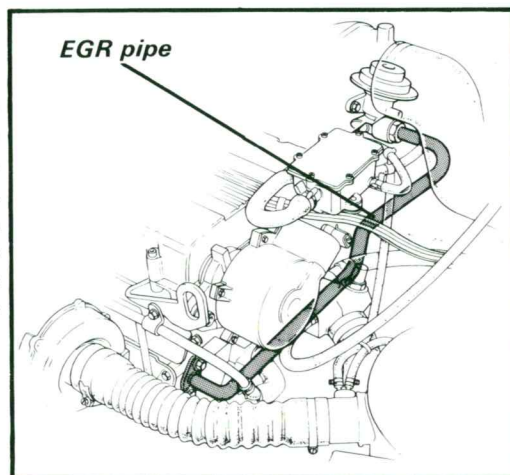
### Seat Belt Cleaning.

The most suitable cleaner for seat belts is a mild soap and water solution since terylene does not absorb water to any extent and therefore will dry quite quickly.

Fluids which are harmful to terylene are those containing mineral acids and **MUST NOT** be used.

## MAINTENANCE

**WARNING:** When the engine is running or is warm, be aware that in addition to the more obviously hot components, the exhaust gas recirculation (EGR) pipe running from the exhaust manifold to the intake manifold may be very **HOT**.



**WARNING:** The spare wheel supplied is for EMERGENCY USE ONLY, and must be replaced with the normal wheel and tyre equipment as soon as possible. Only one spare wheel may be used on the vehicle at any one time. When the spare wheel is in use, differential tyre wear will be experienced and the handling characteristics of the car modified. It is therefore necessary to observe the following recommendations:

- Less than moderate speeds and cornering loads should be employed, i.e. no more than half the car's potential relative to the pertaining road conditions subject to a recommended maximum speed of 50 mph (80 km/h) under the most favourable conditions.
- When following other vehicles, Lotus recommend that you observe the U.K. Highway Code or the American Safety Council guidelines for vehicle spacing; this advice applies equally to spare wheel usage as to all other motoring situations.
- Spare wheel tyre pressure: 4.0 bar (60 lb/in<sup>2</sup>).

Before re-fitting the standard wheel, ensure that the mating face on both the wheel and hub is clean, and free from corrosion; otherwise a wheel vibration and/or loosening of the wheel bolts may occur.

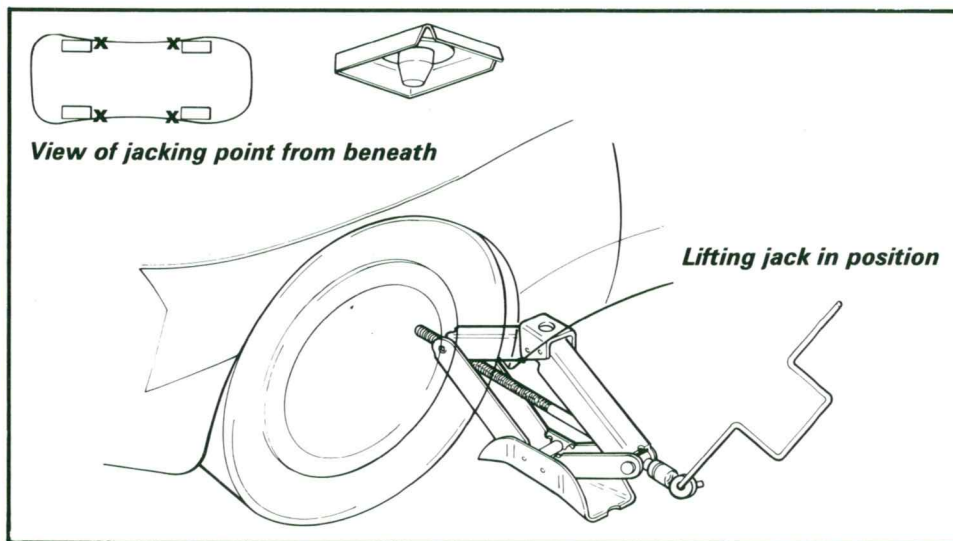
Always restow the spare wheel and wheel changing equipment in their correct locations to prevent insecure items causing damage to other components or to the body: Place the spare wheel into the boot floor well with the outside of the wheel downmost, and a wheelbolt hole positioned over the securing thread hole in the body. Fit the clamping screw through the wheelbrace clip, and with the wheelbrace positioned as shown in the diagram, with the socket end fed into one end of the wheel vent holes, secure the wheel and wheelbrace. Fit the jack handle into its clips on the underside of the boot floor, and the jack into its moulded housing.

