MARCOS

OWNERS HANDBOOK

MANTARA
400/450

THE GREAT BRITISH SPORTSCAR

INTRODUCTION

This Manual has been prepared to acquaint you with the operation and maintenance of your Marcos Mantara, and provide important safety information. We urge you to read this publication carefully before using the car. Follow the recommendations to help assure the most enjoyable, safe and trouble-free operation of your vehicle.

If you are in doubt over any instructions and recommendations you should refer to your Marcos dealer.

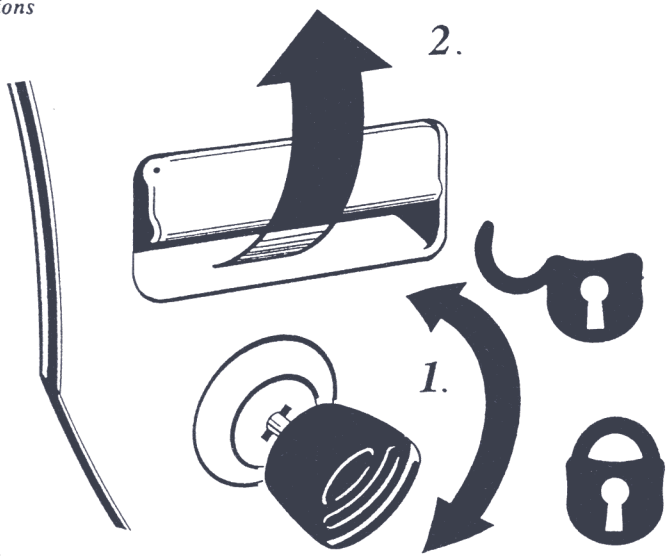
All information and specifications in this Manual are based on latest product information available at time of printing. Owing to Marcos Sales Limited policy of continuous development, the right is reserved to vary in detail any specification at any time.

This Manual should be considered a permanent part of this vehicle. It should stay with the vehicle when sold, to provide the next owner with important safety and operating information.

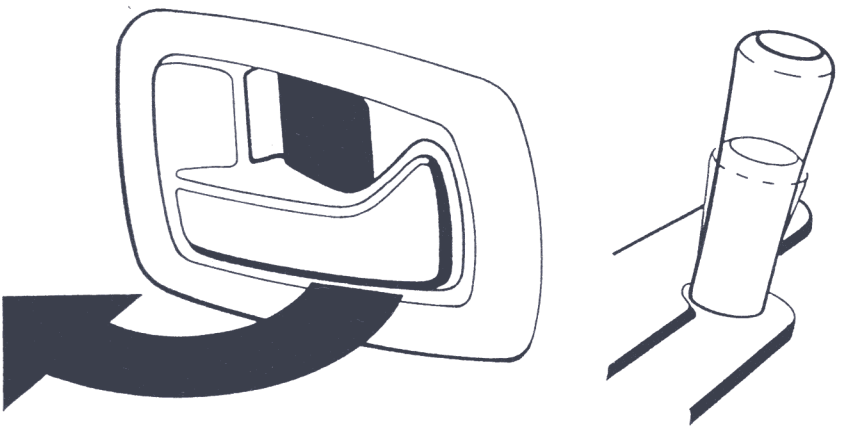
CONTENTS

UNLOCKING & OPENING DOOR

External Operations



Internal Operations

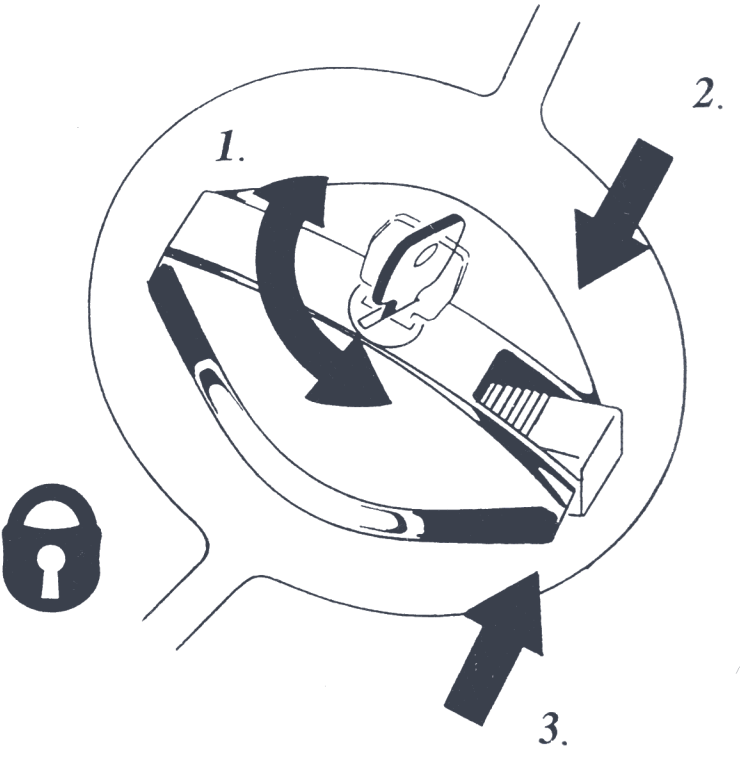


Before driving ensure that all doors are closed fully. Do not close doors with the lock solely on the striker catch.

De-icer may be required for unlocking during the cold season.

When the vehicle is left unattended, ensure all doors are locked and the alarm system, if fitted, is armed.

REFUELLING



Only re-fuel using 95 or 98 octane unleaded petrol.

Care must be taken when dealing with fuel. Before refuelling it is absolutely vital to switch off the engine and apply the handbrake.

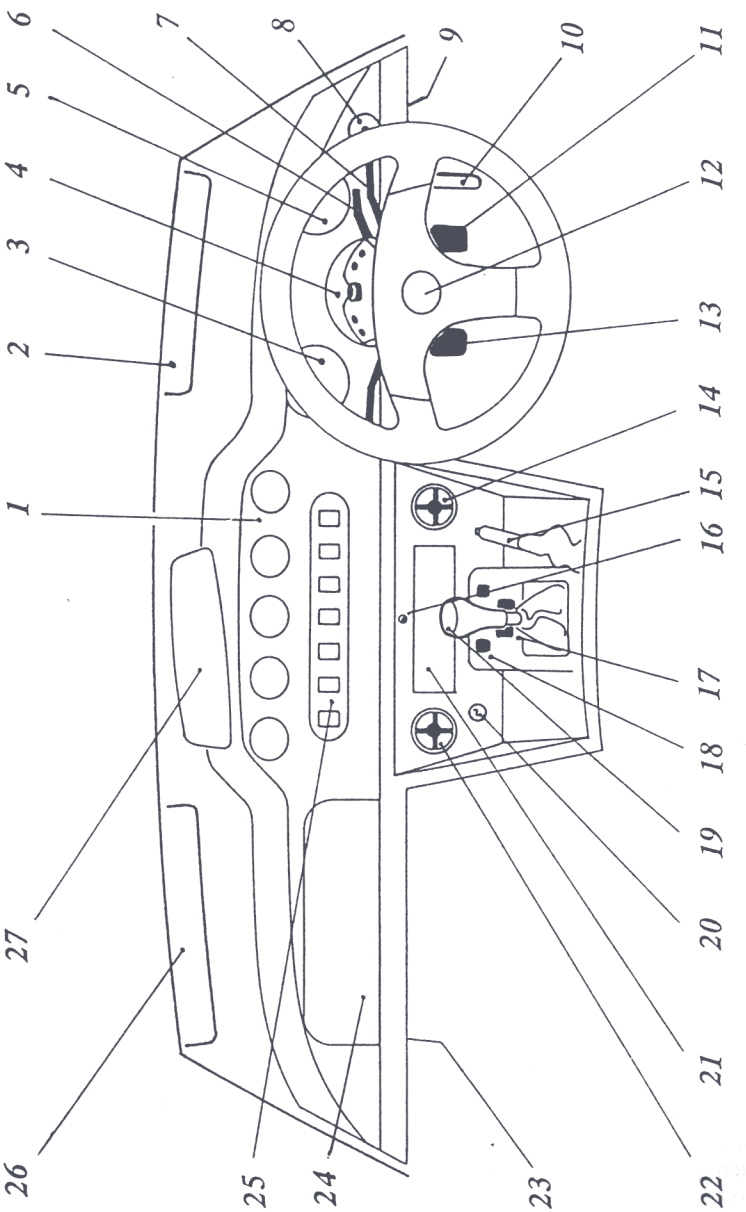
Petrol is combustible and explosive, therefore avoid dealing with fuel near an open flame. No smoking! This also applies where the smell of petrol is noticeable. If a smell of petrol vapour occurs in the vehicle itself, you should stop immediately and investigate the cause so that a remedy can be found and instigated.

When filling up, do not try and fill the tank too quickly, otherwise the fuel may foam and this may cause the nozzle to switch off too soon.

As soon as the correctly operated automatic nozzle on the petrol pump switches off for the first time, the tank is full. Do not try to then put more fuel in because otherwise the expansion space in the tank will be filled, the fuel can then overflow if it gets warm.

Always replace and lock the fuel cap before starting the engine.

FACIA LAYOUT



1 *Auxiliary Instruments*

2 *Drivers Sunvisor*

3 *Speedometer*

4 *Warning Lamps*

5 *Tachometer*

6 *Position Lamps/Head Lamps Stalk*

7 *Wipers and Washers Stalk*

8 *Pedal Adjusting Knob*

9 *Foot Vent*

10 *Accelerator Pedal*

11 *Brake Pedal*

12 *Horn Push Button*

13 *Clutch Pedal*

14 *Facia Vent*

15 *Handbrake Lever*

16 *Handbrake Warning Lamp*

17 *Electric Mirror Controls*

18 *Electric Window Controls*

19 *Gear Shift Lever*

20 *Cigar Lighter (optional)*

21 *Radio (optional)*

22 *Facia Vent*

23 *Foot Vent*

24 *Glove Box*

25 *Auxilary Switches*

26 *Passenger Sunvisor*

27 *Interior Rear View Mirror*

INSTRUMENT BINNACLE

On the steering column there are a series of warning lamps, comprising of the following:-

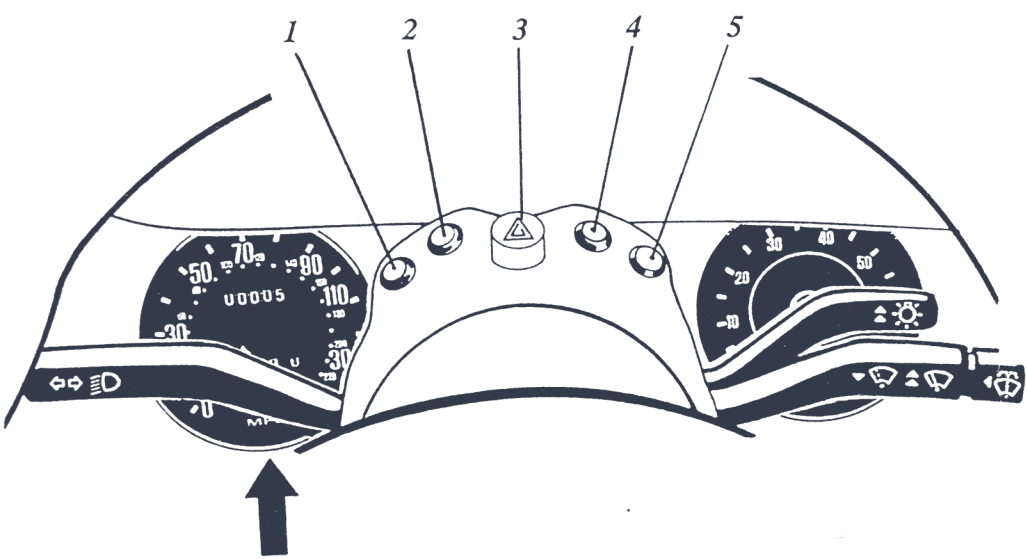
1 *The **left turn signal** will flash in sympathy with the left hand indicator lamp. Shorter flashes indicate failure of a turn signal bulb which should be investigated and replaced immediately.*

2 *The **main beam warning lamp** will light up when the main beam is switched on and when operating the headlamp flasher.*

3 *The **hazard warning signal lamp** will flash when it has been depressed to operate the hazard warning lamps. Depress a second time to switch off the hazard warning lamps.*

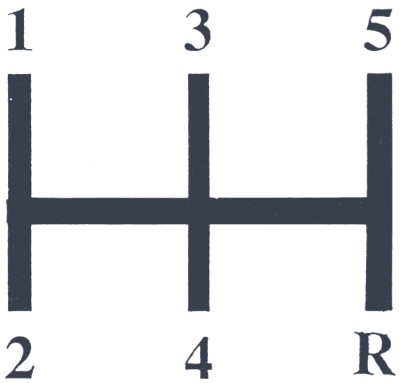
4 *The **alternator lamp** will light when the ignition is switched on, and go out after starting the engine provided the engine speed is increased above idle. If the lamp becomes illuminated whilst driving, this means that the battery is not being charged. It does not necessarily mean that you will have to stop immediately, but you should seek help as soon as possible.*

5 *The **right turn signal** will flash in sympathy with the right hand indicator lamp. Shorter flashes indicate failure of a turn signal bulb which should be investigated and replaced immediately.*

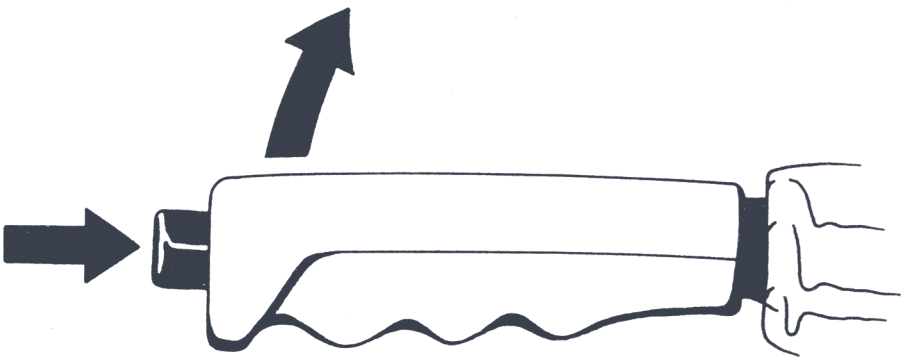


To reset "trip mileage" - turn knob on underside of speedo, this is situated under the facia.

GEARS, HANDBRAKE



With the vehicle stopped it is recommended to depress the clutch pedal and wait a few seconds before engaging reverse gear.



Release the handbrake lever by slightly raising the lever, depress the lock button and lower the lever, before attempting to drive the vehicle away. Ensure the handbrake light is off.

To engage handbrake press button and lift. Release button when lever cannot be lifted further without excessive force.

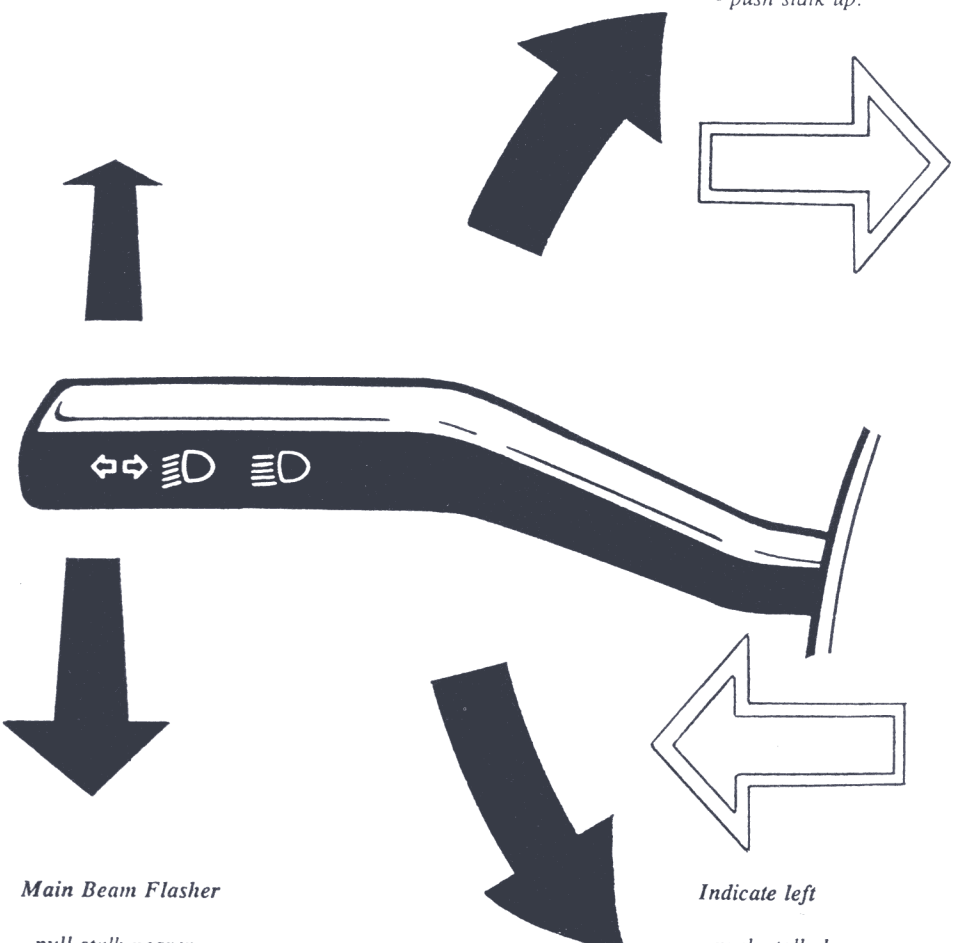
STEERING COLUMN SWITCHES

Main Beam Switch

- push stalk away.

