FOREWORD

This Handbook provides an introduction to your car, together with information on the care and periodic maintenance required to combine trouble-free motoring with minimal running costs.

Claims for the replacement of parts under warranty must be submitted to the supplying Distributor or Dealer, or when this is not possible, to the nearest Distributor or Dealer, informing them of the vendor's name and address. Except in emergency, warranty work should always be carried out by an appointed Distributor or Dealer.

By keeping the Passport to Service, signed by the Distributor, Dealer, or vendor in the vehicle, you can quickly establish the date of purchase and provide the necessary details if adjustments are required to be carried out under warranty.

Regular use of the Passport to Service Maintenance Scheme is the best safeguard against the possibility of abnormal repair bills at a later date. Failure to have your car correctly maintained could invalidate the terms of the Warranty and may result in unsatisfactory operation of the emission control systems.

Safety features embodied in the car may be impaired if other than genuine parts are fitted. In certain territories, legislation prohibits the fitting of parts not to the vehicle manufacturer's specification. Owners purchasing accessories while travelling abroad should ensure that the accessory and its fitted location on the car conform to mandatory requirements existing in their country of origin.

Your Distributor or Dealer is provided with the latest information concerning special service tools and workshop techniques. This enables him to undertake your service and repairs in the most efficient and economic manner. The operations carried out by your Distributor or Dealer will be in accordance with current recommendations and may be subject to revision from time to time.

Further details on Service Parts will be found under 'SERVICE' on page 62. Please note that references to right- or left-hand in this Handbook are made when viewing the car from the rear.

Specification details set out in this Handbook apply to a range of vehicles and not to any particular vehicle. For the specification of any particular vehicle owners should consult their Distributor or Dealer.

The Manufacturers reserve the right to vary their specifications with or without notice, and at such times and in such manner as they think fit. Major as well as minor changes may be involved in accordance with the Manufacturer's policy of constant product improvement.

Whilst every effort is made to ensure the accuracy of the particulars contained in this Handbook, neither the Manufacturer nor the Distributor or Dealer, by whom this Handbook is supplied, shall in any circumstances be held liable for any inaccuracy or the consequences thereof.
CONTROLS

**Pedals**
(1) (2) (3)
The pedal arrangements are in the conventional positions.

The brake pedal operates the dual hydraulic braking system applying the brakes on all four wheels, also when the ignition is switched on bringing the stop warning lights into operation.*

**Hand brake**
(4)
The hand brake is of the pull-up lever type, operating mechanically on the rear wheels only. To release the hand brake pull the lever upwards slightly, depress the button on the end of the lever and push the lever down.

**Gear lever**
(5)
The gear positions are indicated on the lever knob. To engage reverse gear move the lever to the right in the neutral position until resistance is felt, apply further side pressure to overcome the resistance and then move it backwards to engage the gear. Synchromesh is provided on second, third, and fourth gears.

The reverse lights operate automatically when reverse is selected with the ignition switched on.

**Mixture control (choke)**
(6)
Use the control to enrich the mixture and assist starting when the engine is cold. The fuel/air mixture is progressively enriched as the control is pulled out.

Pull out the control to the required position and lock it by turning the control clockwise one-quarter of a turn.

To re-position the control or return it to the 'off' position, turn the knob anticlockwise one-quarter of a turn and push inwards.

**DO NOT MOVE** the control in or out whilst it is in the 'locked' position.

Notes on the use of the control are given in 'RUNNING INSTRUCTIONS'.

* Also see 'RUNNING INSTRUCTIONS'.
WARNING SYSTEMS

Anti-theft
Warning buzzer. A combined ignition and steering lock with warning buzzer is fitted to the car. The warning buzzer will sound if the driver's door is opened while the key is in the steering lock. The buzzer will not operate if the key is removed from the lock.

Recommended procedure. When leaving the car unattended:

- Set the hand brake.
- Lock the steering by removing the key from the ignition steering lock.
- Lock the car doors and remove the key.

Brakes
Brake failure warning lamp and test-push switch. The hydraulic brake system has two independent circuits. If hydraulic pressure fails in one circuit, the remaining circuit will provide an emergency brake condition on the other two wheels and allow the car to be brought to rest by brake pedal application. This would be accompanied by the warning lamp glowing on the instrument panel.

IF THE WARNING LAMP GLOWS AT ANY TIME EXCEPT WHEN THE BULB IS BEING TESTED THE CAUSE MUST BE INVESTIGATED IMMEDIATELY.