### Tyres

The Michelin MXX-2 (Turbo) or Michelin MXV-2 (N.A.) tyres fitted to the car from new, are engineered to provide the optimum balance of ride and handling characteristics, and are the **ONLY** tyres approved by Lotus for all year round use on this vehicle. The tyres should be inspected regularly for signs of cuts, abrasions or other damage, and for any uneven tread wear patterns. Uneven treadwear may indicate that the suspension geometry or dampers require attention from your dealer. Safety considerations should always be paramount when assessing tyre condition and serviceability, and the tyre replaced if any doubt exists, or if the legal tread depth limits are approached.

The cold tyre pressures should be checked every week, or every 1,000 miles (1,700 km), whichever is the sooner, and corrections made as necessary. The spare tyre pressure should also be checked occasionally. See 'Technical Data' at the back of the handbook for tyre pressures. Underinflation will cause excessive wear, rapid deterioration of the tyre sidewalls, and poor handling, whereas overinflation results in a hard ride and increased susceptibility to tyre damage. It is important that the tyre pressures are adjusted only when the tyres are cold (driven less than one mile), as





3. Before jacking up the car, use the wheelbrace to turn the four wheel bolts half a turn counterclockwise. Place the jack beneath the appropriate jacking point, either just ahead of the rear wheelarch, or to the rear of the front wheelarch. Turn the jack screwthread clockwise to raise the jack, and position carefully so that the hole in the jack platform, engages with the conical bolt head in the body at the jacking point. Do NOT use the jack at any other position.
4. Hook the jack handle into the screwthread, and operate the jack to raise the car only sufficiently for the tyre to clear the ground. Continuously monitor the security and stability of the jack during this process.

**WARNING:** Do not get into the vehicle or run the engine whilst the car is supported by the jack. Under no circumstances must ANY work be carried out under the car when it is raised on the jack, unless a chassis stand is used to support the car.

5. Remove the wheel bolts, and withdraw the wheel from the hub. Place the wheel into the plastic bag provided for carriage to a tyre depot.
6. Mount the spare wheel onto the hub and fit the original wheel bolts turning clockwise. Tighten lightly using the wheelbrace.
7. Lower the car using the jack handle to wind down the jack, and restow the jack in its location in the boot underfloor.
8. Tighten the wheelbolts securely in a diagonal sequence. At the first opportunity, have the wheelbolt torque checked, and set to 80 – 88 Nm (59 – 65 lbf.ft). Check and set the spare tyre pressure to 4.0 bar (60 lb/in<sup>2</sup>).

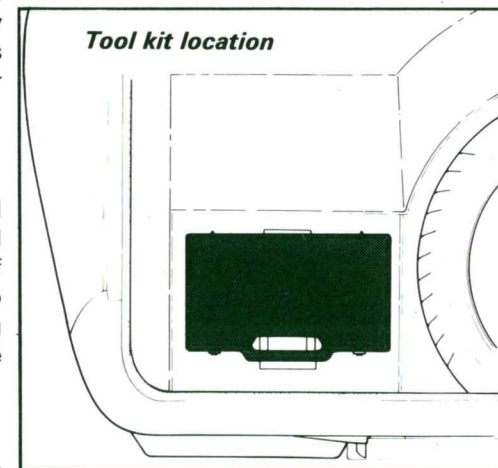
### Jacking Points

Four jacking points are provided on the car; one just ahead of each rear wheel arch, and one just behind each front wheelarch. Each jacking point is fitted with a conical location dowel, in order to engage the hole in the wheelchanging jack. The car should not be raised by jacking under any other point.

**CAUTION:** Do NOT allow a jack to be used beneath the engine bay underframe, as it is not designed for this purpose, and may be damaged or distorted by a jack.

