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Morgan Owners Handbook

FOREWORD

The object of this book is to provide the owner with a clear picture of the car and its needs. Technical terms have been avoided where possible.

Each car is carefully built and tested, but the continued satisfaction of the owner is largely in his own hands. The best cars will not run well unless careful attention is paid to their upkeep.

To gain the maximum pleasure and performance from your Morgan, lubricate regularly, keep all nuts, bolts and screws tight and thereby reduce rattle and unwanted noises, and lastly keep brakes properly adjusted and in good working order. Alterations and adjustments from the standard specification are not recommended but should it seem necessary our Service Department will be pleased to give advice if contacted.

VEHICLE IDENTIFICATION

In all communications with both the Agent and Morgan Motor Company please quote the chassis and engine number. This is particularly important when ordering spare parts.

CHASSIS NUMBER

Stamped on the top of the chassis cross member below the back of the right hand seat. Also on the vehicle identification plate on the top face of the tool box.

ENGINE NUMBER

This is stamped on the small machined face between the middle exhaust manifold pipes on the left hand side of the engine.

Front Wheel Alignment and Suspension

Castor Angle	4°
Camber	1° Negative ±0.5°
King Pin Inclination	2°
Toe-in	0 to ⅛″ (0 to 3.2mm)

Transmission

Clutch:	Diaphragm Spring, Hydraulic Operation, Single Dry Plate, 9.5 in diameter
Rear Axle:	Hypoid Limited Slip. Ratio 3.31:1
Gearbox	Rover: Five Forward Speeds, all Synchromesh, one Reverse. Remote change

Gear Ratios

	Gearbox	Overall
1st	3.32	10.99
2nd	2.09	6.92
3rd	1.39	4.60
4th	1	3.31
5th	0.79	2.61
Reverse	3.43	10.72

Performance **(205/60 VR15 Tyres)**

Miles per hour per 1,000 rpm (approx.)

5th	27.59
4th	21.76
3rd	15.65
2nd	10.41
1st	6.55

GENERAL SPECIFICATION

Engine		Rover V8 Cylinder Overhead Valve
Bore of Cylinder (mm)		88.9
Stroke		71.1
Compression Ratio		9.75:1
Cubic Capacity		3532 cc
Firing Order		1L, 8R, 4R, 3L, 6R, 5L, 7L, 2R
BHP (DIN @ rpm)		190 @ 5280
Torque (DIN lb/ft)		220 @ 4000 rpm
Valve Operation		Central Camshaft, pushrods to Overhead Valves, Hydraulic Tappets
Valve Timing	Inlet	30° BT 75° AB
	Exhaust	68° BB 37° AT
Oil Capacity:	Engine (refill)	9.7 Pts/11.6 US Pts/5.5 Lts
	Gearbox	2.8 Pts/3.36 US Pts/1.6 Lts
	Rear Axle	1.75 Pts/2.1 US Pts/1.0 Lts
Water Capacity		24 Pts/28.8 US Pts/42 Lts
Cooling System		Water pump, radiator, (15 lb/in^2), electric fan and thermostat (88°C) (antifreeze page 5)
Petrol		97 Octane
Tank Capacity		14 Imp Gal/16.8 US Gal/63.6 Lts

Ignition System

Type	Lucas Constant Energy System
Distributor	Lucas 35 DM8
Ignition Timing	8° B.T.D.C. @ 600 rpm
Spark Plug Types	Unipart GSP151/Champion N9YC
Spark Plug Gap	Unipart 0.9mm/0.035″ Champion 0.6mm/0.023″

Carburation Type	Lucas 'L' System Electronic Fuel Injection
Fuel Pump	Lucas Electronic 4 EP
Pressure	26 to 36 lb/in^2
CO Reading	1.5% ±0.5%

RECOMMENDED LUBRICANTS These recommendations apply to temperate climates where operational temperatures may vary between approximately 10°F (– 12°C) and 90°F (32°C). Information on recommended lubricants for use under extreme winter or tropical conditions can be obtained from the Morgan Motor Company or your local Distributor

	CASTROL	MOBILOIL	BP	SHELL	DUCKHAMS	TEXACO
Engine	Castrol GTX	Mobil Super	BP Visco Nova/ BP Visco 2000	Shell Super 15W/40	Hypergrade Engine Oil	Havoline All Temperature 15W/40
Gearbox	Castrol TQF	Mobil ATF 210	BP Autran G	Shell Donax TF	Q-Matic	Dexron 9226 or 3450 Gear Oil
Rear axle	Castrol Hypoy LS		BP Limslip Gear Oil 90/l	Shell Spirax Super 90	Hypoid 90DL	Multigear EP 85W90
Steering Box	Castrol Hypoy EP90	Mobilube HD 90 or Mobilube SHC	BP Energrease FGL	Shell Spirax 90EP	Hypoid 90DL	Multigear EP 85W90
Wheel bearings	Castrol LM Grease	Mobilgrease MP Or Mobilgrease Special	BP Energrease L2	Shell Retinax A	LB10 Grease	Multifak EP or Marfak All Purpose
Chassis grease points	Castrol MS3 Grease	Mobilgrease MP or Mobilgrease Special	BP Energrease L2	Shell Retinax A	LB10 Grease	Multifak EP or Marfax All Purpose
Oil Can	Castrol GTX	Engine Oil	Engine Oil	Shell Super 15W/40	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.

General Dimensions (approx.)

