Driving Controls

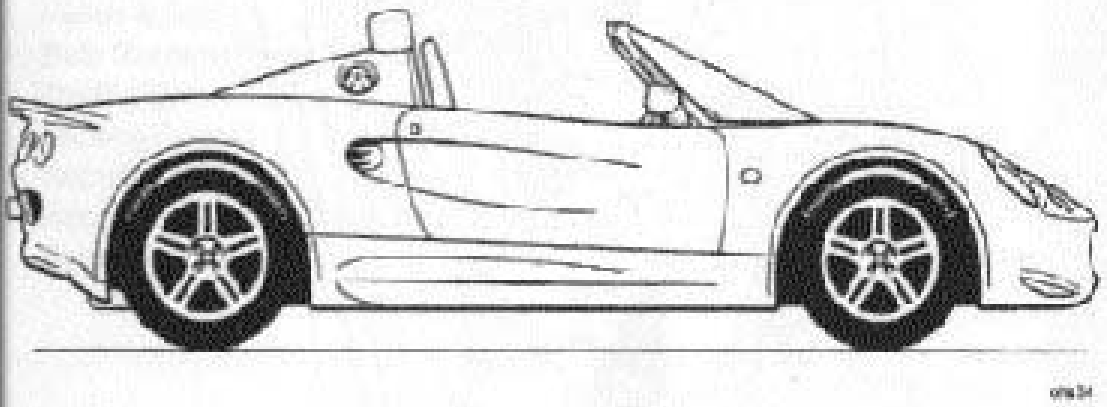
Technical Data

Warranty

ELISE

Publication Part No. C111T0324

ELISE



OWNER'S HANDBOOK

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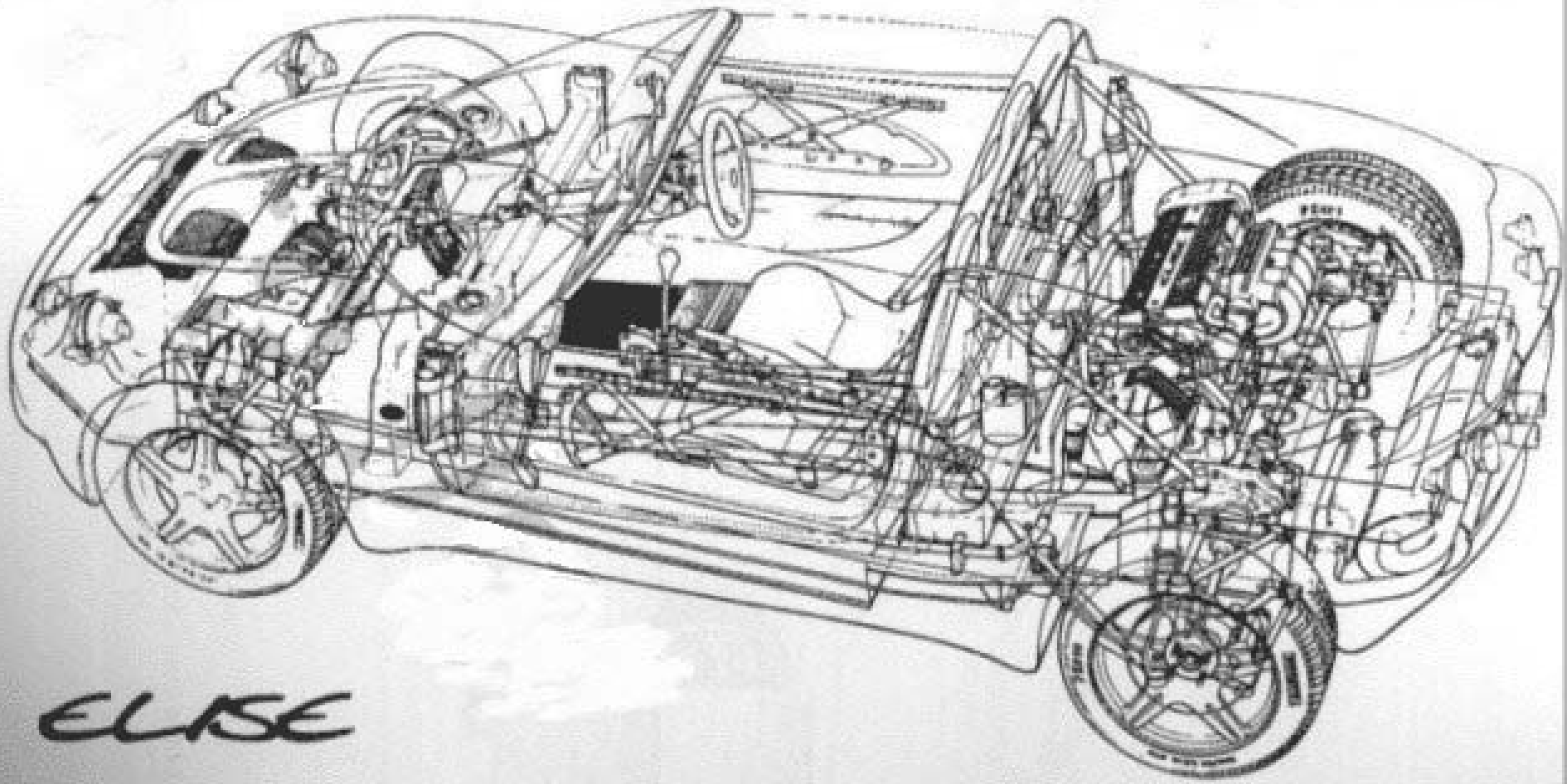
ELISE

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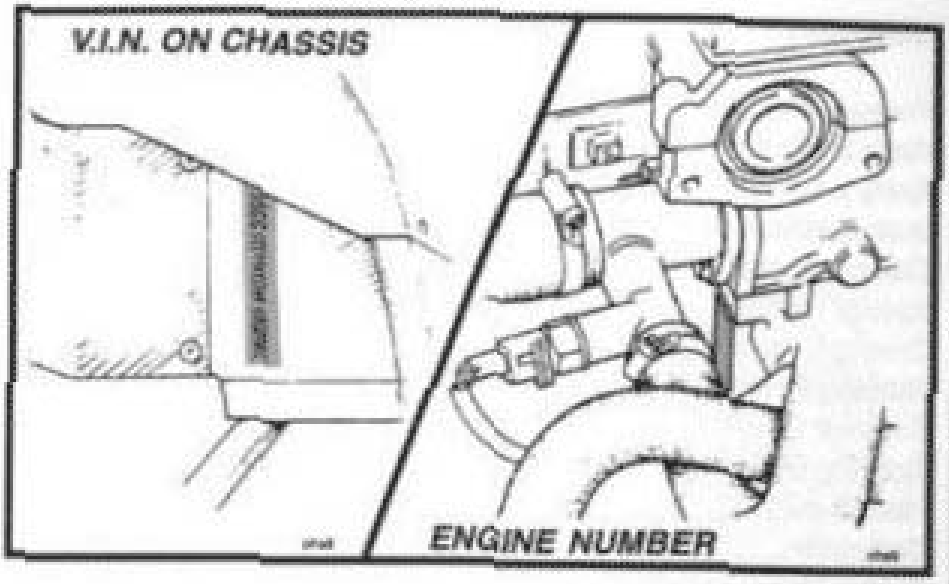


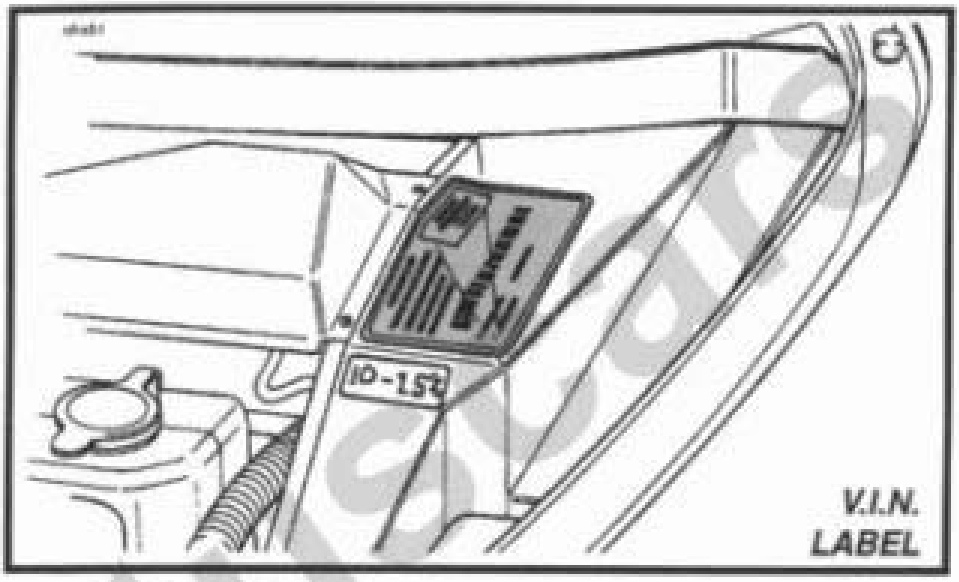
FOREWORD

This handbook has been written for the owner and driver of the Lotus Elise. It should be read before driving the car, and then stored in the vehicle for ready reference. The handbook *includes safety considerations, explanations and instructions* for operating the driving controls, owner maintenance requirements, technical specifications, and an explanation of the warranty. It is not intended to provide all the technical information required for servicing, and should any adjustment become necessary which is not detailed in the handbook, owners are urged to contact their Lotus dealer. It is a requirement of the warranty, and the responsibility of the owner/driver, to ensure that servicing of the vehicle is carried out at the correct intervals.

Lotus has a policy of continuous product improvement, and reserves the right to change specifications and equipment at any time without notice. Keeping in regular contact with your Lotus dealer ensures that you may be kept informed of any technical developments which may improve the specification, performance or safety of your own vehicle.

The specification of some export models may differ in detail from the text and illustrations contained within this handbook, and if any query should arise, the Lotus importer for that territory should be consulted.

Text in this handbook prefaced by '**WARNING**' in bold type, refers to a potential danger to personal health. Death or injury could result from a failure to follow these instructions.



V.I.N. LABEL

Vehicle Identification

The Vehicle Identification Number (V.I.N.) is stamped on the chassis in the right hand rear wheelarch area, and is also printed on a label stuck to the body in the front services compartment.

The engine number is marked on a vertical patch at the left hand end of the forward face of the cylinder block, and is most easily viewed using a mirror.

It is essential that both the V.I.N. and engine numbers are quoted in any correspondence concerning the vehicle, or when ordering spare parts.

Safety

The Elise has been designed to comply with all applicable safety regulations and incorporates passive safety features, which include side impact protection in the form of substantial chassis side frames, a roll over protection bar, reinforcing beams in the doors allied to burst resistant door latches and a collapsible steering column. Active safety features include powerful four wheel disc brakes, high geared responsive steering requiring only small steering wheel movements to alter course, exceptional road holding with optimised handling characteristics, and rapid acceleration to provide for swift and safe overtaking.

Drivers should be aware of their own limitations as well as those of the vehicle, and at all times drive well within their capabilities, particularly on wet roads, or under adverse

weather conditions. Never drive whilst under the influence of alcohol or drugs, or allow the car to be driven unsupervised by inexperienced drivers.

Precautions

Owners should note that the only approved extras and conversions are those which are specified by the Factory and carried out by the Factory or by an authorised dealer. Lotus Cars Ltd. does not accept any liability whatsoever for defects which arise from extras or conversions which are not factory approved. Inexpert modifications or additions to the electrical or fuel systems could jeopardise safety.

The Elise is fitted with a 'three way' catalytic converter in the exhaust system in order to reduce the noxious content of the exhaust gases, and comply with emission control regulations. It is essential that ONLY UNLEADED FUEL is used (see 'Fuel Requirement'). The use of as little as one tankful of leaded fuel will cause irreversible contamination of the precious metal catalysts and the exhaust gas sensor used by the computer controlled engine management system.

It is important that the Maintenance Schedule (see separate booklet) is followed at the specified time and distance intervals, and that the vehicle is kept in proper operating condition. Failure to do so may result not only in a loss of fuel economy and emission control, but may cause damage to the catalytic converter. If an engine malfunction should occur, particularly involving engine misfire or other noticeable loss of performance, do not continue to operate the vehicle in that condition but have the fault diagnosed and repaired promptly.

As with any vehicle, do not park or drive the car in areas where combustible material, such as dry grass or leaves, could come into contact with the hot exhaust system. Under certain wind and weather conditions a grass fire could be initiated.

- **DO NOT** tamper with any electrical components with the battery connected.
- **DO NOT** check or adjust any engine bay equipment with the engine running.
- **DO NOT** use the car if a fuel leak is suspected, as may be indicated by a persistent smell of fuel. Have the fault diagnosed and rectified without delay.
- **DO NOT** touch or approach, any part of a hot exhaust

system.

- **DO NOT** allow servicing or repairs to be carried out by unskilled persons. Lotus dealers have trained staff who are best qualified to maintain your car to the correct specification.

Before driving the car:

- Check all windows, mirrors and lights are clear and unobstructed;
- Check that the doors, engine cover and front bonnet are correctly latched;
- Adjust the seat and mirrors, and familiarise yourself with the controls.
- Check all instruments and tell tales are reading correctly.
- Fasten the seat belt.

Care of the Environment

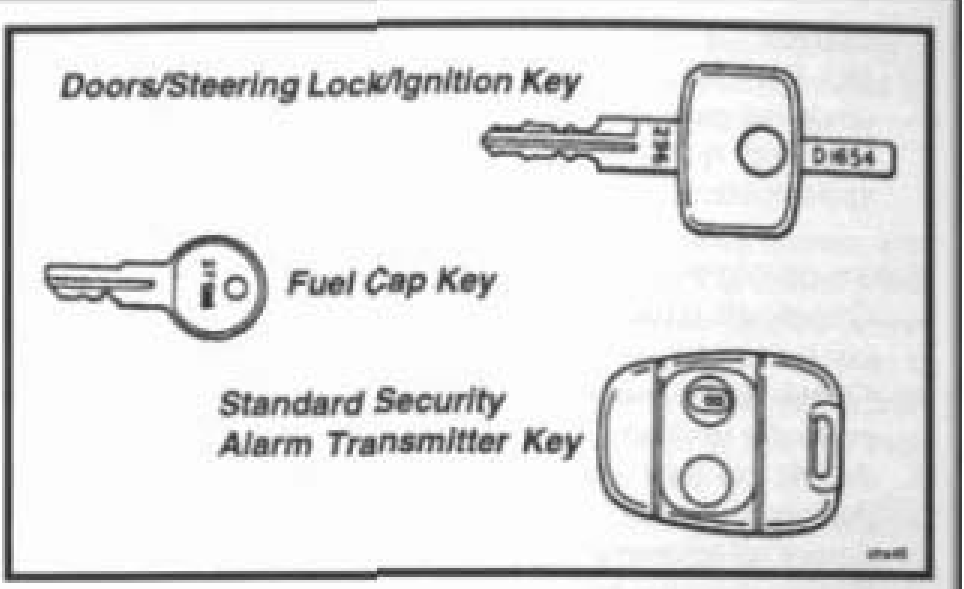
Be aware of the affect of motor vehicle exhaust emissions on the environment and adopt driving practices which minimise unnecessary pollution. Noxious emissions, which are reduced considerably by the catalytic converter, are harmful to the health of humans, animals and plant life, and the production of carbon dioxide, a 'greenhouse' gas which is not reduced by the catalytic converter, is considered to contribute to global warming. Also, the reserves of fossil fuels are finite and should not be wasted.

When traffic conditions are such as to dictate the pace of travel, significant savings in fuel use, exhaust emissions, wear and tear, and noise nuisance can be achieved whilst enhancing driving comfort by:

- Anticipating traffic flow to avoid needless acceleration and braking.
- Using the highest suitable gear.
- Switching off rather than idling for long periods.

In general:

- Drive off as soon as possible after starting; it is not necessary or beneficial to the engine to allow extended idling from cold.
- Have the car serviced regularly as a poorly maintained car will use more fuel; have any engine faults attended to immediately.



- Maintain the tyres at the correct pressures. Under inflation causes increased rolling resistance and uses more fuel.
- Whenever possible, avoid driving during busy periods, or on overcrowded routes.
- The noxious emissions produced by an engine are many times greater when cold than when warm. Consider the need to use the car for very short journeys.
- Always be aware of other road users, and give maximum consideration to cyclists, pedestrians, horse riders and animals. Courtesy and tolerance are the foundations of safe and enjoyable motoring.

KEYS & VEHICLE SECURITY ALARM

Keys

A single mechanical key operates both the door locks and steering lock/ignition switch, with a second, smaller key type for the fuel filler cap. Duplicates of both keys are supplied with the new vehicle. On receipt, separate the duplicate keys and keep in a safe place, for use in an emergency. The key numbers are stamped on the keys themselves, and should be recorded and kept with the vehicle documents to enable your dealer to have replacements made if necessary. If a key is lost, a duplicate should be ordered at the earliest opportunity, so that a spare is always available.

Two battery powered electronic transmitter keys are also provided for the vehicle alarm system. One of these keys should also be kept safe for use in an emergency, and the batteries of both keys renewed at six monthly intervals to ensure continuity of operation.

Vehicle Security Alarm (Standard Fitment)

When armed, the vehicle alarm system enhances theft protection of the car by pulse sounding the horn if either door is opened, or the ignition circuit is energised. Additional protection is provided by an 'immobilisation' feature which disables the engine cranking and ignition circuits when the alarm is armed, whilst 'passive immobilisation' ensures that this feature functions automatically under certain conditions (see below).

Passive Immobilisation: Engine cranking and running are disabled automatically **30 seconds after** the following sequence of events:

- The ignition is switched from on to off;
- The driver's door is opened.

A warning that immobilisation is in effect, is provided by the 'Alarm' tell tale in the instrument pack flashing on once per second (continuously lit if a door is open).

In order to mobilise the engine, press once the smooth button on the transmitter key; the tell tale will extinguish and the engine may be started. If the key is already turned to the ignition position ('II'), either of the two buttons on the transmitter key may be pressed to mobilise.

Note that for only the German market, if the ignition is not switched on within 4 minutes 15 seconds of the alarm being disarmed, immobilisation will be automatically activated.

To Arm the Alarm: Remove the ignition key, close (and lock) both doors, and press once the transmitter key button embossed with the padlock symbol. This command will be acknowledged by:

- The hazard lamps flashing three times;
- The 'Alarm' tell tale in the instrument pack flashing rapidly for 10 seconds (the arming period), then flashing once per second.

To Disarm the Alarm: Press once the transmitter key smooth button. This command will be acknowledged by a single flash of the hazard lamps, and the alarm tell tale going out. The same disarming command applies if the alarm has been triggered, and the horn is sounding.

Note that some variations to the alarm operation may apply in certain territories, according to local regulations.

Transmitter Battery Replacement: Each of the transmitter keys is powered by a Panasonic CR2032 3V battery. With normal use, these should last between 6 and 9 months. To ensure continuity of trouble free operation, it is recommended to replace both batteries at 6 monthly intervals:

1. Split the transmitter case using a finger nail or blade in the case jointline.
2. Slide the battery out of its keeper, and insert the new, taking care to match the polarity marking.
3. Snap the case halves together.

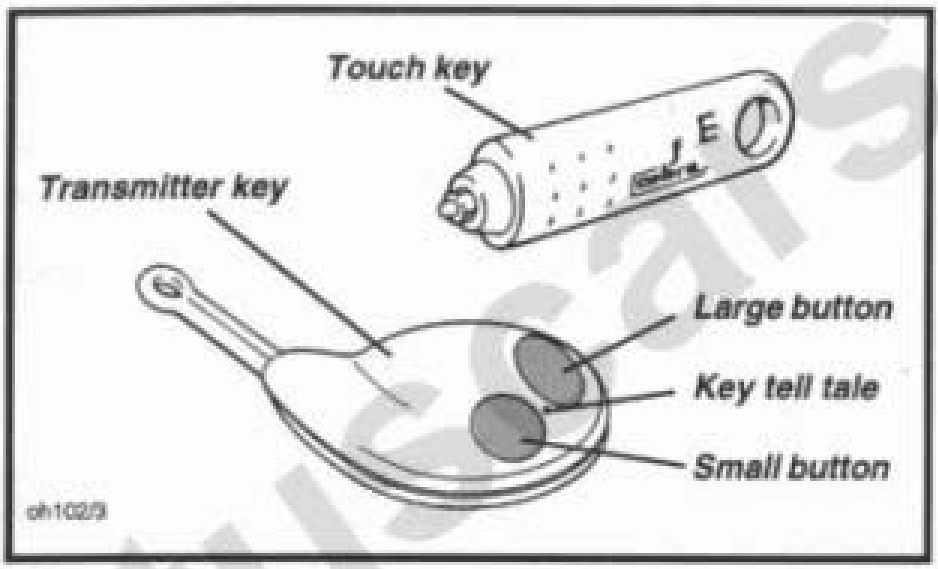
Upgraded Vehicle Security Alarm (if fitted)

In order to provide an exceptional level of theft and vandal protection, the Lotus Elise may be factory fitted with a vehicle security alarm incorporating a Cobra 6422 system. Features include:

- Ingress protection using sensing switches on both doors, front bonnet and engine lid.
- Selectable cockpit intrusion sensing using a hyperfrequency radar sensor.
- Automatic (passive) engine immobilisation to prevent the engine from being started.
- Self powered siren to maintain protection if the vehicle power supply is interrupted.
- 'Dynamic coding' of the transmitter keys; Each time the transmitters are used, the operating frequency is randomly changed to guard against the possibility of code copying.

Transmitter Keys

Two transmitter keys are provided with the car, together with two electronic touch keys. The transmitter key is used to arm and disarm the alarm and to deselect the intrusion sensor. The touch key is provided as a safety back up in case of transmitter key failure (e.g. flat battery), and should be kept



separate (i.e. ***not*** on the same keyring), but readily available. Note that misunderstood use of the touch key can result in the transmitter key codes being wiped (see later).

Arming the Alarm

Remove the ignition key, close and lock both doors, and check that the engine lid and front bonnet are shut. The roof may be either raised or stowed. Press once, the larger of the two buttons on the transmitter key. This command will be acknowledged by:

- Two flashes of the hazard warning lamps;
- Flashing of the alarm tell tale in the instrument pod.

Check that these indications occur. If not, press the button a second time, as the first press may have switched off the passive immobilisation (see later).

Note that if the system is armed when a door, engine lid or front bonnet is not fully closed, a buzzer will sound continuously until the opening is secured. **If still open after 40 seconds, the siren will sound.**

After arming the system, a period of at least 40 seconds must elapse before all functions and sensors become fully active. After this time, the alarm will be triggered by any of the following actions:

- Opening a door, engine lid or front bonnet;
- Movement detected within the cockpit;
- Energising the ignition circuit ('hot wiring').

When triggered, the electronic siren will sound and the hazard warning lamps will flash for a period of approximately 30 seconds before closing down and resetting, ready for any further triggering input. If the engine lid or front bonnet are left open, the alarm will repeat after a short delay, and continue in this sequence for a total of ten cycles.

To silence the siren when the alarm has been triggered, press once the larger of the two buttons on the transmitter key. The siren will reset and the system will remain armed.

Disarming the Alarm

To disarm the alarm prior to entering the vehicle, press once the larger of the two buttons on the transmitter key. This command will be acknowledged by:

- One flash of the hazard warning lamps;
- Extinguishing of the alarm tell tale on the centre console. (If the tell tale is flashing intermittently, the alarm has been triggered during the armed period - see 'Trouble Shooting')

Passive Immobilisation

In order to provide a measure of automatic vehicle security, independent of any driver initiative, the system will 'passively' immobilise the engine's cranking and running circuits either;

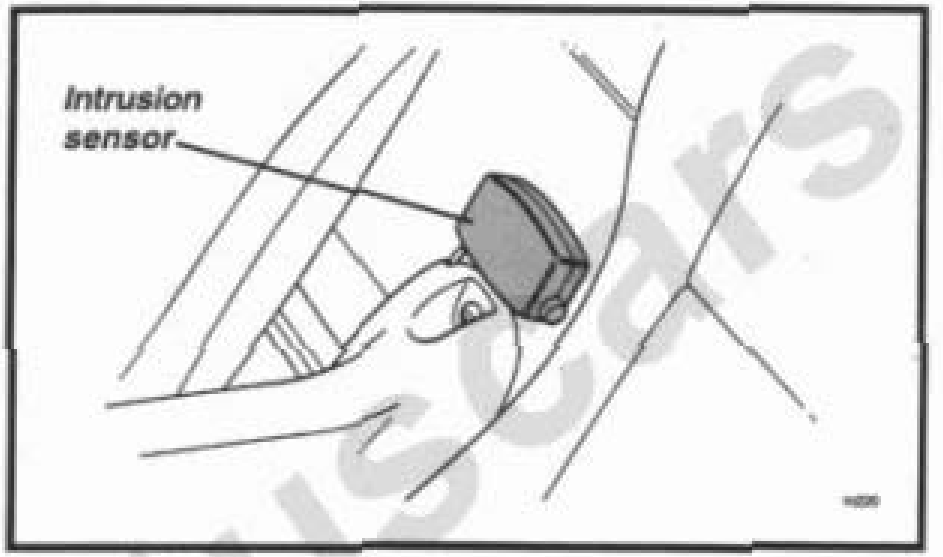
- four minutes after switching off the ignition;
- or one minute after switching off and opening and closing a door.