### Tool Kit

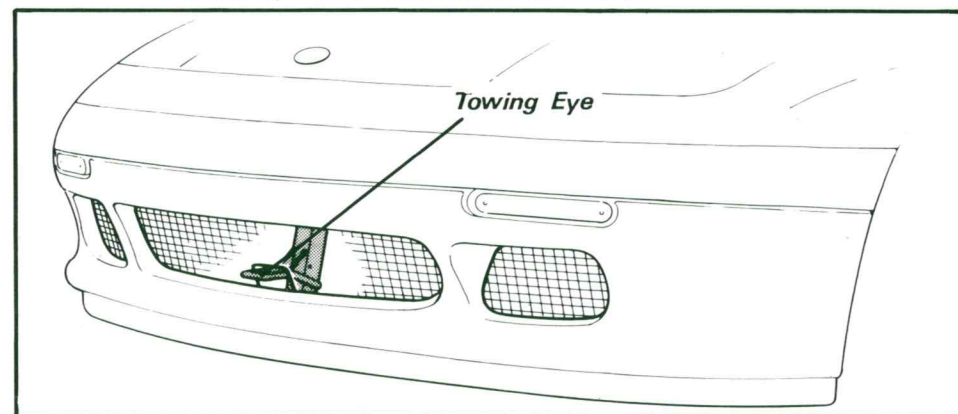
A toolcase containing open ended spanners, plug spanner, screwdrivers and pliers, is stored beneath the left hand side of the boot floor. Always restow correctly to prevent the unrestrained case from causing damage to other items in the boot, or to the body.



### Towing Eye

A towing eye is provided in the radiator air intake aperture for use in an emergency if the vehicle has to be towed.

**WARNING:** – Use only towing equipment designed specifically for this purpose, or damage to the vehicle may be caused, or safety jeopardised.  
– Ensure that the key is used to unlock the steering column, the parking brake is released, and the transmission is in neutral.





- Without the engine running, the brake servo will not operate and a much firmer pressure will be needed on the brake pedal to produce the same stopping force.
- Ensure that all State and local laws which apply to cars being towed are followed.

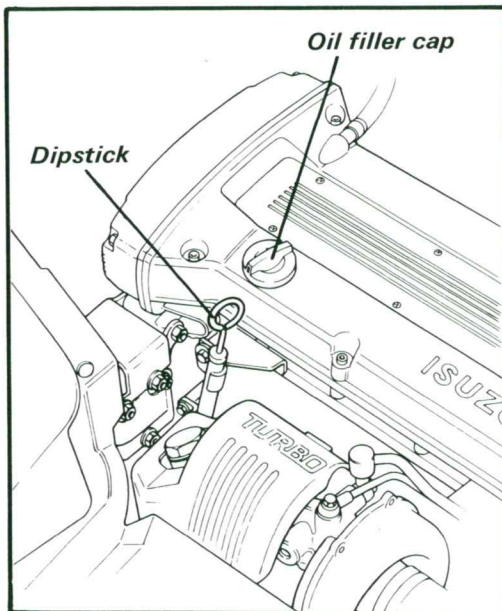
### Engine Oil Level Check

The engine oil level should be checked regularly, such as every two or three fuel stops, and the oil level maintained near the top mark on the dipstick. It is especially important to keep a check on the oil level during the first 1,000 miles (1,700 km), as both the fuel and oil consumption will be prone to some variance until the engine components have 'bedded in'.

The best time to check the level is when the oil is warm, such as during a fuel stop. Ensure that the car is parked on a level surface and that a few minutes have elapsed since stopping the engine to allow the oil to drain back into the sump. If the level is checked when the engine is cold, do not run the engine first, as the cold oil will not readily drain back into the sump, and an artificially low reading will be obtained.

Withdraw the dipstick located at the right hand front of the engine, and wipe with a non-fluffy cloth. Replace the dipstick, pressing firmly to make sure it is fully seated, and withdraw again to inspect the oil level. The correct level is to the upper mark on the dipstick.

Top up if necessary, via the filler on the camshaft cover. Turn the filler cap counterclockwise to remove, and use only a recommended lubricant listed in the Technical Data section at the back of the handbook. Do NOT overfill, or the oil will become aerated and its lubricating properties degraded. The difference between high and low dipstick marks is equivalent to 1.0 litre (1.8 imp.pt). Refit the filler cap and tighten securely.



Before removing the filter element, the precaution should be taken of disconnecting the engine intake hose from the filter box in order to prevent any possibility of dirt entering the hose and engine. The filter element may then be withdrawn from the housing after releasing the four over-centre clips, and removing the lid. Thoroughly clean out the inside of the filter box before fitting a new element, ensuring that it is correctly seated. Refit the cover lid, and engine intake hose.