Wheelbase	8′ 2″ (249cm)
Track (front)	4′ 5″ (134.5cm)
(rear)	4′ 6″ (137.5cm)
Ground Clearance	5½″ (14cm)
Turning Circle	37′ (11.2 metres)
Wheel Size	15″ × 6.5 (38 × 16.5cm)
Tyre Size	205/60 VR 15

Overall Dimensions

Length	13′ (396cm)
Width	5′ 3″ (160cm)
Height (hood erected)	4′ (122cm)

Body Dimensions

Seat to Hood	3′ (91.5cm)
Width at elbows	3′ 11″ (119.5cm)
Height of seat from floor	8″ (20cm)
Leg room (front of seat)	16″–24″ (41–61cm)
Door Width at waistline	2′ 4″ (71cm)
Luggage space: Width	3′ 3″ (99cm)
Height under tonneau	11″ (28cm)
Depth (max)	21″ (53cm)

Weights

Complete with tools and petrol	889kg (1956 lbs)

INSTRUMENTS

Speedometer Indicates the vehicle speed and total mileage and is fitted with a trip which is cancelled by the knob (base of instrument face) and pressed.

Oil Pressure Gauge This gauge indicates the engine oil pressure. The normal oil pressure should be between 28 and 35 lb/in^2 (1.9–2.4 bar), at 2400 RPM, when the engine is running at 90°C and the car is in motion. At idle speed the pressure may drop below this. If no pressure registers, first check the oil level. If this is correct, have the engine examined immediately by your Morgan Agent.

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.

Water Temperature Gauge This is electrically operated, acting only when the ignition is switched on. The normal reading is on or just above 90°C.

Fuel Gauge Operates only when the ignition is on, tank capacity 14 gallons (16.8 US gallons) 63 litres.

Revolution Counter Shows engine speed in revolutions per minute and is calibrated in divisions of 100. It is of the electric impulse type.

Warning Light Unit Placed centrally behind steering wheel.
(1) Direction Indicator Monitor The left hand top indicator glows green when the steering column combination switch is moved to signal left hand turn, the right hand indicator operates for a right hand turn.

(2) Ignition Warning Light (red) This serves the dual purpose of reminding the driver to switch off the ignition before leaving the vehicle and of acting as a no charge indicator. With the ignition switch 'on', the warning light should be illuminated only when the engine is stopped or turning over very slowly. As the engine accelerates the light should dim and eventually go out at a fairly low engine speed. Failure of the light to behave in this fashion will indicate a broken alternator drive belt or other fault in the charging system.

(3) Headlight Warning Light (blue) Glows when headlights are on main beam, no light when dipped.

(4) Brake Warning Light (red) When the ignition is switched on with the handbrake applied the indicator should glow. Should failure of the front or rear brake lines occur or the brake fluid level be too low, the indicator will also light up.

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 disengage drive from engine to gearbox. DO NOT REST YOUR FOOT ON PEDAL WHEN DRIVING or hold the clutch out to freewheel as this will CAUSE UNNECESSARY WEAR.

Foot Control Lubricator Front suspension lubrication control. Depress as instructed (see page 19).

HAND OPERATED CONTROLS

Handbrake This is of the 'fly-off' type. To operate the handbrake pull backwards, the lever is fixed in the 'on' position by pressing the cap on top of the lever which engages the pawl in the ratchet. To release brake pull the lever to the rear and allow to go forward to the full extent. Red warning light shows until hand brake is 'off'.

Heater Control The heater has three separate controls.

(1) The heater knob is on the left-hand side of the steering column opposite the ignition key. This controls the water flow to the heater radiator. The water flow and heat is turned on by pushing this control IN.

(2) Air circulation flaps are located on each side of the heater box, above the gearbox cover, level with the pedals. When these flaps are open, all the heat is directed to the foot wells. When they are closed the heat is directed to the windscreen.

(3) The fan switch may be used to force the warm air around the car. To demist the screen, both heater flaps should be closed and the fan used on the fast speed.

Combined direction indicator, horn, headlamp main beam and headlamp flasher control This antennae control is positioned on the right hand side of the steering column.

(a) Direction Indicator Control – Press the control downwards for right hand turns and upwards for left hand turns.

(b) Headlamp Main Beam Control – With the headlamps on dipped-beam, push the control directly away from the steering wheel for main beam operation. The direction indicators can still be operated with the headlamp main beam in operation.

(c) Headlamp flasher control – Press the control towards the steering wheel to flash the headlamps on to main beam. The control is spring-loaded and will return to its original position when released.

(d) Horn control – To operate the horn, press the end of the control towards the steering column.

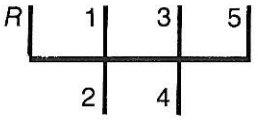
Windscreen Wiper and Washer Control This control is effective only when the ignition is switched on.

For continuous operation of the two-speed wiper move the control downwards to position '1' for slow speed, or fully downwards to position '2' for high-speed operation.

For single wipe action lift the control towards the steering wheel.

To operate the windscreen washers press the knob at the end of the control. To switch off the wipers return the control to 'O' – CAUTION – should the ignition be switched off while the wiper switch remains in its operating position during severe frost conditions, the wiper blades can become frozen to the windscreen. When the ignition is switched on to start the engine, the wiper motor could be damaged by overloading. Be sure to switch off the wiper before switching off the ignition. Avoid using wipers on a dry screen.

Gear Lever Always select neutral position before starting the engine.



Rover box

Do not lift or press

Steering Lock, Ignition and Starter Switch This switch is located on the steering column and has 4 positions. *IMPORTANT* Take note of the key number.

1st position: Steering wheel lock in operation and ignition off, key can be extracted in this position.

2nd position: Moving clockwise 'garage lock'. Ignition off, but steering unlocked which allows the car to be moved and steered by hand.

3rd position: Ignition on.

4th position: Is spring loaded and brings in the starter motor.

To prevent the starter being operated whilst the engine is running, a safety device is incorporated whereby it is necessary to switch the key back to 'garage lock' position before the starter can be engaged again.

Never allow the car to move unless the lock is deactivated.

Headlight, Side and Tail Light Switch This is a two position switch. First position side and tail lights together with number plate light and instrument light. Second position as above plus headlights.