Indicate right

- push stalk up.



Main Beam Flasher

- pull stalk nearer.

Indicate left

- push stalk down.

Headlights

- push stalk once further.

Position Lights

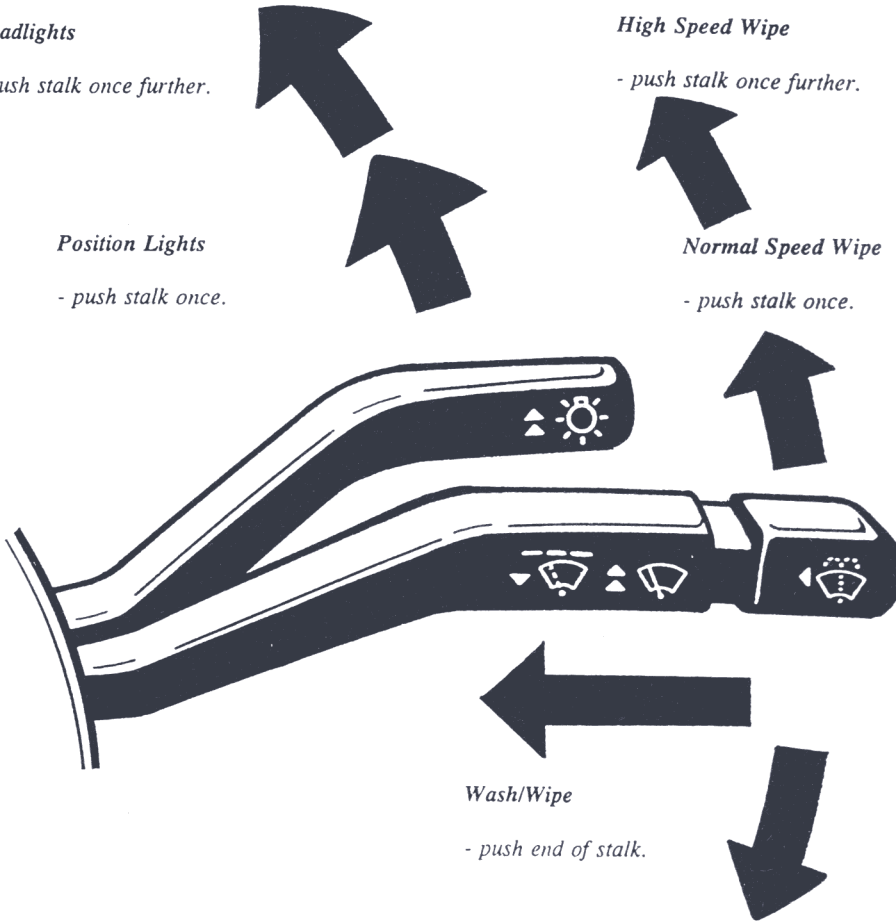
- push stalk once.

High Speed Wipe

- push stalk once further.

Normal Speed Wipe

- push stalk once.



Wash/Wipe

- push end of stalk.

Intermittent Wipe

- push stalk down once.

AUXILIARY SWITCHES

As read from left for right hand drive cars.

Front spot lights *- (optional)*

Rear Screen Demist *- (connected to Coupe only). Do not drive the vehicle until the rear screen is clear to see through.*

Brake warning light *- this lamp should be pushed to test. If it lights up at any other time you should discontinue driving and have the fault remedied by a qualified specialist.*

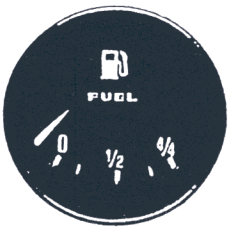
Windscreen demist *- Do not drive the vehicle until the windscreen is clear to see through.*

Rear fog lamps *- It is the driver's responsibility to comply with local regulations where high intensity rear fog lamps are used.*

Heater switch *- press if you do not require hot air in the ventilation system.*

Air blower switch *- has a 2 speed operation and will blow air up to the air vents (models with the air conditioning option have a combined knob with the 3 speed blower switch positioned centrally).*

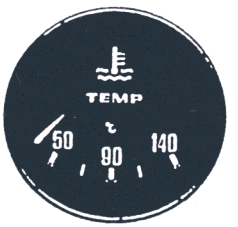
AUXILIARY INSTRUMENTS



Fuel Gauge
It is not recommended to let the gauge fall below quarter. Fuel tank capacity - 47 litres.

Engine Oil Pressure Gauge
This indicates the engine oil pressure when the car is running. The normal oil pressure should be between 1.9-2.4 Bar (28 and 35lb/in square), at 2400rpm when the engine is warm. At idle speed the pressure will fall, but should still register. If no pressure registers when the vehicle is started, check engine oil level. If this is correct, consult your Marcos dealer. Caution: Do not run an engine with low oil pressure. Have it checked!

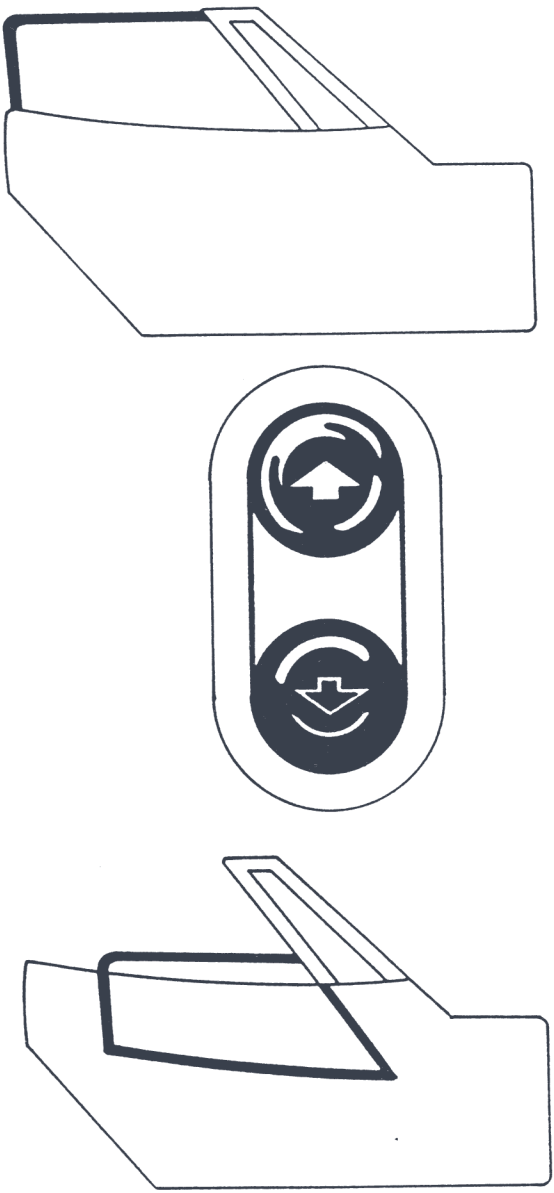
Clock
To reset - press, turn knob.



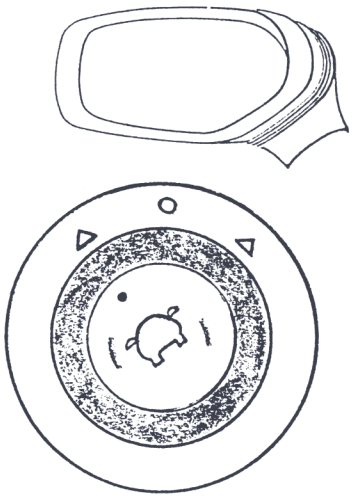
Coolant Temperature Gauge
This is electrically operated, acting only when the ignition is switched on. The normal reading, when running on the road should be between 80 and 115 degrees Celsius. The temperature will change when driving conditions vary.

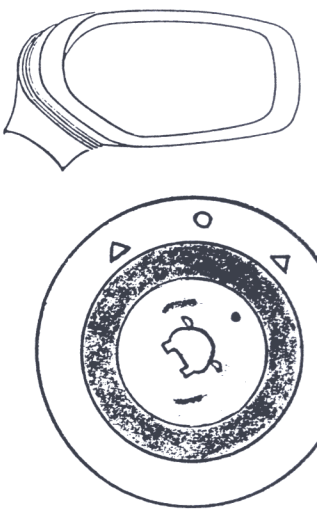
Voltmeter
This instrument indicates the condition of the battery on a voltmeter principle. A reading above the black sector which continues after 10 minutes running is too high and should be investigated. A reading below the black sector indicates the battery charging system requires attention. To avoid battery discharge, switch off unnecessary electrical equipment when stationary.

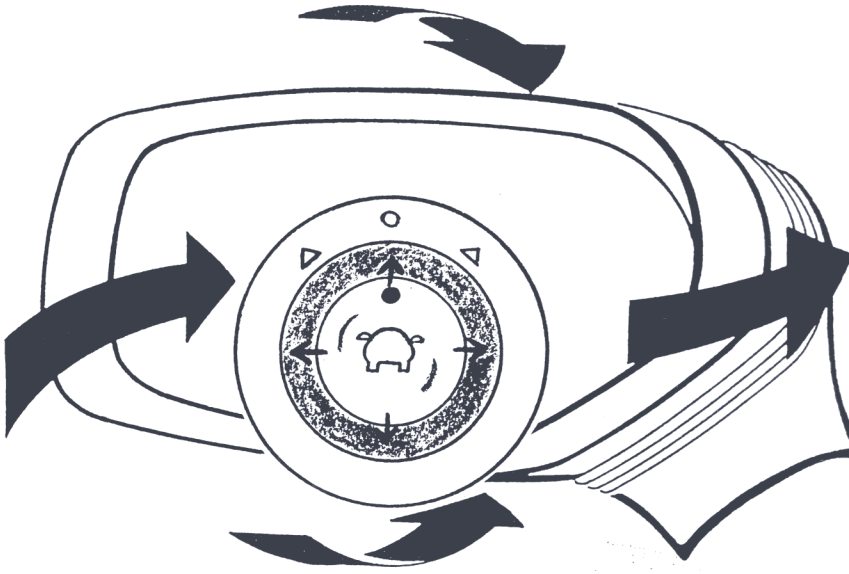
ELECTRIC WINDOW: OPENING & CLOSING



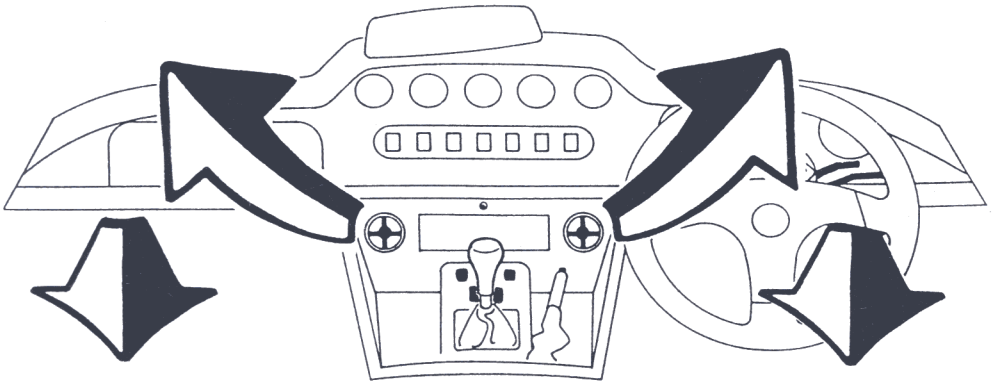
ELECTRIC MIRROR ADJUSTMENT







HEATING AND VENTILATION

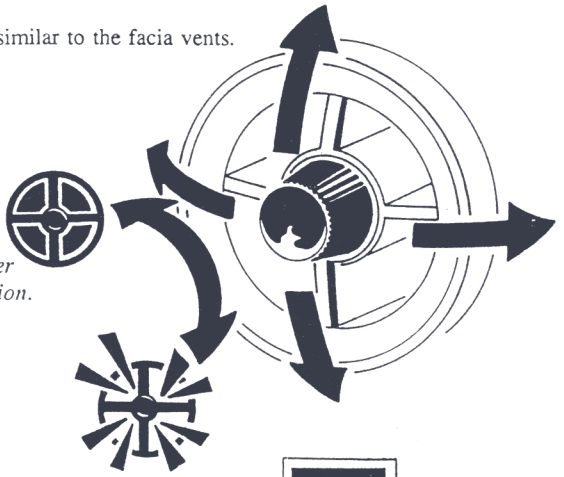


The interior has 4 controllable vents which can be positioned to the desired comfort.

The footwell vents are controllable similar to the facia vents.

Turning knob clockwise increase air flow.

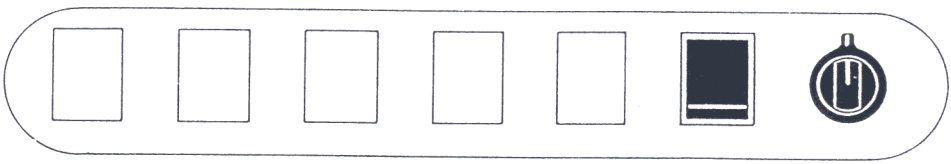
Directing the knob can deliver air flow in the desired direction.



Depressing the blower motor switch once and twice will provide low speed and high speed air respectively.

The heater switch should be depressed if the flow of hot air is not required.

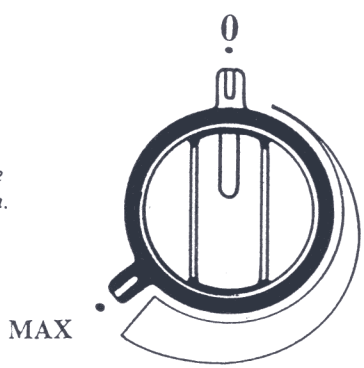
AIR CONDITIONING (OPTIONAL)



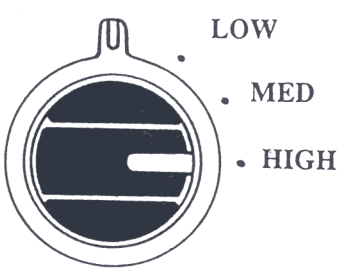
The air conditioning can be operated through the air vents by controlling the combined 3 speed blower and air conditioning compressor switch, whilst ensuring the heater switch remains off.

The windows should be closed when the air conditioning system is in operation.

Turning the outer knob will operate the air conditioning compressor and increase the intensity of cold air up to a maximum.



Turning the inner knob will enable 3 possible air speeds to be selected.

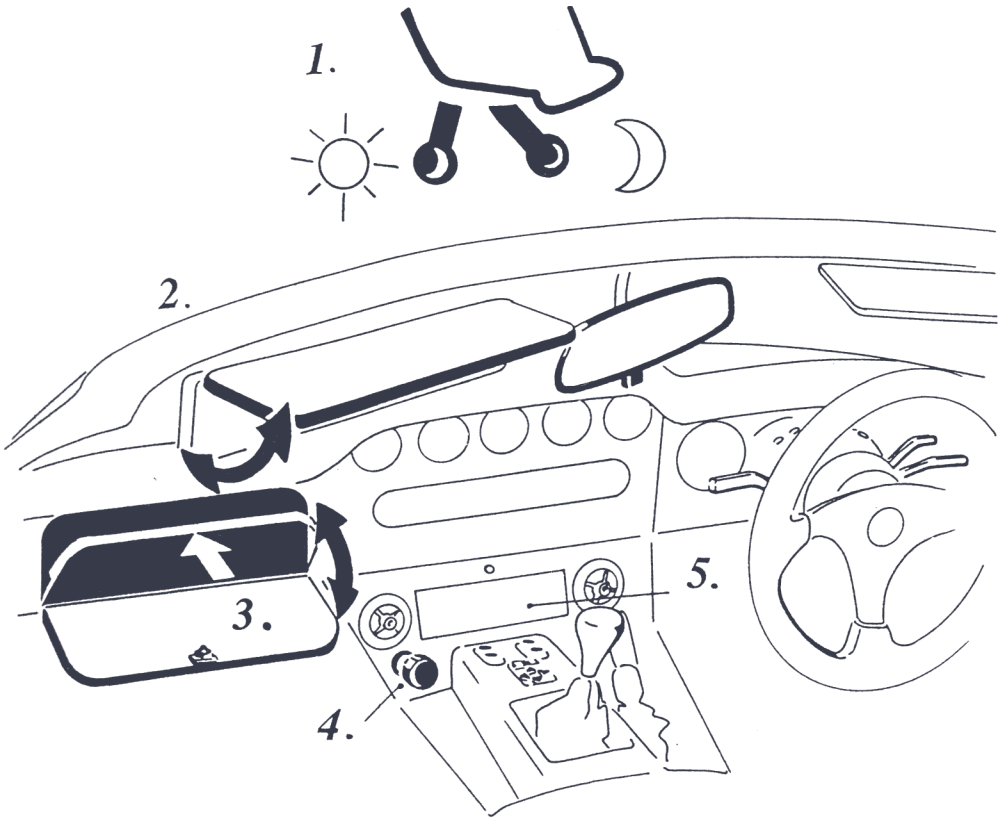


For maximum cooling the vents should be fully open with the blower switch positioned on **'HIGH'** and the compressor positioned on **'MAX'**.