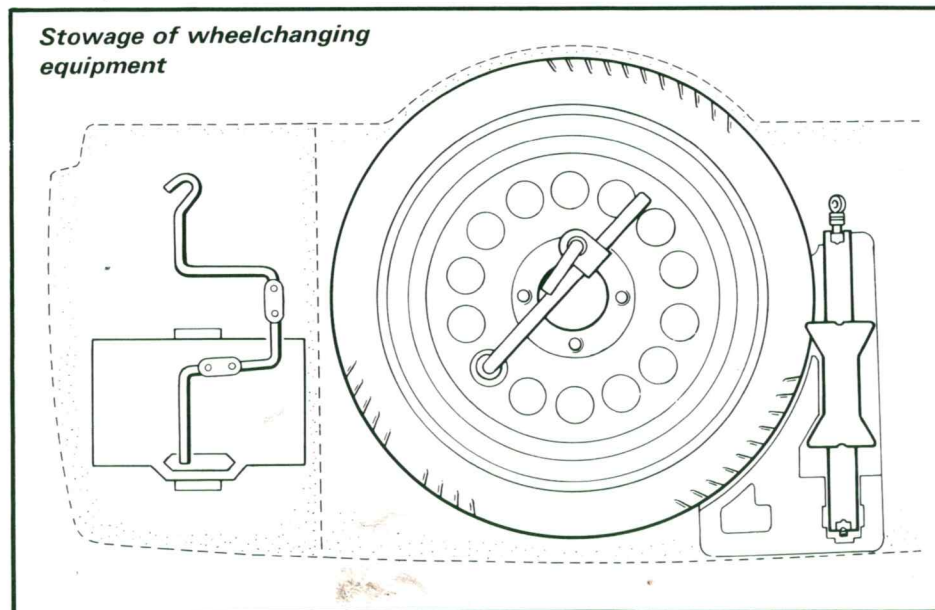
### Spare Wheel & Jack

A 'compact' spare wheel is used on the Elan to enhance luggage space, and, through its light weight, makes mounting of the spare easier. A plastic bag is supplied in which to place the damaged tyre assembly.

In the event of a puncture, proceed as follows to fit the spare wheel.

1. Ensure that the vehicle is parked on a firm level surface. Firmly apply the parking brake, engage first or reverse gear, and chock the wheel diagonally opposite to that being changed.

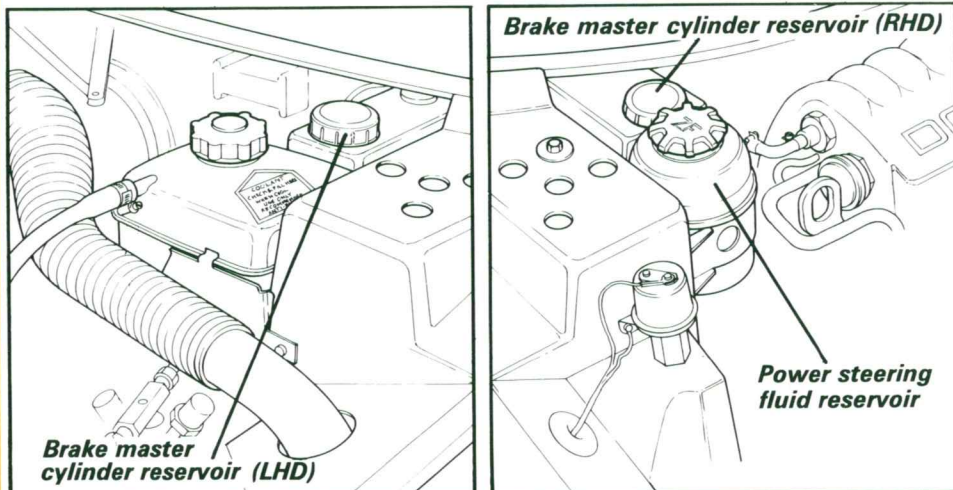
### Stowage of wheelchanging equipment



2. The spare wheel, wheelbrace and jack are mounted beneath the boot floor. Pull up the boot floor, and turn the wheel clamping screw counterclockwise to release the spare wheel and wheelbrace. Unclip the jack handle from the underside of the floor, and remove the jack from its location to the right of the spare wheel well.



of time, resulting in the lowering of the boiling point of the fluid, and corrosion of the hydraulic system. For optimum safety and brake performance, the brake fluid should be renewed every twelve months by your Lotus dealer.