Rear Red Fog Lamps These lights will only operate when other lights are switched on. The switch is only lit when the fog lamps are on. DO NOT USE REAR FOG LAMPS IN GOOD WEATHER.

Hazard Switch This switch when depressed operates all direction lights together and should only be used when the vehicle is stationary in an emergency situation.

Fan Heater Switch Operates the two speed fan blower motor in the car heater system.

Fog Light Switch Operates both fog lights if required in adverse driving conditions.

Instrument Illumination Rheostat Situated behind facia panel below voltmeter. Turn knob clockwise to illuminate the instruments at high intensity and anti-clockwise to reduce the intensity.

Seat Control Two types of seating are available on the Plus 8
(1) The fixed back type bucket seat
(2) The reclining type seat.

Both seats are adjustable for fore and aft movement. The reclining seat has a fine adjustment knurled knob to give varying seat back angles, and also a lever to release the back so that it may be tilted to the fully forward direction.

SEAT BELTS

Wearing Never attempt to wear the belt other than as a complete lap and diagonal assembly. Do not try to use the belt for more than one person at a time, even with small children. Ensure that the belt webbing is not twisted when in use, and that the belt is adjusted to the correct tightness.

Seat belts

Fig. A

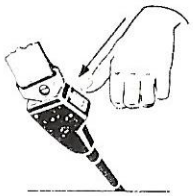


Fig. B

Using the harness Take hold of the chrome connecting end, draw over the shoulder and across the chest. Push the tab firmly into the buckle unit nearest to the wearer, until a positive click is heard. Ensure that the harness is safely locked (see fig. A). To release the buckle press the red button on the centre unit downward, and make sure the belt retracts into the rear. (see fig. B)

Adjusting The belts fitted are of the inertia reel type. Adjustment is automatic and the belt will move to allow freedom in the car. Free movement may be restricted when cornering or braking, as the locking mechanism is operated by the pitch of the vehicle. In the event of an accident the belts will lock, preventing forward movement. The lock will release automatically when car is stationary.

Cleaning the webbing No chemical cleaners should be used on the webbing. If it becomes soiled, sponge with warm water, using a non-detergent soap, and allow to dry naturally, not by artificial heat or direct exposure to the sun. NEVER ATTEMPT TO EITHER BLEACH OR RE-DYE THE WEBBING.

Warning

1. Never at any time wear the lap belt loosely as this reduces its protection.

2. Periodically inspect the webbing for abrasion, paying particular attention to the anchorage points and adjusting devices.

3. In the event of an accident any safety belt which has been subject to a shock load should, in the interests of safety, be renewed.

4. Alterations or additions to the kit which might impair the efficiency of the assembly should not be carried out. In the case of doubt, or suitability of a particular model, consult the manufacturers list.

STARTING

Before operating the ignition key, make sure the handbrake is applied, and the gear lever is in the neutral position. If you are in an enclosed space, be certain there is sufficient ventilation for the exhaust gases.

To start, from hot or cold, DO NOT operate the accelerator pedal or depress the clutch pedal. Turn the key and make sure the steering lock is free. Move forward to the ignition position and rotate the engine until it starts. If the engine does not start instantly, DO NOT depress the accelerator, just continue to turn the key. If the engine will not start, switch off and check fuel content of tank, top up as necessary.

When the engine starts, check the oil pressure and voltage readings. If these are correct, select appropriate gear and move away. When the engine is cold, avoid high engine speeds or fast gear changes.

RUNNING IN

During the first 30 hours or so of their working life, the moving parts of a new car require a 'bedding-in' or polishing process, such as is provided by light and medium running.

Long trouble-free life, particularly of engine, rear axle and brakes depends on this careful running-in, which can only be achieved by restraint on the part of those who drive the vehicle during its initial time.

The engine may seem to lack power for the first 200 to 300 miles (320–480 km) whilst this process is taking place. The power will then improve as the car is used for the first 2,000 miles (3,200 km), and this will be accompanied by a corresponding improvement in fuel consumption.

It is suggested that for the first 500 miles (800 km) engine speed should not exceed 3,000 rpm.

Both long periods of idling and excessive racing of the engine should be avoided at all times and particularly during warming up from cold.

Do not allow the engine to 'labour' especially when driving up steep hills. At the first sign of this, change down, bearing in mind that changing down too early can result in undesirable racing of the engine.

Vary the rpm occasionally whenever possible, releasing the accelerator now and again to give the engine a better start in life.

As the machined surfaces approach their optimum condition, it becomes necessary to reset the adjustments to suit the more flexible engine. Your Morgan dealer will attend to this when he carries out the first service.

FIRST SERVICE

After the first few weeks or 1,000 miles, the car should be returned to the supplying dealer for a 'First Service'.

At this time the car will have settled into a normal running pattern and the 'bedding-in' process should be completed.

Your dealer will examine and reset the engine where necessary. At the same time all the oils should be changed, along with the engine oil filter. This will remove any materials released during the 'running-in' process.

Any points you have noticed may prove useful to your dealer and should be mentioned when you deliver the car for service.

ROUTINE MAINTENANCE AND ADJUSTMENTS

Introduction

In this section will be found information necessary to maintain your car in good mechanical condition in a temperate climate. Details of the intervals of service may be found in the schedule at the back of this book. The time between examination is dependant on many things, particularly the type of use and the road conditions. In dusty conditions or regular town journeys the time between services must be reduced. If a car is not in use for long periods, the need for regular attention is as great as for a vehicle in every day use.

The following details, along with services from your Morgan distributor or dealer, will help to prolong the life and enjoyment of your car.

Regular Checks

1. Front suspension lubrication (200 miles).

2. Every week, engine oil, water level and antifreeze. Windscreen washer, battery electrolyte, tyre pressure and lights.

3. Every month, brake fluid, tyre treads, beam setting, engine oil and water for leaks, handbrake operation and oil hinges.