INTERIOR ACCESSORIES

1. *The interior rear view mirror can be adjusted to suit daytime or nightime driving by pushing or pulling respectively the lower lever without altering the position of the mirror.*

2. *The sun visors should be adjusted to suit driving conditions.*

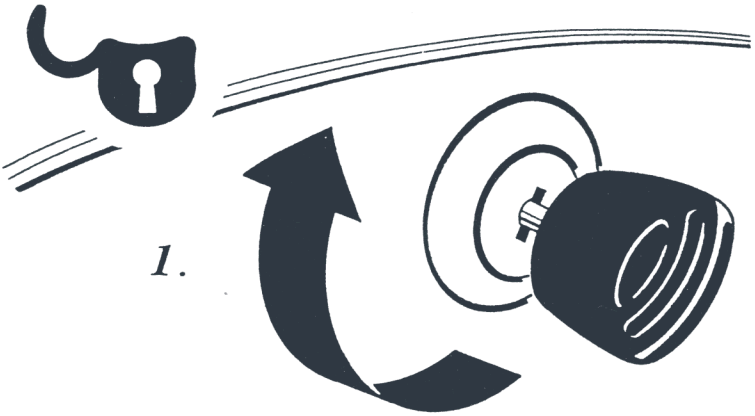


3. *To open glove locker push upper edge and let the flap lower. Push again to close.*

4. *If your Marcos is fitted with a cigar lighter never hold it in the depressed position. Never use a pin to remove particles of tobacco as the element is self cleaning.*

5. *Radio installation - if you want to install "in car entertainment" or replace your current sound system, Marcos recommend you refer to your dealer.*

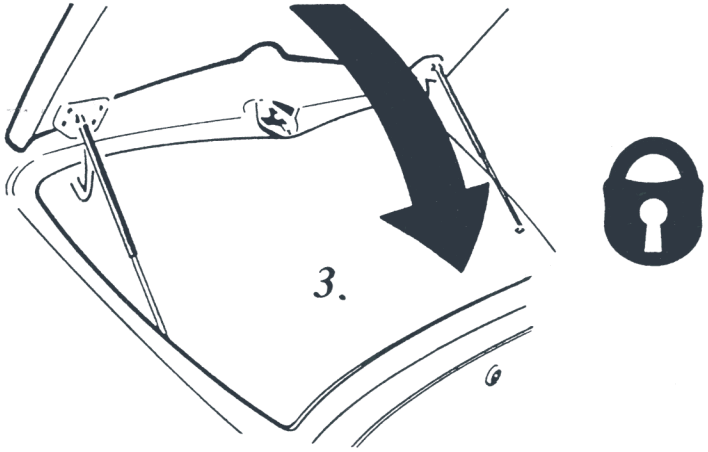
BOOT STORAGE



1. ***Unlock the boot*** *- turn key clockwise.*

2. ***Lift the boot*** *lid centrally, gently allow it to rise with the assistance of the 'gas struts'.*

3 ***Lock boot*** *- Lower boot lid and depress firmly until it is securely fastened. Do not drive off with the boot unlocked.*



The tools required for changing a wheel can be found in the boot.

The tonneau cover should be stored in the boot.

Warning: When loading the boot ensure that the total weight of the luggage does not exceed 28 kgs. To drive the Mantara with loads above this weight will infringe European lighting regulations.

HOOD OPERATION (SPYDER VERSION)

Only operate the folding hood with the vehicle stationary. Before driving the Mantara with the hood up, ensure that the following instructions are adhered to.

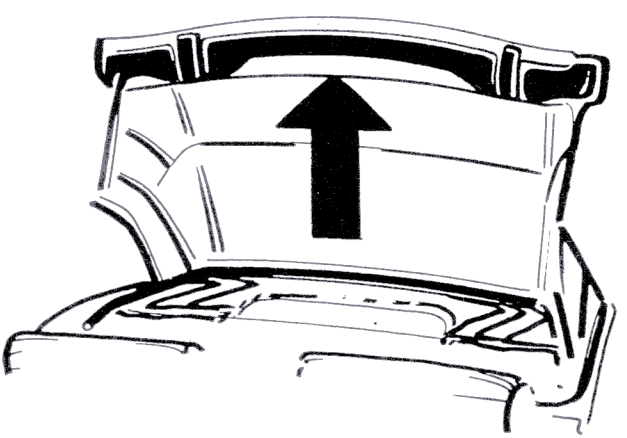
***Remove tonneau cover** - relieve "Tenax" fastners by pulling the centre knobs.*

The tonneau cover should be carefully folded up and stored in the boot. It should not be positioned beneath luggage where it could be damaged.

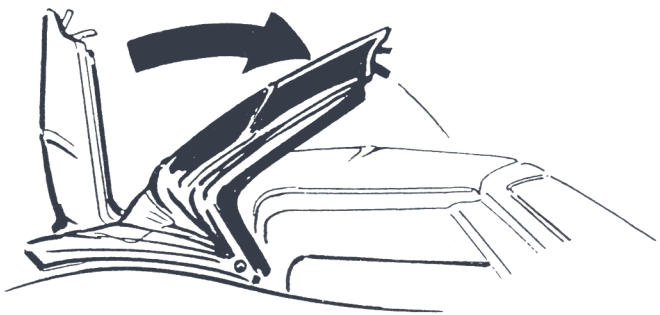
Before operating the hood mechanism - the windows should be lowered and the doors left ajar.

***Erecting the hood** - lift the hood only from the centre of the header rail. Do not force the side mechanism.*

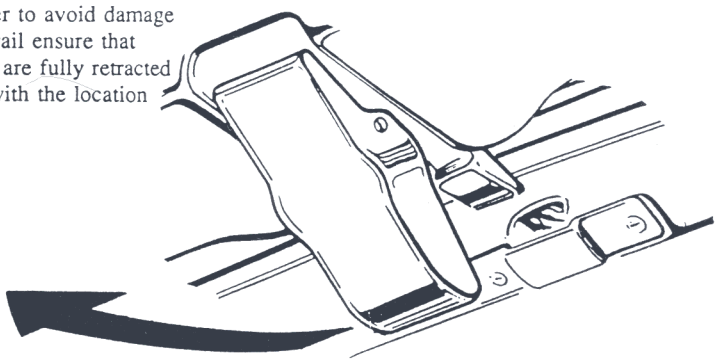
Firstly, only extend the front part of the hood (see below).



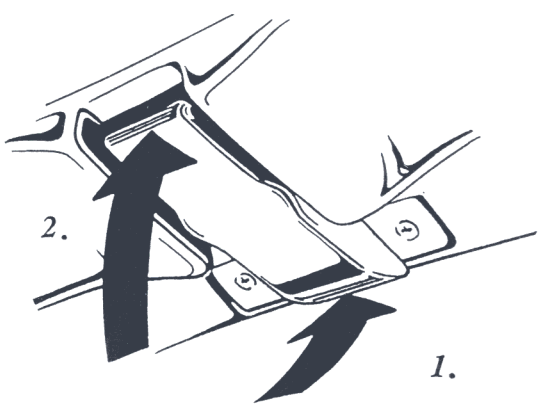
Secondly, extend the rear of the hood by allowing the extended front section to hinge forward.



WARNING : In order to avoid damage to the screen header rail ensure that both header rail clips are fully retracted before mating them with the location plates (see below).



The header rail clips operate on an over centre mechanism and should be fastened securely before driving with the hood up.



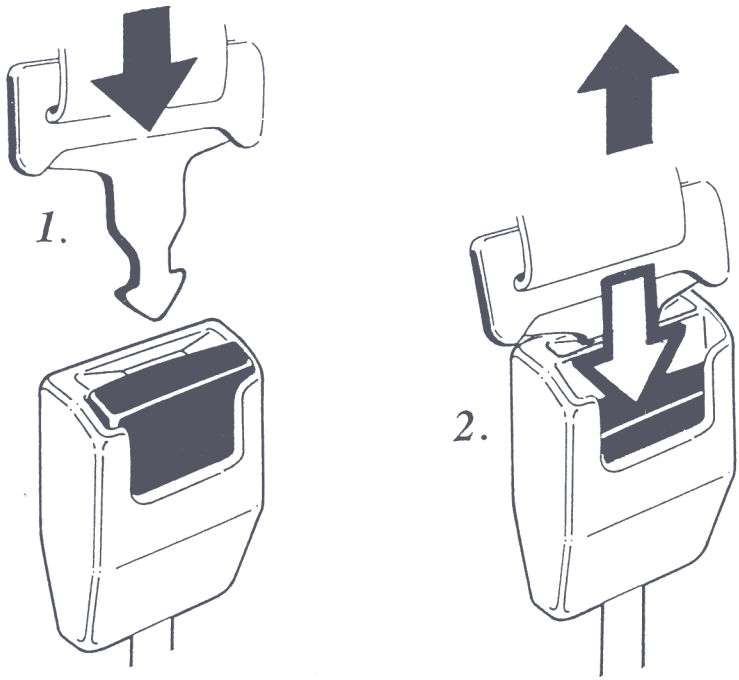
Finally secure the hood by fixing the "Tenax" fastners and ensuring that all of the window rubbers are correctly seated.

Folding the hood down is a reverse sequence. The tonneau cover should always be re-fastened when the hood is down.

SEAT BELTS

In most countries the wearing of seat belts is required by law. Put your belt on before every journey, no matter how short.

1. Draw the seat belt smoothly from the inertia reel and guide over the shoulder. Insert the tongue in the appropriate buckle, until it engages audibly (pull to check).



2. To release the belt depress the red button on the buckle.

The shoulder part of the belt must run roughly across the centre of the shoulder, on no account across the neck, and be firmly in contact with the body. The lap part of the belt must always fit tightly across the lap, as low down as possible (particularly in the case of pregnant women, so that no pressure is exerted on the abdomen). Pull the belt tight if necessary.

The belt must never be twisted.

The belt should not be worn over hard or breakable articles such as glasses, pens, key rings, pipes, etc, as this can cause injury to the body. Loose, bulky clothing, such as overcoats and heavy jackets, affect the fit and function of the belts, and therefore they should not be worn when travelling.

The belt must not be jammed anywhere or rub on any sharp edges. The slot for the belt tongue must not be blocked with paper or any other article as otherwise the tongue cannot

engage properly. Always ensure that the belt is properly adjusted without slack and is not caught round any obstruction. Do not bleach or re-dye the webbing.

Seat belts which are damaged or have been stressed in an accident must be replaced. The anchorages should be checked. For your own safety you should periodically check your seat belts by tugging the webbing sharply. The inertia reel seat belts have a vehicle sensitive retractor, which is designed to lock only during a sudden stop or impact. Never attempt to test the locking device by intentionally 'shooting' your upper torso in a forward direction.

Do not permit parts of different seat belts to become inter-changed.

CARE OF BELTS

Always keep belts clean and dry. Never lubricate any part of the seat belt mechanism.

Clean only with a mild solution or luke warm water. Do not bleach or dye belts, or use any sort of cleaning fluid or hot water as this will severely weaken them. Rinse and dry naturally, with all available webbing pulled from the reel and do not allow the webbing to go back into the reel until the seat belt is absolutely dry. Never allow moisture to penetrate the inertia reel retractor mechanism. Do not perform any alterations on your vehicle's seat belt system. If any part of a seat belt is damaged, the complete seat belt assembly for that seat must be totally replaced.

The effectiveness of seat belts will be impaired if any changes or alterations are made to the belt or to its installation. If for any reason they are removed from the vehicle, re-assembly should be carried out exactly as instructed in the workshop manual.

Only one person is to be secured with each belt. Never secure two people (even children) with one belt.

SAFETY FOR CHILDREN

Babies of up to 8 months of age should be carried on the passenger seat in a restraint system specifically approved for this purpose.

Children up to about 6 years of age, depending on their size, should be carried in a reclining safety seat or a specifically designed childs safety seat.

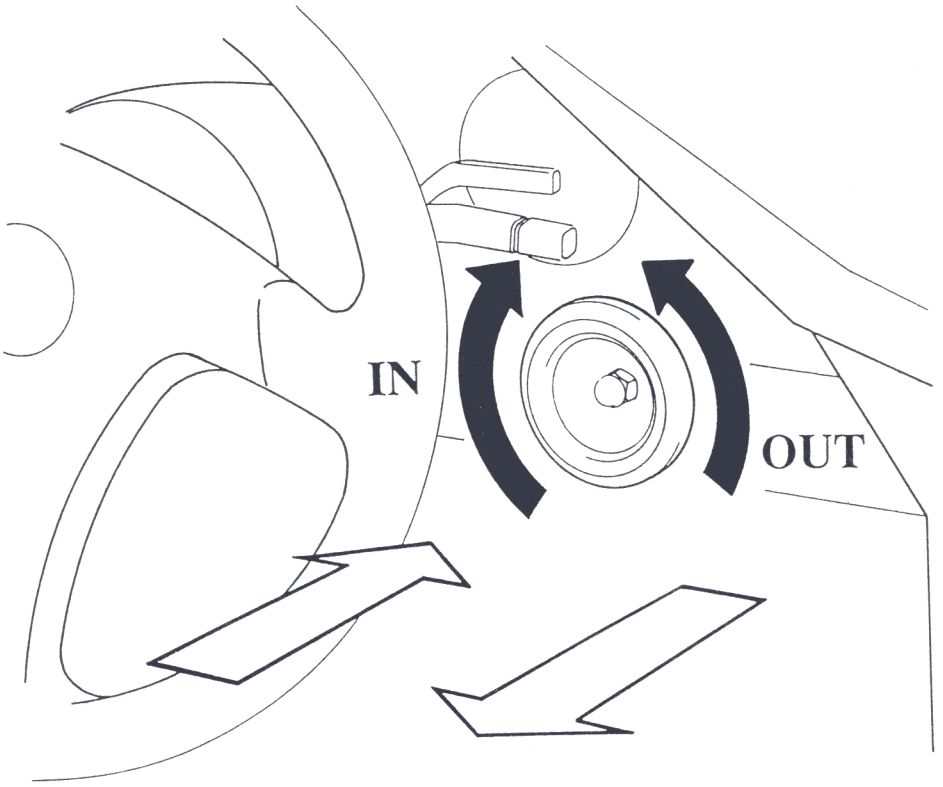
Children under 12 years of age must be secured with a childs restraint system, but can use the adults belt provided a suitable booster cushion is used as instructed by the manufacturer. The installation and use of any child restraint system must be carried out in accordance with instructions of the manufacturer concerned. Never allow children to stand or kneel in any part of the car when it is in motion.

It is the responsibility of the driver of the vehicle to ensure that all children under 14 years of age are secured in approved seats or restraint systems. Children 14 years of age and over are responsible for their own wearing of seat belts.

SEATING ADJUSTMENTS

The Marcos Mantara is designed to suit drivers of virtually any height as the unique pedal assembly varies the leg room quickly and simply.

The pedals are adjusted by a knob positioned to the side of the steering column.



Turning the knob clockwise moves the pedals away.

Turning the knob anti-clockwise brings the pedals closer.

The pedals should only be adjusted when the car is stationary and the ignition is turned off.