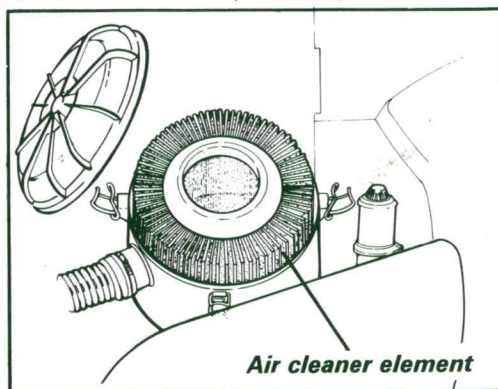
#### Power Steering Fluid Reservoir (if fitted)

On cars fitted with power steering, the hydraulic fluid reservoir is located at the right hand rear of the engine bay. When other fluid levels are being checked, wipe clean the cap and top of the steering reservoir before unscrewing the cap and inspecting the fluid level shown on the dipstick integral with the cap.

The two marks on the dipstick correspond to the correct hot level (top mark – use when the car has been driven several miles, and the reservoir is hot to the touch), and to the correct cold level (lower mark). If any topping up is required, use **ONLY** the approved fluid – Nippon Oils 'Besco A.T.F.Dexron' – available from your Lotus dealer under part number A100E6088V. Refit the reservoir cap securely.

#### Air Cleaner Element

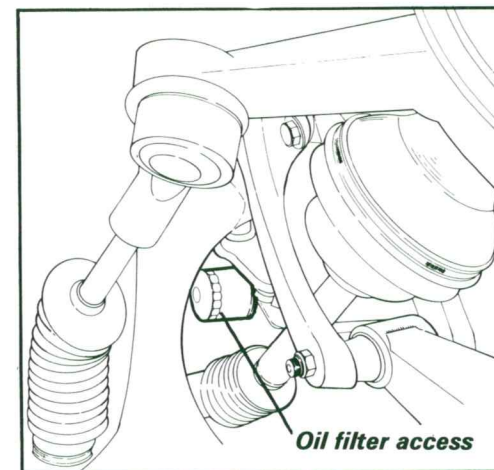
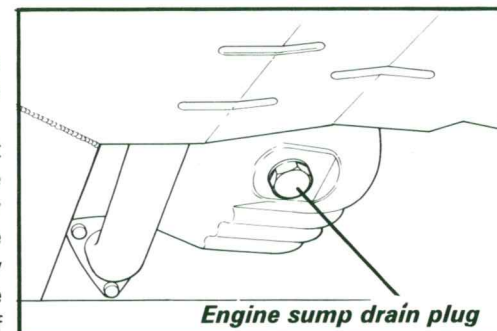
The folded paper type air cleaner element is housed in a cylindrical box at the left hand front of the engine bay, and should be removed and inspected at each service. When the vehicle is operated in a relatively dust free environment, the element should be renewed at intervals specified in the Maintenance Schedule, but where a dusty or smog laden atmosphere prevails, more frequent replacement is required dependent on the level of pollution.



#### Engine Oil Change

The oil should be renewed at intervals specified in the Maintenance Schedule at the back of the handbook.

The sump plug is located at the right hand side of the sump, and should be removed to drain the sump immediately after a run when the oil is warm and the impurities are held in suspension. Allow to drain thoroughly before cleaning the drain plug (replace the sealing washer if necessary), and refitting securely. Fill with a recommended lubricant to the top mark of the dipstick.



#### Oil Filter

The oil filter should be renewed at intervals specified in the Maintenance Schedule at the back of the handbook.

The oil filter is horizontally mounted at the back of the engine, and is of the disposable canister type. The filter is removed from beneath the vehicle by turning in a counterclockwise direction using an oil filter wrench if necessary. Discard the filter after removal.

Before fitting a new filter, clean the mating faces on both the new filter and engine, and smear both faces with clean oil. Add a small amount of clean oil into the filter and screw on by hand sufficiently to make a firm seal, usually  $\frac{3}{4}$  to  $\frac{1}{2}$  of a turn after the

faces have made contact. Start the engine and check for oil leaks, tightening the filter further if necessary.

#### Used Engine Oil

- WARNING:**
- Prolonged and repeated contact may cause serious skin disorders, including dermatitis and cancer.
  - Avoid contact with the skin as far as possible and wash thoroughly after any contact.
  - Keep out of reach of children.

**PROTECT THE ENVIRONMENT** – It is illegal to pollute drains, water courses and soil. Use authorised waste collection facilities, including civic amenity sites and garages providing facilities for disposal of used oil and used oil filters. If in doubt, contact your local authority for advice on disposal.



### 'Severe Service' Conditions

Certain operating conditions can cause rapid degradation of the oil quality, either by the accumulation of dirt particles, or by the absorption of water from condensation. The oil and filter change intervals in the Maintenance Schedule should be adhered to when the vehicle is NOT subjected to one of the following 'severe service' conditions:

- driving in dusty areas (e.g. on unmetalled roads)
- stop/start city driving with frequent short trips where the engine never warms up thoroughly (especially in cold weather); and/or frequent or prolonged idling.