Unless as a result of your investigation you are satisfied that it is safe to proceed, you should leave the vehicle where it is and call for assistance. Even if you are satisfied that it is safe to proceed, the car should only be driven in cases of real emergency, extreme care should be taken and heavy braking avoided. In deciding whether it is safe to proceed you should consider whether you will be infringing any Government Regulations.

To test the warning lamp and circuit, press the switch (1) below the lamp. If the bulb is functioning the light (2) will glow and will go out as the switch is released.

To test the hydraulic system, apply normal foot pressure to the brake pedal. The light will remain off if the hydraulic system is functioning satisfactorily. Check the bulb and the system frequently.

Seat Belt Warning

The seat belt warning system fitted to the car consists of a warning lamp (1) on the control console illuminating the words 'FASTEN BELTS', and a warning buzzer.

The warning system operates when the ignition is switched on (position 'II' on the ignition switch), a forward or reverse gear selected and either the driver's or passenger's seat belt is not fastened by the wearer.

PRECAUTION: Do not travel with a heavy parcel placed on the passenger's seat as this may operate the warning system.

See also page 18 for seat belt instructions.
It is most important that owners **MAKE A NOTE OF THE KEY NUMBERS IMMEDIATELY** on taking delivery of the car and at the same time consult their Distributor or Dealer regarding steering lock key replacements.

**Keys Identification.** To reduce the possibility of theft, locks are not marked with a number. Owners are advised to make a note of the numbers stamped on the keys, on the numbered tag supplied, or on a label stuck to the windscreen. The driver and passenger door locks use a common key. The luggage compartment and steering locks are operated by separate keys.

**Steering**

The lock face is marked '0' (off), 'I' (auxiliary), 'II' (ignition), 'III' (start). To lock the car steering the key must be removed from the lock (4).

To lock the steering, turn the key to position 'I', press the key in and while maintaining pressure turn the key anti-clockwise to position '0' and withdraw the key. The steering lock is set during withdrawal of the key and rotation of the steering-wheel engages the lock. When unlocking, turn the steering to assist disengagement of the locking plunger.

Under no circumstances must the key be moved from the 'I' position towards the '0' position. **WHEN THE CAR IS IN MOTION.** The car may be towed for recovery with the key in the lock at position 'I'.

**WARNING.**—The lock fitted to the steering-column works in conjunction and is integral with the ignition starter switch. The designed operating sequence prevents the engine being started with the steering LOCKED. **Serious consequences** may result from alterations or substitution of the ignition start switch which would permit the engine to be started with the LOCK ENGAGED. Under no circumstances must the ignition switch or the ignition engine start function be separated from the steering lock.

**Ignition and starter**

Insert the key in the lock, and turn to position 'I'. In this position the ignition is off but electrical items not wired through the ignition switch may be operated, e.g. radio. Turn the key to position 'II' to switch on the ignition; further movement to 'III' operates the starter.

The fuel gauge or direction indicators will not operate unless the ignition switch is at position 'II'.

To remove the key from the lock, turn the key to position 'I', press the key in, and while maintaining pressure turn anti-clockwise to position '0' and withdraw the key.

(5) **Ignition warning light (red).** The ignition warning light serves the dual purpose of reminding the driver to switch off the ignition and of acting as a no-charge indicator. The light should glow when the ignition is switched on, and go out and stay out at all times while the engine is running above normal idling speed.

**Doors**

The door key can only be inserted or withdrawn when the key and key slot (1) are vertical. Forward key movement locks, opposite unlocks. To lock the doors from inside the car, turn the locking lever (2), downwards.

**Luggage compartment**

The luggage compartment lid is locked by turning the key (3) clockwise one half turn.
INSTRUMENTS AND SWITCHES

**Instruments**

(1) **Speedometer.** In addition to recording the road speed this instrument also records the total distance (3), and the distance travelled for any particular trip (2). To reset the trip recorder, push the knob (4) upwards and turn it clockwise, ensuring that all the counters are returned to zero.

(5) **Tachometer.** The instrument indicates the revolutions per minute of the engine and assists the driver to use the most effective engine speed range for maximum performance in any gear.

(6) **Oil.** The gauge indicates the pressure of the oil in the engine lubrication system.

(7) **Water.** The gauge is marked ‘C’ (cold), ‘N’ (normal), and ‘H’ (hot), indicating the temperature of the coolant as it leaves the cylinder head.