CHANGING A WHEEL

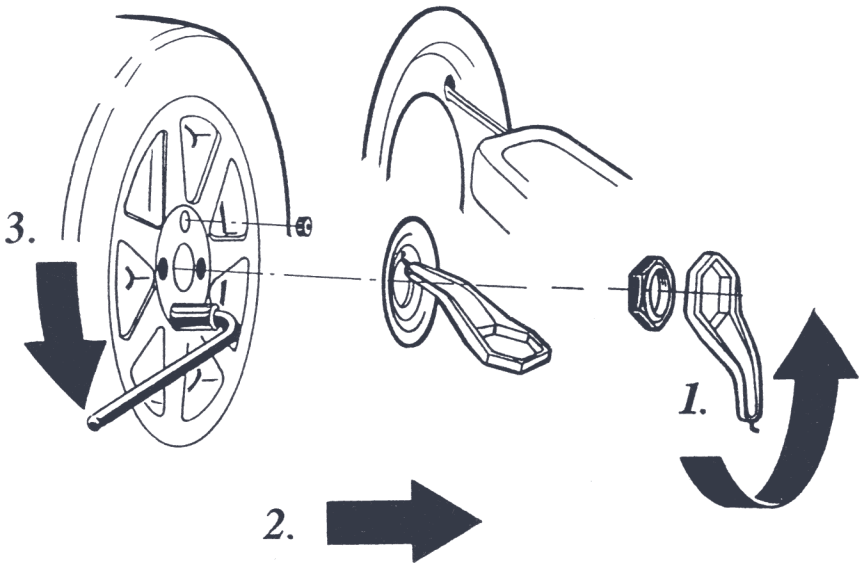
You must follow the following precautions before you proceed to jack up the vehicle. Wherever possible ensure that the vehicle is on firm level ground and that you are working as far away from passing cars as possible. If the ground is soft, you must place a large strong piece of packing underneath the jack base plate. Before jacking up the vehicle make sure the ground is sufficiently solid to take the jack and any additional support used. If the vehicle is on a slope, and you cannot move it to level ground before jacking it up, both wheels on the opposite side of the car to the wheel you wish to change must be securely chocked.

Whatever you do, apply handbrake, engage first or reverse gear or, if automatic, select the P position. Ensure that the jack you use has sufficient lifting capacity. An additional means of support must be used if you intend to work under the car when it is raised. You must use either approved axle stands or approved car ramps. Never use bricks as these could easily topple or crumble under the weight of the vehicle.

Switch on your hazard warning flashers and place a warning triangle at a reasonable distance from the vehicle to warn other traffic.

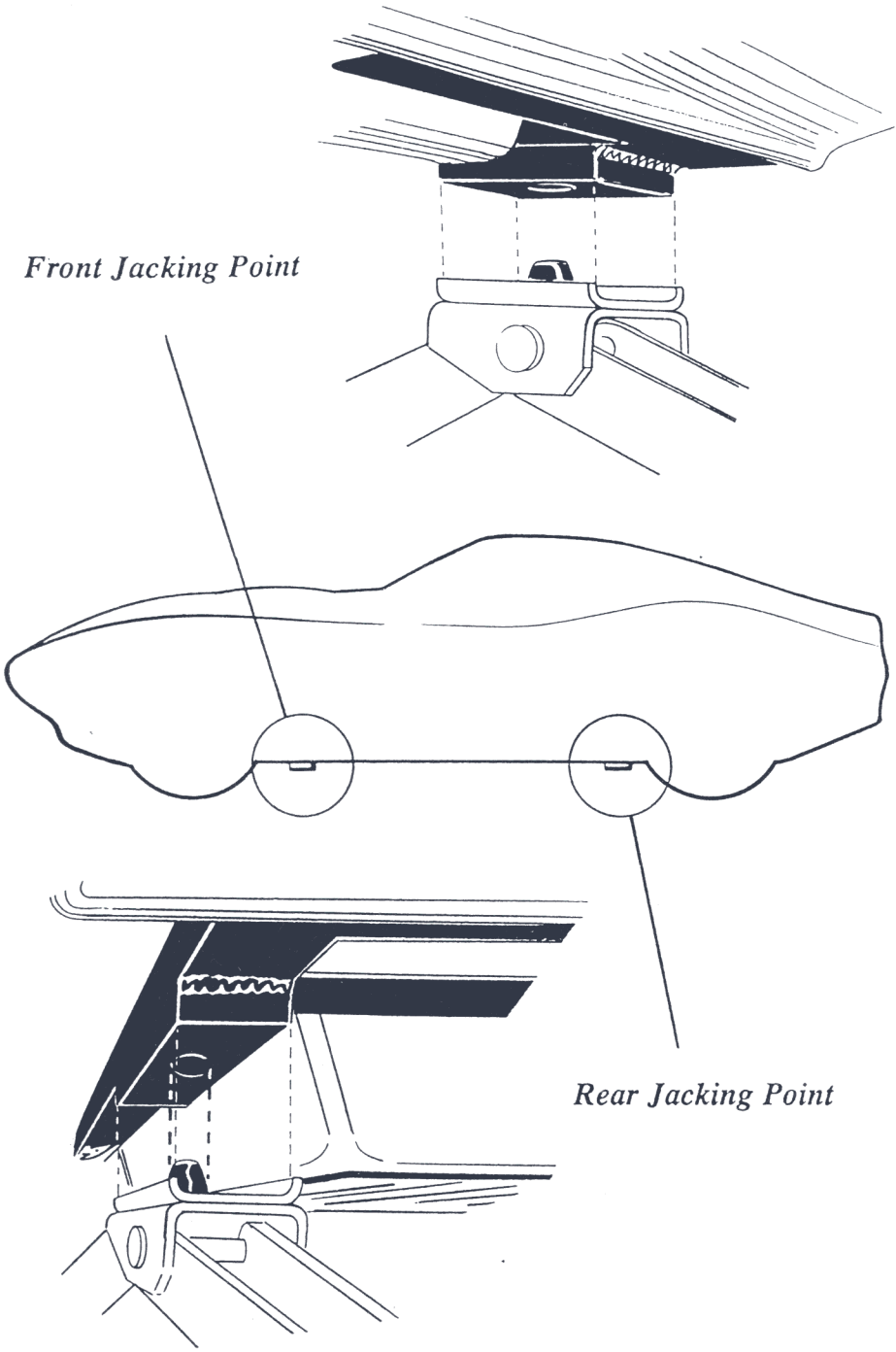
Remove the 'space saver' spare from underneath the front of the bonnet.

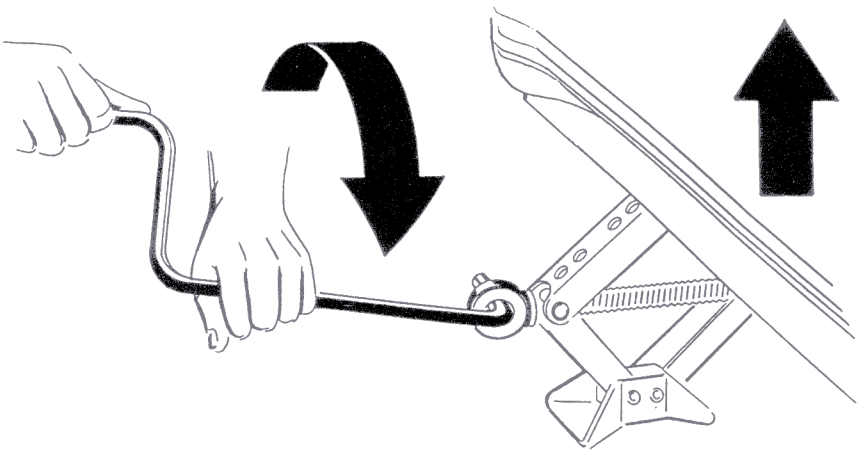
Find tools from within the boot.



Remove outer nut using the large ring spanner and remove the cover plate using the hook on the handle of the large ring spanner.

Loosen the wheel nuts, 2 turns.


Front Jacking Point
Rear Jacking Point



You should only jack up your vehicle using an approved jacking point, such as under the chassis; see diagram. Do not raise the jack higher than necessary to change the wheel, as this could easily cause unsteadiness in the jack and possibly cause it to slip.

Finish unscrewing the nuts and remove the wheel.

Fit the spare wheel onto the hub and make sure it is correctly positioned. Tighten the wheel nuts.

Lower the car to the ground using the jack.

When the vehicle is lowered to the ground you must fully tighten the wheel nuts in a diagonal sequence to a torque of 110Nm. If you are unsure of the security of the wheel nuts or of the wheel balance and pressure setting for the tyres, have these checked at the next available service station.

Do not forget to stow the tools back in their correct positions.

The damaged wheel should be stowed in the boot and the tyre replaced promptly by a tyre specialist.

Switch of your hazard warning flashers before moving the vehicle.

When driving on the 'space saver' tyre, ensure that you follow the recommendations for its use.

PRE-STARTING CHECKS

The operational condition of your vehicle is essential to safe driving. Before moving off, always check the following points:

Lights and turn signals working correctly.

Check brake pedal travel is not excessive.

Amount of fuel - if the pointer is reading less than 1/4 full, fill up.

Mirror settings.

Cleanliness of light lenses and windows.

Doors are not locked (to allow assistance from outside in an emergency).

No objects are placed on any surface under the front or rear windows which, under acceleration or emergency braking can become dangerous projectiles.

Unrestricted vision through all windows, no large articles of clothing hanging up inside the vehicle.

Note weather, road conditions and traffic situation.

Is it safe to reverse?

Also check at regular intervals:

Tyre condition and pressures.

Engine oil level.

Coolant level.

Brake fluid level.

Fluid level in windscreen washer container.

Condition of windscreen wiper blades.

Furthermore, compliance with the specified inspection and renewal intervals in particular the brake fluid changing, is of great importance for driver safety.

Safety on the road depends to a large extent on the personal attitudes and style of driving. To be safe on the road you should therefore:

Always put your seat belt on before moving off even in town traffic - the law in the United Kingdom requires it.

Ensure that the passenger is wearing a seat belts. Passengers without seat belts can endanger not only themselves but also their driver.

Ensure that no articles or loose floor mats interfere with the operation of any pedal.

Stow all luggage correctly. Transported goods should be positioned as far forward as possible on the low floor and secured so that they cannot slide about. Do not place objects on the rear deck. When transporting bulky items do not drive with the boot open. Always ensure that the tyre pressures are adjusted according to the load and take care not to overload the vehicle.

Marcos do not recommend that a towing bracket be fitted. The Marcos Mantara should not be used for towing any type of trailer or caravan.

FOOT OPERATED CONTROLS

Accelerator - The pedal is connected by a cable to the injection throttle.

Foot Brake Pedal - actuates the brakes on all 4 wheels hydraulically, and also closes the circuit to the rear brake lights. These only operate when the ignition is switched on.

Clutch - Press pedal to dis-engage drive from engine to gearbox. Do not rest your foot on pedal when driving, or hold the clutch out to free wheel as this will cause unnecessary wear.

STARTING THE ENGINE

Before starting apply the handbrake.

Ensure that the gear lever is in the neutral position (manual transmission) or in the P position (automatic transmission). On vehicles with automatic transmission, the foot brake must always be applied before one of the driving ranges (R, D, 2 or 1) is selected.

ENGINE START

When the engine first starts, under certain conditions, the hydraulic tappets may emit a rattling noise. This is due to oil having drained from the hydraulic system when the vehicle was standing.

The level of oil will automatically recharge the tappets and the noise cease after a period of engine running. After the engine has been standing for long periods, or in very cold weather, this noise may last for some minutes. Ensure that the engine speed remains below 3,000rpm. If the noise continues after 3 minutes consult a qualified engine specialist.

- *1 Steering Lock*
- *2 Radio*
- *3 Running Position*
- *4 Starter*

Never turn the ignition key away from Running Position when the vehicle is moving, and never withdraw the key until the vehicle is stationary and the hand brake applied.

If you intend starting your engine in the garage, or in a confined closed space, ensure that you leave the doors open as exhaust gas contains carbon monoxide (CO) which is odourless and invisible, but highly poisonous.

Do not drive when you feel tired. Stop for a break, at the latest, after driving for two hours.

Never drive when your reactions are impaired in any way. Not only alcohol, but many drugs, medicines and even tiredness can be very detrimental to your reactions.

Adapt vehicle speed to traffic and road conditions. Remember that particularly on smooth slippery roads the handling and braking is limited by the adhesion of the tyres. On wet roads the front wheels can aquaplane at high speeds. The vehicle can then no longer be steered properly.

STARTING IN COLD CONDITIONS - (10 C)

Before operating the starter, depress the clutch. When the engine starts, release the clutch slowly.

Warming up As soon as the engine is running and the instruments are reading correctly, the car may be driven. The tick-over will be adjusted by the fuel injection and may run a little higher than normal while the engine is cold. The tick-over may also fluctuate for a short time when the electrical equipment is switched on.

Caution: Avoid harsh acceleration or labouring at all times, but especially when the engine is cold. It is recommended that the car is run carefully until the normal running temperature is reached.

When the vehicle reaches normal operating temperature, check that all the instruments are reading correctly.

Under cold conditions, the gear box may appear stiff whilst the car is cold. Operate gears carefully, allow time for the clutch to free the box and the lever to travel between the gate.

ENGINE EXHAUST GAS CAUTION (CARBON MONOXIDE)

If at any time you suspect that exhaust fumes are entering the vehicle, have the cause determined and corrected as soon as possible. If expert help is not immediately available, drive only with all the windows fully open to help ventilation.

CONTROLLED EXHAUST OMISSION

By constructive measures - mainly in the area of the fuel injection and ignition system, the proportion of noxious materials in the exhaust, such as carbon monoxide, hydrocarbons and nitric oxides are reduced to a minimum.

The composition of exhaust gas and the proportion of poisonous constituents, primarily carbon monoxide, are determined by the correct adjustment of the fuel ignition system and the ignition system.

The more accurate the setting, the less the CO content in the pre-catalysed exhaust gas.

The exhaust gas leaving the car should be clean due to the catalyst situated in the exhaust system. If you suspect anything different refer to your dealer.

All checks and setting work should therefore be left to a qualified dealer who will have the suitable equipment and trained personnel available.

You are thereby making an important contribution towards keeping the air clean.

JUMP STARTING FROM ANOTHER VEHICLE OR BATTERY

If jump starting you vehicle, firstly make sure that the battery providing the jump start has the same voltage as the battery in your car. Never lean over the battery during jump starting.

Never allow the terminals of one lead to touch those of the other lead. Switch off all unnecessary electrical loads on both cars and apply their hand brakes.

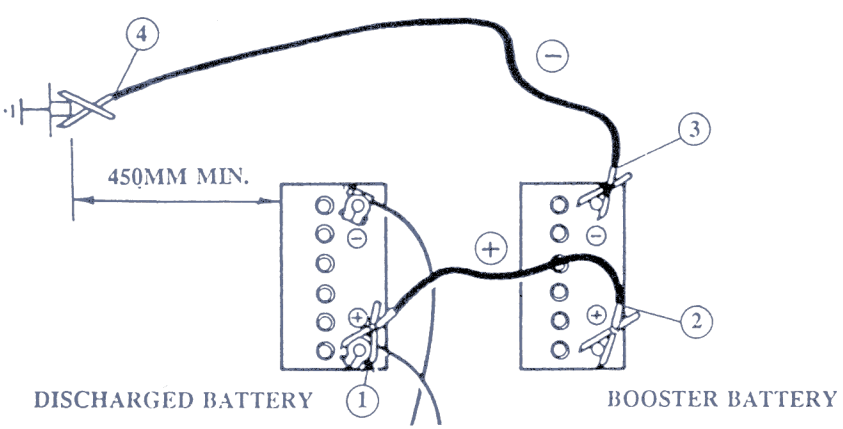
1 *Connect the 1st jump lead from the + terminal of the battery providing the jump start.*

2 *Connect the other end of the 1st jump lead to the + terminal on your vehicles battery.*

3 *Connect the 2nd jump lead to the - terminal of the battery providing the start*

4 *Connect the other end to a ground connection on the discharged vehicle, such as the engine block, this connection point being as far away as possible from the battery. Do not connect a 2nd lead to the - terminal of the discharged battery.*

The engine of the vehicle providing the start can be allowed to run during the starting. Start the vehicle with discharged battery as usual. Reverse the above sequence exactly when removing the leads. Never allow the two vehicles to touch each other.



TOW STARTING

Tow starting is only possible with manual transmissions.

The tow rope should be slightly elastic to reduce the risk of damage to both vehicles. Before towing check whether there are any local traffic regulations concerning the towing of vehicles.

Both drivers must be familiar with towing and tow starting procedures. Inexperienced drivers must not atempt to tow or tow start.

It is the responsibility of the vehicle driver being towed to ensure that the tow rope is always taut. Turn the ignition of the towed vehicle on and engage second or third gear with the clutch depressed before moving off.

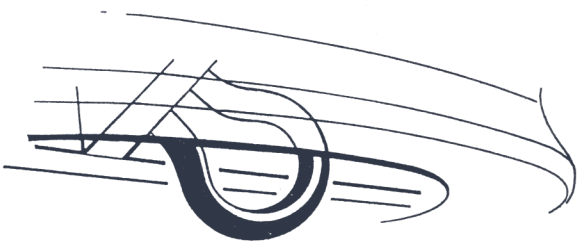
To prevent the entry of exhaust fumes from the towing vehicle entering the passenger compartment of the vehicle being towed, close all the windows.