Immobilisation will be indicated by:

- the alarm tell tale flashing.
- and if initiated by the door being opened and closed: two flashes of the hazard warning lamps.

Note that these indications are the same as those for the arming of the alarm, but in this instance it is only engine immobilisation which is activated.

To start the car after immobilisation has been activated, it is necessary to switch ***OFF*** the ignition and press once the large button on the transmitter key. The alarm tell tale will be extinguished.



Intrusion Sensing

A hyperfrequency radar detector, mounted at the rear of the centre tunnel, is able to detect substantial movement within the cockpit and trigger the alarm in the event of unauthorised intrusion. The range and sensitivity of the intrusion sensor may be adjusted by your dealer if necessary.

If an animal is to be left in the vehicle when the alarm is armed, it is necessary temporarily to switch off the intrusion sensing by the following procedure:

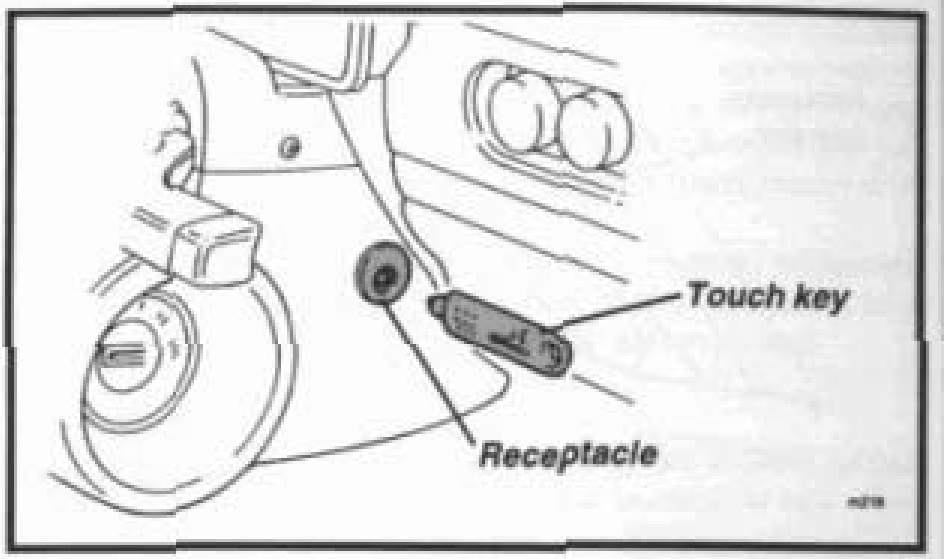
- Arm the system in the usual way by pressing once the large button on the transmitter.
- Within 40 seconds, press once the smaller button on the transmitter. This action will be acknowledged by a single buzz of the buzzer.

Note:

Intrusion sensing will automatically be reinstated the next time the alarm is armed.
Do not inhibit operation of the radar detector by placing bags or large objects against the sensor.

Summary of Alarm Normal Operation

In normal use, wherever leaving the car, close both lids, lock the doors using the key, and press once the transmitter large button to arm the alarm - acknowledged by two hazard lamp flashes, and the alarm tell tale flashing. **Check that two hazard flashes occur** and not one (see below).



On return to the car, whether or not the alarm is armed, again press once the transmitter large button. This will either disarm the alarm, or, if the alarm was not armed, the passive immobilisation will be switched off. In both cases, this will be acknowledged by **one hazard lamps flash** and the alarm tell tale going out.

Emergency Disarming

In the event of lost or failed transmitter keys, an electronic touch key may be used to mobilise the engine:

Enter the vehicle (causing the alarm to be triggered if it is armed), and with the ignition ***OFF***, insert the touch key into the receptacle on the right hand side of the steering column shroud. This will disarm the alarm and mobilise the engine. Note that if this operation is performed with the ignition ***ON***, the transmitter key codes will be wiped, and must be reprogrammed (see below).

Passive immobilisation will still function after the appropriate delay (see above), requiring another insertion of the touch key, with ignition OFF, to overcome.

New Transmitter Programming

If a transmitter key is lost or damaged, a new key may be purchased through your Lotus dealer, and then programmed to the alarm system in your own car using the following procedure:

1. With the alarm system disarmed ***and mobilised***, switch on the ignition. Note that if the transmitter key codes have been wiped, the alarm must be disarmed using the touch key (see above).
2. Insert a touch key into the receptacle on the steering column shroud. The alarm tell tale will light steady.
3. Press, simultaneously, both buttons on the new transmitter key for about ten seconds, until the tell tale in the ***key*** stops flashing and goes out. When the buttons are released, the key tell tale will light steady.
4. Press either one of the transmitter key buttons; the transmitter key tell tale will blink, and the alarm tell tale in the instrument pod will go out for one second.
5. Repeat 3 and 4 for all other transmitter keys to be used, up to a maximum of four. When all keys have been programmed, switch off the ignition (alarm tell tale will go out).

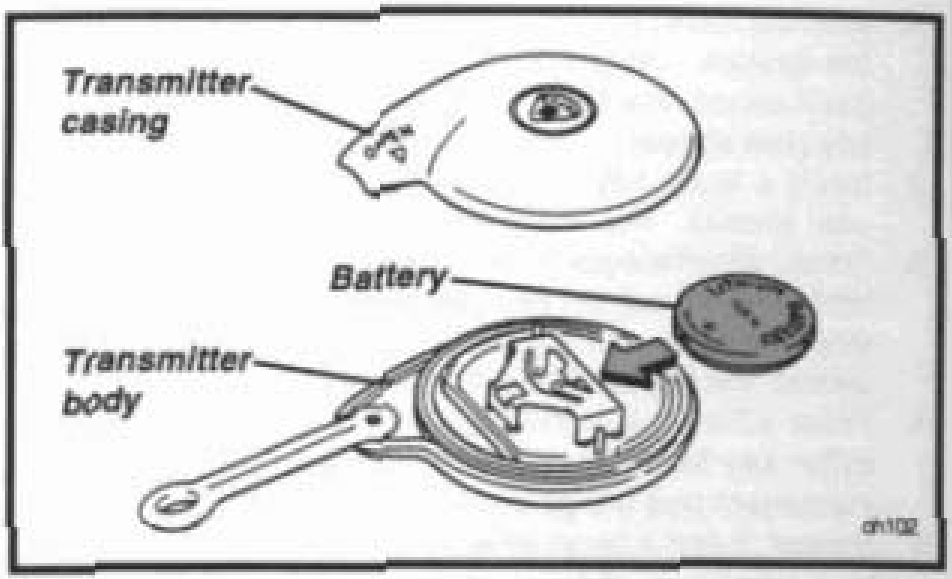
Note that this programming procedure erases all existing transmitter codes, so that all keys to be used must be reprogrammed at the same time.

Checking the Alarm System

To ensure that optimum vehicle protection is maintained, the alarm system function should be checked periodically:

1. Arm the alarm and wait for 40 seconds;
2. Open either door; The siren should sound and the hazard lamps flash for 30 seconds. To turn off the siren before the 30 seconds have elapsed, press the large button on the transmitter key - this will not disarm the alarm.
3. Repeat step (2) testing the opposite door, the engine lid and the front bonnet (Manually operate the sensor switches to test the engine lid and front bonnet).
4. If the engine lid or front bonnet are left open, the alarm will stop after approximately 30 seconds, and then repeat after a short delay, and continue in this sequence for ten cycles.
5. To test the intrusion sensing, arm the system and within the 30 sec. arming period, check that substantial body movement within the cockpit triggers the alarm, as indicated by the sounding of the buzzer. Disarm the alarm before the 30 seconds elapses, or the siren will be activated.

If the alarm system does not operate as described, refer to to your Lotus dealer, or to the 'Trouble Shooting' guide below.



Alarm Trouble Shooting

In the unlikely event of any problem being experienced with the vehicle security system, your Lotus dealer should be consulted at the first opportunity. If this is not immediately possible, the following notes may be of some assistance:

Symptom: Vehicle was left for a few minutes without setting the alarm, and now the engine won't start.
Possible cause: Passive immobilisation has taken effect (indicated by the tell tale flashing), as designed - see above.

Symptom: The transmitter key will not arm or disarm system.
Possible cause: Transmitter key battery low. When the key battery becomes low, the transmitter key L.E.D. will blink in an irregular manner, or once only instead of remaining lit until the button is released.

To replace transmitter battery:

a). Open the transmitter key body by levering in the zone marked 'OPEN', and withdraw the battery.
b). The keys are powered by a 3v long life lithium battery type CR2032. With normal use, this should last between 3 and 5 years. After opening the new battery packaging, touch only the sides of the battery, and fit the battery into the key case with the positive side (+) upwards as shown.
c). Press the battery case together.

Symptom: Both transmitters fail to operate with good batteries.
Possible cause: Transmitter programming has been inadvertently wiped during use of touch key - reprogramme keys (see above).

Symptom: The alarm triggers for no apparent reason.
Possible cause: When the transmitter key is used to disarm the system, if the alarm had been triggered during the armed period, a 'diagnostic code' will be displayed by the alarm tell tale until the ignition is next switched on.
The flash codes are interpreted as follows:
Single flash followed by 2 second break: Caused by a door, engine lid or front bonnet sensor. A sensing switch may require attention.
Three flashes followed by 2 second break: Caused by the intrusion sensor. If there are no loose or moving objects or animals in the vehicle, the sensitivity of the sensor may need adjustment by your dealer.
Four flashes followed by a 2 second break: Caused by the ignition circuit being energised.

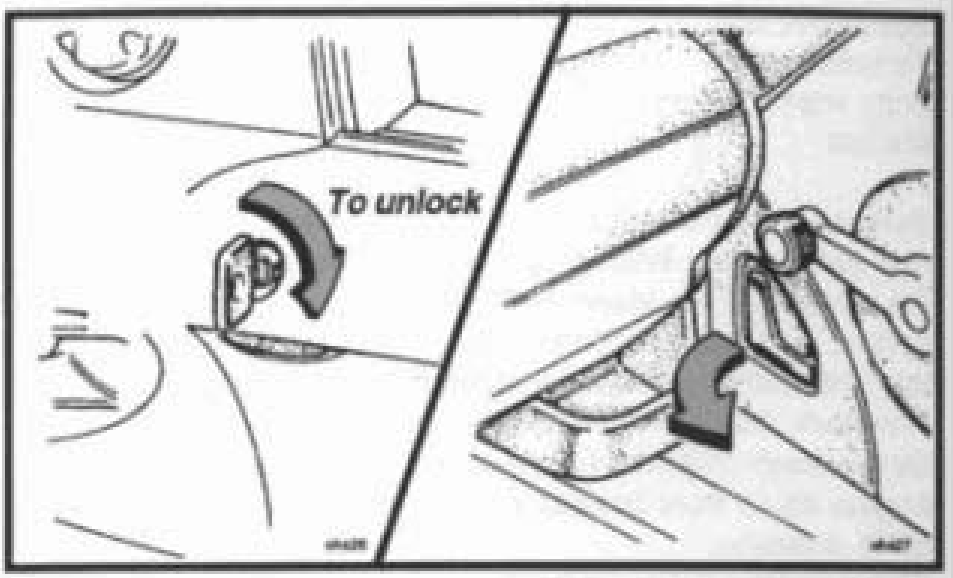
Technical Helpline

In case of a problem with the alarm system, contact your Lotus dealer, and have the vehicle particulars (recorded in the Maintenance Record booklet) to hand. Additionally, a Cobra Technical Helpline is available on 01923 479206.

Disconnecting the Vehicle Battery

If the battery is to be disconnected, refer to the 'Battery' section in the handbook, which includes the following precaution:

- Immediately before disconnection, mobilise the engine using the transmitter or touch key with ignition ***off***, and disconnect the battery within one minute. If disconnected after this time, or when immobilisation is in effect, the siren will sound for 30 seconds.



ENTRY & COMFORT

Doors

To unlock either door from outside, insert the key into the push button and turn clockwise to the horizontal position. Press the button and pull open the door using the lip in the air intake duct. If the door is swung fully open, a spring mechanism on the hinge will restrain the door for convenience whilst entering or exiting the vehicle, but the door should be held in windy conditions, or if the vehicle is parked on a slope.

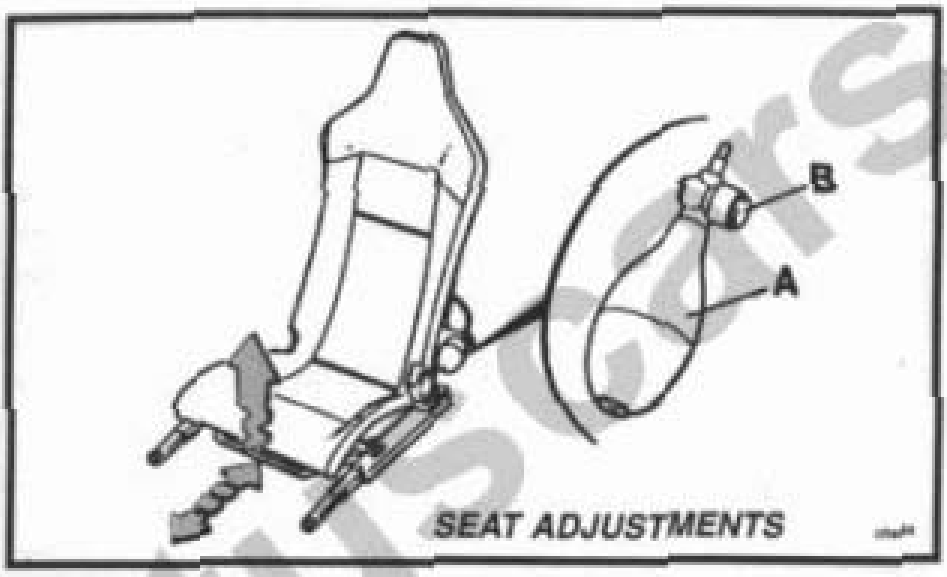
From inside the car, pull the door firmly shut using the recess provided at the top of the door trim panel.

To open the door from inside, pull the release handle at the front of the door and push open.

WARNING: Keep fingers well clear when closing a door.

Shut the door from outside by using firm hand pressure towards the rear of the door, and lock by turning the key counterclockwise to the vertical position.

See 'Instruments and Switches' for operation of the steering lock/ignition switch.



SEAT ADJUSTMENTS

Seats

On delivery of the car, first remove the protective plastic seat covers, if this has not already been done, and dispose of safely.

To adjust the fore/aft position of the driver's seat, raise the lift bar beneath the front of the seat, and slide to the position required. Ensure that the catch is fully engaged after adjustment by attempting to slide the seat with the lift bar lever released.

WARNING: Do not attempt to adjust the seat position whilst driving.

Lumbar Support: On seats fitted with adjustable lumbar support, an inflator 'bulb' (A) and air release button (B) are located at the inboard rear of the seat. To increase lumbar support, squeeze the bulb repeatedly until sufficient support is obtained. To decrease support, press the small black button at the base of the inflator bulb until the desired support is achieved.

Seat Belts

Seat belts provide added safety and comfort for both driver and passenger. Notwithstanding any laws compelling their use, it is strongly recommended that the seat belts are worn at all times, no matter how short the journey, particularly since the inertia reel seat belts fitted give the wearer complete freedom of movement under normal driving conditions. The belt reel will lock automatically whenever the vehicle is subjected to braking, acceleration, or cornering forces, or on impact in a collision. Reel locking will also occur on steep hills or slopes, or if the vehicle is tilted.

To use the belt, take the buckle tongue in the outer hand, and drawing the belt through the top slide, pass the belt across the body and push the tongue into the buckle lock at the inboard side of the seat, until a positive 'click' is heard. Pull on the belt to check for correct latching and to ensure that the belt fits snugly against the body with all the slack taken up by the reel. The belt should be worn low across the front of the pelvis, and across the chest and shoulder.

The belts are released by pressing the red button on the buckle lock, and will retract automatically for tidy storage and to permit easy access to the passenger compartment.

The seat belt tell tale lamp in the fascia will, as a lamp test function, glow red for a short period when the ignition is turned on, and then remain lit until the driver's seat belt is fastened.

WARNING: - On fastening the seat belt, ensure that no part of the belt is twisted, or is entangled in the door or seat mechanism.

- Seat belts are designed to bear upon the bone structure of the body and should be worn low across the front of the pelvis, and across the chest and shoulder. Wearing the lap section of the belt across the abdominal area must be avoided. Pregnant women should consult their doctor to determine whether they should drive, and how to position the seat belt.

- The shoulder portion of the belt must never be worn beneath the arm, or behind the back.

- Each seat belt assembly is designed for use by one occupant of adult build, and should not be used by children under six years old except in conjunction with a suitable child seat or harness.

- Never use one belt around two people, or allow a child to be carried on a driver's or passenger's lap.

- No modifications or additions should be made by the user which will prevent the seat belt mechanism from operating to remove slack. Do not attempt to adjust the seat belt tension by altering the mechanism.

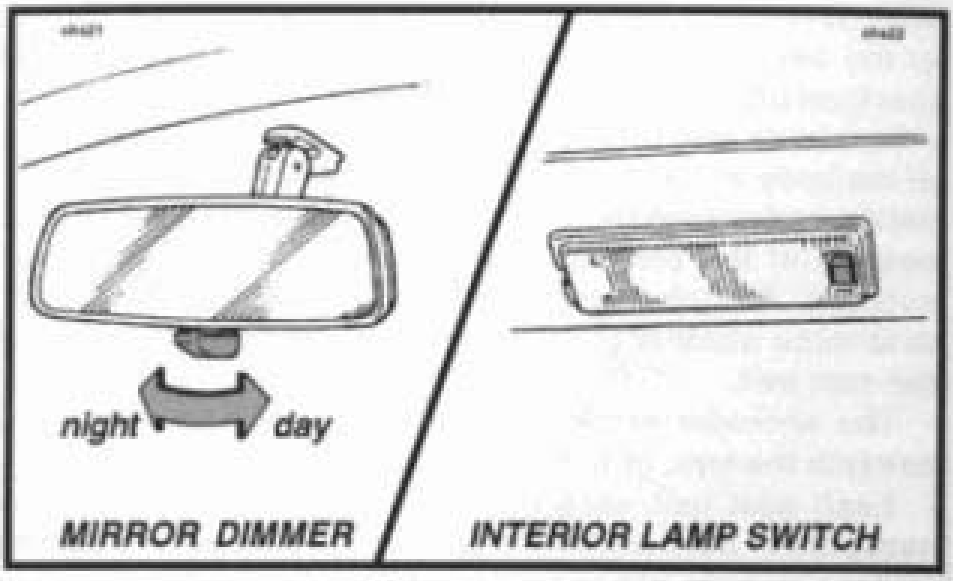
- The belt should be replaced if webbing becomes frayed, contaminated, or damaged. Inspect regularly.

- It is essential to replace the entire seat belt assembly after it has been worn in a severe impact, even if damage to the assembly is not obvious.

Care should be taken to avoid contamination of the webbing with polishes, oils or chemicals and particularly battery acid. Cleaning may be safely carried out using a mild soap and water solution, since Terylene does not absorb water to any appreciable extent and will therefore dry quite quickly. Ensure the belt is fully dry before using.

Door Mirrors

Rear view mirrors are fitted on both driver's and passenger's doors, and may be adjusted manually by direct manipulation of the mirror housing. A spring pivot mechanism allows the complete mirror to swing forwards or backwards on accidental contact to reduce possible damage.



Door Windows

The door windows may be raised or lowered by the winder handle near the front of the door. In very cold weather, it may be necessary to use a de-icer spray along the glass seals to avoid straining the winder mechanism.

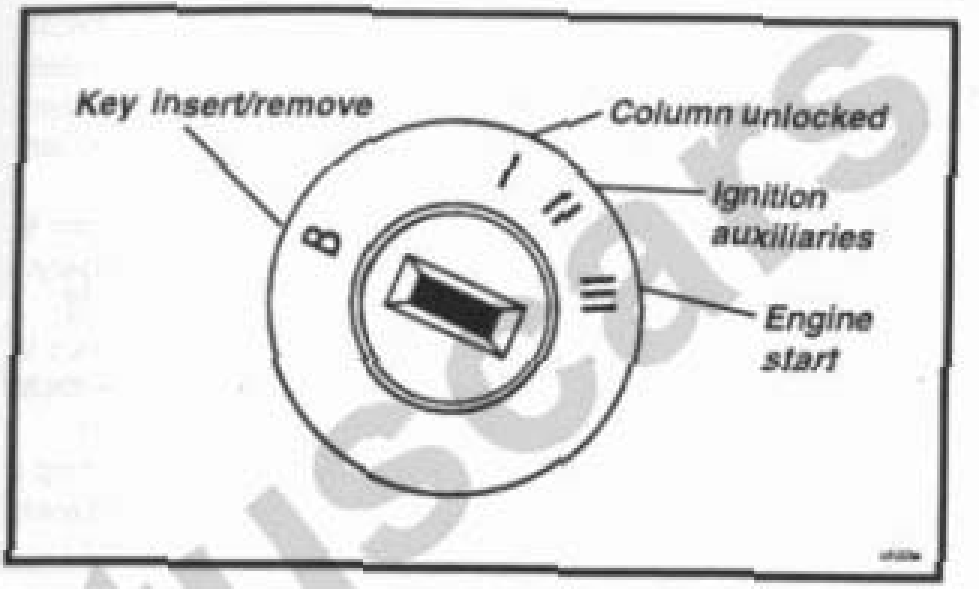
Interior Rear View Mirror

The mirror can be dimmed to reduce headlamp glare from following vehicles by turning the lever on the underside of the mirror towards the left. Turn towards the right for daytime use.

Interior Lamp

An interior lamp is mounted centrally in the fascia, and is equipped with a three position switch:

- Switch forwards; lamp is switched on with or without ignition.
- Switch central; lamp is switched off.
- Switch rearwards; a driver's courtesy mode applies, where the lamp is switched on whenever the driver's door is opened, and goes out when the door is closed.



INSTRUMENTS & SWITCHES

Ignition/Starter Switch/Steering Lock

The switch/lock is located on the right hand side of the steering column.

I - Insert the key into the slot, and turn clockwise to position 'I' to unlock the steering column. If the key is reluctant to turn, wriggle the steering wheel to ease the load on the steering lock.

II - Turn to position 'II' to switch on the ignition and operate auxiliary equipment.

III - Turn further clockwise to 'III' against spring pressure to operate the starter motor. As soon as the engine starts, allow the key to return to position 'II'. For the correct starting procedure, see the later chapter 'Starting Procedure & Running In'. To stop the engine, turn the key back to 'I'.

Passive Immobilisation: If the ignition has been switched off for longer than 30 seconds, it is possible that the passive immobilisation security feature may operate (dependent on type of alarm fitted) and disable the ignition and starter circuits; press the appropriate transmitter key button as directed in the 'Vehicle Security Alarm' section.

B - To remove the key, turn fully counterclockwise to 'B' and withdraw. The steering column lock will be activated when the key is withdrawn but may not engage until the steering is turned and the mechanism is aligned.

DO NOT leave the ignition switched on for long periods without the engine running, since although the ignition system itself draws no current when the engine is stopped, a battery drain will occur through other circuits even when auxiliary equipment is not being used.

Always remove the key when leaving the car in order to lock the steering column and to guard against a flat battery.

WARNING: - Do not push or tow the car unless the key is first used to unlock the column and is then left in the lock.
- Never withdraw the key until the vehicle is stationary.
- Do not leave the ignition key in position when leaving a parked car, to protect against theft, and to ensure the safety of any children remaining in the vehicle.

TELL TALE LAMPS

Bulb Check

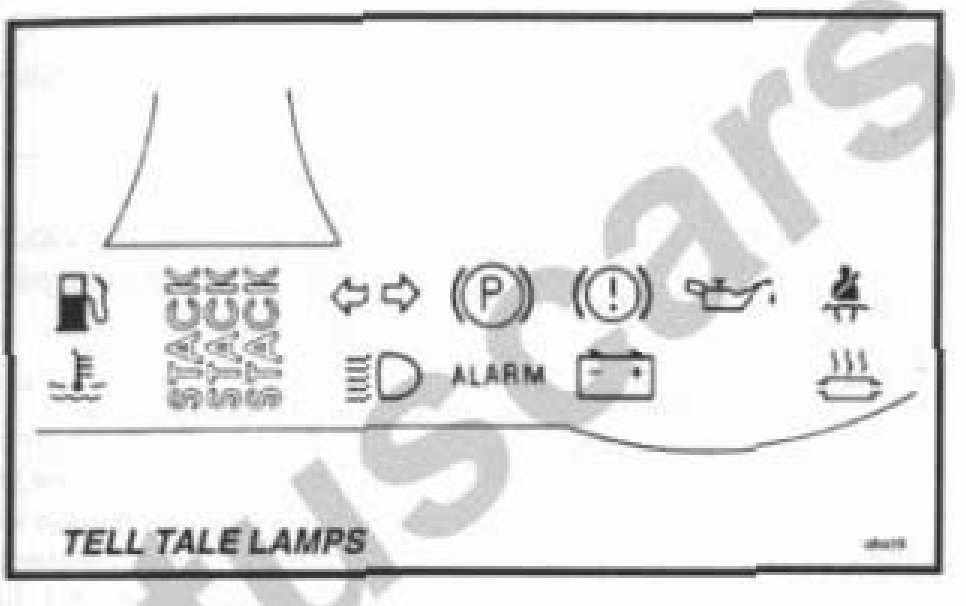
In order to check that the warning systems are operative, all the tell tale lamps (except the 'Alarm' tell tale; see Vehicle Security Alarm) should light for about six seconds when the ignition is turned on. If any lamp should fail to light, it is possible that the bulb or warning circuit may be faulty; see your dealer without delay.