Fuel Grades

97 Octane fuel equivalent to 4-star petrol in United Kingdom must be used. If travelling in areas outside the United Kingdom, it may be necessary to adjust the engine timing to allow for different octane ratings. Your local Morgan dealer can make these adjustments if provided with details of the country in which you are to travel.

Servicing and Adjustments

The importance of regular servicing cannot be over-stressed. Your local dealer can offer the full range of facilities and maintain your car to a high standard.

With the increase in high technology engine management, the level of equipment and method of adjustment for engine running has become more complex. It is essential that the correct equipment is used when retuning a Morgan engine. The wrong testing equipment can cause expensive failure in electronic controls and seriously affect the engine workings.

Slow running and mixture control

The tickover and mixture adjustment are both linked in the fuel injected engine. To obtain the correct adjustment, a gas analyser is required. It is recommended that this is only carried out by an approved garage.

Air Cleaner

The operation of the engine is directly related to the airflow. It is important to keep the air filter clean. If the car is used in dusty conditions or in town for long periods, the filter should be checked more frequently. The filter should be changed at least every 20,000 miles.

Spark Plugs

The spark plugs should be examined every 5,000 miles for the correct gap (see page 2). The electrodes and body should be cleaned and checked for cracks or damage. If the electrode is pitted or covered with heavy deposits, they should be replaced. Any damage to the ceramic top may cause weakened sparks and the plug should be replaced. Under no circumstances must the plug be over-tightened when refitted.

At the same time as the spark plugs are checked, the ignition leads should also be examined. Be certain the leads are replaced in the same order.

Ignition/Timing

The ignition on the Plus 8 is electronically controlled, using the Lucas Constant Energy System. No maintenance is required inside the distributor except for checking the cap and rotor electrodes. If

signs of spark erosion are found renew the cap and rotor. Timing may be adjusted by releasing the clamp bolt on the shaft and turning the distributor in the appropriate direction. The timing should be checked with a stroboscopic light at the front pully.

Engine Oil Level

Should be checked every week. Stand the car on level ground when the engine is warm, allow time for the oil to return to the sump and remove the dip stick. Clean the stick and replace in the tube on the left, front of the engine. Withdraw the stick again and read the level. The level should fall between the two marks at the bottom of the rod.

Oil Change

The engine oil should be changed every 5,000 miles. Run the engine to normal temperature. Switch off engine and remove drain plug from the right hand side of the sump. When the oil has drained completely, clean and replace the plug. Fit a new plug gasket if necessary. Fit a new oil filter (see below) and fill with the correct grade and quantity of oil (see page 5). Replace the filler cap on the left hand rocker cover and run the engine for a short while. Remove the dip stick, left front of engine, and wipe clean. Replace stick to full depth and remove again to examine level. The level should be just on the second mark. Never over-fill the engine!

Oil Filter

The filter should always be changed when the engine oil is replaced. The filter cartridge is located below the engine on the right hand side in front of the engine mounting. To remove, turn the filter anti-clockwise until clear of the thread. Discard the old filter. Clean the thread and face of the mounting with dust free cloth, lightly oil the sealing ring on the new filter and screw into place in a clock-wise motion. Tighten until the seal is in contact with the face and then make half a turn more. Do not over-tighten. Start engine, check oil pressure and examine for leaks.

Engine Coolant

It is essential that the engine is supplied with sufficient water/antifreeze mixture at all times.

In an engine of this type, antifreeze or water additive must be present in the water at all times. Antifreeze should be kept at a minimum of 40% by volume. For details of quantities refer to Page 5.

Whenever the car is serviced and periodically between these times, the coolant must be checked. At the same time it is recommended that all the hose clips and hoses are examined for tightness and damage. Any persistent loss of water should be indicated to your dealer when the car is serviced, or before if the quantity seems high.

It should be noted that when the radiator has been filled to the top of the neck, a certain quantity of water will be discharged through the overflow. The water system will settle to a level and then no more water will be lost. The level is indicated on the overflow bottle.

Thermostat

The thermostat controls the waterflow to the engine. It is contained in a housing between the cylinder banks behind the distributor. The top hose connects to it. The thermostat is set to fully open at 88°C. In extreme temperatures it may prove beneficial to use a lower temperature thermostat. The thermostat should be checked during services and replaced if not operating correctly. Never run the car without a thermostat.

Electric Radiator Fan

This fan is positioned behind the radiator and is operated by a temperature switch in the cylinder head. The fan will start to run when the engine temperature reaches 94°C. It will cut out when it reaches 86°C. If the fan appears to run continuously, it should be examined by your Morgan dealer.

Radiator Cap

The cap on the radiator is of the sealed system type and should only be removed if the radiator has been completely drained and requires a total refill. For normal topping up the cap on the overflow bottle should be used.

Windscreen Washer Bottle

Is located under the bonnet at the rear of the engine on the opposite side to the steering column and is attached to the metal front. The level must be checked regularly, especially during the winter. In cold weather it is recommended to use an Antifreeze and windscreen cleaner, to prevent freezing and aid cleaning.

Fuel Pump

The fuel pump and filter are located under the luggage compartment board. There is no maintenance required and any problems should be referred to your dealer. Under no circumstances remove the pipes from the pump. It should be noted that the pump only operates when the engine is running, not when the the ignition is first switched on.

The filter should be changed every 20,000 miles under normal running conditions.

Alternator Belt

The alternator is fitted on the right hand side of the engine at the front. At every service the belt tension should be checked. The belt should be pressed by the thumb and a movement of no more than ½" should be felt. The belt should also be examined for cuts or rubbing and replaced as necessary.