As soon as the towed vehicle is moving slowly, the tow rope is taut and it is safe to do so, release the clutch gently and as soon as the engine fires depress the clutch again, signal to the towing driver and stop the vehicle.

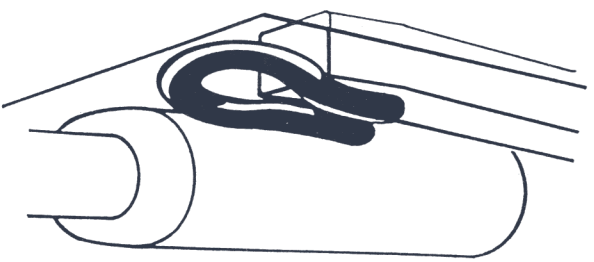
It is advisable to stay in the towed vehicle, and ask the towing driver to remove the tow rope as this will give you an opportunity to keep the engine running.

There are towing eyes positioned on the offside of the car front and rear. These are situated under the bodywork.

FRONT TOWING EYE



REAR TOWING EYE



DRIVING AND THE ENVIRONMENT

ONLY DRIVE WITH THE ENGINE RUNNING

Never coast or run down hill with a stationary or idling engine and never with the ignition switched off. With the vehicle in this condition many units will not function, for example, turn signal indicators. Furthermore, steering could lock in one position.

Safety regulations and anti pollution laws place very strict limits on the amount of repair and adjustments to engine and running gear parts which can be done by the owner. By tinkering with parts that effect the safety and economy of the motor vehicle one can endanger oneself and other road users.

In order to guarantee economical and safe vehicle operation, and to maintain the value of your car, it is of vital importance that all maintenance work is carried out at the recommended intervals. Do not carry out any unauthorised modifications to this vehicle.

PROTECT THE ENVIRONMENT

Observe all environmental regulations, particularly when washing your car and use no aggressive cleaning agents.

The disposal of old oil, used brake fluid, old batteries or worn out tyres, etc, must be carried out in accordance with environmental protection regulations.

It is illegal to pour used oil onto the ground, down sewers or drains, or into water courses. Dispose of used oil through authorised waste disposal sites, or to the waste oil reclamation trade. If in doubt, contact the local authority for advice on disposal facilities.

Driving a car causes noise. We must drive with the environment in mind and keep noise level within reasonable limits by adopting a sensible driving style. Please, therefore, drive carefully and quietly. You will not only be making a contribution to the economy but also protecting your environment.

Unnecessary harsh acceleration considerably increases fuel consumption. Starting very quickly, for example, with screeching of tyres and high engine speeds, increases the noise level by up to 18dB. Select the next highest gear as soon as possible. A car travelling at 30 miles an hour in second gear causes just as much noise as three vehicles driven at 30 miles and hour in fourth gear.

The engine also consumes fuel and creates noise and pollution when idling. If you have to wait at any hold up for more than one minute, it is worthwhile switching off the engine. As an example, three minutes of idling corresponds to almost 0.62 miles of normal driving.

Close doors and bonnet quietly and avoid noise.

Unnecessary weight increases fuel consumption, especially when accelerating. As an example, a load of 220lbs can increase fuel consumption in urban traffic by up to 1.75 gallons for every thousand miles.

DRIVE ECONOMICALLY

Raw materials sources are not inexhaustible, therefore we must drive with energy in mind and save fuel. So drive economically - more miles with less fuel. You will be pleasantly surprised not least of all from a financial point of view.

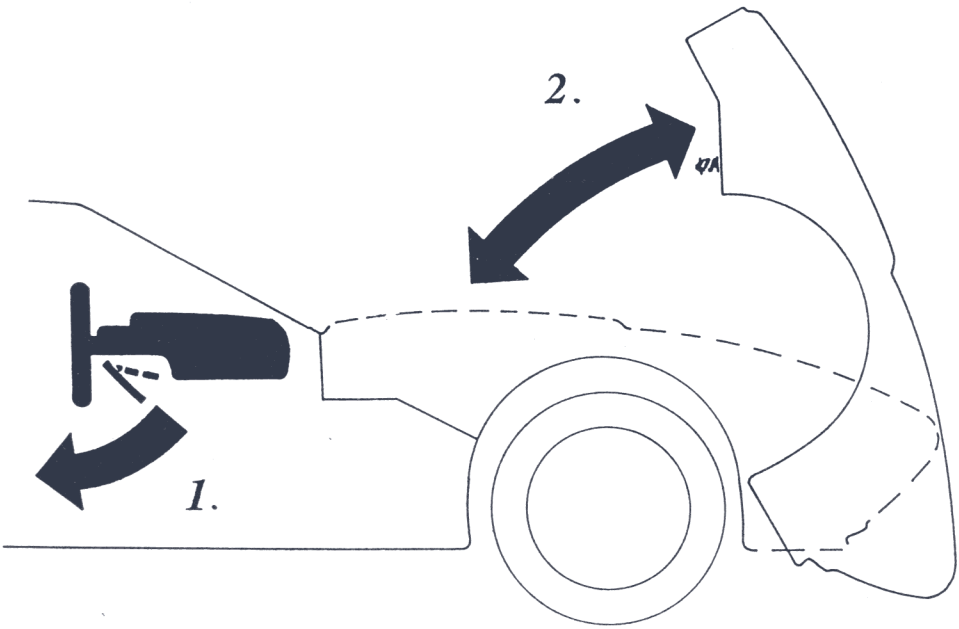
Try to develop a sixth sense for balanced smooth driving. The higher the engine speed the more often you will have to fill up. Unnecessary high speed is simply money down the drain. By keeping to a maximum 75% of the top speed you can save up to one third of every tank full of petrol. Drive as smoothly as possible and look well ahead. Unnecessary acceleration and braking must be paid for with higher fuel consumption and even more disturbance of the environment. Fuel consumption is, for example, twice as high in second gear and 1.5 times as high in third gear as it is when travelling in fourth gear.

There is absolutely no point in warming up your engine before driving away. Your engine will reach its normal operating temperature much quicker if you drive off immediately, but you should avoid heavy acceleration until the engine has reached its normal operating temperature.

The E.C.U. on the fuel feed system will automatically prevent fuel injection and ignition over 5200 r.p.m. on the Mantara 400. Whilst this cut out helps prevent the engine from over revving, a disturbing high level of noise is experienced.

It is important that the left foot is only positioned on the clutch when gear changing is necessary.

ENGINE BAY LAYOUT



OPENING BONNET

1. *Pull lever under steering column.*

2. *Lift bonnet until it comes to rest forward-over centre.*

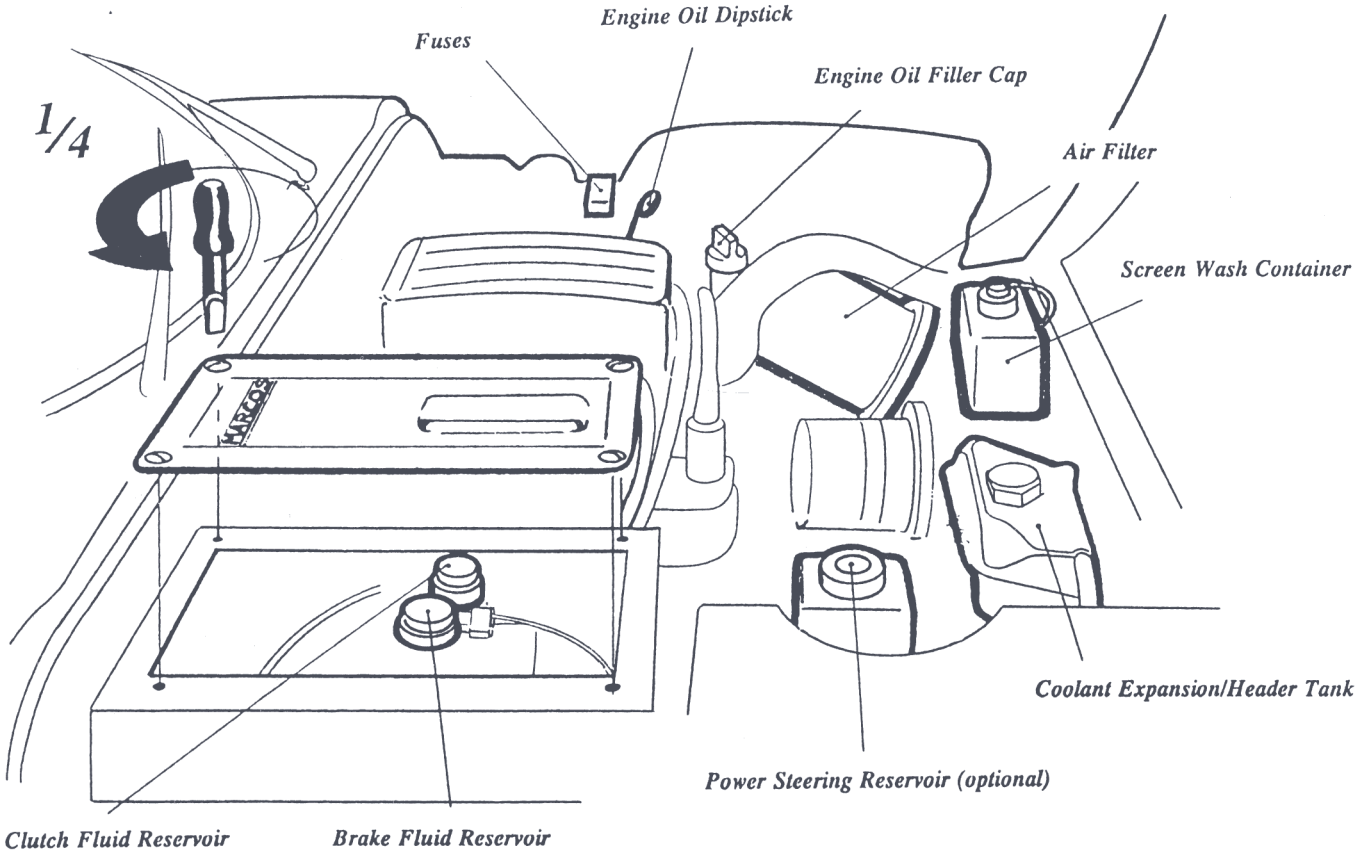
CLOSING BONNET

- *Lower bonnet down fully.*

- *Depress top corners of bonnet until it is fastened. An audible click should be heard.*

- *Check the bonnet is securely closed.*

The bonnet must always be closed properly and locked before the vehicle is driven. Should you notice at any time when driving that the bonnet is not properly secured, stop at once and investigate the fault.


1/4
Fuses
Engine Oil Dipstick
Engine Oil Filler Cap
Air Filter
Screen Wash Container
Coolant Expansion/Header Tank
Power Steering Reservoir (optional)
Clutch Fluid Reservoir
Brake Fluid Reservoir

FUSES

The fuses are situated in 3 fuse blocks of 6, 6 and 4 respectively.

The plastic cover can be removed by squeezing and lifting using thumb and fore finger.

Fuses should by changed by pulling up with thumb and fore finger.

If a fuse has blown, first of all the component concerned must be switched off. The fuse that has blown can be recognised by a burnt metal strip, & must only be replaced with a fuse of the same capacity & type. If the newly inserted fuse blows again after a short time, the electrical system must be checked by an auto electrician a.s.a.p. On no account should fuses be patched up as this can seriously damage the electrical system of the car.

Fuses must be replaced according to the table below:-

1.

10A	Front Fogs Aux
15A	Front Spots Aux
15A	Head Lamp Dip Beam
15A	Spare Aux Dip Beam
20A	Head Lamp Spot Beam with Main Beam
20A	Head Lamp Main Beam

2.

7.5A	Right Hand Side Tail Lamp, Rear Fog
7.5A	Left Hand Side Tail Lamp
10A	Fuel Pump
30A	Heated Screen
20A	Hazards, Horn, Interior Lamp, Clock
25A	Radiator Fans

3.

15A	Left Side Window Motor
15A	Right Side Window Motor
10A	Heater Fan, Rev. Lamps, Cigar Lighter (optional)
20A	Indicators, Wiper Motor, Screen Washers, Mirrors, Stop Lamps

MAINTENANCE

Regular maintenance is an essential part of keeping your vehicle operating in a safe and economical condition. Servicing your car is vital from a safety point of view, because wear and tear are very gradual processes. Caught in time, costs can be small and the benefits in safety and economy can be significant. Left alone they can put you, your car and other road users at risk.

It is essential therefore that servicing is carried out regularly as specified, and that you carry out, yourself, the maintenance shown below. Regular maintenance is a combination of having your car serviced at the recommended intervals and taking the time to carry out certain checks yourself. When refuelling the vehicle you should check the engine oil level, the brake fluid level, washer fluid levels and tyre conditions. If the tyres are cold also check their pressures.

Every day you must check the function of all exterior and interior lights, making sure that any bulbs that have failed are replaced, that all lenses are clean and not cracked. Cracked exterior lenses will mean your vehicle will fail the M.O.T. test.

You should also check the operation of the horn and all other items such as hand brake, seat belts and seat adjustment levers (if fitted) at least once a month.

The engine coolant level and a visual check around all pipes, hoses and reservoirs should also be carried out every week.

When the engine has been running fast for a long time, let it idle for about 2 minutes so that it can cool down slightly before being switched off.

Periodically check for signs of leaking in the following areas. Cylinder head gasket, crank shaft pulley, oil filter, oil pressure switch, rocker cover gasket, fuel pump, fuel lines, fuel hoses, radiator, water hoses, thermostat housing, water pump, exhaust system, brake fluid reservoir, brake lines, brake callipers and rear wheel cylinders.

Proper condition and correct tension of the alternator drive belt are prerequisites for efficient alternator capacity. The belt's condition and tension therefore must be checked regularly.

Warning: If you inspect any area under the vehicle for leaks, never start the engine while the vehicle is off the ground. Instead, lower the vehicle to the ground, on its wheels, and watch the leak from beside the car.

When working under the bonnet ensure that the bonnet is fully open so that it cannot fall on you.

When working near or checking spark plugs and leads, remember that the ignition system carries very high voltages and can do severe harm.

It is a safety precaution therefore to detatch the earth lead from the battery before attempting any work on the ignition system.

WINDSCREEN, WIPERS AND WASHERS

To prevent streaks from forming on the glass the wiper blade should be cleaned regularly with a window cleaning solution. When very dirty and full of insect remains, the blades can be cleaned with a sponge or brush. For safety reasons the wiper blades should be renewed once a year, or earlier if worn or damaged.

When washing the windscreen, ease the wiper blades away from the screen.

Clean all windows only with an automotive glass cleaner. Follow the manufacturer's instructions.

Remove snow and ice from windows and mirrors only with a plastic scraper. To avoid scratches due to dirt on the glass, the scraper should only be pushed in one direction and not moved to and fro.

The windows must be cleaned on the inside at regular intervals.

For safety reasons, hardened, brittle or smearing blades must be replaced. This may be necessary after a particularly icy winter where a lot of thawing salt has been scattered on the roads or after a hot summer where the vehicle has been exposed to high temperatures. Remember, properly functioning windscreen wipers are essential for safer driving and clearer vision.

When filling the container of the windscreen washer system, pull off the cap and fill the container to the brim with washer fluid. Press the cap on tightly again, switch on the ignition and check the operation of the washer system.

It is advisable to add a window cleaning solution (with an additive to prevent freezing in the winter) to the water because plain water is not usually sufficient to clean the glass quickly and thoroughly. Do not add the same type of antifreeze as you would put in your engine's cooling system, but purchase a specially manufactured windscreen washer additive from a recognised garage or car accessory dealer.

CATALYTIC CONVERTORS

At each service the emissions should be checked and any adjustments made. This must be carried out by a qualified person.

After a period of up to 50,000 miles the catalyst units may need replacing. This must be done using the correct specification obtained from your Marcos Dealer.

Caution: The catalysts may be externally hot, as with all exhaust fittings, DO NOT TOUCH UNTIL COLD.

Warning: Never make modification to any part of the ignition, injection or exhaust system. This will affect emissions and may be illegal.

CARE OF YOUR VEHICLE

Regular and careful care helps to maintain the value of the vehicle. Wax the vehicle as often as possible, as this will help prevent dirt from sticking and industrial grime from penetrating the surfaces.

Polishing should only be carried out if the surface has lost its shine and gloss. Use only a polish recommended for the surface and observe the manufacturer's instructions.

If cleaning with a damp cloth or normal washing is not sufficient for plastic parts, these may only be cleaned with special solvent free plastic cleaners. Upholstery and carpet materials must be cleaned with recommended cleaner only.

Paint damage to the chassis should be repaired before rust can form.

The wheels should be cleaned at regular intervals when the vehicle is being washed. This will prevent brake dust, dirt and road salts from accumulating on the wheels. Persistent ingrained brake dust can be removed with an industrial grime remover.

Caution: Some of the materials you may use in the cleaning progress can be injurious to health if misused, and must be kept in sealed containers, out of the reach of children. Use only as directed.