Turn Tell Tale ⇦ ⇨

When the left hand or right hand turn indicators are operating, this green tell tale flashes in unison. The flasher relay may also be heard to operate. If the tell tale fails to light, or flashes at an unusual or irregular rate, check the operation of the turn indicator lamps immediately.

Parking Brake Tell Tale (P)

This tell tale will glow red with the ignition switched on whenever the parking brake is applied. Driving the car with the brake not fully released will cause overheat damage to the rear brakes. Each time the parking brake is released, check that the tell tale is extinguished.



TELL TALE LAMPS

Brakes Tell Tale

If the red brakes tell tale should light any time after the check period, stop the car immediately, as the level of brake fluid in the master cylinder reservoir has fallen to a dangerously low level, possibly caused by a hydraulic leak in one of the separate front or rear brake circuits. There is a danger that air may enter the hydraulic system and cause spongey operation and extended pedal travel. The split brake circuit should ensure that emergency braking will remain, but the car should not be driven until the fault has been rectified.

Oil Pressure Tell Tale

This red tell tale warns of low engine oil pressure. The lamp will be lit whenever the ignition is on and the engine is stopped, but should extinguish as soon as the engine is started. If the lamp fails to go out after engine start up, or comes on when the engine is running, stop the engine immediately and do not restart until the cause has been investigated and rectified. Continuing to run the engine with little or no oil pressure could cause major internal damage, possibly resulting in seizure.

Seat Belt Tell Tale

The red seat belt tell tale is provided as a reminder, and will remain lit until the driver's seat belt is fastened. Both driver and passenger should always wear the seat belts, no matter how short the journey.

Main Beam Tell Tale 

This lamp glows blue whenever the headlamp main beams are operating.

Alarm Tell Tale ALARM

The red vehicle security alarm tell tale indicates the status of the alarm/immobilisation system. For full details see 'Vehicle Security Alarm'.

Battery Charging Tell Tale 

This red tell tale will light whenever the ignition is on and the engine is stopped. If it lights any time that the engine is running, the battery is not being charged, which may be due to a broken alternator drive belt, or an electrical fault. Urgent attention is required, but as the engine coolant pump is independently driven, the car need not be stranded, subject to battery condition and local circumstances.

Catalyst Overheat Tell Tale (Japan only) 

This tell tale will glow amber if an engine fault occurs which results in the temperature of the catalytic converter rising to a level liable to cause damage to the converter and/or engine. Stop the vehicle in an area free of combustible materials (dry grass, leaves etc.) and allow the converter to cool for several minutes before proceeding with caution. Have the fault investigated by your dealer.

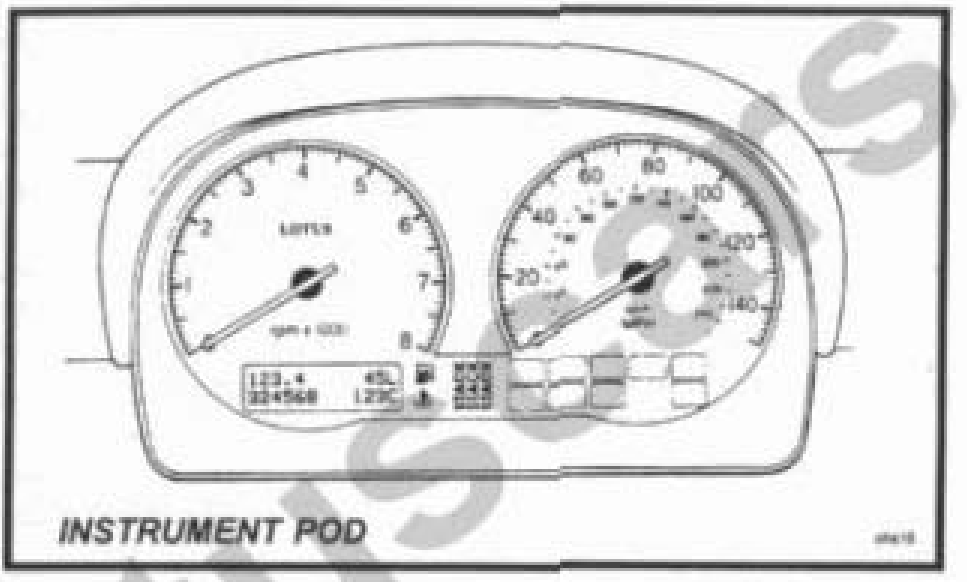
INSTRUMENTS

Speedometer

This instrument displays road speed in either MPH (with a secondary scale in km/h), or km/h according to market.

Tachometer

The tachometer indicates engine speed in revolutions per minute. A safeguard in the engine management system limits continuous engine speed to 7,000 rpm, although allowing, on VVC engined cars, acceleration through the gears to 7,300 rpm. Do not run the engine continuously at its maximum speed, or allow overspeeding to occur on the overrun by changing down through the gears too early, as this imposes



INSTRUMENT POD

very high loads on engine components, leading to premature wear and possible failure.

LCD DISPLAY PANEL

A liquid crystal display (LCD) panel is provided below the instruments in order to display fuel level, coolant temperature, total mileage and trip functions. The panel is blank until the ignition is switched on.

Fuel Contents Display

The top right hand corner of the LCD panel displays the approximate quantity of fuel available in litres. The fuel tank capacity is 36 litres, and the display reads as follows:

0 - 10 litres:	Display flashes 'Refill'.
11 - 34 litres:	Displays actual fuel quantity.
35 - full:	Display reads 'Full'.

In order to ensure the vehicle is not stranded, and to protect against the potentially damaging effects of fuel starvation, it is strongly recommended to refuel at the first opportunity after 'Refill' is displayed.

Coolant Temperature Display

The engine coolant temperature will be displayed at the bottom right hand corner of the panel as soon as the temperature reaches 40°C. The running temperature will

fluctuate a certain amount as the operating conditions change, and during periods of idling or in heavy traffic, the temperature may rise to over 100°C, with the cooling fan switching on at approximately 104°C. *The display will flash at temperatures over 110°C* in order to prompt closer monitoring of high temperatures, but as the pressurised cooling system has a boiling point of over 120°C, only if the temperature approaches this level need there be any cause for concern. If this should occur, allow the engine to idle for a few minutes whilst monitoring the temperature, and if it continues to rise, switch off and seek qualified assistance.

After a heavy snowfall, ensure that the radiator cooling outlet grilles in the front bonnet are cleared of snow before driving the car, or overheating may occur.

Odometer

An odometer (total distance recorder) reading is displayed at the bottom left hand corner of the panel, and is calibrated in the same units (miles or kilometres) as is the speedometer.

Trip Recorder

A trip recorder is provided at the top left hand corner of the panel, calibrated in the same units as the speedometer.

In order to zero the trip display, switch on the ignition, and press for a moment (less than 1 second), the small button on the steering column shroud between the ignition switch and steering wheel. This dual function button also controls the panel illumination - see 'Instrument & Switch Illumination'.

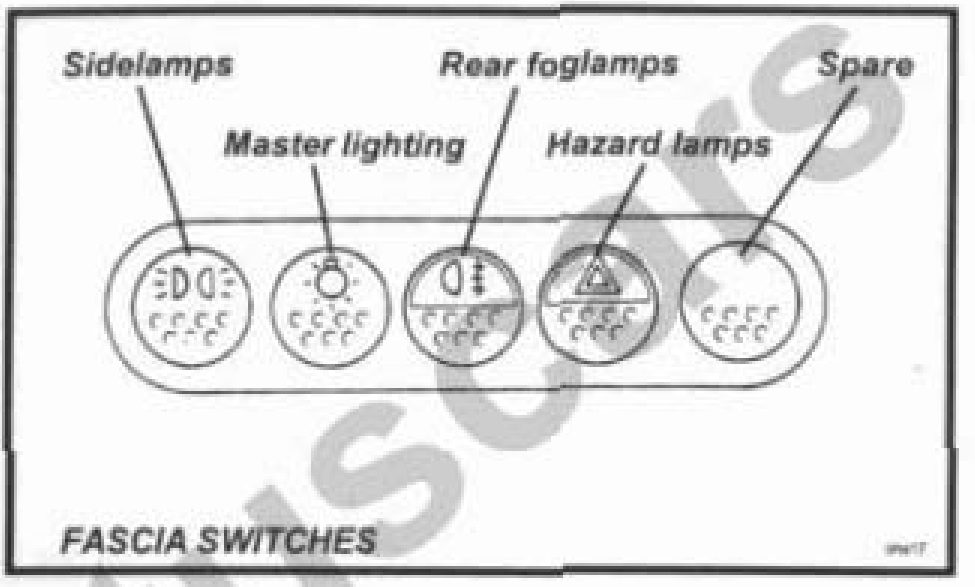
FASCIA SWITCHES

Sidelamp Switch

A green tell tale window within the switch button is back lit when the ignition is switched on to help locate the switch. Pressing the switch will switch on the sidelamps and panel illumination, and brighten the switch button tell tale. The switch operates with or without ignition. Press a second time to switch off.

Master Lighting Switch

A green tell tale window within the switch button is back lit



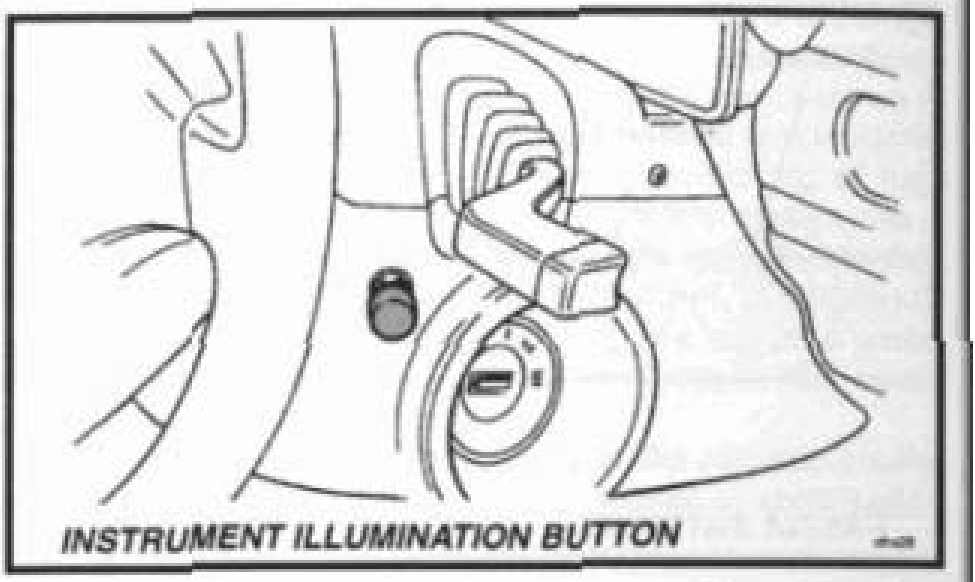
illuminated when the ignition is switched on to help locate the switch. Pressing the switch, which operates with or without ignition, will switch on the headlamps in addition to the sidelamps and panel illumination, irrespective of the sidelamps switch position. The switch button tell tale brightens when the switch is pressed. Press a second time to switch off.

Rear Fog Lamp Switch

An amber tell tale in the switch button is back lit when the sidelamps are switched on in order to help locate the switch. A single fog guard lamp is fitted on the offside rear of the car, and is operative only in conjunction with the headlamps. When the switch is pressed, the integral tell tale brightens only if the headlamp switch is also pressed, and the fog circuit is operating. Press the switch a second time to switch off.

In some territories, rear fog lamps may be used legally only in conditions of 'seriously reduced visibility'. Be aware that indiscriminate or forgetful use of the rear fog lamp can cause distraction and discomfort to following traffic.

On some cars, as a legal requirement, the rear fog lamp circuit is designed to switch off automatically whenever either the headlamps or the ignition is next turned off, regardless of the rear fog switch position. In order to reactivate the rear fogs, the switch must first be pressed 'off' before pressing 'on' once again. The switch tell tale lights up only when the fog lamp circuit is operating.



INSTRUMENT ILLUMINATION BUTTON

Hazard Warning Lamps Switch

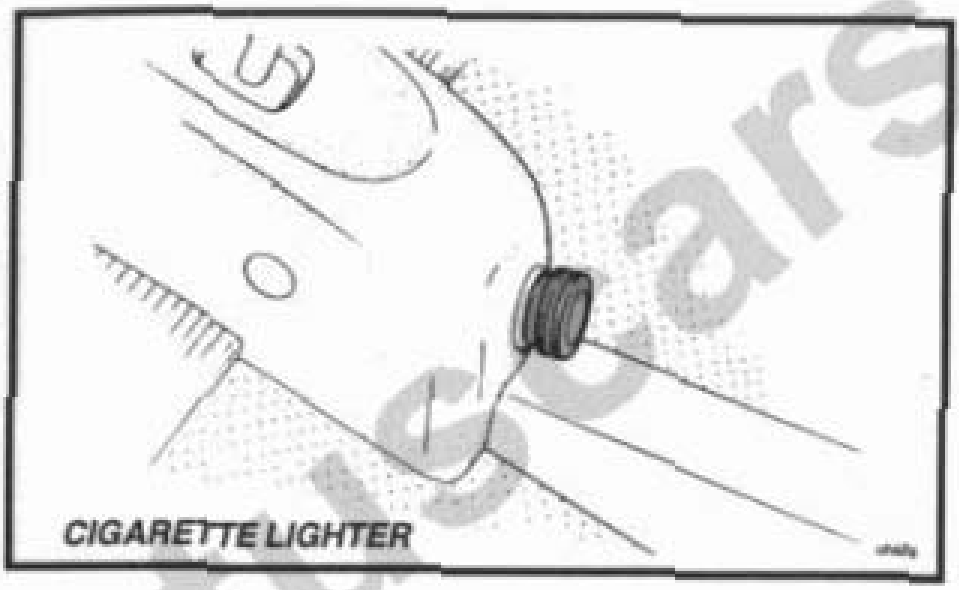
A red tell tale in the switch button is back lit when the sidelamps are switched on in order to help locate the switch. The switch is operative at all times, and when pressed flashes all the turn indicator lamps, and the switch tell tale, in unison.

This facility should be used when the vehicle has to be stopped on the highway in abnormal circumstances, where a warning to other traffic would be prudent. Use of the hazard warning lamps may be subject to local traffic laws, with which drivers should familiarise themselves.

Instrument Illumination

A small button is provided on the steering column shroud, between the ignition switch and steering wheel, by which the brightness of the instrument illumination may be adjusted. To cycle through the four levels of brightness, press and hold the button, and release at the desired setting.

This dual function button also resets the trip distance recorder - see 'Trip Recorder'.



CIGARETTE LIGHTER

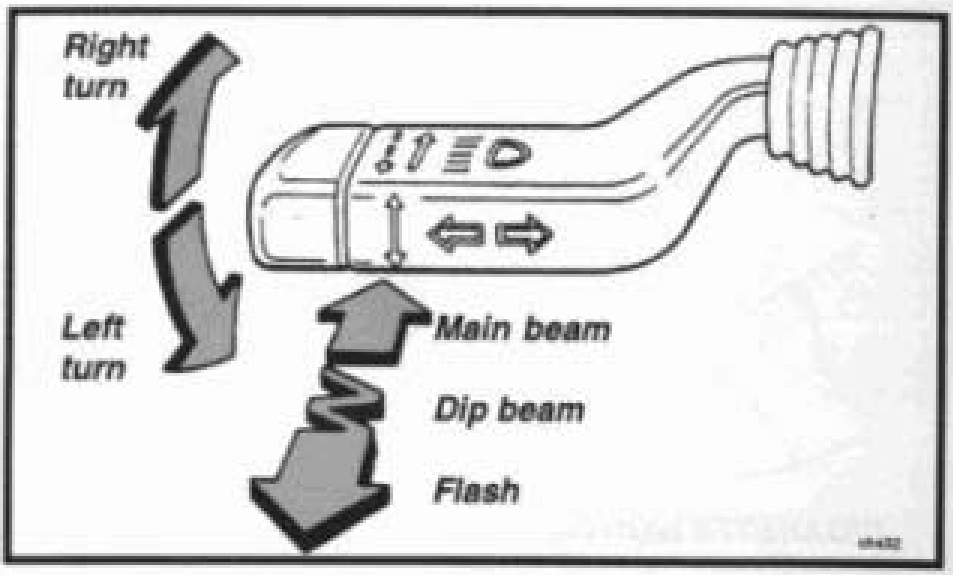
Cigarette Lighter

A cigarette lighter is fitted in the trim shroud ahead of the gear lever, and is operative at all times. To use the lighter, press the centre button of the knob to activate the heating circuit. When the element has been sufficiently heated, which takes only a few moments, the button will spring back out. The lighter may then be withdrawn for use.

Care should be taken when handling the hot lighter to avoid contact other than with its target.

An illumination ring around the lighter is backlit red when the lights are switched on.

WARNING: Do not leave small children unattended in the car since careless use of the cigarette lighter could be dangerous.



COLUMN SWITCHES & HORN

Headlamp Dipswitch/Flasher/Turn Indicators

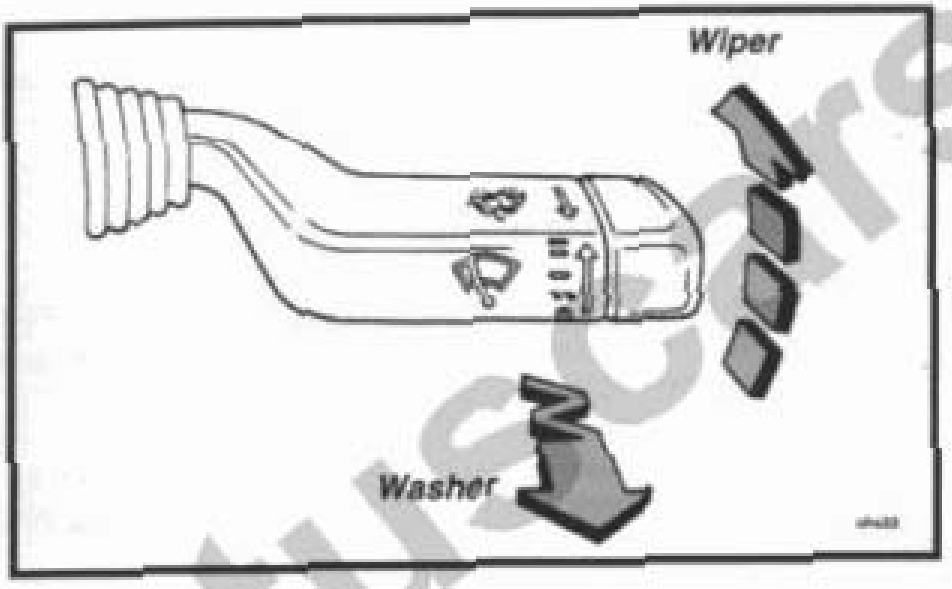
The steering column left hand lever switch controls the headlamps main beam/dip, headlamp flash and turn indicators.

Headlamp Dipswitch: To switch on the headlamps, press the master lighting switch in the fascia outboard of the steering column. The left hand lever switch is then used to select main or dip beam. Main beam is obtained with the lever furthest forward, away from the steering wheel, and dip beam with the lever moved back towards the wheel. The main beam tell tale lamp in the instrument panel lights when main beam is operating.

Note that on cars equipped with the optional driving lamps mounted in the radiator air intake, the bonnet mounted headlamp main beams are supplemented by the two driving lamp beams.

Headlamp Flasher: The headlamp flasher is operative at all times. If the lever is pulled towards the steering wheel against spring pressure, the headlamp main beams will light.

Turn Indicators: The turn indicators operate only with the ignition switched on. Move the lever down to indicate a left hand turn, and up for a right hand turn. The switch will be



cancelled when the steering wheel is returned to the straight ahead position.

For convenience, when signalling a lane change, pressing the switch up or down only lightly, will allow it to return under spring action upon release.

Windscreen Wiper/Washer

The steering column right hand lever switch controls the windscreen wiper and washer, and is operative only with the ignition switched on. Never use the wiper on a dry screen.

Windscreen Wiper: The wiper is controlled by the up/down position of the lever switch, which operates as follows:

- Moved fully down, the wiper is switched off.
- Move up to the first position for intermittent wipe. The wiper will make one sweep about every five seconds.
- Select the next position for normal wiper operation.
- Move fully upwards for quick wipe, to be used only in heavy rain.

Windscreen Washer: Two windscreen washer jets are provided, one each side of the wiper spindle. Pulling the control lever towards the steering wheel will operate both the washer pump and the wiper. When the switch is released, the wiper will continue for a further four sweeps.

Horn

The windtone horn, which functions at all times, is operated by a central button in the steering wheel.

AUDIO EQUIPMENT (if fitted)

The audio equipment is operative only with ignition. Full operating instructions for the particular set fitted are provided in a separate booklet.

A maintenance free, transformer type, flexible aerial is mounted on the engine cover. The antenna mast may by unscrewed by hand from its base if necessary to guard against vandalism.

Code Protected Sets

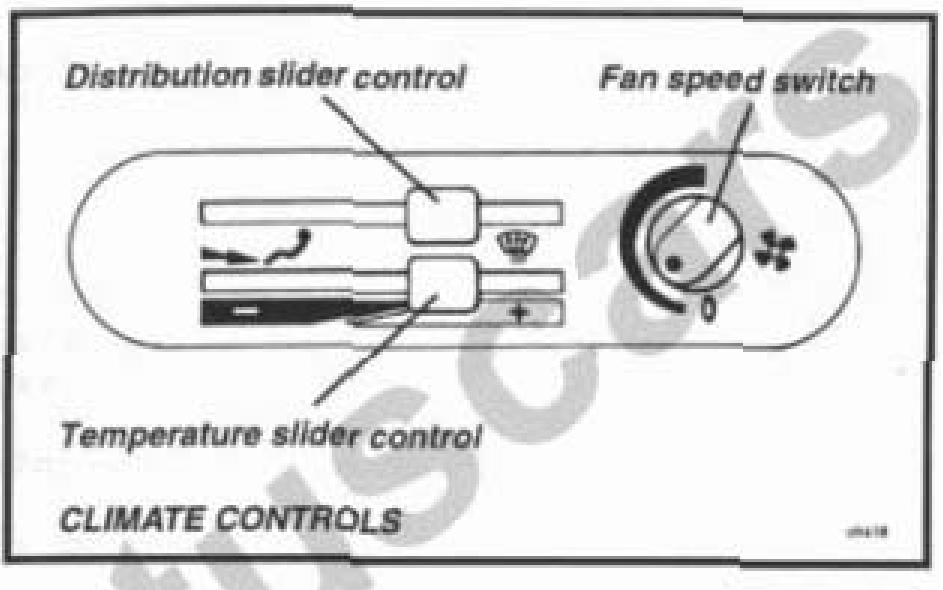
Some audio equipment uses a four digit security code (Computer Anti-Theft System - CATS) as a theft deterrent, such that if the power supply to the set is interrupted, the unit cannot be used again until the 4-digit code is entered. The code may be customer chosen or factory allocated, but in either case, the number should be recorded on the radio ID card and kept safely off board with the vehicle documents. If for any reason the vehicle battery is disconnected, the code will need to be entered after reconnection. Refer to the audio equipment manufacturer's separate booklet for further details of this system.

INTERIOR CLIMATE CONTROLS

A central recess in the fascia houses the interior climate controls which consist of a pair of slider controls for air distribution and temperature control, and a rotary switch for the interior fan.

Air Distribution: Move the upper slider control fully to the right for full defrost. All air will be directed to the four outlet vents in the scuttle top. These may be manually opened and directed for optimum airflow to the screen.

Moving the slider to the left progressively directs an increasing proportion of the airflow to the footwell vents, until



at the full left position, airflow to the scuttle outlets is closed off.

The scuttle outlet vents may be rotated and directed towards the passengers if required.

Temperature Control: Move the lower slider fully to the right for maximum heat, and progressively to the left for cooler temperatures. At the extreme left position, ambient air is supplied.

Fan Speed: The rotary switch to the right of the slider control provides three fan speeds to boost air circulation. Turned fully counterclockwise, the fan is off; air is supplied only by 'ram' effect which is dependent on vehicle road speed. Turning the switch progressively clockwise operates a blower fan at increasing speed to boost circulation.

Full Defrost: For maximum defrost performance, move both slider controls to the right, turn the fan switch fully clockwise, and open and direct the scuttle vents onto the screen.

Ventilation Shut-Off: To close off the ventilation, which may be desirable in traffic to avoid drawing fumes into the car, turn off the fan switch, move the upper slider fully to the right (screen) and manually shut off the four scuttle vents.