(8) **Fuel.** When the ignition is switched on the gauge indicates approximately the amount of fuel in the tank.

* Also see 'RUNNING INSTRUCTIONS'.

**Switches**

(1) **Lighting switch.** Press the lower end of the switch rocker to the first position to operate the parking and tail lamps and to the second position to operate the head lamps. The marking on the switch is illuminated when the panel lamps are switched on.

(2) **Headlamp low beam**—(4) **Flas her.** With the headlamps switched on, at the lighting switch, move the lever down away from the steering-wheel to operate the high beam (3), lifting the lever towards the steering-wheel from the low-beam position will flash (4), the headlamp high-beams irrespective of whether the lighting switch is on or off.

(5) **Headlamp main-beam warning lamp (blue).** The warning lamp glows when the headlamps are switched on and the beam is in the raised position. The lamp goes out when the beam is lowered.

(6) **Panel lamp switch.** With the parking lamps switched on, illumination of the instruments and switches may be varied by rotating the panel lamp switch knob. Turning the switch knob clockwise from the off position illuminates the panel lamps; further clockwise movement will increase the light brilliance.
Instruments and Switches

Switches

(1) Direction indicators. The switch is self-cancelling and operates the indicators only when the ignition is switched on. A visual warning of a front or rear bulb failure is given by the warning lamp and the serviceable bulb on the affected side giving a continuous light when the indicator is switched on.

(2) Direction indicator warning lamp (green). The arrow-shaped lamps show the direction selected and operates with the flashing direction indicators.

(3) Hazard warning. To use the direction indicators as hazard warning lights, press the lower end of the switch rocker; all direction indicators and the warning lamp (4), will operate together, irrespective of whether the ignition is switched on or off. The marking on the switch will be illuminated when the panel lamps are switched on.

(5) Horn. The horn is sounded by pressing the centre disc of the steering-wheel.

(6) Windscreen wiper. Move the switch lever down to operate the windscreen wipers at slow speed; further movement in the same direction will operate the wipers at fast speed. The wiper blades park automatically when the switch lever is returned to the off position.

(7) Windscreen washer. Press the knob on the end of the switch lever to operate the windscreen washer. When the windscreen is dirty, operate the washer before setting the wipers in motion.

In cold weather the washer reservoir should be filled with a mixture of water and a recommended washer solvent to prevent the water freezing. On no account should radiator anti-freeze or methylated spirits (denatured alcohol) be used in the windscreen washer.

(8) Cigar-lighter. To operate, press the cigar-lighter fully in; when ready for use it will partially eject itself and may then be withdrawn. The rim of the cigar-lighter is illuminated when the panel lamps are switched on.

Radio (if fitted). Full operating instructions are supplied with the radio.

Driving Mirrors

External

The mirror head is adjustable from the driving position when the window is open.

Fig. 1

Interior

The mirror stem with anti-dazzle head is designed to break away from the mounting bracket on impact. The stem may be refitted in the mounting bracket as follows. Align the stem ball (1) with the bracket cup (2), ensuring that the small protrusion (3) on the stem aligns with the indent of the mounting bracket. Give the stem a smart tap with a soft instrument to join the two components.

Anti-dazzle. To reduce mirror dazzle, pull the lever (4) away from the windscreen.

Windows and ventilators

Rotate the handle on each door to open and close the windows. The ventilation panels adjacent to each window may be opened after releasing the catch.

Luggage compartment

To open, turn the handle anti-clockwise and raise the lid. When fully raised the support stay will automatically spring into engagement and the lid will be held in the open position. Opening the lid automatically switches on the courtesy light.

To close, raise the lid slightly, push the catch on the support stay forward to release the locking mechanism and lower the lid. Closing the lid automatically switches off the courtesy light.

Head restraint

The vertical position of the head restraint may be adjusted.

To lower, push the head restraint down towards the seat.

To raise, place both hands under the restraint pad and lift the head restraint up away from the seat.
Body Fittings

Cubby box  
To open. Press the button (1) and lower the flap.
To lock. Insert the key and turn clockwise.
To unlock. Turn the key anti-clockwise.

Hard top  
Fitting. Lower the hood.

Fig. 3 and 4  
Position the hard top on the car and engage the toggle fastener tongues in their sockets on the windscreen rail. Check that the rubber sealing strip is correctly positioned forward of the rail. Fasten the toggle links and lock them with the securing brackets (inset, Fig. 3). Fit the bolts into both side-fixing brackets and tighten them down gently and evenly until the hard top seals at both sides and the rear. Do not tighten the bolts hard down.