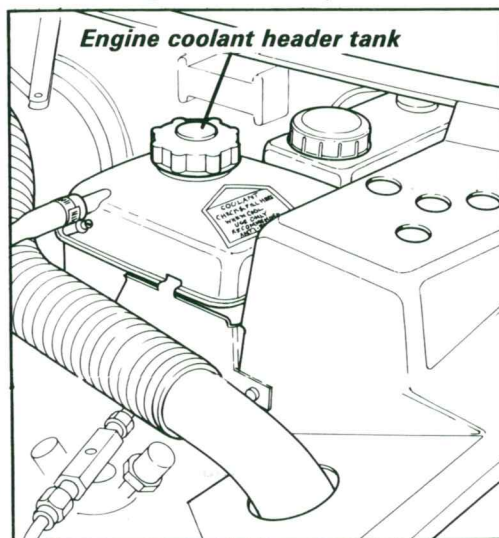
In either of the above conditions, it is recommended that the oil and filter be changed twice as frequently as is listed in the Maintenance Schedule. Change the oil and filter as soon as possible after driving in a dust storm.

### Cooling System

**WARNING:** When the ignition is switched on, the radiator cooling fans will cycle on and off dependent on coolant temperature and air conditioning system status. Do not allow fingers or clothing to encroach in the cooling fan area at any time.

Under normal operating conditions, the engine cooling system, being a closed circuit, should not require any topping up between services. As a precaution however, every week, the level of coolant in the engine cooling header tank should be checked. The translucent header tank is marked with a cold level indicator. The level of coolant will rise as the engine warms up and the coolant expands, and will fall again as it cools down.

**WARNING:** Do NOT remove the cap from the engine cooling header tank when the engine is warm, as serious scalding could result from boiling water and/or steam.



### Brakes

Hydraulically operated front and rear disc brakes are used, with vacuum servo assistance. The brake circuit is a 'diagonally split' system, with the right hand front and left hand rear brakes operated from one compartment in the tandem master cylinder, and the remaining two brakes, from a second compartment. In this way, in the unlikely event of a component failure or loss of fluid, one of the two circuits will still function. Pressure proportioning valves are incorporated into each of the rear circuits, to reduce the likelihood of the rear wheels locking first on heavy braking, and aid vehicle stability and control.

The servo unit uses engine supplied vacuum to reduce the pedal effort needed. If the engine is not running, no vacuum will be generated and the servo will not function. The brakes will therefore need a harder push for a given stopping distance. Never coast downhill with the engine switched off, but if this situation should arise, avoid repeated application of the brakes, or the stored vacuum will be rapidly used up.

The parking brake is mechanically actuated by a cable linkage, and operates on the rear wheels only.

### Brake Pads

Brake adjustment to compensate for pad wear, is automatic, but the brake pad thickness should be checked at every service, and under no circumstances should the thickness be allowed to fall below 2.0 mm (front) or 1 mm (rear). If the brakes are in very frequent or arduous use, as when driving in mountainous terrain, it is recommended that they be examined at more frequent intervals.

### Brake Pipes & Hoses

At the recommended service intervals, the brake pipes and flexible hoses should be carefully examined for signs of damage, corrosion or perishing, especially in areas where salt is used on the road surface in the winter months.

### Brake Fluid Reservoir

Under normal circumstances, there is no requirement for routine 'topping up' of the brake master cylinder reservoir. A visual safety check is all that is required.

Every week, check the level of fluid in the brake fluid reservoir located at the driver's side rear of the engine bay: Without disturbing the filler cap, check that the level lies between the 'max' and 'min' marks moulded on the translucent reservoir body. As the brake pads wear, the level will drop gradually from the 'max' mark towards the 'min', but if the level drops rapidly over a short period, have your Lotus dealer investigate without delay. If the level is found to be below the 'min' mark, it is likely there has been some fluid loss, and that air will have entered the hydraulic system. The car should not be driven until the fault has been investigated and rectified.