Engine Bay Ventilation

The engine bay is ventilated via air intake ducts in the body sides, and outlet grilles in the engine lid.

DRIVING CONTROLS

Foot Pedals

The clutch pedal, brake pedal and accelerator pedal are arranged in the orthodox positions, and are grouped closely together for ready access and refined driving technique. Drivers should avoid wearing heavy boots, high heels or other unsuitable footwear.

Clutch Pedal

The practice of driving with the left foot resting on the clutch pedal should be avoided, as rapid wear of the clutch components can result. A left foot rest is provided for comfort and convenience.

To avoid unnecessary clutch wear, avoid 'holding' the car on a slope for more than a few moments by slipping the clutch; apply the parking brake until ready to drive off.

Accelerator Pedal

It is most important to be aware of the dangers of fitting loose mats in the driver's footwell; these can foul the accelerator pedal and cause a sticking throttle. Use only approved Lotus accessories sold and fitted by a Lotus dealer.

Footbrake

The ventilated brake discs fitted to all four wheels of the Elise, are operated by separate front and rear hydraulic circuits, supplied from a tandem master cylinder located in the front services compartment.

An un-assisted brake system is used to provide good pedal feedback, and is optimised for high speed driving, with efficient disc cooling to inhibit brake fade. With a new car, or new brake system components, maximum braking efficiency will be achieved if, for the first few hundred miles, needless heavy braking is avoided, and the brake pads and discs are allowed to 'bed in' fully before being used to their full potential. Pedal effort will reduce as the brakes are bedded in, and as they are

warmed from cold to normal working temperature. Note that the hard grade pad material, especially on models with 'cross-drilled' discs, may give rise to a certain amount of brake noise under some conditions; such noise is not harmful and does not affect the life or efficiency of the brakes.

After negotiating a stream crossing, or when driving on flooded roads, some loss of braking response may be experienced until the brakes have dried out. As soon as it is safe to do so after such an encounter, apply the brakes until normal operation is restored.

Parking Brake

The parking brake, which operates on only the rear wheels is applied by a parking brake lever mounted between the seats. The brake should be applied by pulling the lever upwards **firmly and fully** to engage the maximum number of ratchet 'clicks'. The fascia tell tale lamp warns of parking brake application (see 'Tell Tale Lamps').

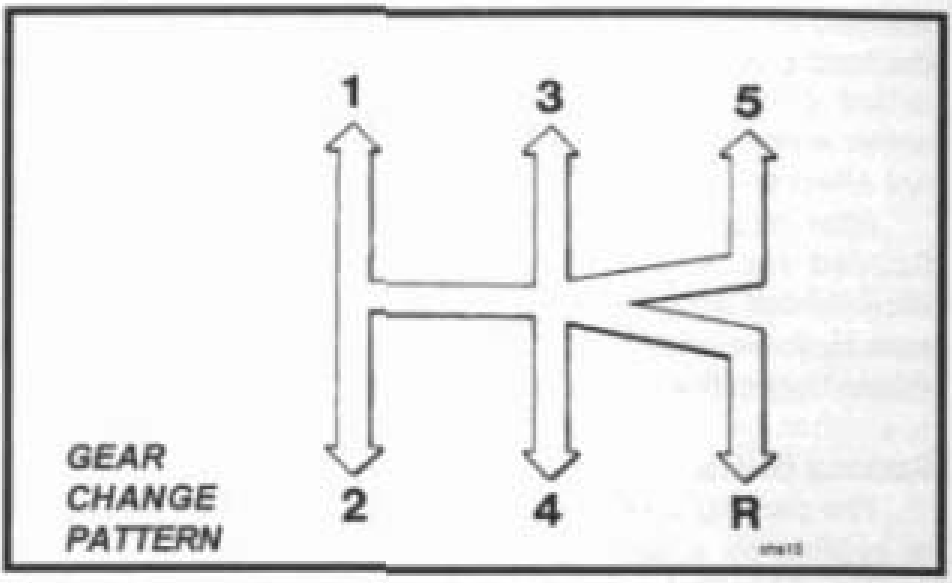
When parking the car on a slope, the additional precaution should be taken, as recommended by the U.K. Department of Transport Driver's Manual and other driver's guidelines, of leaving the transmission in first or reverse gear and steering the wheels towards the kerb. If the parking brake is applied when the brakes are hot (e.g. after prolonged or vigorous braking), special care should be taken to ensure that the parking brake is securely engaged in order to allow for any potential affect on brake performance due to temperature change.

To release the brake, pull up the lever, press and hold the release button in the end of the handgrip, and lower the lever fully. Before driving off, always check that the parking brake has been fully released, as confirmed by the tell tale lamp going out, or damage to the brake system may be caused.

Note that the parking brake uses a cable mechanism to apply the rear brake calipers, and is totally independent of the footbrake hydraulic circuit.

Gear Lever

The gear lever is spring biased towards the 3rd/4th gear plane, and must be moved against light spring pressure to the left before selecting first or second gear, or against similar pressure to the right before selecting 5th speed.



Engaging Reverse Gear: Note that a safety feature prevents reverse gear being selected directly from 5th, by requiring that the lever is first moved across the gate to release an interlock. With the vehicle at a **complete standstill**, pause for a moment with the clutch pedal fully depressed before moving the lever into reverse. The reversing light is switched on automatically when reverse gear is engaged.

When changing gear, it is essential that the transmission is not abused by 'power shifting'; the clutch pedal must be fully depressed during each gear shift, and the throttle pedal eased during upshifts. Gearshifting without correct operation of the clutch and throttle controls can result in severe damage to the transmission and engine.

STARTING PROCEDURE & RUNNING IN

WARNING: CARBON MONOXIDE - Be aware of the danger of carbon monoxide! Never run the engine in an enclosed space. The exhaust gases contain carbon monoxide, a deadly gas which is particularly dangerous, as being colourless odourless and tasteless, its presence is very difficult to detect.

Before starting the engine, always check that the parking brake is firmly applied, the transmission is in neutral, and as an extra precaution, depress the clutch pedal. Switch off any unnecessary electical loads.

Starting a Cold or Warm Engine

The fuel injection and engine management system controls fuel delivery and engine settings under all normal operating conditions. When starting the engine, do NOT depress the accelerator:

i) If necessary, mobilise the engine by pressing the appropriate transmitter key button (see 'Vehicle Security Alarm').

ii) Turn the ignition key to position 'III' to engage the starter motor, and release as soon as the engine starts. If the engine fails to start within 15 seconds, stop cranking and pause for 10 seconds before a second attempt.

iii) If difficulties are encountered, press the accelerator half way down, and repeat (ii).

iv) If the engine still fails to start, it is likely that it will have become fuel flooded. Provision is made to cut off the fuel supply completely when cranking, by fully depressing the accelerator. Repeat the starting procedure holding the pedal fully down, and release immediately the engine starts.

Note:

i) Before repeating a starting attempt, pause one or two seconds to ensure that both the engine and starter motor have come to rest , and thus avoid risk of damage to the starter mechanism.

ii) The use of wide throttle openings and/or high rpm before the engine has reached normal running temperature will result in premature wear, and should be avoided.

Idle Speed

Engine idle speed is controlled electronically by the engine management computer, and is normally about 875 rpm. An uprated idle speed is required under certain operating conditions including the engine warm up phase, during which time the raised idle helps to speed the time taken for the catalytic converter to reach operating temperature, as well as to aid rapid demisting, and inhibit stalling. Idle speed will return to normal automatically when the engine has warmed sufficiently.

Running In

The progressive and sympathetic running in (or bedding in) of a new engine and transmission is a major factor in attaining efficient operation with smooth, durable and economic performance throughout the life of the vehicle.

Although it is not necessary to follow a formal 'running in' schedule, it is important during the engine's early life to limit the amount of engine heat generated, which is dependent on throttle opening and speed. For the first 600 miles (1,000 km) use only moderate throttle openings and do not exceed 3,000 rpm, making full use of the gearbox to avoid labouring the engine in too high a gear. After this period, the engine speed and throttle opening may be progressively increased, and higher engine work loads used for longer periods. Vary the operating conditions rather than maintain a steady cruising speed, and restrict operation at full throttle and rpm until after 1,000 miles (1,600 km) have been covered.

EXTERNAL OPERATIONS

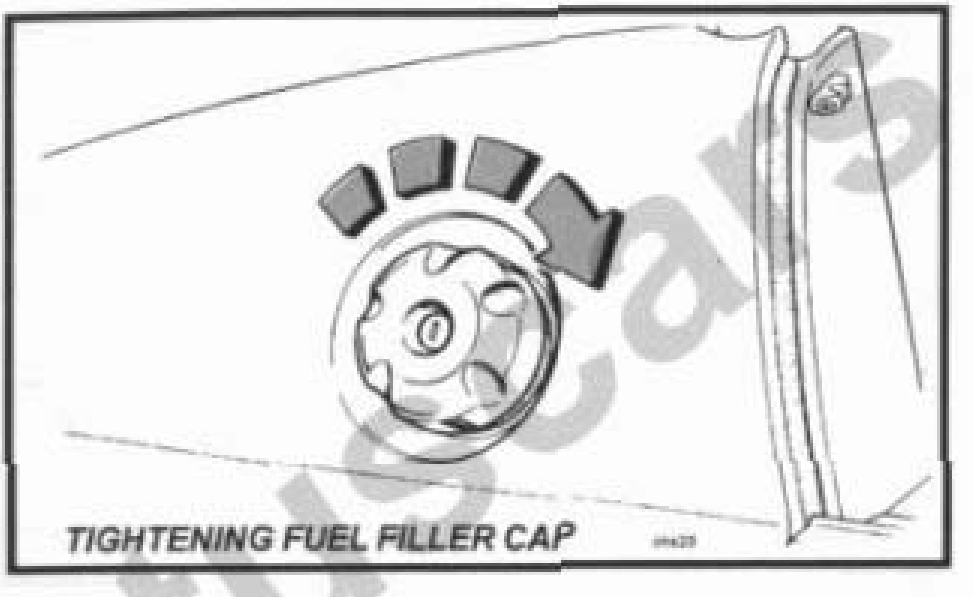
Fuel Requirement

Use only UNLEADED fuel with a minimum octane rating of 95 RON ('Premium' unleaded in U.K.). Unleaded fuel with higher octane ratings may be used, but will be of no additional benefit.

Note that the filler necks are restricted in size so that only the smaller diameter nozzle used on **unleaded** petrol pumps may be inserted. The use of as little as one tankful of leaded fuel would cause irreparable contamination of the precious metal catalysts and the exhaust gas sensor used by the computer controlled engine management system.

Fuel Filling

WARNING: Be aware of the danger of explosion when dealing with petrol and its attendant fumes. Before stopping at a filling station, ensure that all cigarettes are extinguished, and that no naked flames or other potential ignition sources are present. Switch off the engine before refuelling.



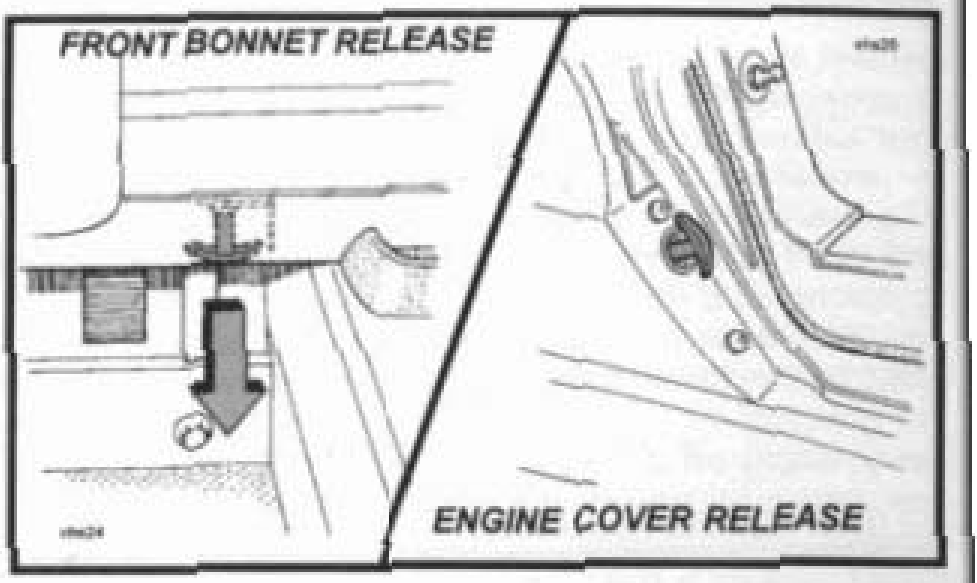
TIGHTENING FUEL FILLER CAP

Filler Cap: The self locking filler cap is located in the right hand rear quarter panel:

- To unlock the cap, insert the key, turn ¼ clockwise, ¼ counterclockwise, and withdraw key.
- Remove the cap by unscrewing counterclockwise.
- Refit the cap by screwing clockwise into the filler neck and tighten until the ratchet mechanism clicks at least three times. The cap is now automatically locked, and requires the use of the key to be removed.

Filling Procedure: Insert the pump nozzle fully into the neck, and fill until the first time the auto-shut off mechanism is triggered. Do not attempt to 'brim' the tank to the top of the filler neck, as expansion of the fuel due to temperature change (underground fuel storage) may cause flooding of the fuel tank breather system charcoal canister, or spillage of fuel.

The total fuel tank capacity is 36 litres (8.0 imp.gal).



Front Bonnet

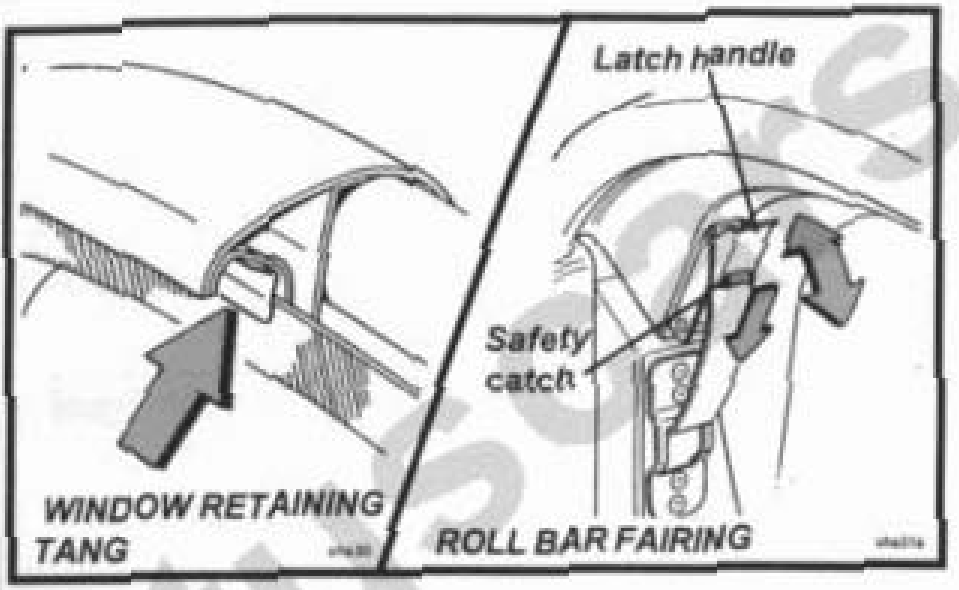
The front bonnet provides access to the windscreen washer reservoir, brake fluid reservoir, battery and main fusebox. To open the bonnet, release the catch by pulling ***downwards*** the release handle located beneath the driver's side of the fascia, and lift the rear edge of the bonnet.

To close, lower the bonnet and press firmly over the centre of the rear edge to fully engage the catch.

Engine Cover

The engine cover provides access to the engine and rear luggage compartment, and may be opened only via a remote cable release: Open the driver's door, and pull the release handle located in the door jamb. Lift the rear edge of the engine cover, and support using the prop fitted on top of the luggage compartment bulkhead; engage the end of the prop in the slot provided on the underside of the engine cover.

To close, disengage the prop and clip into its bulkhead retainer, before dropping the engine cover to engage the latch using the panel's own momentum. On cars fitted with an aluminium engine cover, take care not to dent the panel by applying inappropriate hand pressure.



SOFT TOP ROOF

Concept

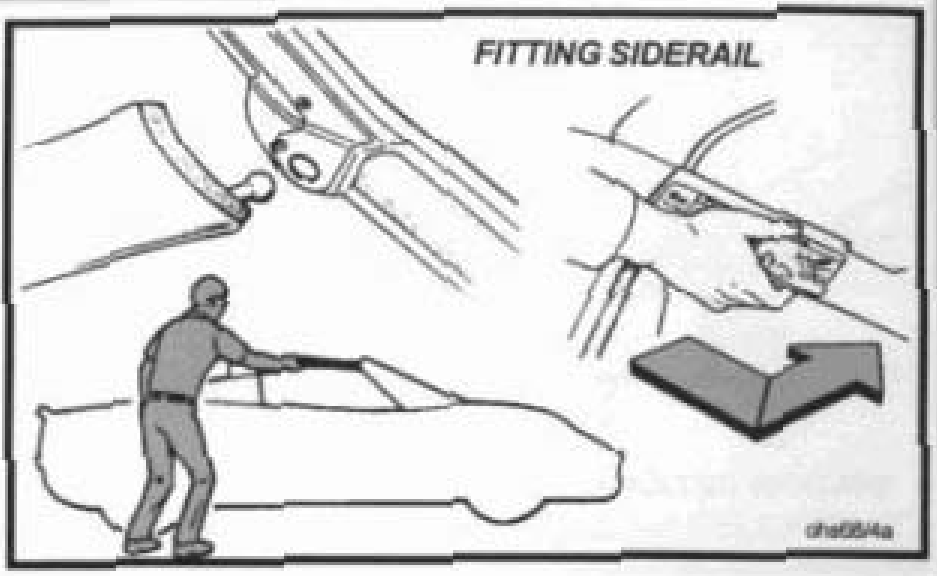
The Lotus Elise has been designed to exploit the pleasures of open top motoring, the better to enjoy exposure to the natural environment, unencumbered by the restrictions and confinement bestowed by a cockpit roof.

In order to provide some weather protection to the occupants and vehicle interior, and allow the continued enjoyment of the car in unfavourable weather conditions, a simple soft top roof may be erected in conjunction with a rigid rear window and roll bar fairing.

Rear Window & Roll Bar Fairing

When running the car in open top configuration, it is recommended to fit the roll bar fairing and rear window in order to reduce cockpit air turbulence, and restrict the backflow of hot air from the engine bay outlet vents.

The rear window is bonded to a composite frame with a rubber seal fitted on the forward side. Slot the lower flange of the frame into the moulded channel in the body. Place the fairing onto the roll over bar, and press the top edge of the window forwards against the fairing flange to compress the seal and allow the glass to be retained by the two tangs on the underside of the fairing. Hook the single over-centre latch at each end of the fairing into its anchor plate on the body, and close the latch, which will automatically engage a secondary



safety catch.

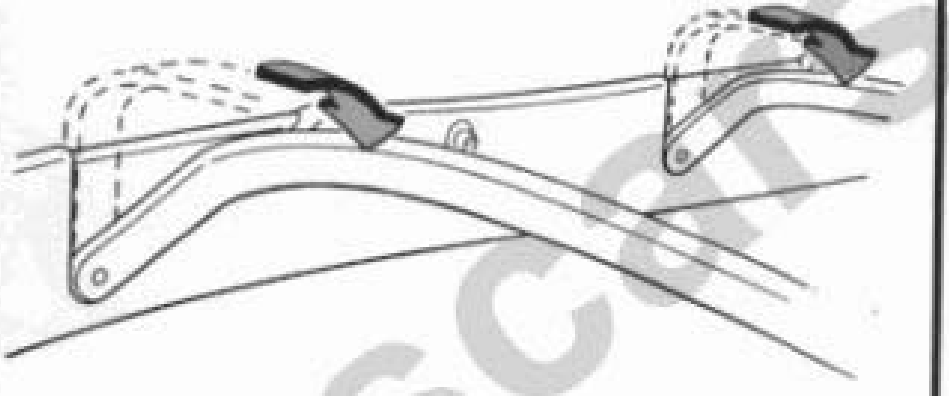
To remove the window and fairing, press down the safety catch before releasing each over-centre latch and lifting off the fairing. Lift out the rear window from its channel, and store carefully.

Soft Top Roof - Erection

Before erecting the soft top roof, first ensure that the rear window and roll bar fairing are fitted (see above).

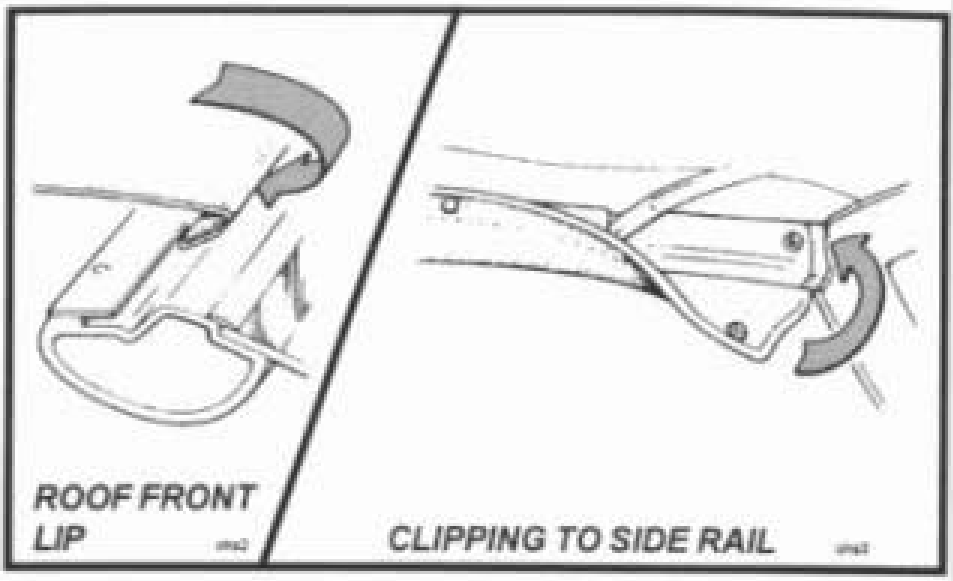
Retrieve the folded roof assembly in its stowage bag from the luggage compartment or from behind the seats. Withdraw the soft top and roof side rails from the bag, open both doors and then:

1. Identify the left hand and right hand roof side rails. Plug the spigot on the front end of the right hand rail into the socket at the top of the windscreen pillar, and align the tapered guide on the rear face of the rail with the wedge on the roll over bar. Push the side rail forwards to enable the rear end dovetail joint to fully engage, and be retained by the spring clip. Fit the left hand rail in a similar manner.



POSITIONING ROOF BOWS

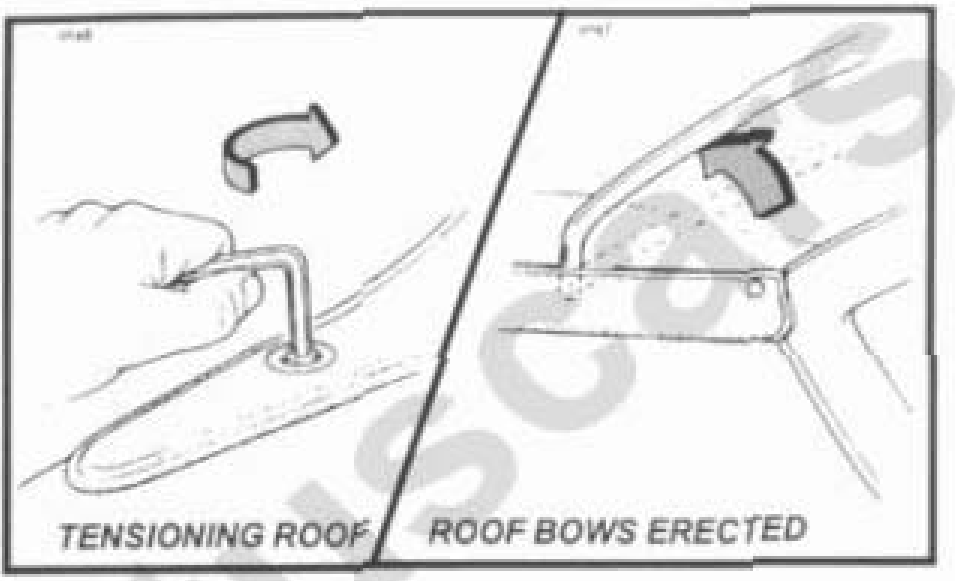
2. Retrieve the two roof bows from their stowage site at the top front of the rear luggage compartment, and fit into their locating holes in the roof side rails. Note that the two bows are identical. Fold both bows forwards (down).



ROOF FRONT LIP

CLIPPING TO SIDE RAIL

3. Unroll, and lay the soft top roof in position, and hook the whole length of the lip on the front edge of the roof beneath the retaining strip on the windscreen header rail. Centralise the roof by locating the pip on the roof front lip with a corresponding notch in the header rail, and wrap the side flaps of the soft top around the side rails, clipping to the three press stud fasteners on the inside face of each rail.