Check the width of the gap between the flanges of the side-fixing brackets (see Fig. 4), remove the bolts and fit packing washers between the flanges to the thickness of the gap.

Refit and tighten the securing bolts.

Bonnet  
To raise the bonnet, pull the knob (1) located inside the car on the left-hand side below the fascia panel.

Press the safety catch (2) under the front of the bonnet and raise the bonnet. When fully raised the support stay will automatically spring into engagement and the bonnet will be held in the open position.

To close, raise the bonnet slightly, push the catch (3) on the bonnet stay rearwards to release the locking mechanism and lower the bonnet. Apply light pressure with the palms of the hands at the front corners of the bonnet and press down quickly; undue force is not necessary and may cause damage. The safety catch and lock will be heard to engage.

Drain points  
Fig. 6  
The body and doors are provided with drain holes to allow rain-water and condensation to flow freely from the panels, thus preventing accumulated water from causing rust and corrosion. It is essential that the drain holes are kept clear and are not inadvertently blocked. When painting or applying underseal to the body underpanels or doors, temporarily seal or mask the drain holes to prevent the ingress of sealant. Periodically inspect the drain holes and clear any obstruction using a piece of stiff wire or a suitable tool.

Jacking up beneath the underfloor may deform the drain apertures; always use the jacking points provided.
Body Fittings

Hood (Soft top)

It is most important that the instructions for raising, lowering, and folding the hood are carried out in the sequence given. Do not apply pressure to the frame-members other than the header rail; undue force is not necessary and should be avoided. Do not fold or stow the hood when it is wet or damp.

Lowering

1. Unclip the sun visors and move to one side. Release the press studs on the windscreen frame and hood frame links (Fig. 7).
2. Release the hood from the self-fastening strip and the three fasteners on each rear quarter panel.
3. Open the toggle catches on the windscreen rail (inset, Fig. 7).
4. Press the header rail rearwards to collapse the hinge links, at the same time keeping the hood material pulled out towards the rear away from the frame (Fig. 8).
5. Collapse the frame into its stowage position in the rear compartment and lay the hood material on the luggage compartment lid.
6. Fold the quarter-light inwards, on a line between the quarter-light and backlight (Fig. 9).
7. Fold the hood over the frame into the rear compartment (Fig. 10).
8. Lay the hood cover over the hood and secure the rear edge with the fasteners (Fig. 11).
9. Arrange the cover and secure it at the sides with the fasteners provided at each quarter: secure the front edge to the cockpit rear panel with the four press studs (Fig. 11). Reposition the sun visors.

Raising

1. Remove the hood cover and open both doors.
2. Lift the hood over the frame and lay it on the luggage compartment lid.
3. Unfold the quarter-lights and pull the header rail forward and upwards at the point indicated by the label. Ensure that the hood material takes up its correct position as the frame is erected.
4. Engage the hood toggle fastener tongues in their sockets on the windscreen rail, check that the rubber sealing strip is correctly positioned forward of the rail, and fasten the toggle links.
5. Secure the hood with the fasteners on the rear quarters, windscreen side-posts, and frame hinge links.
6. Stow the hood cover.

Tonneau cover Fitting.

Lay the cover over the cockpit and secure the rear edge and sides with the fasteners on the tonneau and quarter-panels.

Extend the cover forward and secure the front edge to the fasteners on the fascia panel top and windscreen pillars.

Usage. The centre zip allows the cover to be folded down to give access to the driving seat or both seats. Fold the cover down behind the seat and secure it with the fasteners to the heelboard (see Fig. 12). The short side zips permit the use of seat belts when the cover is folded down.

Removing. Reverse the fitting procedure.
SEATS AND SEAT BELTS

SEATS

Fig. 1

Seat adjustment

Driving position. Both seats are adjustable and can be moved easily into the most comfortable position. Move the lever (1) located beneath the front of the seat outwards; hold the lever in this position while the seat position is adjusted. The locking pin is spring-loaded and will automatically lock the seat in the required position when the lever is released.

Seat back adjustment. The rake of the back or squab of the seats can also be adjusted. Ease the body weight from the seat back and move the lever (2), in the direction of the arrow. Release the lever and ensure that the seat back is fully locked in position; check by applying back pressure on the seat.