Brake fluid is hygroscopic, and absorbs water from the atmosphere over a period



### Anti-Freeze/Corrosion Inhibitor

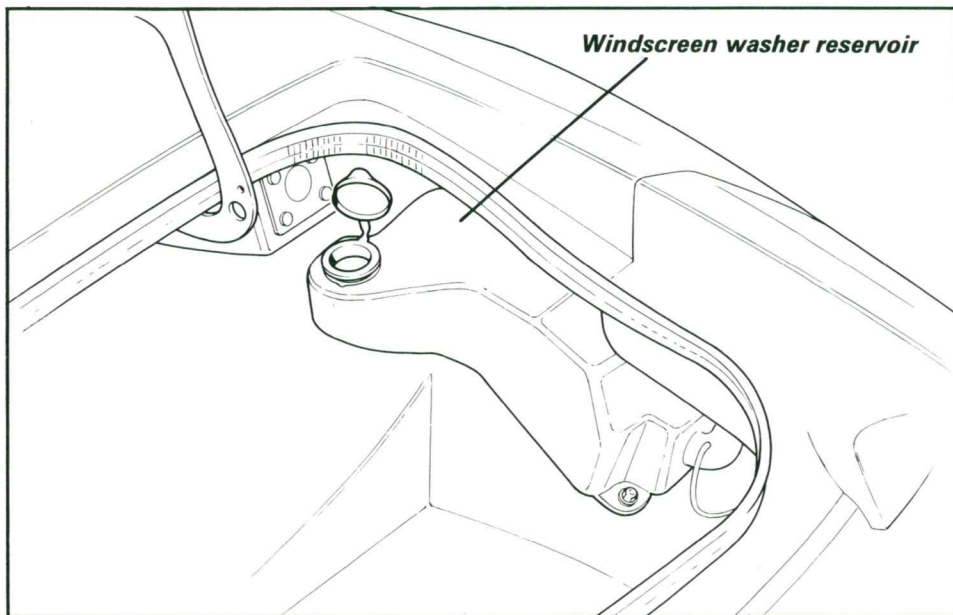
It is important that the coolant should contain an anti-freeze with corrosion inhibitor to protect the engine and heat exchangers from both frost damage, and corrosion of the metallic elements. Use of a good quality ethylene glycol anti-freeze, protects against these dangers as well as improving the cooling efficiency of the system. When new, the system is filled with a 40% anti-freeze concentration which is suitable for all but the very coldest climates, which should use concentrations up to 60% strength. In warm climates it is recommended that the concentration is not allowed to fall below 25%, in order to maintain full corrosion protection.

The effective level of mono-ethylene glycol in the system may be measured using a hydrometer, but the level of corrosion inhibitors, whose effectiveness diminishes over a period of time, can only be assured by the renewal of the coolant mixture every year.

For recommended anti-freeze products/specification, see 'Technical Data'.

### Washer Reservoir

The windscreen washer reservoir is situated at the right hand side of the boot, and should be kept topped up with clean water and a suitable proprietary solvent. Do NOT use radiator anti-freeze in the reservoir as this could seriously damage the paintwork.



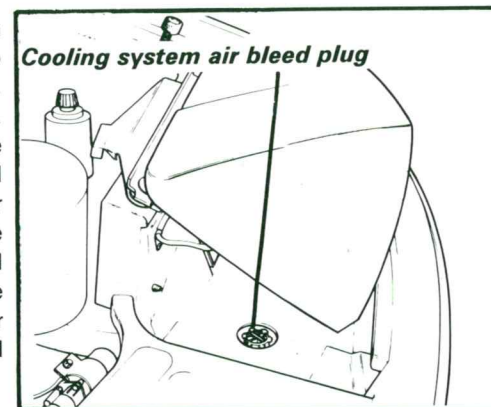
If the washer fluid level becomes low, and needs replenishing, an amber tell tale reminder in the instrument panel will glow.

When fully cold, the level of coolant should be up to the 'cold' mark on the header tank. If overfilled, the excess coolant will be ejected when the engine is warm, and if the level is allowed to fall too low, overheating may result. If necessary, top up the system, being sure to use an approved coolant mixture (see below) in order to maintain full protection from freezing damage and corrosion. Extremely hard water (hardness exceeding 250 parts per million) should not be used in the cooling system. In such areas, distilled, de-ironised or filtered rain water should be used.

At service intervals, the matrices of all the cooling radiators (especially the close finned oil cooler radiator) should be checked externally for clogging by insects, leaves or other debris, and if necessary, a water jet used from behind to clear the finning.