To adjust or replace the belt:

1. Slacken the retaining bolts on the engine block and the top adjustment bracket.

2. Move the alternator inwards or outwards until the correct tension is obtained.

3. Re-tighten the mounting bolts.

Clutch Cylinders

The clutch used on the Plus 8 is of a hydraulic type. The fluid reservoir is located with the brake master cylinder in the engine compartment. The level should be checked every month and at every service. If necessary the reservoir should be topped up with Girling Universal fluid. The slave cylinder on top of the bell housing should be examined for leaks at every service, as should the connecting pipe from the fluid reservoir. Adjustment of the clutch is automatic.

Pedal Assembly

When a service is carried out, the pedal bar should be greased using the nipples provided. The accelerator should be lubricated at the pivot and on the roller. Care should be taken to wipe excess lubricants from the pedal rubbers or surfaces.

Gearbox

At each service the gearbox oil should be drained, when warm, and replenished with the correct grade of oil (see page 5). The drain plug is located on the bottom right hand edge of the box, half way along. The filler is reached by way of the inspection hole on the left hand side of the gearbox cover. This is found by lifting the carpet, undoing the lift-a-dots and raising the leather cover. The inspection hole is seen in the centre of the cover. After replacing the drain plug, refill to the bottom of the filler hole and replace plug.

Front Suspension

Lubrication of the sliding axles is carried out by the 'one shot' lubrication system. The plunger which operates the system is situated in the top area on the left of the steering column above the drivers clutch foot on the scuttle. The plunger should be depressed every 200 miles (370 km), preferably when the engine oil is cold. The plunger should be held down for a few seconds during which time a very small decrease in oil pressure may be noticed on the oil gauge.

The sliding axles are also provided with grease nipples which should be lubricated with grease every 5,000 miles (8,000 km). The grease helps to retain the oil supplied by the 'one shot' system.

In addition to lubricating the sliding axles and hubs, the damper blades and shims should be oiled and greased.

The damper blade is the piece of spring steel running from the stub axle to the chassis. This should be cleaned and greased at every service. The fittings should also be checked for tightness. On certain cars which have covered considerable mileage, faults are sometimes noticed in respect of front wheel vibration even though the wheels are correctly balanced. This can be overcome by making sure that the flat spring sheet blade mounted from the stub axle to the chassis side member is secured without any radial movement at the chassis end. This blade should slide inwards and outwards only. Any sideways or radial movement should be reduced to a minimum by adjusting the shims. These shims are locked in place by the two bolts which secure the flat steel clamps to the chassis. It may also be necessary to renew the damper blades if worn edges are apparent. These blades should be greased regularly. Your dealer will test for this at each service and replace the blades when worn. In bad weather conditions the damper blades should be examined between services.

Note:

The importance of frequent lubrication to the sliding axles cannot be too highly stressed as comfort is to a large extent dependant on the free working of these parts and neglect will result in tightness which not only makes the springing harsh, but results in excessive wear, necessitating renewal before it should be necessary.

Steering

The steering rack should be examined at every service. There is no maintenance required, but the boot and fittings should be checked for damage and tightness.

Shock Absorbers

At every service the shock absorbers should be examined for oil leaks and for operation. The Mountings should also be checked for tightness. If found faulty the shock absorbers should be replaced in pairs as the performance of a new one will be different to the original and may affect the handling.

Rear Axle

The axle used in the Plus 8 is fitted with a limited slip differential. It is essential that an oil specially formulated for this type of axle is used (see page 5). The oil must be changed every 5,000 miles (8,000 km). A drain plug is provided at the base of the axle.

Note:

The hypoid bevel gears and limited slip differential fitted in the rear axle require a special lubricant to ensure efficient operation and long life.

During 'running in' the limited slip discs may be heard to 'knock' or 'click' when turning corners, particularly after long motorway trips. This should become less frequent after the first 5,000 miles (8,000 km).

This type of gear incorporates a sliding action between the exceptionally sturdy gear teeth, resulting in silent operation. However, the rubbing action is too severe for normal oils, so special 'Hypoid' oils have been developed which contain additives that make the oil capable of withstanding pressures many times heavier than normal oils can cope with. A further feature of 'Hypoid' oils is that they are 'lighter' – that is to say, more fluid than normal axle oils. However, the special additives begin to lose their properties in the course of use, and the oil tends to revert to a light gear oil.

Thus it is advisable to completely drain and replenish with a new 'Hypoid' oil every 5,000 miles (8,000 km), and in any event do not exceed a period of 10,000 miles (16,000 km).

It is desirable to have the oil level checked during this period and if the oil level is below the plug on the rear do not 'top up' but drain the oil and refill with new oil, this will overcome the danger of mixing the various grades of oil.

Clean away grit from the filler plug and refill until oil reaches the level of the filler plug on the rear of the axle case.

Rear Road Springs

The rear road springs should be painted and sprayed with engine oil every 5,000 miles (8,000 km).

It is the area around the tips of the blades which most requires the lubricant, as it is at these points that one blade presses upon the next. The spring clip should also be oiled.

Oil should be kept away from the rubber bushes located at the end of each spring.

Brake Fluid Reservoir

The brake fluid reservoir is situated under the bonnet on the bulkhead on the same side of the car as the driver.

Every 5,000 miles (8,000 km) remove the cover and check fluid level in the reservoir. If necessary replenish to within ½" (12mm) of the top with Castrol Girling Universal Brake Fluid. Replace cover ensuring that the rubber sealing ring is in good condition and that the ventilation hole is unblocked.

If significant topping-up is required check master cylinder, slave cylinders and pipes for leakage; any leakage must be rectified immediately.

After approximately 3 years or 40,000 miles (64,000 km) the seals and cups of the hydraulic system should be inspected and if necessary replaced.

Brakes

The brakes will be inspected regularly during normal servicing but should the car be used for competition work, brake wear will be much more rapid and therefore inspection and perhaps replacement of pads or shoes be necessary during the period in between.