Head restraint

The head restraint (3) may be raised or lowered as desired.

SEAT BELTS

Fig. 2

Warning system

To ensure that the driver and front seat passenger wear their seat belts when the car is being driven a buzzer will sound, the 'Fasten Belts' lamp will switch on and the starter motor will fail to operate if the ignition starter switch is turned before the seat belt of each occupied seat is fastened.

The 'FASTEN BELTS' warning lamp and the warning buzzer will NOT operate nor will the starter motor be INOPERATIVE if the following simple sequence is carried out at all times:

1. Sit in the seat.
2. Wear and fasten the seat belt.

A front seat passenger must follow the same sequence.

To fasten

Lift the engagement tongue (1) and draw the belt from the reel over the shoulder and across the chest, and push it into the locking clip (2) of the short belt nearest the wearer.

To release

Press the release button (3) on the short belt.

To stow

After releasing the belt, hook the tongue (1) onto the parking device (5).

Wearing

Never attempt to wear the belt other than as a complete diagonal and lap assembly. Do not try to use the belt for more than one person at any one time, even small children.

Ensure that the belt webbing is not twisted when in use, and that the belt is adjusted to the correct tightness.

Care of the belts

After releasing the belt allow the webbing to retract into the automatic reel. Ensure that while the belt is retracted the engagement tongue has not moved on the belt to a point near the sill mounting; this can be remedied by moving the tongue (1) and belt clip (4) towards the reel.

Do not attempt to bleach the belt webbing or re-dye it. If the belts become soiled, sponge with warm water using a non-detergent soap and allow to dry naturally. Do not use caustic soap, chemical cleaners or detergents for cleaning; do not dry with artificial heat or by direct exposure to the sun.

No unauthorized alterations or additions to the belts should be made. Inspect the webbing periodically for signs of abrasion, cuts, fraying, and general wear; pay particular attention to the fixing points and adjusters. Replace belts that are defective or have been subjected to severe strain in an accident.

Fig. 1

Fig. 2
HEATING AND VENTILATING

HEATER
The heating and ventilating system is designed to provide fresh air either heated by the engine cooling system or at outside temperature to the car at floor level and for demisting and defrosting to the windscreen.

Air distribution
Two doors, located one at each side of the gearbox tunnel, control distribution of air between screen and car interior. To supply air to the car, open the doors; to boost the flow of air to the screen, close the doors.

Controls
Heater (Fig. 1). A valve controlling the flow of coolant through the heater unit is fitted at the rear of the cylinder head. The valve is opened by turning it in an anti-clockwise direction when heating is required or shut off by turning clockwise when the system is to be used for cool air ventilation.

Air flow (Fig. 2). The knob (1) operates a valve in the air intake and controls the flow of air to the car interior. Turn the knob anti-clockwise from the ‘OFF’ position to open the valve, the valve is fully open when the knob is turned to the ‘ON’ position.

Booster. Press the lower end of the switch rocker (2) to boost the air flow.

Illumination
The markings on the booster switch, the control dial and the position indicator on the rotary control knob are illuminated when the panel lamps are switched on.

Usage
By varying the settings of the air flow control, opening or closing the air distribution doors, and utilizing the booster blower, a wide range of settings can be obtained for heating, when the heater valve is open, or for ventilating when the valve is shut, to suit prevailing conditions.

RUNNING INSTRUCTIONS

The following instructions are a guide for starting, running and loading the car, and include notes on the use of the controls and the indications of the instruments.

Choice of fuel
Our MG engines have been designed to operate on fuels of 91 octane rating or above and have not been developed for the regular use of unleaded or low lead gasolines. The use of such fuels cannot be recommended as they could have a detrimental effect on engine components, resulting in loss of performance, excess exhaust emissions and, possibly, complete engine failure.

Starting
Sit in the seat, then wear and fasten the seat belts; this applies to both driver and passenger.

Pull out the mixture control (choke).

Switch on the ignition (page 9) and check:
That the ignition warning lamp glows
That the fuel gauge registers.

Operate the starter.

After the engine has started, check:
That the oil pressure gauge registers
That the ignition warning light has gone out.

Push the mixture control (choke) in to the minimum setting.

Check the temperature gauge reading.

Mixture control (choke)
The function of this control is to enrich the air/fuel mixture for cold engine control starting and to provide a faster idle speed without enrichment during the warm-up period.