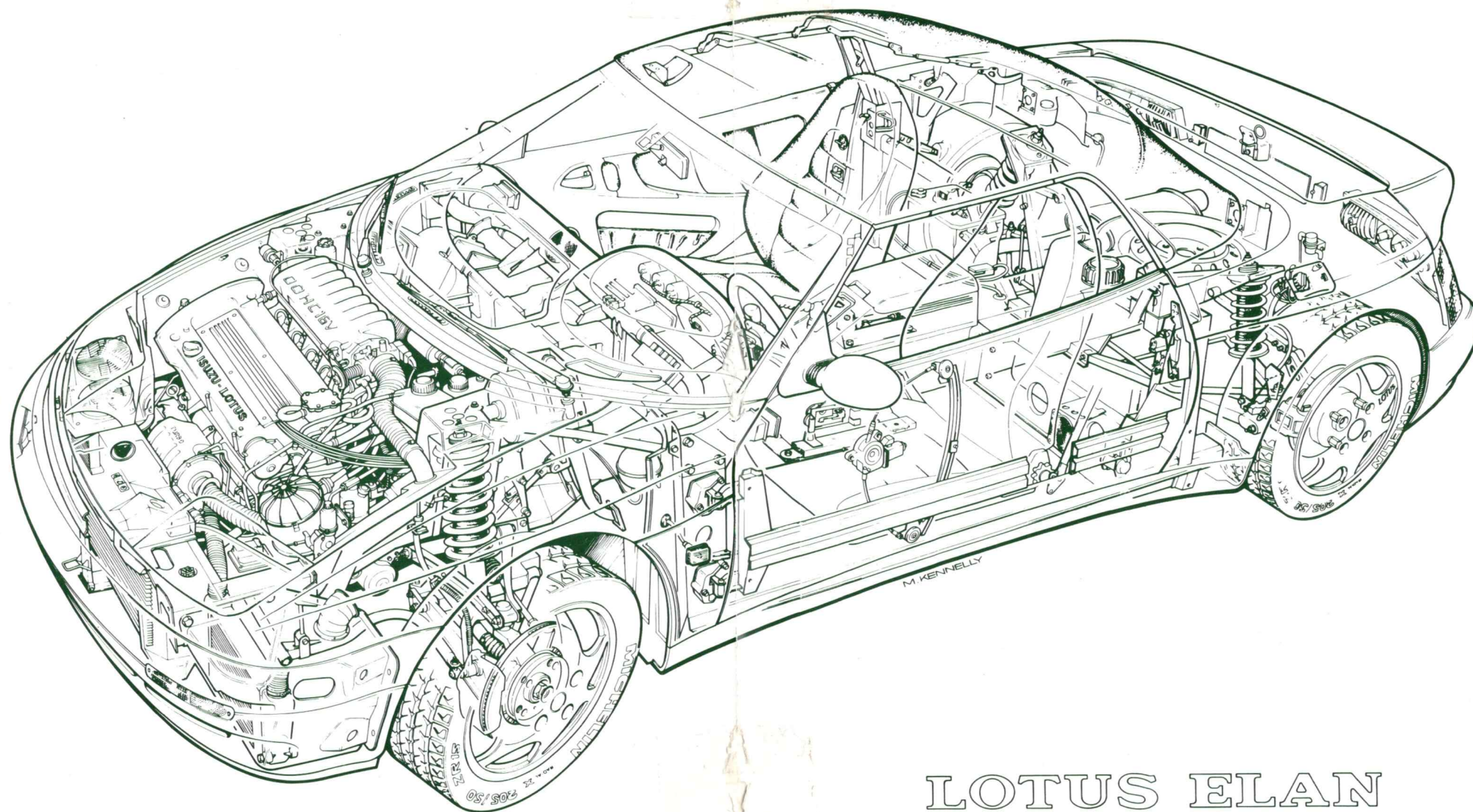
To drain the engine cooling system, set the heater temperature control to 'hot', remove the header tank cap, and disconnect the radiator bottom hose.

To refill the system, reconnect the bottom hose securely, set the temperature control to hot, and fill with coolant via the header tank, until up to the cold level indicator mark. Bleed air from the radiator by removing the bleed plug in the left hand headlamp pod well (raise headlamps), and refit when all air is bled. Run the engine, and top up the header tank as necessary until the level stabilises or starts to rise. Stop the engine and allow to cool fully. Bleed the radiator again, top up the header tank to the cold indicator level, and fit the pressure cap.



Note that after stopping a warm engine, a coolant circulation electric pump may be heard running, or in certain conditions, start running a few minutes after engine switch off. This feature helps control engine temperature and prevents coolant loss in conditions of 'heat soak'. The pump will switch off when coolant temperature has fallen to a specified level.





LOTUS ELAN