4. Unfold the two roof tails, and engage the pin in each tail with its keyhole slot in the body buttress. Ensure that the pin is fully engaged before using the hexagonal key provided (stowed in the corner panel behind the right hand seat) to turn each cam pin to tension the roof:
   - Turn the right hand pin clockwise;
   - Turn the left hand pin counterclockwise.

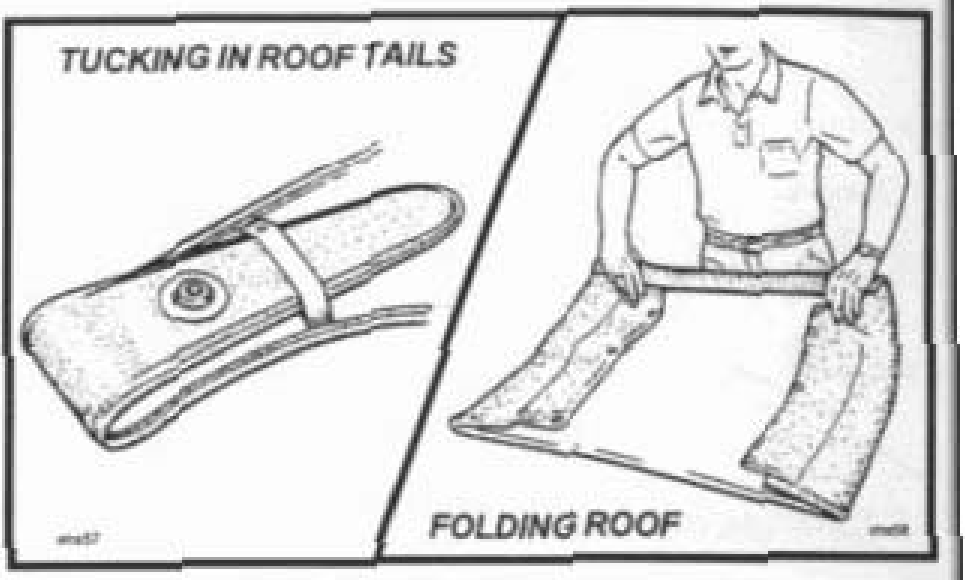
   Note: Tension the roof in this manner only when the roof bows are folded forwards (down).

5. Push the two roof bows rearwards to their upright position to fully tension the roof.

Soft Top Roof - Removal & Stowage

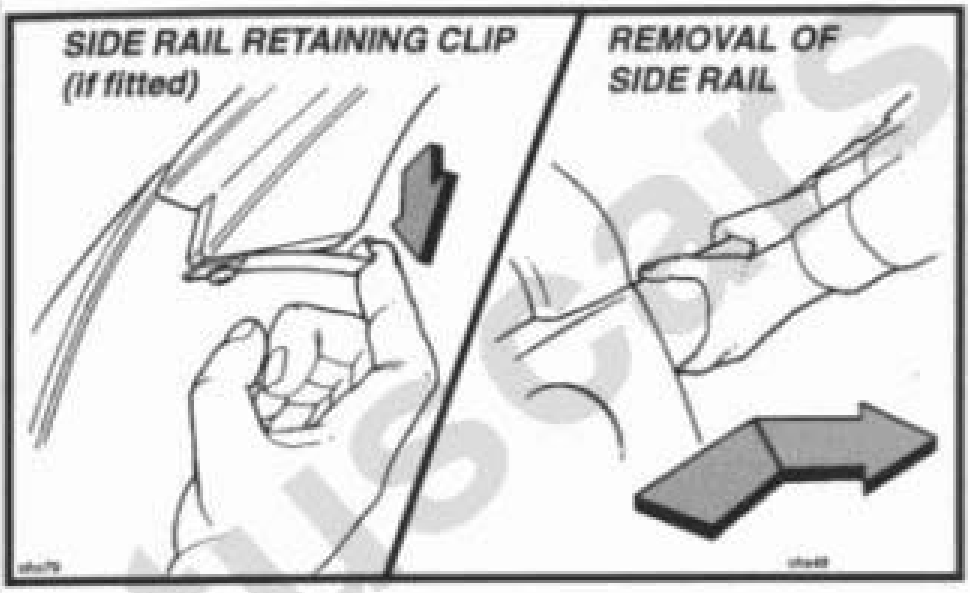
1. Push both roof bows forwards to relieve the tension on the fabric.

2. Use the hexagonal key stowed in the corner panel behind the right hand seat, to release the tensioning pins in the roof tails:
   - Turn the right hand pin counterclockwise;
   - Turn the left hand pin clockwise.



3. Pull each tail backwards to disengage the pin from its keyhole slot, fold the tail over, and tuck the end beneath the elastic strap to protect the paintwork and glass from being damaged by the pin mechanism.

4. Unclip the three press studs securing the roof to each siderail, and pull the front edge of the roof forwards to disengage from the header rail slot. Lift off the roof fabric, lay upside down, and fold over each side towards the centre. Roll up the roof around the stiff header rail strip, and fit into the stowage bag.

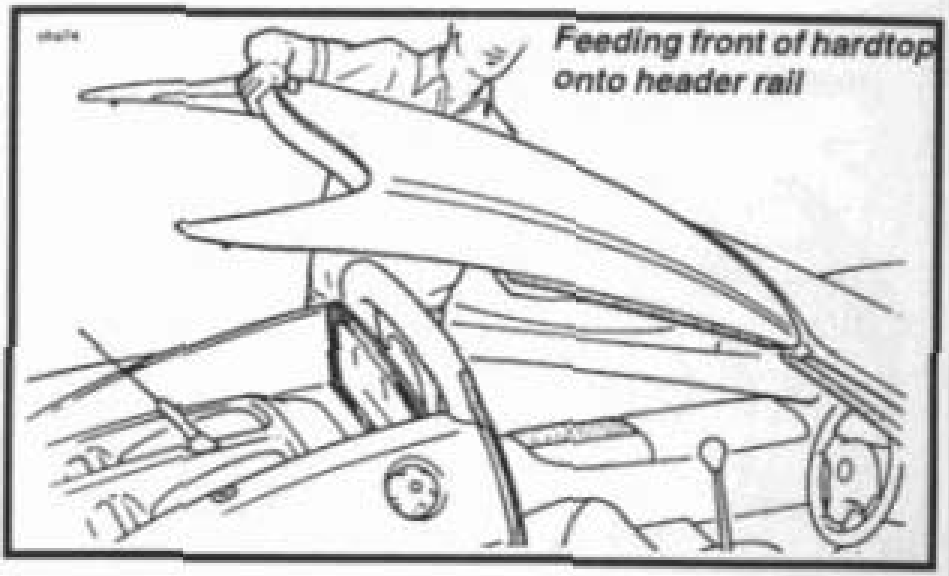


5. Release the two roof bows from the side rails, and stow in their locations behind the seats or in the rear luggage compartment.

6. Remove each side rail by pulling down the rear end retaining clip (if fitted) with a finger, whilst pushing the rail forwards and outwards. Withdraw the rail front end spigot from the windscreen pillar.

7. Lay the two siderails on the roof fabric, and roll up the roof with the siderails inside. Place the roof in the storage bag (if available), and stow either behind the seats, or in the rear luggage compartment.

Important Note: If the roof is not fully dry, it should be stowed for no longer than a few days before unrolling or refitting and allowing to air dry completely. Prolonged stowage of a wet or damp roof will promote rotting of the fabric.



Feeding front of hardtop onto header rail

HARD TOP ROOF

Concept

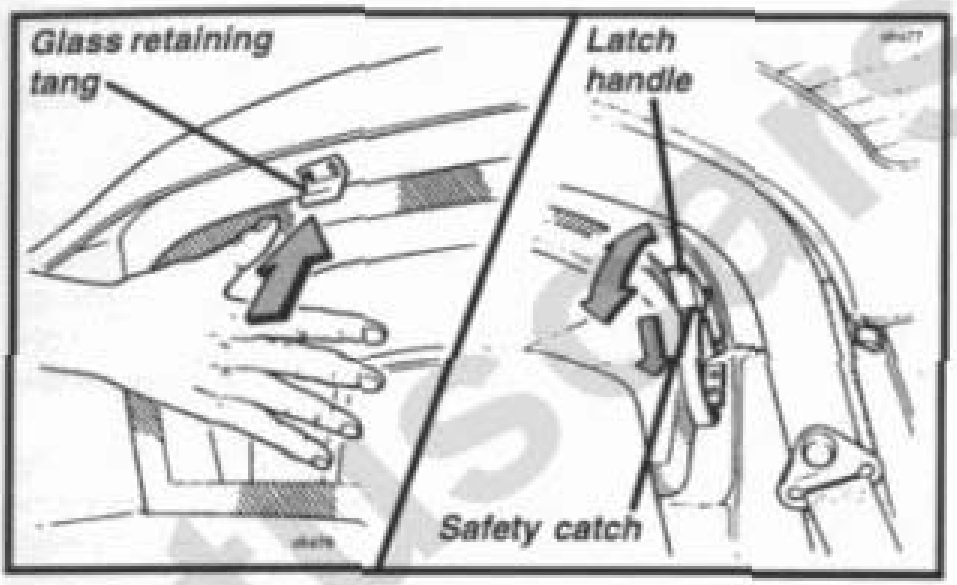
The hard top roof is designed to be fitted or removed in a few minutes by one person, and garage stowed. After removal, it is recommended to fit the roll bar fairing and rear window in order to minimise cockpit air turbulence and inhibit the backflow of hot air from the engine bay outlet vents when running in a roofless configuration.

To Fit The Hardtop

1. From inside the car, release the latch securing each end of the roll bar fairing by pressing down the safety catch before pulling down the latch handle and unhooking the latch from the anchor plate (see handbook page 38).

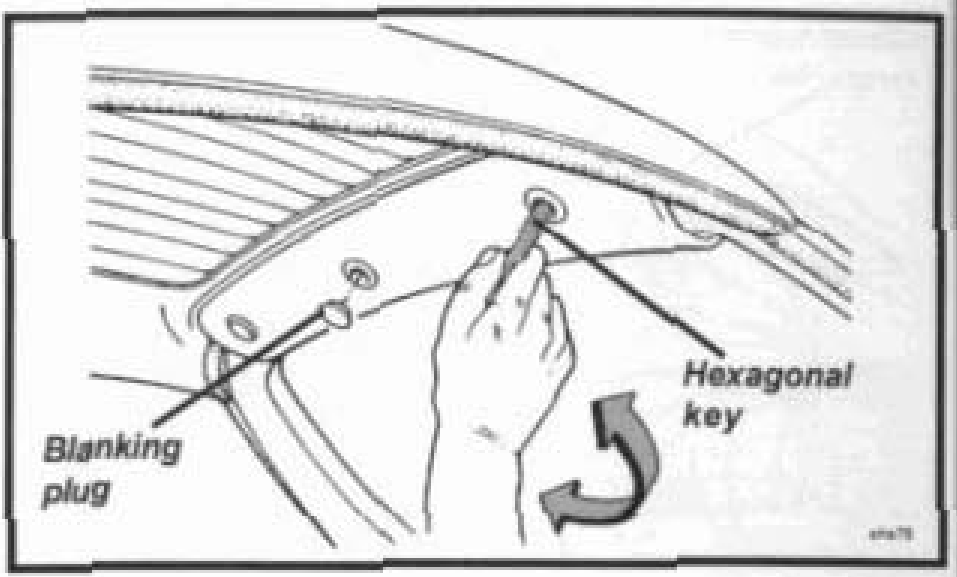
2. Lift off the fairing, leaving the glass window in place, and store the fairing carefully, using the protective bag if available.

3. With both doors open (or the windows wound down) and the engine lid closed, feed the front of the hardtop into position, with the clamp hooked beneath the windscreen header rail.



4. Lower the back of the hardtop onto the rear body buttresses, ensuring that the top of the rear window glass is pressed forwards against its seal and is retained by the two tangs on the underside of the roof. Check that the location pin in each of the roof tails is located in the keyhole slot in the body butress.

5. Hook the single over-centre latch at each side of the rear window onto its anchor plate on the body, and close the latch handle, which will automatically engage a secondary safety catch.



6. Use the hexagonal key provided (stowed in the corner trim panel behind the right hand seat) to tighten the three clamp screws recessed in the roof header rail, and fit the three finisher plugs.

To Remove The Hardtop

1. Open both doors (or wind down windows) and close the engine lid.

2. Pull out the three finisher plugs from the roof header rail, and use the hexagonal key provided to slacken each of the clamp screws three turns.

3. Press down the safety catch and disengage the over-centre latch at each side of the rear window.

4. Lift the rear of the hardtop roof ensuring that the rear window glass remains in place on the body, and withdraw the front end from the windscreen header rail.

5. Stow the roof carefully to avoid damage, using the protective bag if availabe.

6. Fit the roll bar fairing (see handbook page 41).

Body Features

Lotus are acknowledged leaders in the field of composite moulding design and manufacturing techniques, having developed methods which are now used under licence throughout the world. Composite materials have major advantages for specialist vehicle bodies, and these brief notes introduce some features of the construction and service properties of composites as applied to this field.

The manufacturing process enables the thickness of composite mouldings to be varied in order to provide efficient structures of high strength and low weight. Composites will not corrode, so the strength of composite components is retained regardless of age, unless physical damage is sustained. On the Elise, the body construction utilises a single moulding for the whole of the nose and front wings, and a second one piece moulding for the whole of the rear body aft of the doors. These two mouldings are fixed using threaded fasteners to permit easy removal for access to chassis or powertrain components, or to allow simple and economic accident repair. Other composite mouldings include the door shells, sills, front compartment lid, windscreen frame and rear bulkhead, some panels being bonded to the aluminium alloy chassis with an elastomeric adhesive.

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

Causes of gel cracks include:

- Vehicle collision;
- Sitting, leaning heavily or pushing on the body or any composite panel;

- Knocking doors against obstructions when opening;
- Dropping objects onto a panel;
- Allowing unrestrained items to slide around in the luggage compartment;
- Closing a compartment cover 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);
- Incorrect use of a vehicle jack.

Paint Care

The acrylic enamel finish of the Lotus Elise is extremely resistant to all normal forms of atmospheric attack. Following the simple maintenance procedure summarised below will help retain the gloss, colour and protective properties of the paint throughout the life of the vehicle. However, car finishes are not immune to damage and amongst the more common causes of deterioration are:

- Atmospheric contaminants; dust, soot, ash, and acidic or alkaline aerosol mist can chemically attack paint.
- Abrasion; blowing sand and dust, or a dirty washing cloth.
- Tree sap and insect fluids; can form a water-insoluble polymer that adheres to the paint.
- Bird droppings; highly acidic or alkaline, they can chemically etch the paint.
- Leaves; contain tannic acid which can stain light finishes.
- Impact damage; granite chippings thrown up from poor or recently dressed road surfaces can subject the body to severe localised impact, and result in paint chips, especially around the vulnerable frontal panels. Do not follow other vehicles too closely in such circumstances.

Washing

Lotus recommends that the car be hand washed, using the following instructions:

Many contaminants are water soluble and can be removed before any harm occurs by thorough washing with plenty of lukewarm water, together with a proprietary **car wash** additive (household detergent and washing up liquid can remove wax and accelerate oxidation). Frequent washing is the best safeguard against unseen contaminants; at the same time

ensuring the regular removal of dirt, dust and traffic film.

Wash in the shade, and use a cotton chenille wash mitt or a sponge rinsed frequently to minimise entrapment of dirt particles. Use a straight back and forth washing motion to avoid swirled micro scratches, and rinse thoroughly.

Soft Top Roof

1. Careful vacuuming of the soft top before washing may be helpful in removing excess dust and other foreign particles
2. Wash in partial shade rather than strong sunlight, and wet the whole car before tackling the soft top.
3. Use a sponge (a chamois or cloth will leave lint, and a brush may abrade the threads) to apply a mild **soap** solution of lukewarm water. Do NOT use a detergent.
4. To avoid rings or spots, wash the entire top uniformly and let the soapy solution remain on the fabric for 2 to 5 minutes.
5. Rinse the whole car to remove all soap from the fabric and to prevent streaking on the paintwork.
6. Remove surface water with a sponge and allow to air dry in direct sunlight. Ensure that the roof is fully dry before stowing, as prolonged stowage of a wet or damp roof will promote rotting of the fabric.

Keeping the soft top clean by regular washing will enhance the life and maintain the appearance of the roof, and facilitate subsequent cleaning. The use of stronger cleansers should be left to professionals experienced in handling this type of fabric as discoloration and degradation of the material may result. The application of wax finishes, dressings or preservatives may cause stains, and should be avoided.

Paintwork Polishing

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

Higher gloss of the paint finish, and added protection against contamination, can be obtained by the use of a wax polish. However, this can only be used successfully on a clean surface, from which the previous application has been removed with white spirit or a liquid polish cleaner.

Ventilation

Water lying on the paint surface for a lengthy period will eventually penetrate the paint film. Although the effects will not be visible immediately, a deterioration in the protective properties of the paint film will ultimately result.

It is not recommended to store a wet car in a poorly ventilated garage. If good ventilation cannot be provided, storage outside on a hard standing or under a carport is to be preferred.

Windscreen Cleaning

When washing the windscreen, take care to lift the wiper blade only a small distance from the glass in order not to damage the wiper arm mechanism. 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.

Upholstery Cleaning

Cloth Upholstery: 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. Alternatively, a proprietary upholstery cleaner may be used.

Leather Upholstery: The leather should be wiped over occasionally with a cloth dampened in warm soapy water. Use a mild, non-caustic toilet soap or soap flakes. Repeat the operation using a fresh cloth and water only, but avoid flooding the leather. Finish by drying and polishing with a soft dry cloth. The manufacturers of the leather do not recommend the use of any hide 'food', and prohibit the use of petrol or detergents, furniture creams and polishes.

Senotex Coated Trim: Some areas of the interior, including the scuttle and rear bulkhead are finished with a grey, textured 'Senotex' coating. Stains may be removed using a proprietary upholstery cleaner and a soft bristle brush. Finish by wiping

over with a dry soft cloth.

Seat Belts Cleaning

The seat belt should be sponged with warm water and allowed to air dry naturally before use. Do not use chemical cleaners and never attempt to bleach or dye the webbing.

OWNER MAINTENANCE

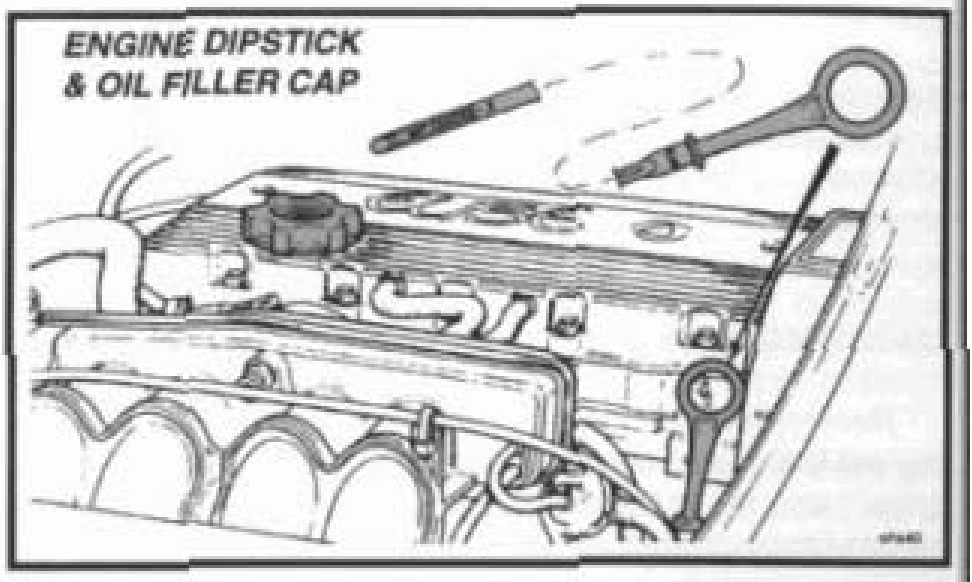
Remember that fuel consumption and wear and tear of the vehicle are affected considerably by the way the car is driven and maintained. Be sure to carry out the simple maintenance checks detailed below, and to have your car serviced regularly by your Lotus dealer, in order to ensure maximum safety, reliability, longevity and pleasure of ownership. Attempts at vehicle servicing with inadequate knowledge, tools or equipment could result in personal injury or vehicle damage. Consult your Lotus dealer in all cases of doubt.

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 vehicle's first 1,000 miles (1,600 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 oil to drain back into the sump. If the engine is stopped before reaching normal running temperature, the oil will not drain back to the sump so readily, and the dipstick will display an artificially low reading.

Dipstick: The dipstick is identifiable by its yellow loop handle, and is located at the right hand rear of the engine. Withdraw the dipstick, and wipe with a paper towel. 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.



Topping Up: If topping up is necessary, remove the oil filler cap from the cam cover, and in order to allow the crankcase to ventilate, remove the dipstick. Add a suitable quantity of a recommended engine oil (see 'Recommended Lubricants') taking care not to spill any oil onto engine or electrical components; use a funnel if necessary.

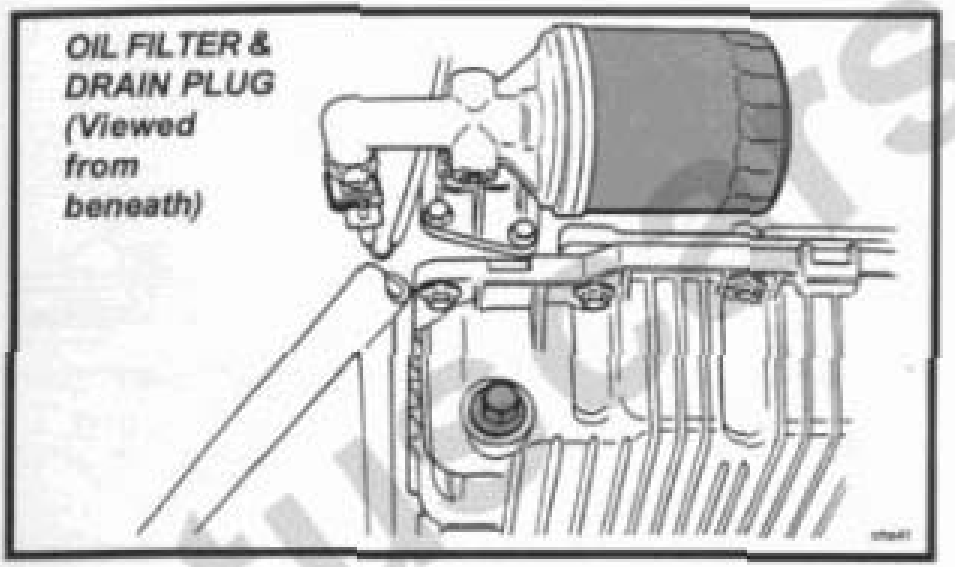
The difference between high and low dipstick marks is equivalent to 1.0 litre (1.8 imp.pt). Allow several minutes for the oil to drain through to the sump before re-checking the oil level. Do NOT overfill, or the oil will become aerated and its lubricating properties degraded. Refit the filler cap and turn clockwise until secure.

Engine Oil Change

The use of high quality oil, renewed at the specified intervals, is the key to engine longevity and sustained performance. Adhere strictly to the engine oil and filter change intervals specified in the Maintenance Schedule.

On cars so fitted, the engine bay undertray/diffuser must be removed for access to the engine sump and filter.

The drain plug is located at the right hand front of the sump, and should be removed to drain the sump immediately after a run when the oil is warm and the impurities are still held in suspension. Take suitable precautions to guard against scalding. Allow to drain thoroughly before cleaning the drain plug, fitting a new sealing washer, and tightening to 25 Nm.



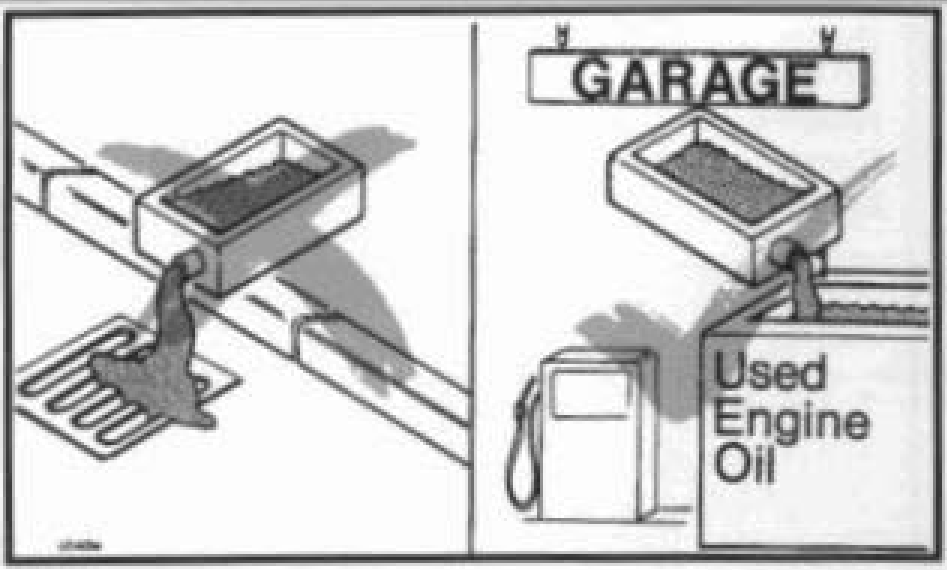
Refill with a recommended lubricant via the oil filler on the camshaft cover, to the top mark on the dipstick. Be sure to *remove the dipstick to permit crankcase venting, and allow* sufficient time for the oil to drain through to the sump before checking the oil level on the dipstick. Take care not to overfill. Re-fit the oil filler cap securely, and check the oil level again when the engine is fully warm (see above).