Periodically, when washing your vehicle, particularly in winter, you should hose down the underside to remove the build up of general road grime and corrosive salt. When using any chemicals or compounds to wash or clean your car, environmental protection regulations must be observed.

Marcos Sales Ltd make every effort to make sure that their cars are watertight. However under adverse conditions it has been found that ingress of water does occur. It is advisable that should water enter the car it is dealt with immediately.

CLEANING EXTERIOR REAR VIEW MIRRORS

To prevent scratches, care should be taken when cleaning exterior rear view mirrors as these have an external reflective surface.

Always soften dirt and mud with soapy water before washing mirror surfaces.

Never use abrasive cleaning compounds.

Remove frost and ice with a plastic scraper, never use a metal scraper. ***Warning: Do not drive the vehicle until ALL the windows and mirrors are free of ice or mist.***

Adjust interior and exterior mirrors, and always check for correct adjustment.

ENGINE LUBRICATION SYSTEM

CHECKING OIL LEVEL

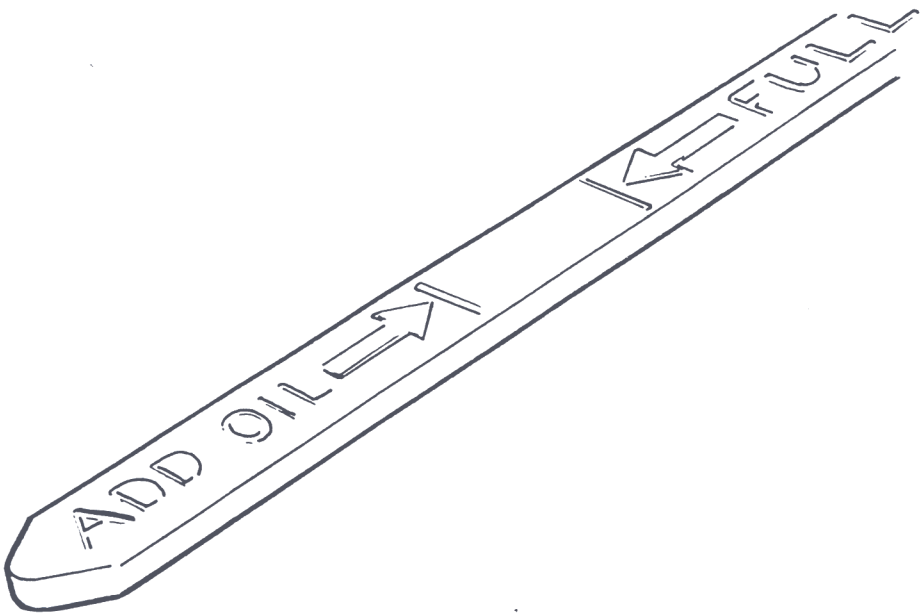
Every engine uses a certain amount of oil. The engine oil level must therefore be checked at regular intervals, such as when filling the fuel tank.

When the engine is working hard, such as in sustained high speed motorway cruising, or when climbing passes, the oil level must be kept up to the full mark. Do not fill above the full mark as the extra oil will be wasted and could result in increased consumption, possible engine damage and increased pollution.

The engine oil filler cap should only be removed when putting oil into the engine. Never remove the cap while the engine is running.

Engine oil and filter changes must be carried out as per the vehicle engine service schedule. Oil loses its lubrication property not only through engine operation but also through aging. Under exceptional conditions, for example local running or heavy traffic, the engine oil and filter should be changed at shorter intervals than usual.

Keep all oils, fluids and greases safely locked away from children. Always take note of the safety precautions on the container.



THE COOLING SYSTEM

With the beginning of the cold weather season, the coolant must be checked with a calibrated hydrometer for correct constituents. The anti-freeze content must guarantee freeze protection down to 30 degrees centigrade (minus 22 degrees fahrenheit). The coolant system must be filled with a glycol based coolant and corrosion inhibitor solution.

This solution provides excellent corrosion and freeze protection, for the entire cooling and heating system. For this reason it must not be replaced with water, even in summer. It should be changed every 2 years.

The coolant additive (anti-freeze mixture) and the coolant are poisonous. The additive must therefore only be stored in the original closed container, out of reach of children. If the coolant has, for any reason to be drained, it must be caught and also stored in a safe place until it is re-used. If the coolant is not to be used again, it must be disposed of in accordance with environmental protection regulations.

When topping up the coolant, stop the engine first and let it thoroughly cool down. Cover the cap with a large cloth and turn cap carefully to the left to let the pressure escape. Then take the cap off.

Never remove the cap when the engine is hot, as a danger of scalding is present, partly because of the high temperature of the water contained inside, and secondly, because the whole system is under pressure. Never add coolant to the cooling system of a hot engine. Always allow the engine to cool down first.

Contact your dealer for a recommended coolant additive.

Avoid skin or eye contact with coolant or coolant solution. If skin or eyes are accidentally splashed with this solution, rinse the affected area immediately with plenty of clean water and seek medical advice.

Before driving off ensure that there are no leaks from your cooling system and that the cap is screwed down tight.

The Mantara is fitted with electric cooling fans, never touch the fan blades. Depending upon how the fan is wired in, it can switch on suddenly even when the ignition is switched off. If you have to work on the engine anywhere near the fan, ensure that no loose clothing such as ties or cuffs can become entangled with the fan.

BRAKES

The following points are of particular importance for the safe operation of the brakes.

New disc pads must be run in and do not have the optimum friction properties for the first 50 or 60 miles. The slightly reduced braking effect can be compensated for by slightly more pedal pressure being applied.

When driving down hills change down in good time to make use of the braking effect of the engine. This helps to relieve the strain on the braking system. When brakes are applied, never keep them on continuously, apply and release alternately. The guidelines on mountain driving recommend that the same gear be used going down hill as would be used at the same spot going up hill. Engine and brakes then share the load.

Brake pads will not be fully effective on wet discs. Water reduces friction and delays the braking effect, so it is advisable to test the brakes gently on the start of each journey and to keep a greater distance between you and the car in front in heavy rain and slush. After washing your car, or driving through floods you should operate the brake and accelerator pedals simultaneously over a short distance to dry any form of water that may have formed on the brake discs or drums.

The full braking force will also be restricted when the vehicle has been driving for some time on heavily salted roads without using the brakes, because the build up of salt on discs and pads has to be removed first.

Brake pad wear depends to a large extent on the operating conditions and the style of driving. On vehicles which are used mainly in town traffic and stop/start conditions, or driven hard it may be necessary to have the thickness of the brake linings checked in between the intervals specified in the service schedule.

If the brake pedal travel increases suddenly it may be that one of the two brake circuits has failed. You must stop and check the fluid level in the reservoir immediately. If the fluid is up to the mark in either sector you can still drive the car but you must go to the nearest workshop for rectification. Be prepared to use more pressure on the pedal and allow for longer braking distances on the way. Keep your speed down.

The mechanically operated hand brake acts on the rear wheels only. It serves to secure the stop or parked vehicle and engages automatically once applied.

ASBESTOS WARNING

In common with most vehicles, some components such as gaskets and friction surfaces (brake pads, clutch discs, or automatic transmission brake bands), may contain asbestos. When in use and when being changed, some of these components produce dust. Breathing asbestos dust can be dangerous to your health. You are therefore advised to have any maintenance or repair operations on such components carried out by a qualified technician at a fully equipped workshop.

If you have to carry out any work involving components you believe could contain asbestos, you must refer to the relevent Health and Safety Executive publications and guidelines.

BRAKE FLUID

Brake fluid is hygroscopic which means that it will absorb moisture from the air. Water affected brake fluid has a reduced boiling point, the water also helps corrosion start in the braking system. Your must therefore have your brake fluid changed regularly. This should be done at a maximum of 2 years and a maximum of 24,000 miles.

In damp conditions which are common in this country, brake fluid left open to the atmosphere can absorb enough water in a few hours to make it highly dangerous if used in the braking system.

Check regularly, at least once a week, that the brake fluid is up to the maximum line marked on the side of the reservoir. Never let the brake fluid level fall below the minimum line.

The brake fluid warning light will illuminate if the fluid level drops significantly. The level of fluid tends to sink slightly when the vehicle is used due to the automatic adjustment for brake lining wear. This is quite normal. If, however, the level sinks noticeably in a short time and drops below the minimum mark, the system may be leaking and this must be checked immediately at a workshop.

It is good practice to check the operation of the brake fluid level warning light each time you check the fluid level. With the ignition switched on, press the button on the dash panel. If the light fails to illuminate have the system checked by an auto electrician.

When topping up or renewing brake fluid, you must always work from a freshly opened pack of fluid. NEVER re-use fluid. Use only fluid that is recommended by the brake manufacturer.

We would not recommend opening a container today and using the contents tomorrow. You should therefore buy brake fluid in the smallest packs possible and discard any fluid that is not used at once.

Once the fluid is sealed in the braking system, it can degenerate much faster than many people appreciate. You must therefore have the brake fluid checked at regular intervals.

If your brakes are constantly used in mountainous areas, the brake fluid should be renewed each time the brake pads are replaced.

Warning: Brake fluid is poisonous. If it is accidentally swallowed medical advice must be sought immediately. If it is splashed onto skin this should be washed off immediately with water. If brake fluid is splashed into your eyes, you should wash the fluid off with plenty of clean water and seek medical advice immediately. Brake fluid must therefore only be stored un-opened, in the original container out of reach of children. Remember brake fluid will attack paint work.

Environmental protection regulations must be observed when disposing of the fluid.

BATTERY CARE

In normal operating conditions the battery will require hardly any maintenance. At high ambient temperatures however, it is advisable to check the acid level at regular intervals.

Battery acid is corrosive and must not get into the eyes or onto skin and clothes. Any acid splashes must be washed off thoroughly with clean water and medical advice sought without delay.

In slow urban traffic or when otherwise driving slowly, it is advisable to turn off, where possible, all unnecessary loads.

Winter weather is particularly hard on your battery. Furthermore at low temperatures it has only a part of the capacity that it would have at normal temperatures. It is therefore recommended that the battery be checked and charged if necessary before the onset of winter. If the vehicle is not driven for several weeks when temperatures are low, the battery should be taken out and stored in a frost free room. Remember the battery can freeze up at minus 10 degrees centigrade. The battery must be stored out of reach of children.

Never disconnect the leads while the engine is running.

Never leave the battery in a discharged state as it may not be possible to recharge it.

CHARGING THE BATTERY

If the battery becomes partially discharged and fails to start the vehicle, it can be recharged using normal charging equipment, but it is recommended that the charger is switched off as soon as the electrolyte starts to effervesce.

Before starting to charge the battery note these safety points.

Never expose the battery to open flames or sparks, and never smoke near a battery especially when it is being charged. Chemical action in the battery generates hydrogen gas which is flammable and explosive. Do not allow battery fluid to contact eyes, skin, fabric or painted surfaces. The fluid is a corrosive sulphuric acid solution which could cause serious personal injury or property damage. Flush any contacted area with water thoroughly and seek medical attention immediately.

To lessen the risk of injury always wear eye protection when working near any battery.

When charging a battery still installed in a car, all connecting wires to that battery must be disconnected. Disconnect the negative wire first then the positive wire. The boot must be left open. When re-connecting the battery to the vehicle system, again note that you connect the positive wire first then the negative wire. Make sure that the charger is of the correct voltage for the battery before starting to charge. On no account lean over the battery during charging.

Never short the battery terminals as this causes the battery to heat up very quickly and

it may burst.

Never reverse the polarity of the battery, ie the connection for positive and negative cables must not be interchanged.

If a normal charger fails to recharge your battery, have it checked by an auto electrician.

The battery charger must be switched off before disconnecting the charging leads from the battery.

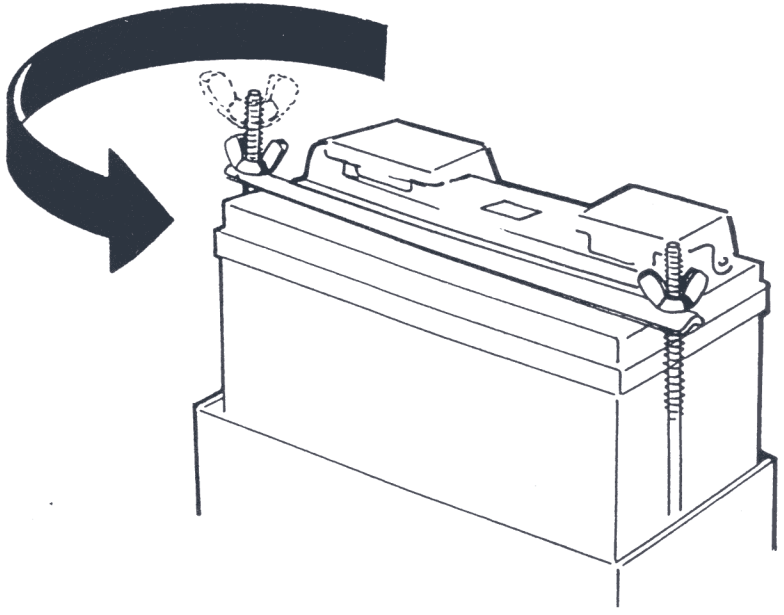
After charging the battery do not touch or go near it for at least 10 minutes after the charging equipment has been disconnected. This is because the battery continues to give off hydrogen gas for a short period after charging has been completed.

BATTERY REMOVAL

The battery can be found in the boot on the offside of the vehicle.

Remove the carpet trim to expose the battery.

Unscrew the wing nuts to remove the battery retaining bar. The battery is now in a position where it can be lifted carefully from the battery tray.



REPLACING BULBS

Bulbs should not be changed until they have been off for a few minutes and that the corresponding switch remains off.

The use of a cross-head screwdriver is necessary when replacing lamp bulbs.

REPLACING FRONT BULBS

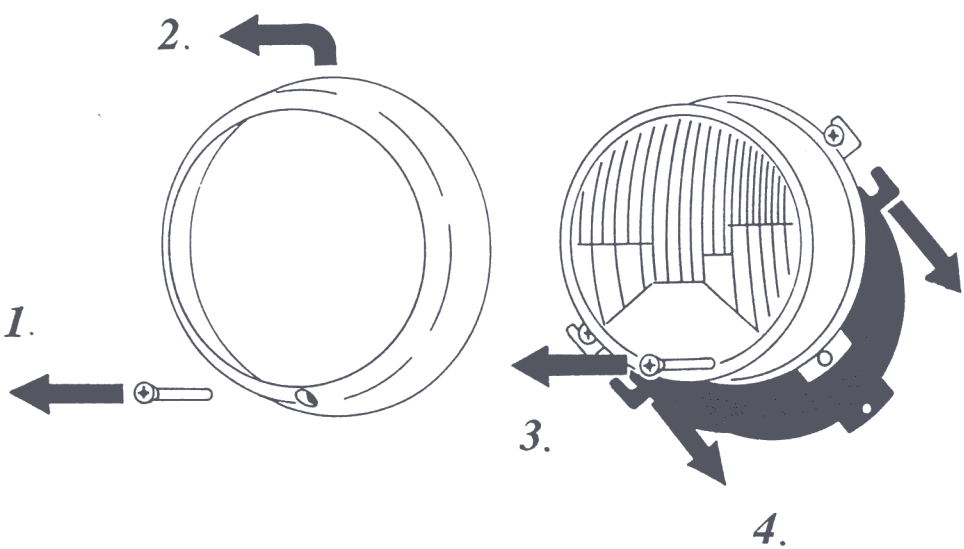
Headlamp Removal

1 *Remove lower retaining screw on lamp rim.*

2 *Remove lamp rim by gentle lifting upwards before easing forward.*

3 *Remove lower screw from securing rim only.*

4 *Ease lamp cluster from mountings by sliding fixing tabs out from adjusting screws. Do not move adjusting screws. If the headlamp aim is incorrect, refer to a specialist who can correctly make adjustment.*



Outer Headlamp Bulb Removal

5 *Pull off connecting block from cluster.*

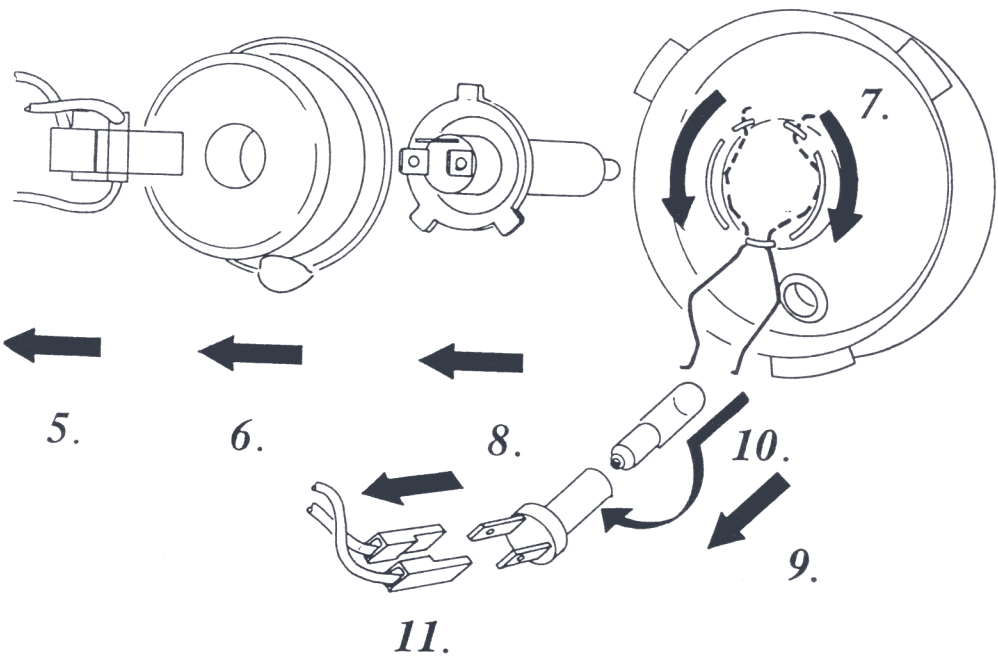
6 *Lift off rubber shroud from cluster.*

7 *Separate the ends of the bulb retaining spring and swing it clear.*

8 *Pull bulb from reflector.*

When replacing halogen bulbs, never touch the glass with bare hands. This will cause stains, resulting in dull light. To clean inadvertently stained bulbs, use alcohol or white spirit with a clean non-fluffy cloth.