Cleanliness is essential when dealing with brakes, as no method is known of successfully removing grease or oil from brake linings. Always replace with genuine Morgan relined shoes or pads as they will have the correct grade of lining, ground to the correct contour and inspected to conform to the original specification.

Front Brake Pads

Hydraulic disc brakes are fitted to the front wheels and the correct brake adjustment is automatically maintained, no provision is therefore made for adjustment.

Every 5,000 (8,000 km) (more frequently if used in competition) check the thickness of the brake pads and renew if the minimum thickness is less than ⅛" (3mm). Also check for oil contamination of brake pads and discs.

Removal

1. Jack up front of the car and remove road wheels.
2. Remove hairpin clips and withdraw the pad retaining pins.
3. Withdraw pads complete with anti-rattle springs and damping shims.
4. Measure the linings and if less than ⅛" (3mm) renew pads. If pads are not to be renewed mark each one in order that it may be fitted in its original position.

Replacement

1. Push in the pistons with an even pressure to the bottom of the cylinder bores. Then slide the pads into position, together with the damping shims. Ensure arrow cut-out in shim points in direction of rotation.
2. Refit the anti-rattle springs if included, one on each pad then replace the pad retaining pins, ensuring that the anti-rattle springs are clipped under the pins. Fit new hairpin clips.
3. Pump the foot pedal until a solid resistence is felt. This repositions the piston and puts the pad in slight frictional contact with the disc.
4. Refit the road wheels, remove car from jack and road test car.

Rear Brake Drums

Hydraulic brake drums are fitted to the rear wheels and should be inspected and checked every 5,000 miles (8,000 km) or before if the brake pedal had excessive free movement. To adjust proceed as follows:

1. Jack up rear of vehicle and remove rear wheels (the last operation is not essential but makes the task easier).
2. Turn the adjuster nut in a clockwise direction until the shoes contact the drum and release back one or two notches until the drum is free. The single adjuster is placed facing a forward direction on the backplate.

Rear Brake Shoe Replacement

1. Jack up the car and remove road wheels.
2. Remove the countersunk screw and take off brake drum.
3. Dismantle the brake by prising one shoe out of the groove in the wheel cylinder piston with a large screwdriver. Both shoes and pull off springs can now be removed, leaving the wheel cylinders and pivot pins in position on the backplate. Do not detach these units from the backplate. To prevent loss of brake fluid, place an elastic band over the wheel cylinder pistons to hold these in place.
4. Clean down backplate and check wheel cylinders for leaks and freedom of motion. It is important that the adjuster is turned back (anti-clockwise) to the full 'off' position and is working freely.
5. To fit replacement shoes, first attach shoe springs (new if possible) to shoes. Be sure that the springs are between the shoe webs and backplate, otherwise shoes will not be flat on backplate. Keep all grease off linings and do not handle linings more than necessary. Place shoes with springs attached against backplate. Shoes have half round slots at one end. Fit these slots to the pivot pin, then insert the other end of the shoe in the wheel cylinder piston. Place the screwdriver under the web of the remaining shoe and against the backplate. Ease the shoes into the grooves on the piston.

6. Refit drums; be sure these are clean and free from grease etc.
7. Tighten up adjusters until the wheel just locks and then slacken off until the wheel spins freely.
8. Refit road wheels, jack down and road test.

The Handbrake

Adjustment of the rear brake shoes automatically re-adjusts the handbrake mechanism. The rods are correctly set before leaving the works and only maladjustment will result from tampering with the mechanism. Cable adjustment may be made by turning the adjuster at the rear of the handbrake cable. The lever compensating mechanism on the rear axle should be kept free and well oiled.

Bleeding the System

Except for periodical inspection of the fluid level in the reservoir chamber and lubrication of the handbrake cables and connections no attention should be necessary. If, however, a pipe joint is uncoupled at any time, or the wheel cylinder cups are inspected or replaced, the system must be bled in order to expel any air which many have been admitted.

Air is compressible, and its presence in the system will affect the working of the brakes.

1. Wipe clean the bleeder nipple of the brake concerned and fit a piece of rubber tube over it, allowing the tube to hang in a clean container partially filled with fluid, so that the end of the pipe is below the level of the fluid.
2. Unscrew the bleeder nipple one complete turn with a suitable spanner. There is only one bleeder nipple to each wheel.
3. The fluid reservoir of the master cylinder must be topped up before commencing the bleeding operation, and must be kept at least half-filled during the whole operation, otherwise more air will be drawn into the system via the master cylinder. Always clean the area around the screwed cap before removing it, this will lessen the risk of grit falling into the chamber after removal.

4. Depress the brake pedal quickly and allow it to return without assistance. Repeat this pumping operation with a slight pause between each depression of the pedal. Observe the flow of fluid being discharged into the glass jar and when all air bubbles cease to appear, hold the pedal firmly down and securely tighten the bleeder nipple.

Note:

Depending upon the position at which a pipe joint has been uncoupled it will be necessary to bleed the system at either both front or both back wheels. If the pipe was uncoupled at the master cylinder then the system must be bled at all four wheels.

Propshaft

The propshaft is provided with two grease nipples, one in the front and one in the rear. These should be greased at every service. They should be examined more regularly in adverse conditions such as dusty roads.

Battery

The battery fitted is 12 volt 50 amp/hr Lucas 015 with negative earth. Keep the terminals clean and well covered with petroleum jelly. If they are corroded, scrape them clean, assemble and cover with petroleum jelly. Wipe away all dirt and moisture from the top of the battery, and make sure that the connections are clean. Never overfill the battery. The liquid should only be sufficient to cover the plates by ⅛". Too much fluid will cause overflow when charging. The level of fluid should be checked at every service and more frequently during winter periods.