The amount which the control knob must be pulled out to achieve easy starting will be dependent on engine temperature and prevailing conditions.

To lock the control in the required position, turn the control knob a quarter of a turn clockwise.

After the engine has been started with the aid of the choke, unlock the control and push it in gradually as the engine warms, until only about ¼ in of travel remains. With the control in this position the engine will run at a faster idle speed and attain its correct working temperature as quickly as possible.

Do not warm up the engine by allowing it to idle slowly or by leaving it to idle with the control pulled out. Driving the car onto the road while the engine is cold with the control partly pulled out is preferable to allowing the engine to idle, or run with the control pulled out, in the garage or on the driveway prior to moving off.

Ignition warning lamp
The lamp should glow when the ignition is switched on, and go out and stay out at all times while the engine is running above normal idling speed. Failure to do so indicates a fault in the battery charging system. Check that the fan belt is correctly tensioned before consulting your Distributor or Dealer.
**Running Instructions**

**Starter**
Do not operate the starter for longer than five to six seconds.

To prevent damage the starter cannot be operated while the engine is running.

If after a reasonable number of attempts the engine should fail to start, switch off the ignition and investigate the cause. Continued use of the starter when the engine will not start, not only discharges the battery but may also damage the starter.

If the starter pinion fails to engage with the flywheel ring, or fails to disengage when the engine starts, the starter will emit a high-pitched whine; release the ignition key immediately. Should the starter pinion become jammed in mesh with the flywheel ring, turn the squared end of the armature spindle with a spanner.

**Oil pressure gauge**
The gauge should register a pressure as soon as the engine is started up. The gauge pressure may rise above 70 lb./sq. in. (4.92 kg./cm.²) when the engine is started from cold and as the oil is circulated and warmed the pressure should then drop to between 40 and 70 lb./sq. in. (2.81 to 4.92 kg./cm.²) at normal running speeds and to approximately 20 lb./sq. in. (1.4 kg./cm.²) at idling speed.

Should the gauge fail to register any pressure, stop the engine immediately and investigate the cause. Start by checking the oil level.

**Temperature gauge**
Normal operating temperature is reached when the pointer is in the ‘N’ sector.

Overheating may cause serious damage. Investigate any upward change in the temperature gauge reading immediately. Check coolant level and fan belt tension.

**Tachometer**
For normal road work, and to obtain the most satisfactory service from your engine, select the appropriate gear to maintain engine speeds of between 2,000 and 4,500 r.p.m.

When maximum acceleration is required upward gear selections should be made when the needle reaches the yellow sector (5,500-6,300 r.p.m.). Prolonged or excessive use of the highest engine speeds will tend to shorten the life of the engine. Allowing the engine to pull hard at low engine speeds must be avoided as this also has a detrimental effect on the engine.

The beginning of the red sector (6,300 r.p.m.) indicates the maximum safe speed for the engine.

Never allow the needle to enter the red sector.

**Running in**
The treatment given to a new car will have an important bearing on its subsequent life, and engine speeds during this early period must be limited. The following instructions should be strictly adhered to.

During the first 500 miles (800 km.):
- **DO NOT** exceed 45 m.p.h. (72 km.p.h.).
- **DO NOT** operate at full throttle in any gear.
- **DO NOT** allow the engine to labour in any gear.
CLEANING

Interior
Clean the carpets with a semi-stiff brush or a vacuum cleaner preferably before washing the outside of the car. The most satisfactory way to give carpets and nylon faced upholstery a thorough cleaning is with UNIPART Upholstery Cleaner, diluted one part with eight parts warm water. Apply vigorously with a semi-stiff brush, and remove the surplus with a damp cloth or sponge. Carpets should not be cleaned by the 'dry-clean' process. The plastic faced upholstery and roof lining may be treated with undiluted UNIPART Upholstery Cleaner spread thinly over the surface to be cleaned with a brush or cloth. Leave for five minutes, then wipe off with a moist sponge or cloth.

UNIPART Upholstery Cleaner can be used for cleaning and renovating all the usual upholstery materials, and rubber, but it should not be used on painted surfaces.

Body
Regular care of the body finish is necessary if the new appearance of the car exterior is to be maintained against the effects of air pollution, rain, and mud.