Ensure the replacement bulb is correctly positioned before pinching retaining spring and re-assembling lamp cluster.



To Replace Side Lamp Bulb in Outer Headlamp

9 *Pull the sidelamp bulb holder from the grommet in the reflector.*

10 *Press and turn the bulb anti clockwise from the bayonet fixing, fit the replacement bulb by turning it clockwise in the bayonet fixing.*

11 *Ensure the connectors are producing electrical contact. They can be removed for inspection by pulling them from the bulb holder.*

Replacing Front Indicator Bulb

Remove 2 securing screws from lens.

Lift off lens and sealing ring.

Rotate the bulb 1/4 turn anti clockwise and remove from the bayonet fixing.

Replace bulb and secure by turning 1/4 turn clockwise in fixing.

When replacing lens; ensure the rubber seal is correctly seated. Do not overtighten securing screw as this may crack the lens.

Replacing Side Repeater Bulb

Before replacing the side repeater bulb it is necessary to remove the mud arch from inside the engine bay. This can be achieved by removing the securing bolts.

The side repeater lamp cluster should now be within reach from inside the body panel.

The lamp cluster can be pulled from its mounting and the bulb removed from its bayonet fixing. A replacement bulb should be securely re-fitted to the bayonet fixing.

Replacing Inner Headlamp Bulb

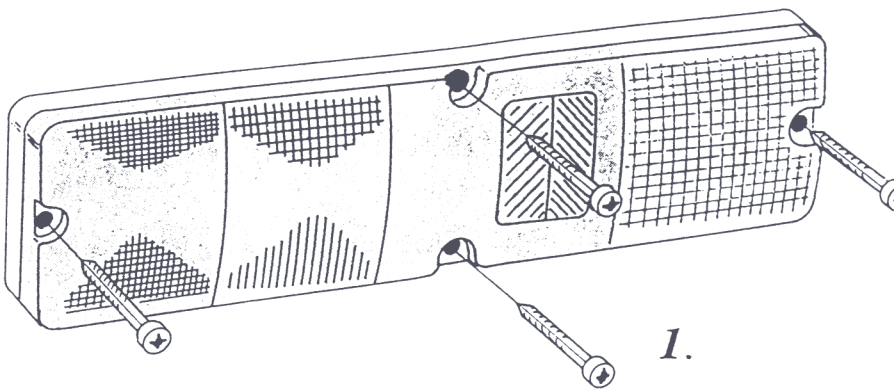
Remove inner headlamp from lamp mounting, see ***Headlamp Removal.***

Remove the bulb from the lamp reflector by pulling off the electrical connectors, the rubber shroud and the retaining spring, see ***Headlamp Removal.*** *The bulb has an adaptor connector which plugs into the cars wiring loom. This must be retained when replacing a bulb.*

Re-assemble the inner headlamp installation before switching the inner headlamp on.

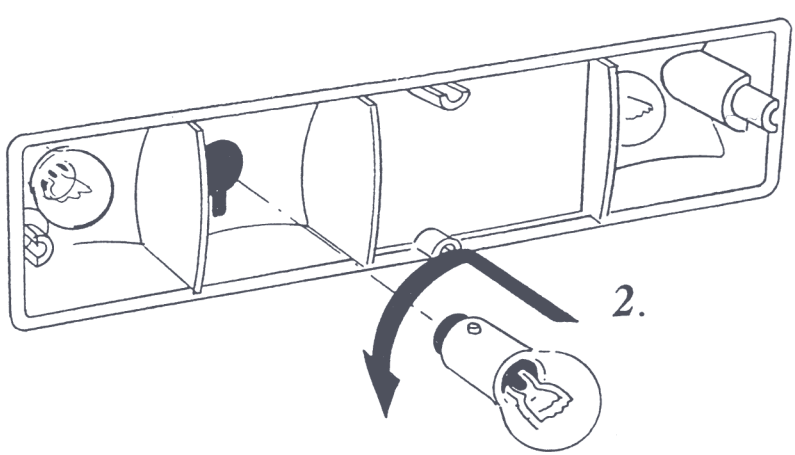
REPLACING REAR BULBS

1 *Unscrew the 4 securing screws from the lens.*



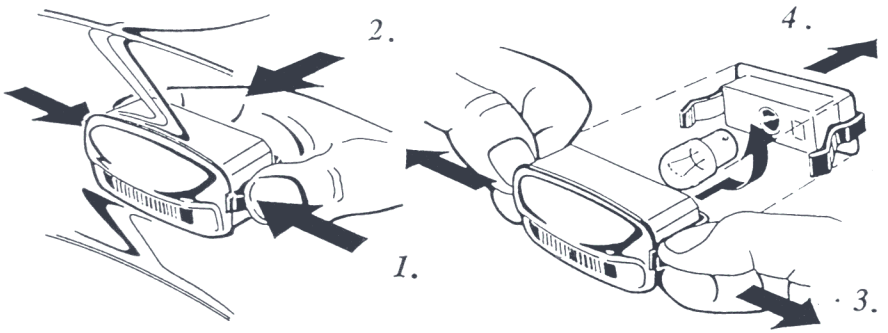
2 *Remove the damaged bulb by pushing in, turning anti-clockwise 1/4 turn, and pull out.*

Before replacing with the correct type of bulb ensure that all electrical connections are clean and conductive.



When replacing the lens ensure that it is correctly seated. Do not over tighten any of the screws as this will damage the lens.

Replacing Registration Plate Light



IMPORTANT: Ensure that all lamp units are properly re-installed before any lamps are switched on. If problems cannot be rectified using these guidelines then you should refer to your Marcos Dealer.

If any of the warning lamps or facia display lamps fail, refer to your Dealer immediately.

APPROPRIATE BULBS

Use	*Specification*	
Front		
Dipped & Main Beam (outer)	*H4*	*55-60W*
Side Lamp	*233*	*T4W*
Indicator Lamp	*382*	*21W*
Repeater Lamp	*233*	*T4W*
Main Beam (inner)	*H1*	*100W*

Rear		
Stop Lamp/Side Lamp	*380*	*21/5W*
Indicator Lamp	*382*	*21W*
Reversing Lamp	*382*	*21W*
Fog Lamp	*382*	*21W*
Registration Plate Lamp		*6W*

Interior	
Interior Lamp	*10W*
Map Reading Lamp	*T4W*

TYRES AND WHEELS

New tyres do not give maximum grip straight away, and therefore should be run in at moderate speeds and using a careful driving style for the first 200 miles. This will help to make the tyres last longer. It is recommended that the front wheel alignment is checked when the vehicle is new, every 20,000 miles, or if you have driven over a large pothole or kerb and suspect possible damage.

Wheels and tyres are important design features. The wheels and tyres approved by Marcos are especially matched to the model concerned. If you wish to fit your car with non-standard wheels and tyres which have not been approved by Marcos, for your vehicle, this can be detrimental to the safety of the vehicle. It can also effect the vehicle under Construction and Use regulations. If wheel trim discs are subsequently installed it is essential to ensure that the air flow remains adequate to cool the brakes.

TYRE PRESSURE AND MAINTENANCE

Tyres are the only part of the car which are in contact with the road. Safety in acceleration, braking, steering and cornering, all depend on a relatively small area of road contact. It is therefore of paramount importance that tyres should be maintained in good condition at all times, and that when the time comes to change them suitable replacements are fitted.

Maintaining the specified tyre pressures is essential for driver comfort, and long tyre life.

Prolonged under-inflation causes excessive flexing, deterioration of the casing, and rapid wear of the tread edges. Over-inflation results in an uncomfortable ride, a reduced area of tyre contact with the road surface, and accelerated wear in the centre of the tread.

Inflation pressure must be checked at least once a fortnight, and should be checked only when the tyre is cold, since there is an increase in pressure when the tyre has warmed up after being run. A reliable pressure gauge should be used. When you have checked the pressures, securely re-tighten the valve caps.

It is dangerous to re-inflate a tyre which has been run flat or seriously under-inflated and such tyres should be removed for complete examination by a tyre specialist.

Tyres should be examined regularly, removing stones and other objects embedded in the tread. If the tyre has lumps and bulges it must be examined by a tyre specialist since they could indicate internal damage. Wipe away oil or grease with a suitable diluted detergent.

If you must drive over kerbs or similar obstacles, do so very slowly, and as near right angles as possible. When parking, make sure that the tyres are not pressed against the edge of the kerb.

It is illegal in the United Kingdom, and dangerous, to mix radial and cross-ply tyres on the same axle, or to have radial type tyres on the front axle and cross-ply on the rear. This applies to all cars, whether front or rear wheel drive.

REPLACEMENT OF TYRES

Tyre treads are designed to give good wet grip but the road surface condition plays the major part in tyre to road adhesion. In general, wet grip decreases as tyre tread patterns wear down or as the depth of the surface water increases. Motorists should take this into consideration and reduce speed when it is wet. Most car tyres have tread wear indicators in the tread grooves which show when the tyre is worn to 1.6mm remaining tread. A triangle or the letters TWI will be moulded into the side wall to show the location of the tread wear indicator. The appearance of these indicators, level with the tread surface, should be taken as a sign that the tyre is ready for replacement.

For safety reasons tyres should only be replaced in pairs. The tyres with the deepest tread must always be on the front wheels. Use of unsuitable tyres or wheels may result in the loss of insurance cover.

For safety reasons a new rubber valve must be fitted when a new tubeless tyre is installed. Replacement of tyres calls for specialised equipment and knowledge, and should therefore only be entrusted to a tyre specialist.

It is important that the wheels are balanced and you seek advice of the tyre specialist regarding this point.

The legal limit of tread depth for car tyres in the United Kingdom is 1.6mm across three quarters of the width of the tread pattern, with the visible tread on the remaining one quarter. The legal requirements may differ in other countries. It is highly recommended that tyres are changed well before this point is reached.

Ensure that the replacement tyres correspond to the technical specification in the back of the handbook and that the correction direction of rotation of the tyre corresponds to the direction of wheel rotation.

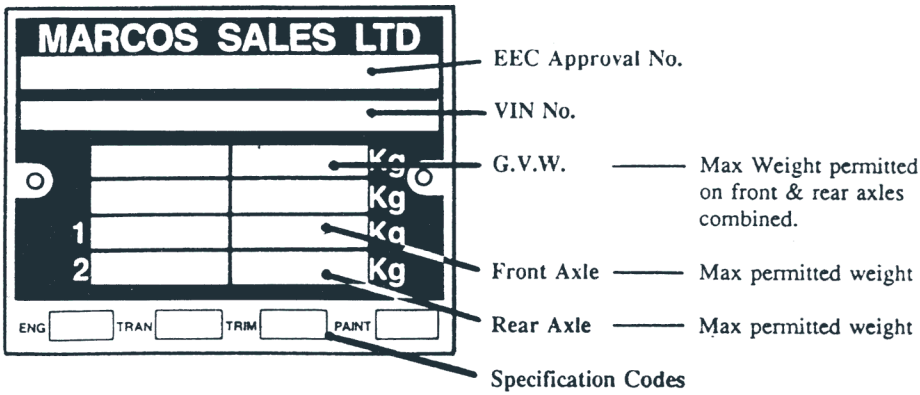
TYRE REPAIRS

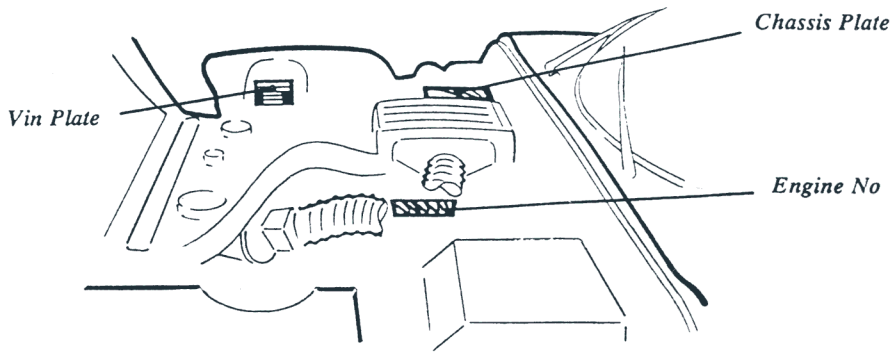
Repairs to car tyres must be carried out in accordance with the current British Standard AU159 and should, therefore, be entrusted only to a specialist.

All punctured or damaged tyres must be removed from the wheel for internal and external examination to ensure there is no hidden damage which could cause later failure. Tyres must not be used on damaged, distorted or modified wheels since this could result in tyre damage and deflation and possible loss of control of the vehicle.

It is strictly forbidden to fit inner tyres to tubeless tyres on the alloy wheels.

VEHICLE IDENTIFICATION NAME (VIN) PLATE





Quote VIN plate information when ordering replacement parts through your Dealer.

All genuine Marcos replacement parts are available from Marcos. It is in the user's interest, for his safety and for the sake of the Warranty, to reject all other parts.

Fitting parts or units not supplied by Marcos may even result in a violation of the law, if it results in non-compliance with regulations, especially as regards safety, pollution control, interference suppression, and the noise level of the vehicle.

Fitting such parts or units could also deprive the user of any recourse against the maker. This applies in particular to:

- parts of the braking system,
- lighting and signalling equipment,
- engine equipment,
- the exhaust system,
- steering system, structural and suspension parts.

TECHNICAL SPECIFICATION

MANTARA COUPE & SPYDER MODELS

Transmission

Drive:	To rear wheels	Independant Rear Suspension:	Unequal length wishbones. Constant velocity drive shafts including adjustable coilspring damper units.
Type:	Five speed synchromesh manual		

Suspension

Front: Adjustable McPherson Strut

Brakes

Front:	Discs 26.9cm diameter
Circuit:	Front/Rear safety split
IRS:	23cm discs

Electrical

Battery:	12v 65AH
Alternator:	65 amp
Fuses:	16

Headlights

Type:	Quartz Halogen
Dip:	110W total
Main:	120W total

Wheels/Tyres

Type:	Aluminium alloy 7 x 15
Tyres:	205-55-15 VR (front) 24psi 225-50-15 VR (rear) 26psi (ZR on 450)

Engine Mantara 400

Engine	ROVER 3.9	Max Torque	227lb/ft (308Nm) at 3599 rpm
Cylinders	V8		
Capacity	3.9 (3950cc)	Fuel System	Lucas 'L' electronic fuel injection
Bore/Stroke	94mm/71.1mm		
Max Power	190bhp (133kW) at 4750 rpm	Ignition	Lucas breakerless electronic
Performance	0-60mph - 5.4 seconds	Fuel	Lead free only
Top Speed	140 mph		

Engine Mantara 450

Engine	DAKAR 4.5
Cylinders	V8
Capacity	4.5 (4500cc)
Bore/Stroke	94mm/80mm
Max Power	302bhp (225kW) at 6000 rpm
Max Torque	320lb/ft (43Nm)
Fuel System	Lucas 'L' electronic fuel injection
Ignition	Lucas breakerless electronic
Fuel	Lead free only
Performance	0-60mph - 4.65 seconds
1/4 Mile	12.5 seconds
Top Speed	150 mph +

Special Features

Fully balanced and blueprinted engine featuring 80mm crankshaft, Omega die cast pistons and lightened flywheel. J.E. 101 camshaft, hi rev followers, roller vernier gears, large diameter exhaust and inlet valves with bronze guides and double valve springs fitted into J.E. modified polished and ported cylinder heads. High performance, big bore free flow exhaust system. Complete engine is hand built and test run on our engine dynamometer.