Oil Filter

The oil filter is horizontally mounted at the front of the engine, and is accessible from beneath (remove the engine bay undershield/diffuser if applicable). The filter should be renewed, at intervals specified in the Maintenance Schedule, by turning in a counterclockwise direction using an oil filter wrench if necessary. Discard the filter after removal (see 'Used Engine Oil').

Before fitting a new filter, clean the mating face on the engine, and smear the new seal on the filter with clean oil. Add a small amount of clean oil into the filter, screw onto its spigot and tighten BY HAND just sufficiently to make a firm seal, typically 2/3 to 3/4 of a turn after the filter sealing ring has *made contact*.

Start the engine and check for oil leaks. Re-check the security of the filter, further tightening by hand if necessary. Check the oil level (see above) when the engine is fully warm.



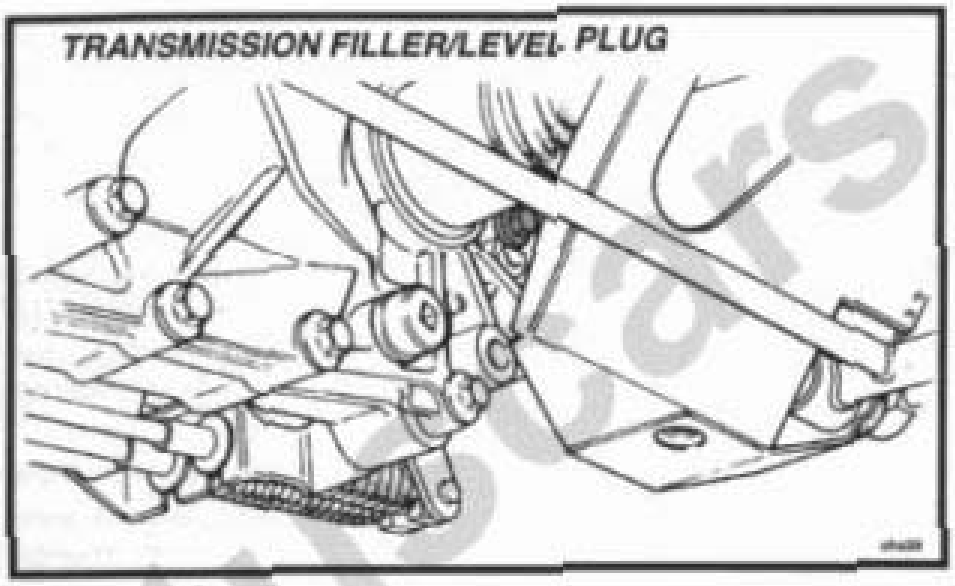
Used Engine Oil

WARNING: - Prolonged and repeated contact with used engine oil may cause serious skin disorders, including dermatitis and cancer.
- Avoid contact with 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. If either of the 'severe service' conditions described below apply, it is recommended that the oil and filter be changed twice as frequently as is listed in the Maintenance Schedule.

Driving in dusty areas (e.g. on unmetalled roads); Change the oil and filter as soon as possible after driving in a dust storm.
Stop/start city driving with frequent short trips where the engine rarely warms up thoroughly (especially in cold weather); and/or frequent or prolonged idling.



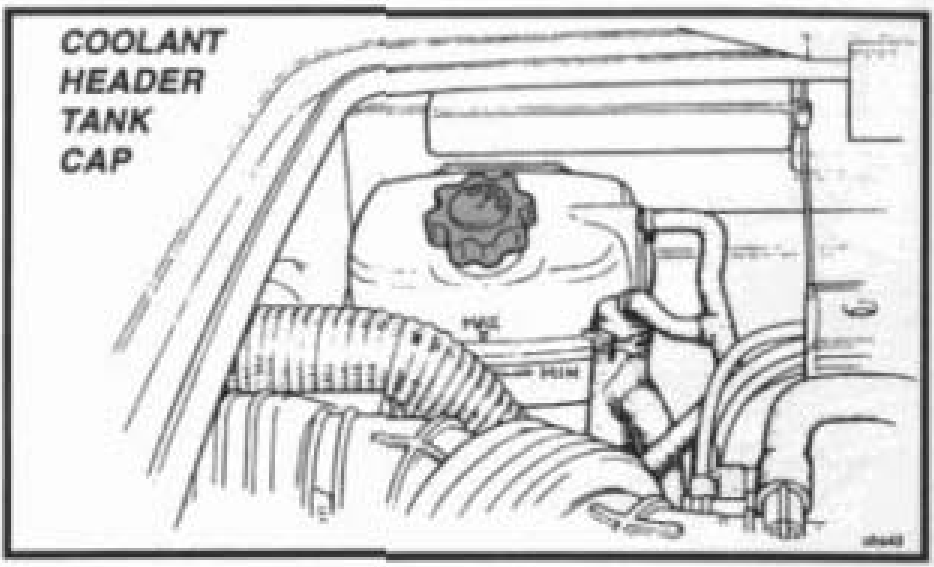
Transmission Oil

The transmission is 'filled for life' with a special lubricant which under normal circumstances requires no routine renewal. For safety reasons, the oil level should be checked at the specified service intervals in the following manner:

- Ensure the vehicle is parked on a level surface.
- Wipe clean the area around the level/filler plug on the left hand side of the transmission casing, behind the output shaft.
- Remove the plug, and check that the oil is level with the bottom of the hole. Note that the release of oil trapped by the plug, should not be confused with an indication of correct oil level.
- If necessary, add only the specified lubricant - Texaco MTF 94 - until the oil level stabilises at the bottom of the plug hole.
- Refit the filler/level plug with a new sealing washer, and tighten to 35 Nm.

Cooling System

The engine cooling system uses a water based coolant and provides heat for the interior climate control. A header tank is used to ensure that the system remains completely filled and also accommodates expansion of the coolant with increasing engine temperature. The tank is mounted at the left hand front of the engine bay, and is fitted with a 110 kPa



(15 psi) pressure cap to raise the boiling point of the coolant to over 120°C.

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

The level of coolant in the translucent header tank will rise as the engine warms up, and fall as it cools down, and under normal circumstances it should not be necessary to add any coolant to the system between services. If overfilled, the excess coolant will be ejected when the engine is warm. If underfilled, overheating may result.

As a precaution, every week when the engine is completely COLD, and without disturbing the filler cap, check that the level of coolant in the translucent tank is close to the 'COLD' mark moulded on the tank. If topping up is required, turn the cap counterclockwise and allow any remaining pressure to escape before removing completely. Fill the tank to the 'COLD' mark, using an approved coolant mixture (see below) in order to maintain full protection from freezing damage, coolant boiling and metal corrosion. In areas where the tap water is extremely hard (exceeding 250 parts per million), distilled, de-ionised or filtered rain water should be used. Refit the cap, and turn clockwise to tighten securely.

NOTE: If the cap is removed from the header tank when the engine is warm, the pressure balance of the system will be disturbed and a small coolant loss may occur. The completely cold header tank level should be checked at the first subsequent opportunity.

Cooling Fan: The radiator cooling fan normally operates only when the engine coolant reaches a specified temperature, but may also run if certain types of engine fault are detected by the on board diagnostic system.

WARNING: Do not encroach into the radiator cooling fan area, as personal injury could result from the fans starting up without warning.

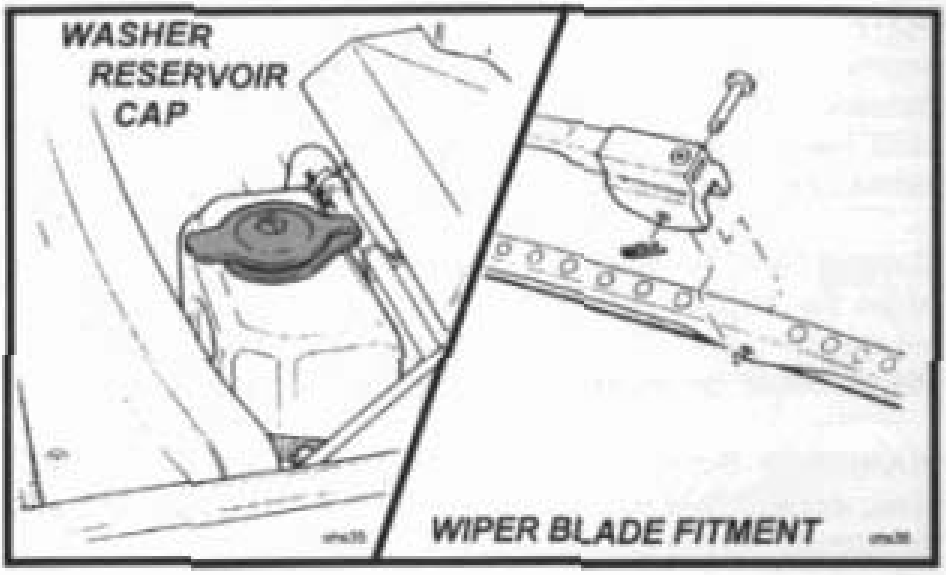
At service intervals, the air duct and matrix of the engine cooling radiator should be checked externally for clogging by insects, leaves or other debris, and if necessary, a water jet used to clear the finning.

Anti-Freeze/Corrosion Inhibitor

It is most important that the coolant contains an anti-freeze with corrosion inhibitor in order to raise the coolant boiling point, and to protect the engine and heat exchangers from both frost damage, and metal corrosion. Use of a good quality monoethylene glycol anti-freeze, protects against these dangers as well as raising the boiling point of the coolant. When new, the system is filled with a 50% concentration of water and Unipart Superplus Anti-Freeze and Summer Coolant, which is suitable for all climates, and should be maintained throughout the life of the vehicle. No other anti-freeze or additive is approved by Lotus.

The effective level of monoethylene glycol in the system may be measured by your dealer 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 24 months.

For coolant capacity, refer to 'Recommended Lubricants' and 'Technical Data'.



Coolant Drain/Refill Procedure

The cooling system of the Lotus Elise has been carefully *optimised to allow the required cooling performance using* the minimum volume of coolant. This provides for high cooling system efficiency, with quick engine warm up, and interior heater output.

When refilling the cooling system, it is vital to ensure that the correct bleeding procedure is followed, and that no air pockets remain. This operation should be entrusted to your Lotus dealer.

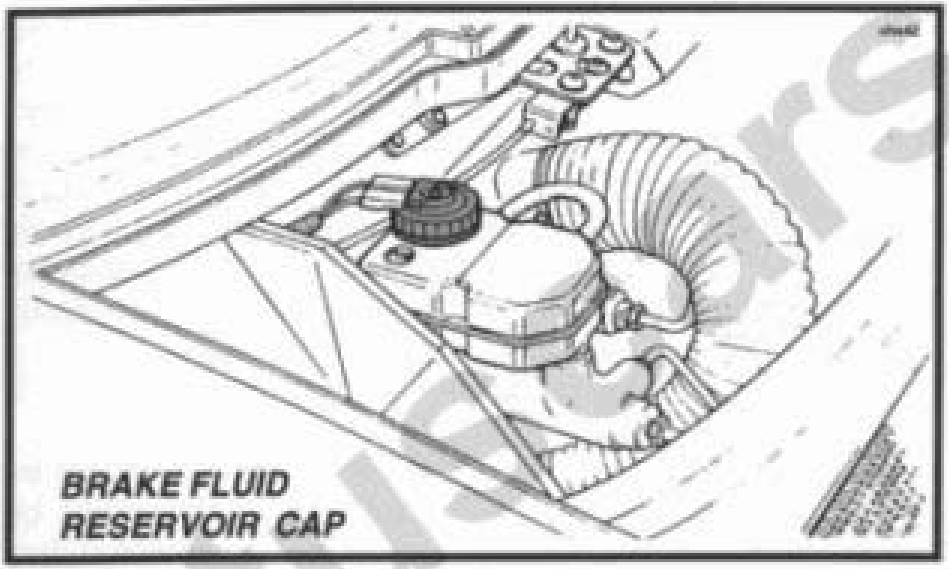
Washer Reservoir

The windscreen washer reservoir is situated in the passenger side of the services compartment beneath the front bonnet, 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.

The washer jets are mounted each side of the wiper spindle, and may, if necessary, be cleared or adjusted using a suitable pin.

Wiper Blade

To replace the single wiper blade, remove the retaining 'R' pin before withdrawing the pivot pin attaching the blade to the arm. Fit the new blade and renew the 'R' pin, ensuring the pin is correctly located and secure.



BRAKE FLUID RESERVOIR CAP

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 in the services compartment beneath the front bonnet: Without disturbing the filler cap, check that the level lies between the 'MAX' and 'DANGER' 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. Note that a single reservoir is used to supply both of the independent hydraulic circuits for the front and rear brakes, and also serves the hydraulic clutch release circuit.

If any fluid is to be added, first clean the surrounding area to guard against dirt ingress before unscrewing the reservoir cap. Be aware of the damaging effect that brake fluid can have on paintwork, and take suitable precautions to avoid any such contact.

Use only a non-mineral type DOT 4 brake fluid from a sealed container marked with a yellow and black (non-mineral) symbol. Do not use DOT 5 silicone fluid, or any fluid which

has been exposed to the atmosphere for more than a brief period, or any fluid suspected of being wet, dirty or contaminated. Do not overfill, and replace the cap securely.

Brake fluid, being hygroscopic, absorbs water from the atmosphere over a period of time, resulting in a 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.

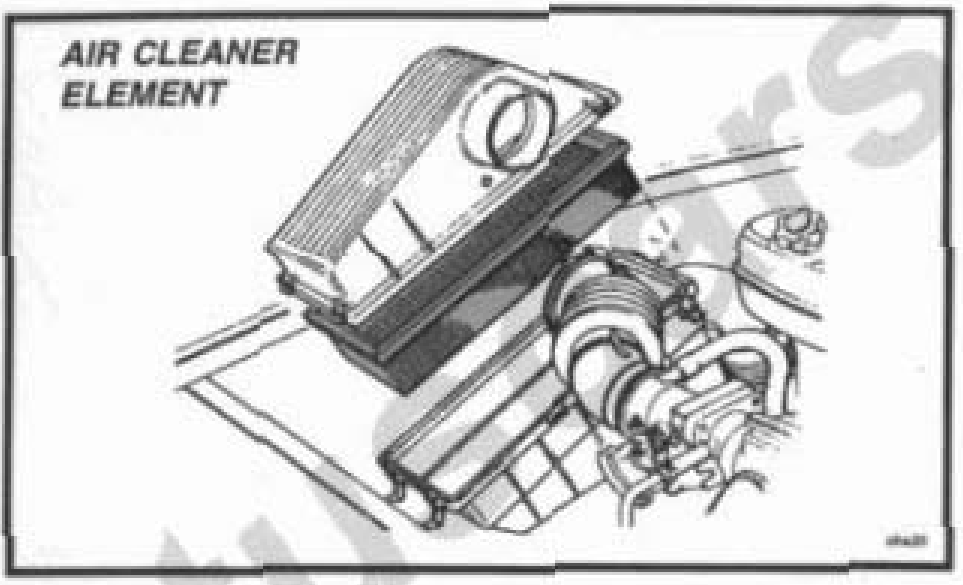
Brake Pads

The thickness of the brake pad lining material should be checked at every service, and under no circumstances be allowed to fall below 2.5 mm (0.1 in). If the brakes are in very frequent or arduous use, as when driving in mountainous terrain, it is recommended that they be examined more frequently. The pads should be renewed if of insufficient thickness to ensure safe braking until the next scheduled service.

Note that in order to ensure that brake pads with the correct material specification are used, only genuine Lotus replacement parts should be fitted, and in the interests of safety, pad renewal should be entrusted to your Lotus dealer.

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 territories where salt is used on the road surface in the winter months.

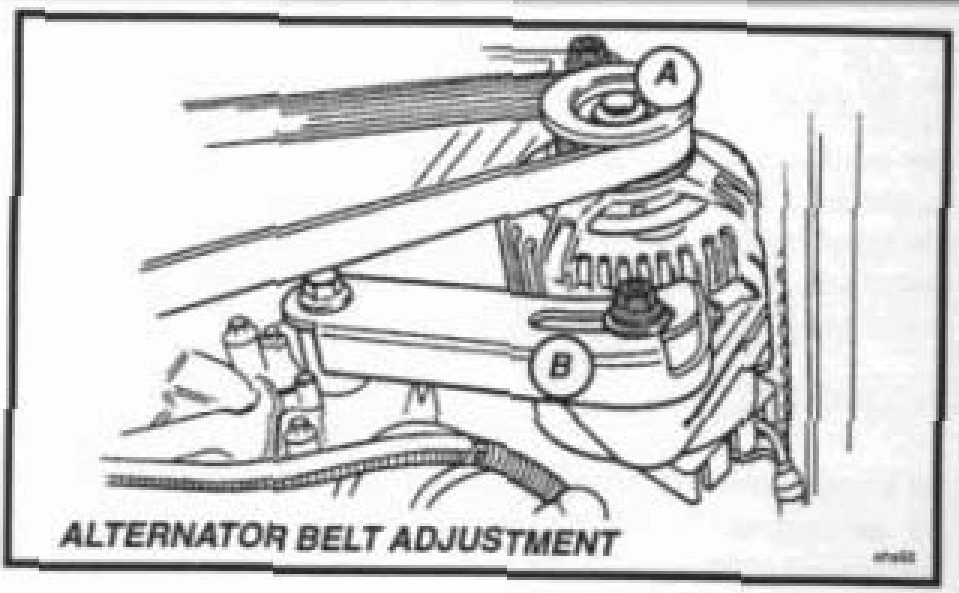


Air Cleaner Element

The air filter should be inspected at intervals dependent on the operating conditions. When the vehicle is operated in a relatively clean 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 will be required dependent on the level of pollution.

A disposable folded paper type air cleaner element is fitted in a housing at the left hand side of the engine bay. To replace the filter element, leave the hose attached, and release the four over-centre clips securing the top cover of the air filter housing. Raise the cover and ensure that the filter element remains in the lower housing before swinging the cover aside. Lift out the element and clean the inside of the filter housing and cover, including the joint line recess.

Fit the new element into position in the lower housing, and refit the top cover, ensuring that the filter seal is correctly located in the cover recess. Engage each of the four over-centre fasteners, and snap each clip closed.



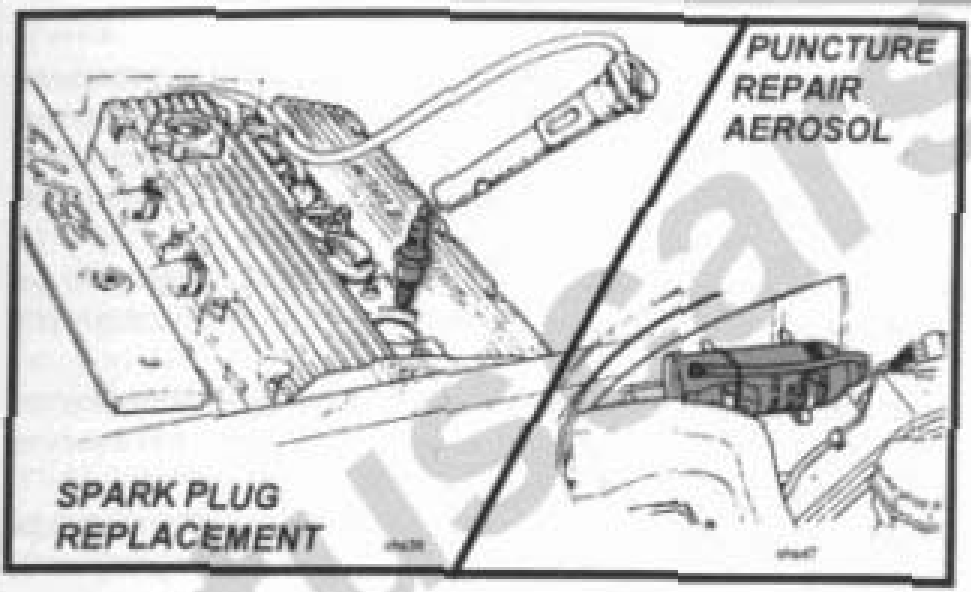
ALTERNATOR BELT ADJUSTMENT

Alternator Belt

A single multi-rib type belt is used to transmit drive from the crankshaft to the alternator. The belt requires no periodic maintenance other than a visual check of its condition. If the belt exhibits any evidence of physical damage, cracking, fraying, perishing, abrasion or contamination, it should be replaced. In the case of oil contamination, the cause must be identified and rectified, and each of the pulleys must be thoroughly degreased before the new belt is fitted.

To replace the belt:

- Slacken the alternator pivot bolt (A).
- Slacken the clamping bolt (B) securing the alternator to the slotted strap.
- Turn the adjuster bolt in the end of the slotted strap to allow the alternator to be swung towards the engine, and unhook the belt from the pulleys.
- Fit the new belt over the two pulleys, ensuring it is correctly seated in the grooves, and tension the belt such that moderate finger pressure at the centre of a belt run produces a one way deflection of 6 mm.
- *Tighten the clamping and pivot bolts.*



Sparking Plugs

Renew the sparking plugs in accordance with the Maintenance Schedule. Remove the two screws securing the spark plug access cover, and pull off the HT lead from each spark plug. Use an airline or vacuum cleaner to remove any loose dirt from the plug wells before unscrewing the spark plugs using a 16 mm (5/8") A/F spark plug socket spanner. Take precautions to prevent debris falling into the open plug holes.

Check the electrode gap of each new plug, and reset if necessary to 0.9mm (0.035 in). Fit the plugs taking care not to cross-thread, and tighten to 25 Nm. Refit the plug leads, pressing firmly, and checking that they are correctly located in their routing clips. Secure the access cover.

Puncture Repair Aerosol

In order to fully exploit the benefits of light weight, and to maximise stowage space and convenience, a 'keep you mobile' puncture repair facility is provided in the form of a puncture repair aerosol stowed in the front services compartment. When the aerosol is connected to the tyre valve, and the button pressed, a mixture of liquid latex and propellant is injected into the tyre, such that the solidifying latex is forced into the puncture site at the same time as the tyre is inflated, effecting a temporary repair and enabling the car to be driven at moderate speed to the nearest tyre depot.

WARNING:

- **Use of the aerosol does not constitute a permanent repair, but is designed to allow the car to be driven to the nearest tyre depot. At the earliest opportunity, the tyre should be professionally repaired or replaced dependent on the severity of the damage.**
- **Until the tyre is repaired or replaced, the car should be driven in a moderate manner, not exceeding 30 mph (45 *km/h*).**
- **Do not use the aerosol for large holes or repairs, or when the tyre sidewall has been damaged, or if the tyre has been displaced from the rim.**
- **The aerosol should be carried at all times in the stowage bracket provided in the front luggage compartment; never in the passenger compartment.**

As soon as a puncture is suspected, pull off the road at the first safe opportunity. If possible avoid driving on a deflated tyre, or irreparable damage to the tyre may be caused.

Directions for use of the aerosol: Before using, carefully read all the instructions on the canister, or on any literature accompanying the product. The following instructions apply to the use of Holts Tyreweld:

1. Remove the object causing the puncture, and position the wheel with the puncture site lowermost. Deflate tyre fully.
2. Shake the can vigorously. In cold conditions, warm the *can using the car's heater outlets,* or by body warmth.
3. Screw the aerosol tube onto the tyre valve, remove the cap, hold the can upright and press the button until the tyre is firmly inflated.
4. Immediately drive for 6 - 12 miles (10 - 20 km) (or to the tyre depot if nearer) in a moderate manner and not exceeding 30 mph (45 km/h), to allow the sealant to spread. Then check and adjust the tyre pressure as necessary.
5. Have the tyre professionally repaired or replaced at the earliest opportunity, and until such time, *limit speed to 30* mph (45 km/h) with a moderate driving manner. Note that some tyre repairers may make an additional charge for cleaning the sealant off the tyre before repair, and that any subsequent repairs may not be guaranteed.
6. Replace the puncture repair aerosol.

Tyres

Lotus engineers work with tyre manufacturers to produce optimal tyre specifications for Lotus models. When tyre replacement is due, consult your Lotus dealer for the current recommendations, which may stipulate a particular country of origin as well as tyre make and model.

In order to fully exploit the dynamic qualities and packaging opportunities, the wheel and tyre sizes are different front and rear, so that interchanging of wheels and tyres between axles is not permissible. Note that the Pirelli P Zero tyre tread pattern is asymmetric with the tyre sidewalls marked 'Inner' and 'Outer'; check that replacement tyres are correctly fitted. Part of the tread pattern is also directional in appearance, but the direction of rotation has no bearing on the tyre performance.

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. Take care when parking to avoid tyre contact with high or sharp edged kerbs, as mistreatment of this nature can cause internal damage to the tyre structure which may not be readily apparent. The alloy wheel rims may also be distorted or damaged by careless parking, and result in wheel imbalance or loss of tyre pressure. Safety considerations should always be paramount when assessing tyre condition and serviceability, and the tyres replaced if any doubt exists, or if the legal tread depth limits are approached.