Wheels

In the normal course of wear and tear, or due to minor impacts, the wheels may develop irregularities, or cease to point directly in the direction of motion. A check should be made periodically to ensure that the wheels are in correct alignment or 'track'. Every garage possesses an alignment gauge and can carry out a test in a few minutes. Errors in alignment can be corrected by adjustment of the track rod, the end of which are threaded for this purpose. The 'Toe-in' for the front wheels should be 0"–⅛". 'Toe-out' even in the smallest degree, is to be avoided.

To ensure smooth running especially on the front wheels and at high speeds, it is recommended that wheels and tyres are periodically balanced, this can be carried out by most garages, and the trouble in having this done is well repaid by the results obtained.

Tyre Pressures

Tyre pressures should be checked weekly and at every maintenance inspection. Maximum tyre life and performance will be obtained only if the tyres are maintained at correct pressures.

	lbs/sq in	Bar
Normal (front and rear)	22	1.5

Whenever possible check with the tyres cold, as the pressure is about 3lbs/sq. in (0.2 kg/cm^2) higher at running temperature. Always replace the valve caps, as they form a positive seal on the valves.

When high speed touring or taking part in competitions, the tyre pressures should be checked much more frequently, even to the extent of a daily check. Any unusual pressure loss (in excess of 1 lb/sq. in (0.5 kg/cm^2) per week) should be investigated and corrected.

Always check the spare wheel, so that it is ready for use at any time.

At the same time remove embedded flints, etc. from the tyre treads with the aid of a penknife or similar tool.

Wheel and tyre units are accurately balanced if necessary on initial assembly with the aid of clip-on weights secured to the wheel rims.

Tyres

When tyres are changed, road wheels should be carefully checked for possible damage.

When replacements are required, the tyres should be as currently specified by the Company. They should be of the same type as those previously fitted.

Fuel Filler Caps

Two fuel filler caps are provided, one each side of the spare wheel. This allows the tank to be filled extremely quickly during competitions and ensures that 'blow back' will not occur during fast refuelling, provided both are open.

Headlamp Beam Setting

This operation should be carried out every 10,000 miles (16,000 km) but is best left in the hands of your garage. They can however be set reasonably accurately as follows:

Place the car 25 ft (7.6 m) away from a blank wall, taking care that the car stands on a level surface, and that the front of the car is parallel to the wall. The car must be unladen. Do this job at night, or pick a spot which is well shaded, so that the light spots thrown by the lamps can be clearly seen.

When correctly set the light spots from the lamps should be 2½" (63 mm) below the centre of the headlamps. The beams should also be parallel with each other. If they require adjustment, remove the moulding surrounding the lamp – and the beam adjustment screws will be exposed.

The top screw controls vertical adjustment and the lower screw the horizontal adjustment. It is preferable to start with the screws well in so that the moulding does not interfere with them when replaced.

Headlight

The headlights are of the Halogen type with H4 12 volt clear bulbs (export yellow).

To renew the headlight bulb, remove the moulding surrounding the lamp. Place two fingers in the holes at the bottom of the rim and pull towards the front of the car.

To remove the lamp, grip the lens and reflector firmly on each side and pull with a steady pressure. Remove rubber cover and clip, then bulb.

Facia Lights

Illuminated facia panel bulbs. Ensure the correct light bulbs are fitted as follows:

Warning light unit behind steering wheel	12v 1.5w
Light bulbs in switches	14v 0.56w

Coach Work

We recommend that the paintwork on the cars should not be waxed polished for a period of three months after the car has been painted, to allow for the paint film to 'breathe' and cure correctly.

This is assuming *normal* driving conditions i.e., the car being used and not stored under cover. If the car is rarely used we would increase this time to anything up to 6 months.

For removing any imperfections in paintwork, such as scratches, we recommend 2B Rubbing Compound (P565–32) applied with a soft cloth. This should be used until the scratch has disappeared (being careful not to polish all the colour away – unlikely knowing how much paint is on the car to start with!). This should then be followed with Car Polish No. 7.

Supercut (P971–29) is a fine cutting abrasive polish for general polishing and for restoring aged paint film and removing traffic film. It does not contain ammonia which has a tendency to bleach some pigments.

Car Polish No. 7 (P71–9) is a fine polishing cream to use for lightly polishing after a Rubbing Compound or Supercut if necessary – it is not a wax.

After the time intervals we have already stated it would be alright to wax polish a car – use a recognised cream wax and generally try to keep away from silicon polishes and sealants as they tend to seal the paint and prevent it 'breathing' – problems can also arise when refinishing the paint surface.

All the above products are available from I.C.I. Distributors.

Leather

The leather upholstery (where fitted) is made of Connolly Bros 1st grade hides. To clean the upholstery, wipe with a damp cloth using Connolly Cleaner Solution or mild hand soap. Do not use detergents. After soaping use a fresh cloth with clean water then dry.

After cleaning feed leather with Connolly Hide Food to maintain the supple feel of the leather.

Hood

When erecting the hood, always fix the eyelets in the back curtain over the turn-buttons first and then fix snaps across the top of the windscreen, making sure the sealing pipe runs along the back of the screen. If secured at the front first some strain will be necessary to pull the eyelets over the turn-buttons, which in time will pull away from the fabric.

However, it is recommended that if the hood is tight when dismantling it is advisable to release it at the turn-buttons, which avoids straining at the eyelets. It is not intended that the tonneau cover over the rear compartment should remain in position when the hood is up as the turn-buttons do not allow for the double thickness, and unnecessary strain is placed on the hood fabric and turn-buttons alike.

Sidescreens

It should be remembered that Vybak is easily scratched and soiled, spoiling vision at the sides. When not in use, therefore, do not throw the sidescreens carelessly into the rear compartment or they may move about and become damaged. A small 'tommy bar' is provided to facilitate the tightening of the knurled knob fixing the sidescreens to the car.