RECOMMENDED LUBRICANTS - These recommendations apply to temperate climates where operational temperatures may vary between approximately 0°F (-20°C) and 90°F (32°C). Information on recommended lubricants for use under extreme winter or tropical conditions can be obtained from Marcos Sales Ltd or your local distributor.

	CASTROL	MOBILOIL	BP	SHELL	DUCKHAMS	TEXACO
Engine	Castrolite 10/W/40 or TXT 10W/40	Super 10W/40 Rally Formula 5W/50	Visco Nova 10W/40	Super II 10W/40 Quadro 10W/40	10W/40 QXR 10W/40	Havoline 10W/40
Gearbox	TQF	ATF 210	Autran G	Donax TF	Q-Matic	Texmatic Type G
Rear Axle	Castrol Hypoy LS		BP Limslip Gear Oil 90/1	Shell Spirax Super 90	Hypoid 90DL	Multigear EP 85W 90
Steering Rack						
Wheel Bearings	Castrol LM Grease	Mobilgrease MP or Mobilgrease Special	BP Energrease L2	Shell Retinax A		Multifak EP2 or Marfak All Purpose
Chassis Grease Points	Castrol MS3 Grease	Mobilgrease MP or Mobilgrease Special	BP Energrease L2	Shell Retinax A		Multifak EP2 or Marfak All Purpose
Oil Can	Engine Oil	Engine Oil	Engine Oil	Engine Oil	Engine Oil	Engine Oil

ANTIFREEZE - It is essential that the level of antifreeze should not fall below 40% at any time. Antifreeze is required during winter and summer months to prevent corrosion of the aluminium engine components. The antifreeze used should be of a recommended type suitable for aluminium or mixed metal engines.

SERVICE SCHEDULES

The mileage allocated service schedules for your Marcos vehicle should be rigorously followed. All work listed should be carried out by a Marcos dealer who will have complete details of the procedures involved.

ADVERSE CONDITION MAINTENANCE

When the car is operating continuously under adverse conditions, such as those experienced in cities and towns where constant stopping and starting is the normal rule, the engine oil should be changed every 3,000 miles or 3 months whichever is the earlier.

RECOMMENDED MILEAGE FOR SERVICE SCHEDULES

1,000 miles	(owner required to pay for materials)
6,000 miles	(or every 6 months)
12,000 miles	(or every 6 months)
24,000 miles	(or every 6 months)
30,000 miles	(or every 6 months)
36,000 miles	(or every 6 months)
42,000 miles	(or every 6 months)
48,000 miles	(or every 6 months)
54,000 miles	(or every 6 months)
60,000 miles	(or every 6 months)
66,000 miles	(or every 6 months)
72,000 miles	(or every 6 months)
78,000 miles	(or every 6 months)
84,000 miles	(or every 6 months)
90,000 miles	(or every 6 months)

Further servicing should continue every 6,000 miles or every 6 months thereafter.

MARCOS 400/450 FIRST SERVICE - 1,000 MILES

Engine

1 Check for oil leaks.
2 Renew engine oil filter.
3 Renew engine oil.
4 Check/adjust all driving belts.
5 Check cooling and heating systems for leaks and hoses for security and condition.
6 Check/adjust operation of all washers and top up reservoirs.
7 Check/top up cooling system.
8 Check/adjust exhaust Co level and idle speed.

Ignition

9 Check/adjust ignition timing using electronic equipment.

Transmission

10 Check for oil leaks.
11 Check/top up gearbox oil.
12 Check/top up automatic gearbox oil.
13 Check clutch pipes for cracks, chafing, leaks and corrosion.
14 Check/top up clutch fluid reservoir.
15 Check/top up final drive oil.
16 Check tightness of propellor shaft coupling bolts.
17 Grease propellor shaft and driveshaft UJ's.

Steering & Suspension

18 Check conditions & security of steering rack and column mountings, joints and gaiters.
19 Check/top up fluid in power steering reservoir.
20 Check power steering system for leaks, hydraulic pipes & unions for chafing & corrosion.
21 Check/adjust front hub bearing end float.
22 Check/adjust front/rear wheel alignment.
23 Check shock absorbers for fluid leaks.

Brakes

24 Check visually hydraulic pipes & unions for cracks, chafing, leaks & corrosion.
25 Check/top up brake fluid reservoir.
26 Check brake servo hose for security and condition.

Electrical

27 Check function of all original equipment, i.e., interior and exterior lamps, horns, wipers, switches and all warning indicators.
28 Check/adjust head lamp alignment.
29 Check operation of air conditioning refrigeration system.

Fuel & Exhaust Systems

30 Check exhaust systems for leaks and security.
31 Check fuel system for leaks, pipes and unions for chafing and corrosion.

Wheels & Tyres

32 Check tightness of road wheel fastenings.
33 Check/adjust tyre pressures including spare.
34 Check that tyres comply with manufacturers specifications.
35 Check tyres for tread depth and visually for external cuts, in fabric, exposures of ply or cord structure, lumps or bulges.

Body

36 Lubricate all locks, hinges and doors, check mechanisms.
37 Check operation of all doors, bonnet, tailgate boot & operation of steering column lock.
38 Check condition, security and operation of all seats and seat belts.
39 Check operation of window controls.

General

40 Road test. Check performance, braking operation, and function of all instrumentation.
41 On completion of the required service, complete the record card contained at the rear of the book.

MARCOS 400/450 - 6,000 MILES
(or every 6 months)

Engine

1 Check for oil leaks.
2 Renew engine oil filter.
3 Renew engine oil.
4 Check/adjust all driving belts.
5 Check cooling and heating systems for leaks and hoses for security and condition.
6 Check/adjust operation of all washers and top up reservoirs.
7 Check/top up cooling system.
8 Check/adjust exhaust Co level and idle speed.

Ignition

9 Clean/adjust spark plugs, renew if necessary.
10 Check/adjust ignition timing using electronic equipment.

Transmission

11 Check for oil leaks.
12 Check/top up gearbox oil.
13 Check/top up automatic gearbox oil.
14 Check clutch pipes for cracks, chafing, leaks and corrosion.
15 Check/top up clutch fluid reservoir.
16 Check/top up final drive oil.
17 Check tightness of propellor shaft coupling bolts.
18 Grease propellor shaft and driveshaft UJ's.

Steering & Suspension

19 Check conditions & security of steering rack and column mountings, joints and gaiters.
20 Check/top up fluid in power steering reservoir.
21 Check power steering system for leaks, hydraulic pipes & unions for chafing & corrosion.
22 Check/adjust front/rear wheel alignment.
23 Check shock absorbers for fluid leaks.

Brakes

24 Check visually hydraulic pipes & unions for cracks, chafing, leaks & corrosion.
25 Inspect brake pads for wear, discs for condition, adjust brakes as necessary.
26 Check/top up brake fluid reservoir.
27 Check brake servo hose for security and condition.

Electrical

28 Check function of all original equipment, i.e., interior and exterior lamps, horns, wipers, switches and all warning indicators.
29 Check/adjust head lamp alignment.
30 Check and renew if necessary wiper blades.
31 Check operation of air conditioning refrigeration system.

Fuel & Exhaust Systems

32 Check exhaust systems for leaks and security.
33 Check fuel system for leaks, pipes and unions for chafing and corrosion.

Wheels & Tyres

34 Check tightness of road wheel fastenings.
35 Check/adjust tyre pressures including spare.
36 Check that tyres comply with manufacturers specifications.
37 Check tyres for tread depth and visually for external cuts, in fabric, exposures of ply or cord structure, lumps or bulges.

Body

38 Lubricate all locks, hinges and doors, check mechanisms.
39 Check operation of all doors, bonnet, tailgate boot & operation of steering column lock.
40 Check condition, security and operation of all seats and seat belts.
41 Check operation of window controls.

General

42 Road test. Check performance, braking operation, and function of all instrumentation.
43 On completion of the required service, complete the record card contained at the rear of the book.

MARCOS 400/450 - 12,000 MILES
(or every 12 months)

Engine

1 Check for oil leaks.
2 Renew engine oil filter.
3 Renew engine oil.
4 Check/adjust all driving belts.
5 Check cooling and heating systems for leaks and hoses for security and condition.
6 Check/adjust operation of all washers and top up reservoirs.
7 Check/top up cooling system.
8 Check hoses/pipes for blockage, security and condition.
9 Remove air cleaner element, clean and refit.
10 Check/adjust exhaust Co level and idle speed.
11 Lubricate accelerator control linkage and pedal pivot. Check operation.

Ignition

12 Renew spark plugs.
13 Check security of distributor vacuum line and operation of vacuum unit.
14 Check/adjust ignition timing using electronic equipment.
15 Check ignition wiring (including electric fuel pump wiring) for security, fraying, chafing or deterioration.

Transmission

16 Check for oil leaks.
17 Check/top up gearbox oil.
18 Check/top up automatic gearbox oil.
19 Check clutch pipes for cracks, chafing, leaks and corrosion.
20 Check/top up clutch fluid reservoir.
21 Check/top up final drive oil.
22 Check tightness of propellor shaft coupling bolts.
23 Grease propellor shaft and driveshaft UJ's.

Steering & Suspension

24 Check conditions & security of steering rack and column mountings, joints and gaiters.
25 Check/top up fluid in power steering reservoir.
26 Check power steering system for leaks, hydraulic pipes & unions for chafing & corrosion.
27 Check/adjust front hub bearing end float.
28 Check/adjust front/rear wheel alignment.
29 Check shock absorbers for fluid leaks.

Brakes

30 Check visually hydraulic pipes & unions for cracks, chafing, leaks & corrosion.
31 Inspect brake pads for wear, discs for condition, adjust brakes as necessary.
32 Check/top up brake fluid reservoir.
33 Check brake servo hose for security and condition.

Electrical

34 Check function of all original equipment, i.e., interior and exterior lamps, horns, wipers, switches and all warning indicators.
35 Check/adjust head lamp alignment.
36 Check and renew if necessary wiper blades.
37 Check operation of air conditioning refrigeration system.

Fuel & Exhaust Systems

38 Check exhaust systems for leaks and security.
39 Check fuel system for leaks, pipes and unions for chafing and corrosion.

Wheels & Tyres

40 Check tightness of road wheel fastenings.
41 Check/adjust tyre pressures including spare.
42 Check that tyres comply with manufacturers specifications.
43 Check tyres for tread depth and visually for external cuts, in fabric, exposures of ply or cord structure, lumps or bulges.

Body

44 Lubricate all locks, hinges and doors, check mechanisms.
45 Check operation of all doors, bonnet, tailgate boot & operation of steering column lock.
46 Check condition, security and operation of all seats and seat belts.
47 Check operation of window controls.

General

48 Road test. Check performance, braking operation, and function of all instrumentation.
49 On completion of the required service, complete the record card contained at the rear of the book.

MARCOS 400/450 - 18,000 MILES

Service as per 6,000 mile service.

MARCOS 400-450 - 24,000 MILES

Service as per 12,000 mile service.

In addition:

1 Renew transmission oils.
2 Renew fuel filter.
3 Renew air filter.

MARCOS 400/450 - 30,000 MILES

Service as per 6,000 mile service.

MARCOS 400/450 - 36,000 MILES

Service as per 12,000 mile service.

MARCOS 400/450 - 42,000 MILES

Service as per 18,000 mile service.

MARCOS 400/450 - 48,000 MILES

Service as per 24,000 mile service.

ADDITIONAL JOBS TO SERVICE ACCORDING TO YEARS

Once a year - Renew brake fluid. Service air conditioning system.

Every two years - Renew coolant.

MARCOS SERVICE

PDI **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

1,000 miles **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

6,000 miles/6 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

12,000 miles/12 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

MARCOS SERVICE

18,000 miles/18 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

24,000 miles/24 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

30,000 miles/30 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

36,000 miles/36 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

MARCOS SERVICE

42,000 miles/42 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

48,000 miles/48 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

54,000 miles/54 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

60,000 miles/60 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

MARCOS SERVICE

66,000 miles/66 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

72,000 miles/72 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

78,000 miles/78 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

84,000 miles/84 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

MARCOS SERVICE

90,000 miles/90 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

96,000 miles/96 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

102,000 miles/102 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

108,000 miles/108 months **DEALER STAMP**

Chassis No:	
Date:	
Mileage:	

THE WARRANTY

1 The Marcos dealer gives a warranty on each new vehicle sold by him. Every Marcos dealer has the same terms of warranty as defined by Marcos Sales Limited. The purpose of the Marcos dealer's warranty is to allow you, the customer, to have faults in manufacture or materials rectified free of charge within the warranty periods applicable, without the necessity of invoking your legal rights against the vendor.

2 This warranty does not seek to adversely affect the purchaser's rights under the Sale of Goods Act 1893 - as amended by the Supply of Goods (Implied Terms) Act 1973.

3 Warranty conditions between Dealer and Consumer are currently 12 months or 12,000 miles whichever the sooner.

Should a defect in manufacture or workmanship occur on your Marcos despite careful treatment and maintenance as specified in the Service Schedule Booklet and Owner's Instruction manual, your Marcos dealer will rectify such defects without charge, during the first 12 months or 12,000 miles whichever the sooner.

In addition, any authorised Marcos dealer will repair such defects free of charge within this period even if he did not sell the vehicle to you.

Claims for repair of defects can only be made at workshops which are authorised to service Marcos products and must be made as soon as the defect is apparent.

The warranty covers the replacement or repair of defective parts according to technical requirements. Replaced items become the property of the manufacturer.

You will not be charged with the labour costs of removing and installing parts for warranty repairs but you may be charged for extra work needed due to modifications to the vehicle. Such modifications include radios installed after manufacture.

This warranty does not cover damage or defects due to:-

-repairs by a workshop not authorised by Marcos Sales Ltd.

-installation of parts, the use of which has not been approved by the manufacture.

-failure by the customer to comply with the operating instructions in the Instruction Manuals, Service Schedule, etc...

Normal wear and tear is excepted from the warranty. The same applies to damage caused by improper handling or misuse (eg as in automotive sporting events). See 9 for details and examples of exceptions.

4 **REPLACEMENT PARTS**

All genuine Marcos replacement parts carry a warranty for a period currently of 12 months from the date of installation/purchase. This does not apply to parts fitted under the terms of the vehicle or major unit warranty.

5 Marcos Sales Ltd are final Arbiters of fact relating to warranty conditions between dealer and consumer.

6 Any unexpired portion of the warranty periods are always transferred automatically to any subsequent purchaser of the vehicle.

7 Marcos dealers carry out warranty work quickly and effectively. They do not charge for warranty work subject to later reimbursement on submission of a successful claim. However, your dealer cannot submit a claim if he is not given proof that the vehicle is under warranty and has been serviced and maintained according to manufacturer's recommendations. Your Service Record should provide this proof and you must produce it at your dealer's request.

8 If, unusually, your Marcos is off the road for an extended period for warranty work, the dealer may extend the warranty period by an appropriate amount with the individually written permission of Marcos Sales Ltd at the time of repair.

9 **TYPES OF DAMAGE NOT COVERED BY WARRANTY & GOODWILL**

Damage not due to defects in manufacture or materials is not covered by warranty and goodwill. For example, normal wear and tear is not covered. The same applies to damage caused by improper handling or misuse and to any repairs, adjustments and replacements which arise from circumstances outside the control of the manufacturer.

The following examples of non-warranty damage will help to avoid misunderstanding:

Fair wear and tear, on items such as brake and clutch linings, wiper blades, spark plugs and ignition points, carpets and seat covers etc...

Wheel balancing, the frequency of which largely depends on driving techniques such as rapid starts & stops, tyre skidding, hitting pot-holes & kerbs & normal wear & tear.

Mechanical adjustment to items such as breaker points, valve clearances, carburettors, ignition, brakes, clutch and door locks.

Windscreen and window glass breakage after the expiry of one month from the date of purchase of the vehicle or after it has been driven or used over a distance of 600 miles whichever occurs first. Faults in material or manufacture would have become obvious by then so that broken glass occurring later mus: be regarded as being due to external influences for which the manufacturer cannot be held responsible.

Marcos Sales Ltd make every effort to make sure that their cars are watertight. However, under adverse conditions it has been found that ingress of water does occur. It is advisable that should water enter the car it is dealt with immediately.

Damage caused by industrial pollution cannot be covered and neither can damage to paintwork, chrome or convertible top caused by climatic, thermal, chemical or mechanical influences.

Other matters not covered by Warranty are charges incidental to breakdowns such as towing fees, hotel charges, damage and loss of personal effects and clothing, loss of income, hire of alternative transport and incidental consequential losses.

Likewise excluded are damage and maintenance due to rallying, racing or time trials.

MARCOS NEDERLAND
Wagenmakerstraat 2, 2984 BD Ridderkerk, telefoon: 01804-40440, fax: 01804-40450