When driving on wet roads, surface water is squeezed out from between the tyre and road, but excessive speed or water depth can overwhelm the water clearing capability and lead to a condition called 'aquaplaning' where the tyre rides on a film of water and provides little or no grip on the road surface, leading to an inevitable loss of control. This condition is more likely to occur with worn tyres having little depth of tread, or with incorrect tyre pressures. Drivers should keep a vigilant check on tyre wear and condition, and moderate their speed in adverse weather conditions.

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. See 'Technical Data' at the back of the handbook for tyre pressures. Under-inflation will cause excessive wear, rapid deterioration of the tyre sidewalls

and heavy steering, whereas overinflation results in a hard ride and increased susceptibility to tyre damage. Both conditions will cause a degradation in the handling qualities.

It is important that the tyre pressures are adjusted only when the tyres are cold (driven less than one mile), as the pressures may increase by 0.3 - 0.5 bar (4 - 8 lb/in²) 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.

When balancing the wheel and tyre assemblies, the wheels should be 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

If the car is to be used in very cold territories, or driven on snow covered roads, it is recommended to fit winter tyres developed specifically for such conditions. Lotus approves the fitment of Michelin X M+S 130 winter tyres in the following sizes:

Front: 185/55 R15 81T mounted on standard 15 inch front wheels.

Rear: 195/60 R15 88T mounted on standard 15 inch **front** wheels (standard rear wheels are 16 inch diameter).

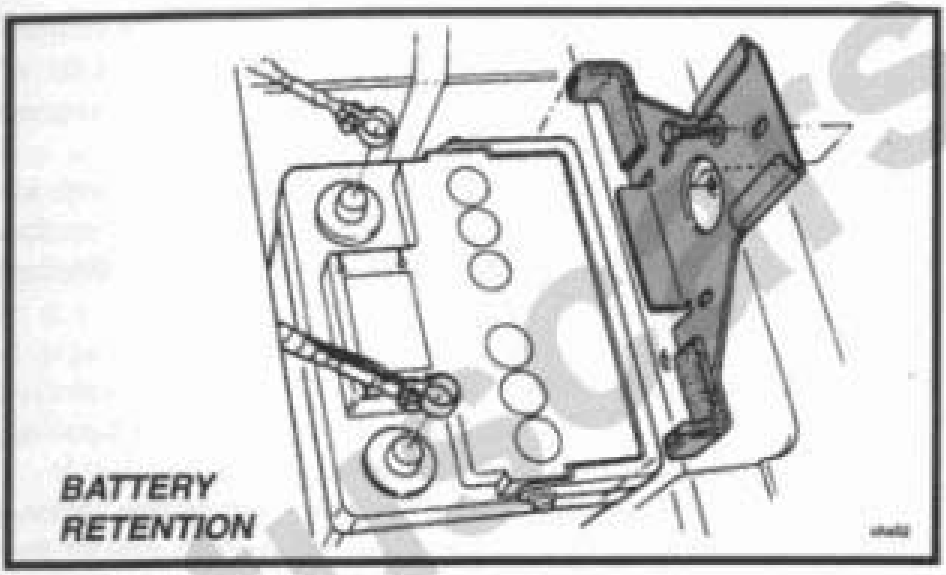
For winter tyre pressures, refer to 'Technical Data' at the back of the handbook.

WARNING:

- **When winter tyres are fitted, a maximum speed of 118 mph (190 km/h) must be observed.**
- **The tyres are NOT suitable for studding.**

Tyre Chains

Snow chains may by used in extreme conditions only in conjunction with winter tyres (see above) and fitted only on the rear wheels. Lotus approves the fitment of Pewag FX 67 S Ring-Super-X snow chains, available under Lotus part number A100G6011F. Follow the fitting and tensioning instructions supplied with the chains, drive in an appropriate manner, and remove the chains as soon as road conditions allow.



BATTERY RETENTION

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.

Battery Access

The 'maintenance free' battery is located in the front services compartment, in the chassis well beneath the windscreen washer bottle. No routine inspection or topping up of the electrolyte is required, but at intervals specified in the Maintenance Schedule, the battery terminals should be checked for security and condition, and protected with petroleum jelly.

For access to the battery, remove the washer reservoir by pulling upwards from its mounting bracket. To remove the battery, disconnect both battery cables (see below), and pull off the breather pipe from the outboard end of the battery. Release the three screws securing the battery clamp bracket

to the chassis, remove the clamp bracket, and tilt the battery to release the lower edge from its retaining channel. Lift out the battery from its well taking suitable precautions with regard to the battery weight and difficult access.

Refit the battery, with its terminals towards the front, by reversing the above procedure. Remember to push on the breather pipe, and reconnect the battery cables as detailed below.

Disconnecting the Battery

If the battery is to be disconnected, the following precautions should be taken:

i) 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.

ii) Ensure that all electrical loads (e.g. lights) are switched off.

iii) Disconnect the **negative** (earth; black; '-') battery cable first, and re-connect last. If the battery positive terminal is inadvertently earthed (e.g. when using a spanner) whilst the negative terminal is still connected, the resultant short circuit with heavy sparking and current flow could cause serious burns.

iv) If the vehicle is fitted with 'CATS' coded audio equipment, check that the security code is available for entering on reconnection.

Battery Reconnection

i) Check again that all electrical loads are switched off.

ii) Connect the positive battery cable first, followed by the negative (earth) cable.

iii) Be aware that the vehicle security alarm may be triggered by the action of battery re-connection. Have the alarm transmitter key ready to disarm the alarm (see 'Vehicle Security Alarm').

iv) After reconnection, 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.

v) Where applicable, enter the 'CATS' code into the audio equipment.

Battery Charging

Under conditions of normal daily use, it should not be necessary to use external battery charging equipment. In a low usage regime, however, it is important to maintain the charge state of the battery using a trickle charger, or an automatic battery management charger such as that supplied by Airflow U.K. This mains operated device, when connected to a vehicle battery, is able to continuously monitor battery charge state and switch on and off automatically in order to maintain the battery in a fully charged state without danger of damage through overcharging.

If the battery becomes discharged to the extent that the vehicle cannot be started, the recommended course of action is to fit a substitute battery whilst the original battery is trickle charged. If, in an emergency, the vehicle has to be 'jump' started, the subsequent conditions of vehicle use may not allow for sufficient alternator charging of the battery to achieve a fully charged state. The battery should be trickle charged until a specific gravity of 1.28 is recorded using a hydrometer, which process may take 24 hours or longer. Putting the battery into service at a lower state of charge will reduce the time period for which the vehicle can be parked.

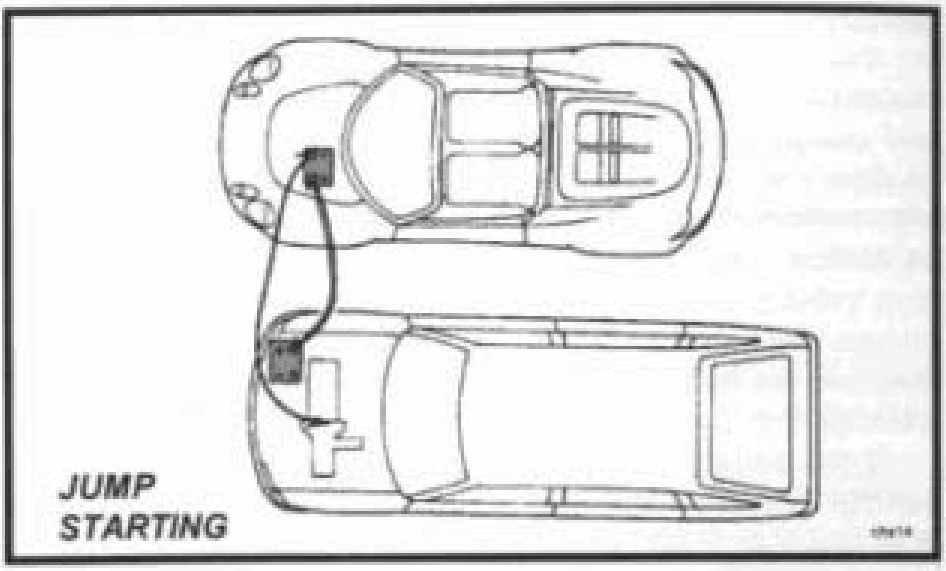
Unless using an automatic battery management charger, the battery should be removed from the car for recharging, to a well ventilated area to avoid a build up of fumes in the luggage compartment and to prevent damage to the car's electrical system. Observe the safety precautions listed above when removing the battery and take care to avoid sharp knocks or shocks, keeping the battery as upright as possible. Beware of the considerable weight of a battery, and take necessary precautions against personal injury.

Check that the electrolyte level is between the upper and lower markers on the battery case, and if necessary add distilled water. The recommended bench charge rate is 4 amps. When the battery is fully charged (s.g. approx. 1.28), allow the battery to stand for an hour before refitting into the battery well and reconnecting the leads - see above.

Electrical Accessories

If fitting electrical accessories of any description, note that these also must be of **negative earth** polarity.

Owners should note that the only approved extras and



JUMP STARTING

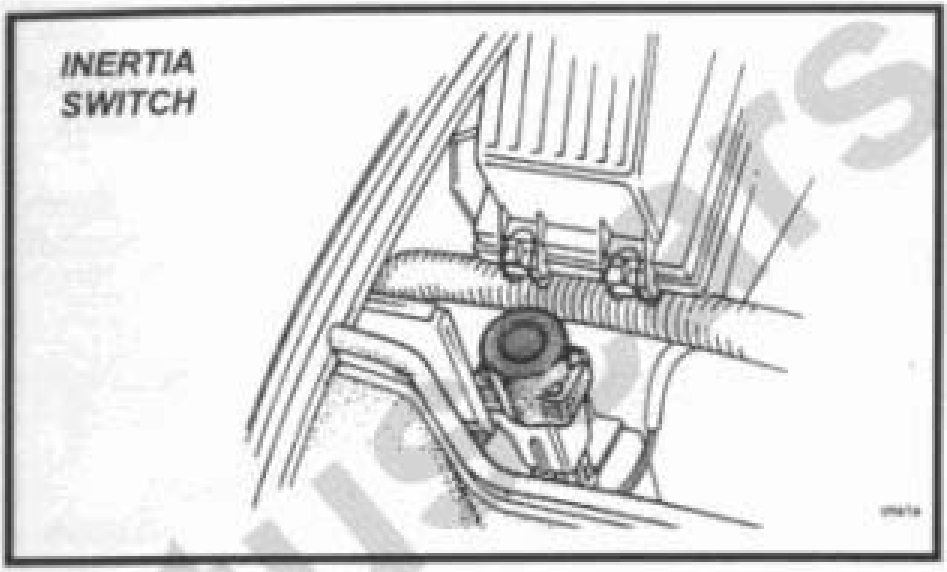
conversions are those which are specified by the Factory and carried out by the Factory or by an authorised dealer. Lotus Cars Ltd. does not accept any liability whatsoever for defects which arise from extras or conversions which are not factory approved. Inexpert modifications or additions to the electrical system could jeopardise safety.

'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.

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. Take care to avoid earthing the positive terminal of the Elise battery against the chassis.
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.

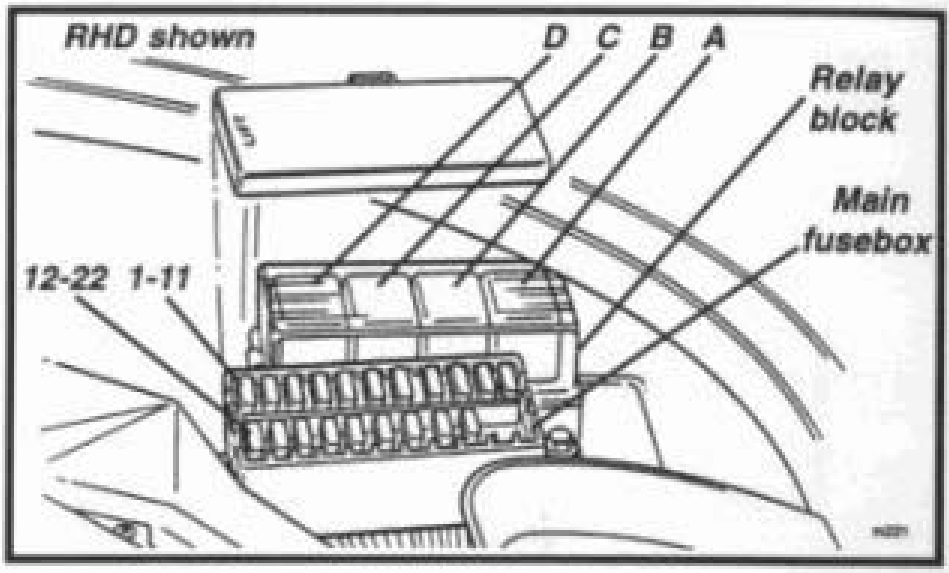
v) A spark will occur at the first disconnection of a jumper cable, so it is essential that the first disconnection is made from the slave vehicle earth. Both batteries (especially the discharged one) will be 'gassing' heavily at this time, and if the first disconnection is made at a battery terminal, 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, and trickle charge the battery as detailed above.

Inertia Switch

The safety inertia switch is designed to operate on impact, such as will occur in an accident, to switch off the fuel pump, and thus minimise any fire hazard.

The inertia switch is mounted at the left hand rear corner of the engine bay, behind the air cleaner housing, and is reset by pressing the rubber diaphragm button on the top of the unit.



Fuses & Relays

The main fusebox is located in the front services compartment, on the passenger side, and is protected by a clear plastic cover. Twenty two slots are provided for 'Little' type fuses, which are numbered and coloured according to their amperage rating, and may be pulled out from their slots using the fuse extractor tool provided on the fusebox lid.

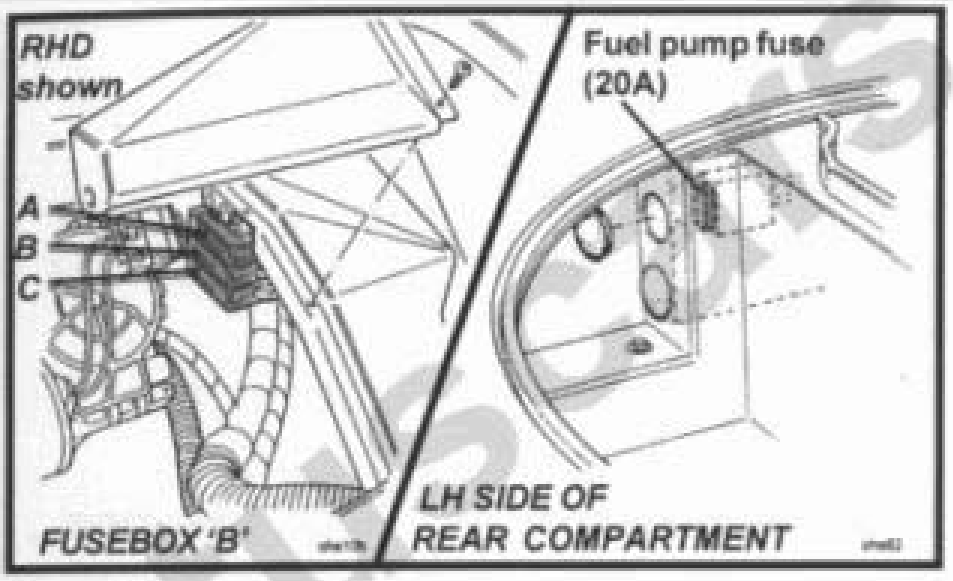
A relay block adjacent to the fusebox houses four relays, protected by a clip-on cover.

Fuses

Slot	*Rating*	*Circuit*	*Slot*	*Rating*	*Circuit*
1	3A	Rear fog lamp	12	25A	Cooling fan
2	2A	Alarm ignition	13		-
3	20A	Interior fan	14	20A	Audio
4	15A	Wiper motor	15	20A	Cigar lighter
5	3A	Reverse lamp	16	5A	Sidelamp LH
6	7.5A	Direction ind.	17	5A	Sidelamp RH
7	10A	Ignition services	18		-
8	7.5A	Stop lamps & battery services	19		-
			20	20A	Fast fan speed relay
9	10A	Hazard lamps	21		-
10	7.5A	Horn	22		-
11	10A	Alarm & Int. lamp			

Relays

A Horn
B Cooling fan
C Dip beam
D Main beam



On right hand drive cars, three Maxi fuses are located beneath the wiper motor protective cover. On left hand drive cars, two fuses are beneath the cover, with the engine management fuse at the opposite side of the front compartment.

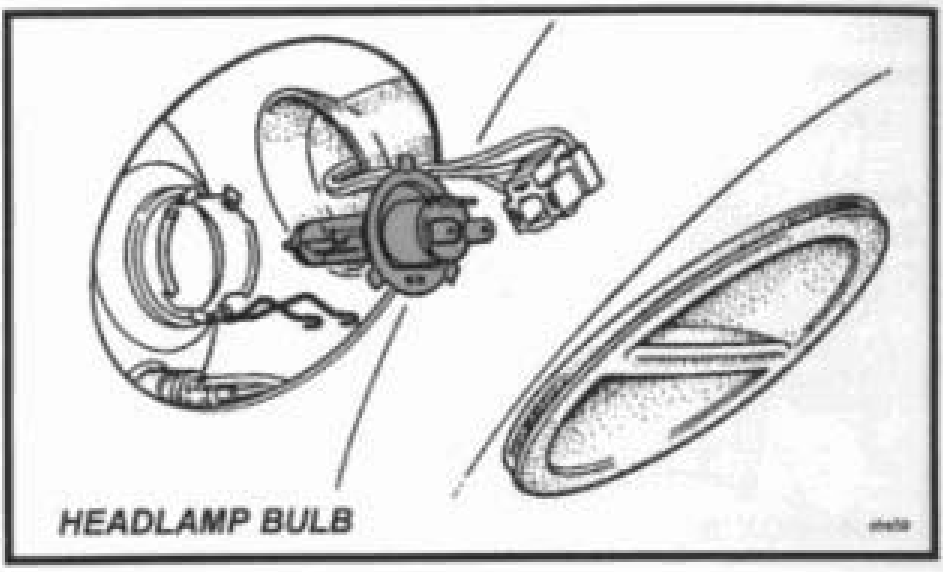
Slot	*Rating*	*Circuit*
A	50A	Lighting
B	50A	Ign. switch
C	40A	Engine man.

To access the 20A fuel pump fuse, unclip the carpet at the left hand front corner of the rear luggage compartment, and pull out the upper of the two grommets.

If the engine management fuse, or any of the Maxi fuses are found to have blown, no repair should be attempted until your Lotus dealer or a competent auto electrician has been consulted. Similarly, any other electrical equipment not illustrated, should be accessed only by a Lotus dealer with the necessary expertise. Upgrading a fuse rating, or interchanging any of the relays or modules, could result in permanent damage to a circuit or electrical component.

Fuse colours:

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



HEADLAMP BULB

BULB REPLACEMENT

Headlamp Bulb

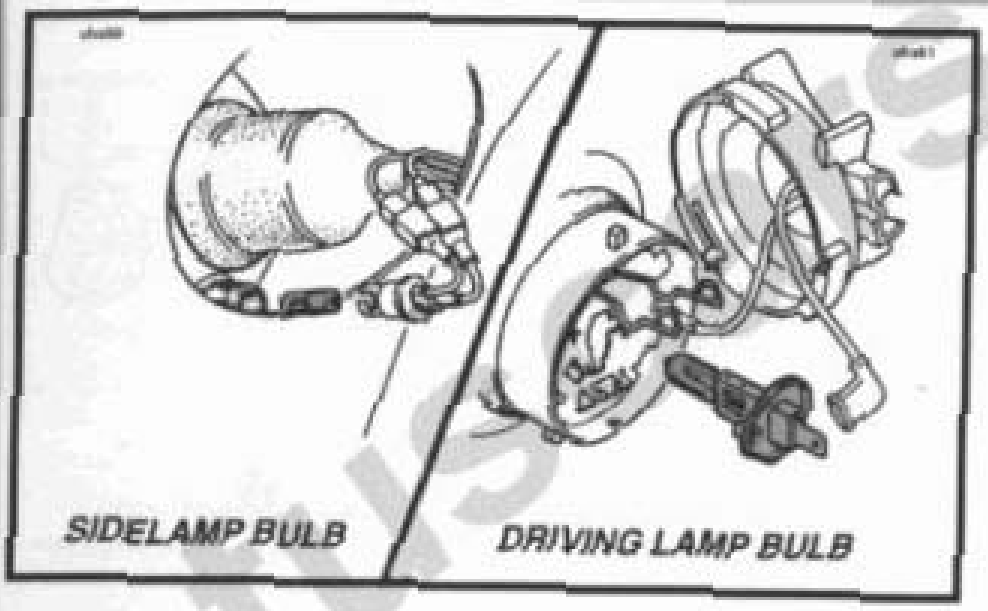
Access to the headlamp bulbs is available via access grommets in the front wheelarch liners. Pull out the grommet, remove the protective boot from the headlamp, and pull off the electrical connector plug. Unhook each leg of the spring wire clip, and withdraw the H4 type bulb.

Note: Do not touch the halogen bulb glass envelope with the fingers, as the greasy deposit left behind will greatly reduce bulb life. Use a paper tissue to handle the bulb.

Fit the new bulb into position, retain with the spring clip, plug in the connector block, and refit the protective boot. Finally refit the access grommet.

Headlamp Masking: If a right hand drive car is to be used in a left hand drive territory, or vice-versa, it is necessary to mask certain areas of the dip beam headlamp lenses in order to prevent dazzle. Masking kits using self adhesive film are available from motoring organisations. Note that on cars equipped with the optional driving lamps, only the two body mounted headlamps need be masked.

For access to the lenses on cars with faired in headlamps, the wheelarch liners must be released, and the headlamp assemblies withdrawn from the body.



Front Sidelamp Bulbs

A sidelamp bulb is incorporated into the reflector of each body mounted headlamp. Remove the access grommet in the front wheelarch liner, and pull out the sidelamp bulb holder from the headlamp. Replace the bayonet fitting bulb, and refit the bulbholder.

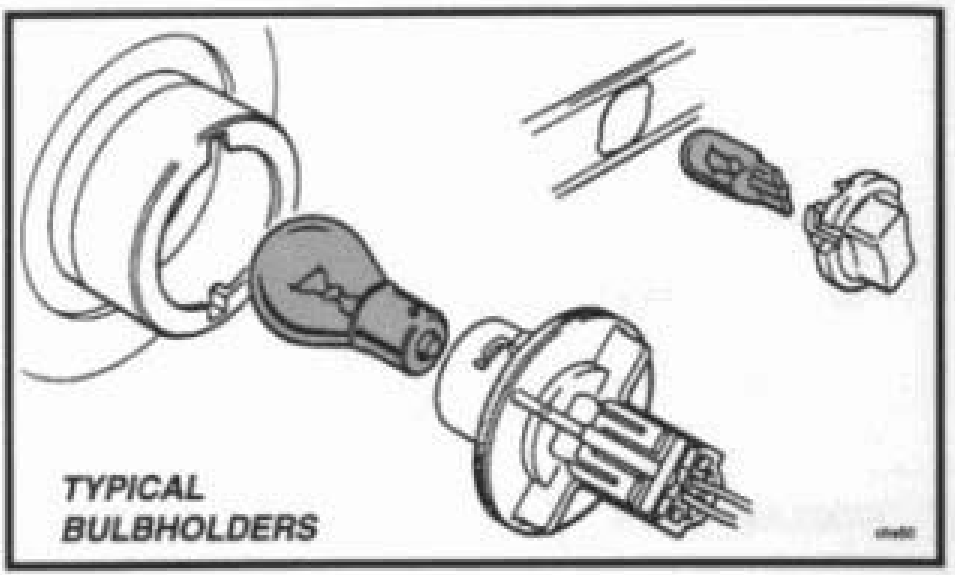
Driving Lamp Bulbs (if fitted)

Access to the optional driving lamps is available after removing the radiator air intake grille. To remove the grille, remove the two screws securing the top of the intake grille, and withdraw the spigots on the grille lower edge from their holes.

Twist counterclockwise, and remove the protective cap on the back of the lamp. Pull off the single spade terminal from the bulb, unhook both legs of the spring wire clip and withdraw the H1 type bulb.

Note: *Do not touch the halogen bulb glass envelope with the fingers, as the greasy deposit left behind will greatly reduce bulb life. Use a paper tissue to handle the bulb.*

Fit the new bulb in reverse order to the above, noting that the small location cut out in the protective cap must be positioned uppermost.



TYPICAL BULBHOLDERS

Front Turn Indicator Lamp Bulbs

For access to the front turn indicator bulb, pull back the front part of the wheelarch liner from the body lip. Twist the bulb holder counterclockwise to release from the lamp, and replace the bayonet fitting bulb.

Side Repeater Lamp Bulbs

For access to a side repeater lamp bulb, the rear edge of the front wheelarch liner must be released. Twist the bulb holder ¼ turn counterclockwise and withdraw from the lamp. Pull the capless bulb from the bulb holder.