Jacking System

The jack is used in the following manner:

First make sure that the car cannot move backwards or forwards by using the brakes or chocking the car firmly.

The jack may be used for lifting front wheels by placing it under the bottom cross axle tube, care should be taken not to damage the brake pipe.

Rear wheels can be lifted by using the jack directly under the rear chassis box cross member.

Great care must be taken if the car has to be lifted on cambered surfaces. No work other than changing wheels must take place under the vehicle unless the car is standing on chocks that are fully capable of withstanding the full weight. No part of a person's anatomy must be under the car when the jack is used for any purposes.

SERVICE

Our Service Department is especially equipped to take care of customers' requirements, and can at all times undertake anything from adjustments to major repairs and complete overhauls, at reasonable charges consistent with expert workmanship.

Parts sent for repairs must be consigned carriage paid and should be clearly labelled with the sender's name and address, along with chassis and engine number.

Instructions should be sent separately stating whether an estimate is required before putting the work in hand. When it is inconvenient to send repairs to the works an accredited 'Morgan' Dealer should be consulted.

NOTIFICATION OF SALE CARDS

The Morgan Motor Company Ltd. introduced these cards to enable the Company to deal with claims promptly and it is most important that the cards are completed and returned without delay. Failure to return these cards may jeopardize any future claims being met.

WARRANTY

The Morgan Motor Company Limited warrants in respect of its vehicles that if any defect shall be revealed in a part manufactured by the Company and which is returned to the Company's premises at Pickersleigh Road, Malvern Link, Worcestershire within twelve months of delivery to the customer or 12,000 miles whichever shall occur, that it will examine the same and should any fault due to defective materials or manufacture be found upon such examination, to repair or replace the defective part without charge, at the Company's discretion. The warranty is limited to the delivery to the Purchaser at the Company's premises and in the case of a new part supplied only in exchange for the defective part.

Any part of the vehicle manufactured other than by the Company is protected by the warranty (if any) given by that manufacturer and the Company can accept no responsibility save and except in accordance with any such warranty.

It is a condition of this warranty that the vehicle must not have been neglected, misused, modified or used for racing or rallying and that it has been serviced in accordance with the recommendations of the Company as embodied within this handbook or otherwise defined.

The warranty does not apply to tyres or consumables (e.g. brake pads/shoes, clutch lining etc.) or to defects arising from the fitting of parts not made by or approved by the Company or by the original manufacturers of any proprietary parts fitted to the vehicle.

Any parts or parts replaced or repaired under this warranty will be covered for the balance of the warranty period.

The warranty is dependant upon compliance by the vehicle owner with the following provisions:

a) The owner shall send to the Company's premises such part or parts as are alleged to be defective promptly on discovery of the claimed defect. Transportation is to be prepaid and the part or parts to be properly packed and clearly marked for identification with the full name and address of the owner and with the car and chassis numbers of the vehicle from which the parts have been taken.

b) The owner shall post to the Company on or before despatch of such parts as are alleged to be defective a full and complete description of the claim and the reasons therefore.

c) In the event of any disagreement the matter shall be referred to the decision of an agreed arbitrator or in the event of failure to agree an arbitrator to be appointed by the President for the time being of the Law Society.

This assurance is in addition to and does not detract from the contractual rights you have under Statute or at common law.

MORGAN SPORTS CAR CLUB

As you are now the possessor of a Morgan Car, you may care to share your enthusiasm with other current or previous owners of Morgan cars.

To this end, the Club which was founded by a group of enthusiastic owners exist to promote meetings of a social and competitive nature for its Members. It is recognised by the RAC for the promotion of such events, and is associated with the Midland Association of Car Clubs.

The President is Mr Peter Morgan, and the Club enjoys a favourable degree of Factory encouragement and support.

Your Annual Membership entitles you to participate in all Club events, which include the entire range of motoring competitions – i.e. Rallies, Driving Tests, Sprints, etc., and every kind of social activity. We also receive many invitations to other Club events, and you will be kept notified of these activities through the Quarterly Miscellany, the Editor of which will be grateful for any contributions in the form of articles, experience or criticism.

You are also entitled to purchase and display car badges, ties, key fobs, also lapel badges, all bearing the Club emblem and colours.

As a historical fact, the Club was founded in 1951, and has acquitted itself well by winning team awards in National Rallies and Races.

So may we invite your application for Membership, to enable you to share our activities.

All enquiries should be addressed to the Club Secretary:

Mr B. Iles,
22 Montpellier Spa Road,
Cheltenham,
England.

SERVICE SCHEDULE

This schedule is designed to help you maintain your car in optimum condition. By reference to these pages you will be aided in planning your service times or dates. At each service ask your dealer to fill in the details required, to show the service has been completed and where it was carried out.

For the best service for your car, contact your nearest Morgan Dealer or Service Agent.

FIRST SERVICE

After 1,000 miles (1,500 km) or 3 months after delivery

Serviced by: Name: MIKE DUNCAN

Address: STATION GARAGE
MUCKLOW HILL
HALESOWEN

Date 10.6.88 MILEAGE 965 MILES

SIGNATURE _____

SECOND SERVICE

at

5,000 miles (8,000 km) or 6 months after delivery

Serviced by: Name: R. GRIFFITHS

Address: _____

Date 7.4.88 MILEAGE 5,648

SIGNATURE _____

THIRD SERVICE

at

10,000 miles (16,000 km) or 12 months after delivery

Serviced by: Name: _____

Address: _____

Date _____ MILEAGE _____

SIGNATURE _____

FOURTH SERVICE

at

15,000 miles (24,000 km) or 18 months after delivery

Serviced by: Name: _____

Address: _____

Date _____ MILEAGE _____

SIGNATURE _____