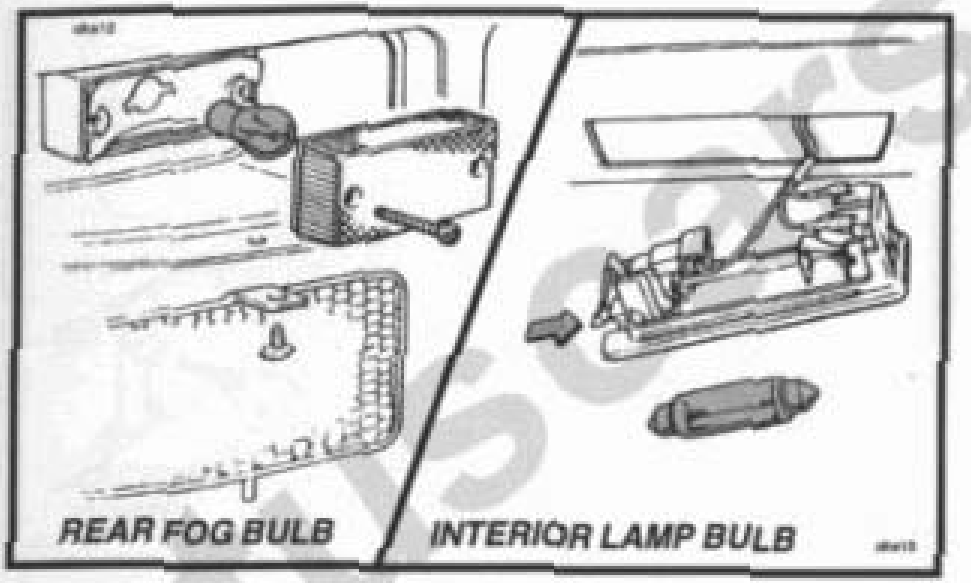
Push a new bulb into the holder, twist the holder into position, and refit the wheelarch liner.

Tailamp Bulbs

The tailamp bulbs may be accessed from within the rear luggage compartment. Twist the bulbholder counterclockwise to remove, replace the bayonet fitting bulb, and refit the bulbholder.

High Mounted Stoplamp Bulbs

The high mounted stoplamp bulbs may be accessed from within the rear luggage compartment. Twist the bulbholder counterclockwise to remove, replace the capless bulb, and refit the bulbholder.



Number Plate Lamp Bulbs

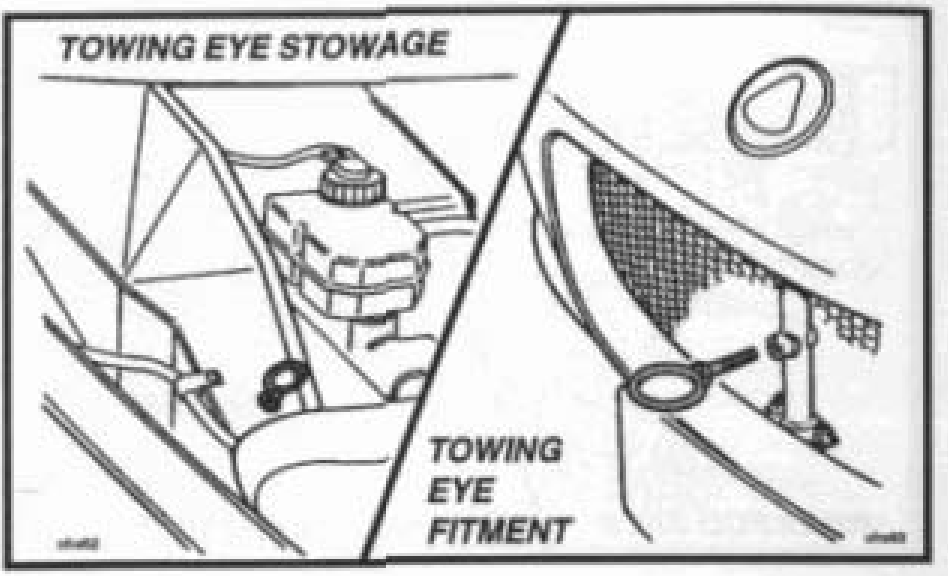
To replace a bulb in a number plate lamp, first remove the *two screws securing the lamp, and withdraw. Replace the* festoon bulb, and refit the lamp.

Rear Fog and Reversing Lamp Bulbs

To remove the rear valance grille, prise out the two fasteners from the top edge of the grille, and withdraw the grille lower edge spigots from their location holes. Remove the two screws securing the lamp lens, and replace the bayonet fitting bulb. Refit the lens with the drain hole lowermost, and replace the grille.

Interior Lamp

To withdraw the interior lamp from the fascia, depress the retaining tab at the non-switch end of the lamp, and pull the lamp from its aperture, taking care not to earth out a harness terminal on the fascia. Replace the festoon bulb, and push the lamp back into position



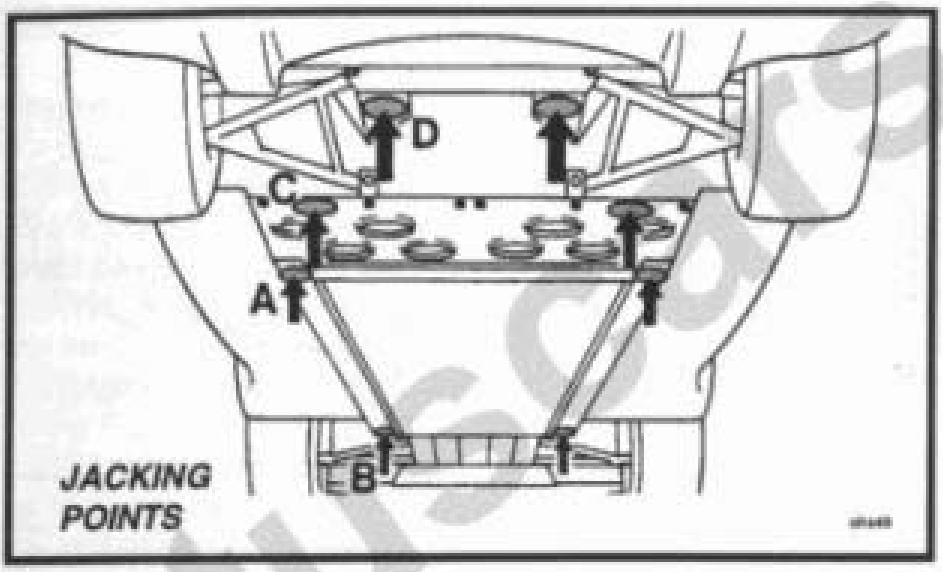
Towing Eye

A towing eye is stowed in the front services compartment, in a grommet in the driver's side scuttle buttress. When required, transfer the towing eye to its anchorage point in the radiator air intake aperture, screwing fully into the tapped boss.

The eye is provided to aid vehicle recovery, such as winching onto a car transporter. Only in an emergency should the vehicle be towed, and for the shortest distance necessary, during which time the following precautions must be taken:

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.**
- **Ensure that compliance is made with all local legislation applicable to cars being towed.**



JACKING POINTS

Jacking Points

Care must be taken when using a lifting jack or hoist to position the device only in one of the the areas shown in the illustration. Use a suitable rubber or timber pad to protect the chassis from surface damage:

A; Identified by a blue sticker. Beneath crossmember ahead of fuel tank bay. To be used one side at a time for wheel changing - lifts both wheels on one side.

B; Beneath the front end of the right or left hand main chassis rail, behind the front wheelarch. Garage use with 4-point lift.

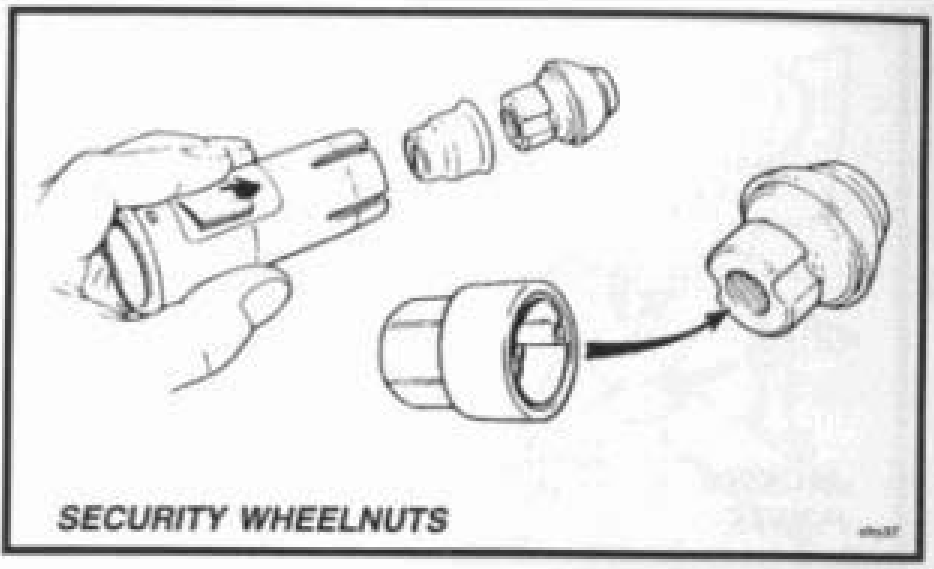
C; *Do not use if the optional diffuser panel is fitted.* Beneath the outboard end of the chassis crossmember ahead of the rear wheelarches. Garage use with 4-point lift. Take care to position the jack between the fixing screws for the fuel tank bay perforated undershield.

D; *Do not use if the optional diffuser panel is fitted.* Beneath the rear subframe, close to the lower wishbone rearmost mountings.

Jacking at any other point may damage the chassis or body structure and/or jeopardise safety.

Fuel Tank Undershield

Note that the perforated panel enclosing the underside of the fuel tank bay, contributes to the structural rigidity of the chassis frame. Do not use the car with this panel removed.



SECURITY WHEELNUTS

Security Wheelnuts

On cars so equipped, each of the four road wheels is fitted with one security keyed wheel nut in order to deter theft and vandalism. The special splined security nut requires a matching key coded socket before it may be removed using a standard 19mm wheelbrace. For aesthetic purposes, the coded nut is capped by a metal cover, which may be removed using an extractor tool stowed, together with the key coded socket, in a grommet in the windscreen buttress, at the right hand rear corner of the front services compartment..

Push the extractor over the cover until it clips onto the rim, and withdraw the cover. Mate the key coded socket with the nut, and undo using a standard 19mm wheelbrace.

Ensure that the cover extractor and wheel nut key are always stowed in their correct location, as they will be needed by your Lotus dealer when servicing the vehicle.

Engine

In order to ensure the longevity and reliability of the vehicle, it is most important that only the specified lubricants are used. It is an entirely false economy to try to save money by using lower quality oils, which may break down before the next change interval and provide inadequate protection before the end of the term. High oil consumption may also result.

Engine oil should meet Rover specification RES.22.OL.G4 or the European specification CCMC G4, and have a viscosity band recommended for the local ambient temperature range, as shown in the following chart. Where oils to these standards are not available, reputable brands meeting American specification API SG or SH should be used.

Engine Oil Viscosity Chart

Viscosity	Ambient Temperature Range							
5W/20								
5W/30								
5W/40								
5W/50								
10W/30								
10W/40								
10W/50								
15W/40								
15W/50								
20W/40								
20W/50								
°C	-30	-20	-10	+10	+20	+30	+40	+50
°F	-20	-5	+15	+50	+70	+85	105	120

Note that the viscosity rating is made up of two numbers; the first, identified by a 'W' suffix is the winter (or low temperature) viscosity grade, and the second number the summer or high temperature viscosity grade. i.e. a 20W/50 oil performs like an SAE 20 oil at low temperature and an SAE 50 oil at high temperature.

Capacity - refill inc. filter	4.5 litre (7.9 imp.pt)
- dry inc. filter	5.0 litre (8.8 imp.pt)
Difference between high & low dipstick marks	1.0 litre (1.8 imp.pt)
Oil change interval	9,000 miles (15,000 km)

Transmission (gearbox & final drive)

Only specified lubricant	Texaco MTF 94
Capacity - refill	2.1 litre (3.7 imp.pt)
- dry	2.4 litre (4.2 imp.pt)
Oil change interval	Filled for life

Brake & Clutch System

Type	Non-mineral (non-petroleum) hydraulic fluid
Specification	DOT 4
Capacity - brake	1.5 litre
- clutch	0.5 litre
Fluid change interval	12 months

Engine Coolant Additive

Type	Unipart Superplus Anti-Freeze & Summer Coolant
Concentration	50%
Quantity reqd. @ 50%	4 litres
Coolant change interval	24 months

Tyres

Type	- factory fit	Pirelli P Zero **(refer to dealer)**
	- service option	Michelin Pilot SX-GT
Size	- front	185/55 R15 81V
	- rear - standard	205/50 ZR16 87W
	- 111S & std. option	225/45 ZR16
- pressure (cold) - front		1.6 bar (23 lb/in²)
- rear	- 205	1.7 bar (24.5 lb/in²)
	- 225	1.9 bar (27.5 lb/in²)

Wheels

Type		Light alloy, 4 nut fixing
Size	- front	5.5J x 15CH/H2 ET14
	- rear - std	7J x 16H2 ET16
	- 111S & std. option	7.5J x 16H2 ET10
Wheel nut torque		80 - 85 Nm (59 - 63 lbf.ft)

Dimensions

Overall length	- std	3726 mm		
	- 111S	3734 mm		
Overall width	- excl. mirrors - std	1701 mm		
	- 111S	1730 mm		
	- incl. mirrors	1850 mm (approx.)		
Overall height (at kerb weight)		1148 mm		
Wheelbase		2300 mm		
Track	- front	1440 mm		
	- rear - 7J wheels	1458 mm		
	- 7.5J wheels	1470 mm		
Ground clearance		160 mm		
Approach angle		12.4°		
Departure angle		28°		
Unladen weight	- std - total	755 kg	>	
	- front	303 kg	>	
	- rear	452 kg	>	inc. full
	- 111S - total	770 kg	>	fuel tank
	- front	303 kg	>	
	- rear	467 kg	>	

Max. weight	- std	- total	974 kg	}
		- front	386 kg	} incl.
		- rear	588 kg	} occupants
	- 111S	- total	992 kg	} & luggage
		- front	376 kg	}
		- rear	616 kg	}
Trailer towing			Not permissible	

Capacities

Engine oil (refill inc. filter)	4.5 litre (7.9 imp. pt)
High/low dipstick mark difference	1.0 litre (1.8 imp. pt)
Transmission oil	2.1 litre (3.7 imp. pt)
Fuel tank	36.4 litre (8.0 imp.gall)
Cooling system	8.0 litre (1.8 imp.gall)

Front Suspension

Type	Independent. Upper and lower wishbone; co-axial coil spring/telescopic damper unit; anti-roll bar
Ride height (for geometry check)	
- front	140 mm below front end of chassis siderail
- rear	140 mm below rear end of chassis siderail
Camber	- 0.1°; + 0.1°, - 0.2° max. side/side 0.2°
Castor	+ 3.8°; ± 0.2° max. side/side 0.2°
Steering axis inclination	12 ° nominal
Alignment	0.2 mm toe-out overall; - 0, + 0.2 mm

Rear Suspension

Type	Independent. Upper and lower wishbone; co-axial coil spring/telescopic damper.
Ride height (for geometry check)	
- front	140 mm below front end of chassis siderail
- rear	140 mm below rear end of chassis siderail

Camber	- 1.8°; ± 0.2°
	max.side/side 0.2°
Alignment	1.2 mm toe-in each side;
	+ 0.2 mm, - 0
	max.side/side 0.2 mm

Electrical

Light Bulbs	*Wattage*	*Type*
Headlamps	60/55	H4 P43t
Driving lamps	55	H1
Front side/parking lamps	5	W2x4.6d
Side repeater lamps	5	W2x4.6d
Front & rear turn indicators	21	SCC BA15s
Stop/tail lamps	5/21	SBC BAY15d
High mounted stop lamp	11	891
Rear fog lamp	21	SCC BA15s
Reversing lamp	21	SCC BA15s
Licence plate lamps	5	SU 8.5-8
Interior lamp	10	SU 8.5-8
Fascia switches	1.2	W2x4.6d

System voltage/polarity	12V negative earth
Alternator	85A
Battery - type	Tungstone 063
- cranking power	330 amps (SAE)
- reserve capacity	60 minutes

Engine

Type designation	K16
Cylinder configuration	in-line 4
Capacity	1796 cm^3 (70.71 in^3)
Bore	80.00 mm (3.150 in)
Stroke	89.30 mm (3.516 in)
Compression ratio	10.5:1
Firing order	1,3,4,2
Spark plugs	RC8 PYP or GSP 9652
Spark plug gap	0.9 ± 0.1 mm (0.035 in)
Maximum engine speed	7000 rpm
Fuel requirement	Unleaded 95 RON min.
Fuel system - std	Multi-point grouped fuel injection with MEMS 1.9 engine management.

Fuel system	- 111S	Sequential fuel injection with MEMS 2J engine management
Max power	- std	88 kW (118 bhp) @ 5,500 rpm
	- 111S	107 kW (143 bhp) @ 7,000 rpm
Max torque	- std	165 Nm (122 lbf.ft) @ 3,000 rpm
	- 111S	174 Nm (128 lbf.ft) @ 4,500 rpm

Transmission

Type — 5 speed manual transaxle. Bevel gear differential.

Standard:

Gear	*Ratio*	*Final Drive*	*mph(km/h)/1000 rpm*
First	3.17 : 1	)	5.5 (8.9)
Second	1.84 : 1	)	9.5 (15.3)
Third	1.31 : 1	) 3.94 : 1	13.4 (21.5)
Fourth	1.03 : 1	)	16.9 (27.2)
Fifth	0.77 : 1	)	22.9 (36.8)
Reverse	3.00 : 1	)	

111S (close ratio):

Gear	*Ratio*	*Final Drive*	*mph(km/h)/1000 rpm*
First	2.92 : 1	)	5.6 (9.0)
Second	1.75 : 1	)	9.4 (15.1)
Third	1.31 : 1	) 4.20 : 1	12.6 (20.3)
Fourth	1.03 : 1	)	16.0 (25.7)
Fifth	0.85 : 1	)	19.4 (31.2)
Reverse	3.00 : 1	)	

Brakes

Type	Ventilated front & rear discs. Two piston fixed front calipers. Single piston sliding rear calipers.
Disc size - front & rear	282.5 mm
Operation	Tandem master cylinder
Parking brake	Cable operation of rear calipers, self adjusting for pad wear.

LOTUS ELISE WARRANTY

The new vehicle warranty on the Lotus Elise includes a 12 month, unlimited mileage defect warranty, and an 8 year chassis anti-corrosion warranty. The warranty period commences from the first occurring of the following dates:

i) delivery to the original (first) purchaser; or
ii) first registration with a licensing authority; or
iii) when first used as a 'dealer demonstrator'.

The warranty is transferable to subsequent owners without prior reference to Lotus subject to the 'Change of Owner/Warranty Transfer' certificate in the Owner's Handbook being completed and returned to Lotus.

DEFECT WARRANTY

Lotus Cars Limited (hereinafter called "Lotus") undertakes that each new motor vehicle, including all accessories supplied thereon by Lotus as original equipment, will be free from defect in material or workmanship under normal use and service: Lotus's obligations under this warranty being limited to repairing or replacing at its option any parts which shall, within 12 months of warranty commencement, be returned to the authorised dealership through whom the vehicle was supplied (or, in the event of this being impossible or inconvenient, to any authorised dealership's place of business) and which parts shall prove to have been thus defective. The repair or replacement of defective parts under this undertaking will be made by the authorised dealer to whom the vehicle is returned, without charge for parts, and if made at such dealership's place of business, without charge for labour.

The provisions for this undertaking shall not apply to any motor vehicle which has been subject to misuse (e.g. operating beyond the specified gross vehicle weight), negligence or accident, or which shall have been repaired or altered in any way so as to affect adversely its performance and/or reliability, nor to normal maintenance service (such as engine tune, fuel system cleaning and brake and clutch adjustments) and the replacement of service items (such as spark plugs and filters) made in connection with such services, nor to normal deterioration of soft trim and appearance items due to wear and exposure.

If any dispute or difference shall arise concerning this un-

dertaking, or any defect in the motor vehicle, it shall be referred to a single arbitrator to be agreed between the parties.

EIGHT YEAR CHASSIS ANTI-CORROSION WARRANTY

Subject to the terms, conditions and exclusions set out herein, Lotus guarantees the main bonded aluminium chassis structure and chassis rear subframe, against failure due to corrosion where such corrosion occurs as a result of defective materials or workmanship. This warranty applies for a period of eight years from commencement of the warranty, providing that the car has received normal and reasonable usage.

Lotus' liability hereunder is limited to repairing or replacing at its option, at no cost to the owner, any parts, which, in its opinion are defective, provided that such replacement or repair is undertaken by an authorised Lotus dealer.

This warranty does not apply:

1. To any motor vehicle which has been subjected to misuse or neglect; or
2. To any part of the chassis which has suffered accidental damage; or
3. Where corrosion results from damage to the protective surface caused by extraneous factors including but not limited to accident damage, atmospheric pollution or the application of corrosive materials; or
4. Where corrosion results from heating, welding or bending of the chassis in contravention of Lotus approved practice.

New Vehicle Warranty & The Owner

Every precaution is taken during design and manufacture to ensure that each new motor vehicle produced conforms to a high manufacturing standard. Such is the complex nature of a modern motor vehicle that every manufacturer recognises the need to safeguard owners against the unexpected failure arising in service.

In the event of warranty repairs becoming necessary, owners are advised to return their vehicle to the authorised Lotus dealership from whom it was purchased, because of that dealer's continuing interest in its customer's satisfaction. Should this be impractical, however, then all authorised Lotus dealerships undertake to perform warranty repairs with the minimum of delay.

The unexpired part of the warranty is transferable to subse-

quent owners without reference to Lotus. The full benefits of the warranty are obtainable through any authorised Lotus dealership, but the 'CHANGE OF OWNER/WARRANTY TRANSFER' form (in the Owner & Maintenance Record section of the handbook) must be completed and returned to Lotus.

Authorised Lotus dealerships make no charge for parts or labour pending claim settlement for normal warranty repairs. Lotus maintains very close liaison with its dealers to ensure smooth and swift administration of the new vehicle warranty.

Warranty Application

Depending on operating conditions and the owner's driving habits, additional wear and tear of components may take place and the rectification of any faults generated in this way are considered to be the owner's responsibility.

Glass Breakage: Disintegration of toughened glass or damage to the surface of laminated glass in the form of chipping or star-like cracks can be caused by the surface being struck by a stone or similar hard object and the replacement of damaged or broken glass is not, therefore, included under the warranty. Most insurance companies offer low premium policies to cover glass breakage, safeguarding owners against the loss of any 'No Claims Bonus' and we recommend owners to take advantage of this facility.

Body Components: Body components such as hinges and strikers may require attention or adjustment from time to time, dependent largely on the way the vehicle is used. Such adjustments are included in the Maintenance Schedule and are not normally regarded as warranty items.

Paint Finish: The acrylic enamel finish of the Lotus Elise is extremely resistant to all normal forms of atmospheric attack. Following the simple maintenance procedure detailed under 'Bodycare' in the Owner's Handbook will help retain the gloss, colour and protective properties of the paint throughout the life of the vehicle. However, car finishes are not chemically resistant and can also be damaged by abrasion and impact. Amongst the more common causes of paint detriment not covered by warranty are:

- Atmospheric contamination; Dust, soot, ash, and acidic or

alkaline aerosol mist can chemically attack paint.
- Tree sap and insect fluids; These can form a water-insoluble polymer that adheres to the paint.
- Bird droppings; Highly acidic or alkaline, bird droppings can chemically etch the paint.
- Leaves; contain tannic acid which can stain light finishes.
- Abrasion; May be caused by blown sand or dust, or by the use of a dirty washing cloth.
- Impact damage; Granite chippings thrown up from poor road surfaces can subject the body to severe localised impact, and result in paint chips, especially around the vulnerable frontal panels. Do not follow too closely in such circumstances.

Wheel Balancing: Wheel balancing is regarded as a normal maintenance operation, but is excluded from the Maintenance Schedule as the frequency of attention varies with operating conditions and usage. Wheel balancing is not regarded as a warranty item.

Clutch and Brake Linings: The wear rate of the clutch and brake linings varies considerably from vehicle to vehicle dependent on both the type of usage and driver technique. In some circumstances, renewal of the clutch friction plate or brake pads may be required during the warranty period at owner expense.

Contaminated Fuel: Despite the precautions taken by oil companies and filling stations, it is possible that dirty or contaminated fuel may find its way into the vehicle's fuel tank. Lotus cannot accept claims for the cleaning of fuel tanks, pipes, filters and fuel injection equipment.

Parts Warranty

Any Lotus replacement part fitted within the vehicle warranty period, will be warranted until the expiration of the vehicle warranty. A Lotus replacement part fitted outside of vehicle warranty, will be subject to the standard parts warranty which applies for a period of 12 months either from the date of fitment to the vehicle at a Lotus dealership, or the date of purchase of the part by an individual. Labour charges will be covered by the warranty only if performed by a Lotus dealer.