Wash the bodywork frequently, using a soft sponge and plenty of water containing UNIPART Car Shampoo. Large deposits of mud must be softened with water before using the sponge. Smears should be removed by a second wash in clean water, and with the sponge if necessary. When dry, clean the surface of the car with a damp chamois-leather. In addition to the regular maintenance, special attention is required if the car is driven in extreme conditions such as sea spray or on salted roads. In these conditions and with other forms of severe contamination an additional washing operation is necessary which should include underbody hosing. Any damaged areas should be immediately covered with paint and a complete repair effected as soon as possible. Before touching-in light scratches and abrasions with paint, thoroughly clean the surface. Use petrol/white spirit (gasoline/hydrocarbon solvent) to remove spots of grease or tar.

The application of UNIPART Car Polish is all that is required to remove traffic-film and to ensure the retention of the new appearance.

Bright trim
Never use an abrasive on stainless, chromium, aluminium, or plastic bright parts and on no account clean them with metal polish. Remove spots of grease or tar with petrol/white spirit (gasoline/hydrocarbon solvent) and wash frequently with water containing UNIPART Car Shampoo. When the dirt has been removed polish with a clean dry cloth or chamois-leather until bright. Any slight tarnish found on stainless or plated components which have not received regular attention may be removed with UNIPART Chrome Cleaner. An occasional application of light mineral oil or grease will help to preserve the finish, particularly during winter, when salt may be used on the roads, but these protectives must not be applied to plastic finishes.

Windscreen
If windscreen smearing has occurred it can be removed with UNIPART Screen Cleaner.

Hood
To clean the hood it is only necessary to use soap and water, with a soft brush to remove any ingrained dirt. Frequent washing with soap and water considerably improves the appearance and wearing qualities of the hood, and it should be washed at least as often as the rest of the car.

Do not use caustic soaps, detergents, or spirit cleaners to clean the hood or the hood back-light.

UNIPART products mentioned above are obtainable from your Distributor or Dealer.

COOLING SYSTEM

Expansion tank and cap
The expansion tank collects the coolant displaced by expansion when the engine is heated to normal running temperature. The displaced coolant is returned to the radiator when the system cools. The cap (1) on the expansion tank maintains the pressure in the cooling system to 15 lb/sq. in. maximum when the engine is running. If the system is hot, protect the hands against escaping steam, turn the cap anti-clockwise to the stop, wait until all pressure has escaped, press down and turn further until the cap can be lifted off.

Checking
The coolant level must only be checked when the system is cold. Remove the expansion tank cap (1) to check the coolant level which must be maintained to the half-full point of the tank.

Draining
To drain the cooling system, stand the car on level ground and remove the radiator filler plug (3). Slacken the hose clips and disconnect the bottom hose at its connection to the radiator. Remove the drain plug (2) on the engine cylinder block.

There is no provision for draining the heater or expansion tank.

Filling
Refit the drain plug and open the heater valve. Fill the system through the radiator filler orifice and fit the filler plug. Top up the coolant on the expansion tank to the half-full point and refit the cap. Run the engine at a fast idle speed for 30 seconds, stop the engine and top up the system through the radiator filler.

Refit the filler plug and bottom hose and run the engine until normal operating temperature is reached. Stop the engine and allow the system to cool then top up the expansion tank to half-full.

Fig. 1
Cooling System

**Frost precautions**

Anti-freeze can remain in the cooling system for two years provided that the specific gravity of the coolant is checked periodically and anti-freeze added as necessary. The specific gravity check should be carried out by an authorized Distributor or Dealer.

Only top up when the cooling system is at its normal running temperature in order to avoid losing anti-freeze due to expansion.

After the second winter the system should be drained and flushed. Refer to the instructions given for draining the cooling system, then clean out the system thoroughly by flushing water through the radiator passages using a hose inserted in the radiator filler orifice.

Before adding the recommended anti-freeze make sure that the cooling system is watertight; examine all joints and renew any defective hose.

We recommend owners to use UNIPART Frostbeat or Bluecol Anti-freeze to protect the cooling system during frosty weather and reduce corrosion to the minimum. We also approve the use of anti-freeze which conforms to specification B.S.3151 or B.S.3152.

The correct quantities of anti-freeze for different degrees of frost protection are:

<table>
<thead>
<tr>
<th>Anti-freeze percentages</th>
<th>Commences to freeze</th>
<th>Frozen solid</th>
<th>Amount of anti-freeze</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>°C.</td>
<td>°F.</td>
<td>°C.</td>
</tr>
<tr>
<td>25</td>
<td>-13</td>
<td>9</td>
<td>-26</td>
</tr>
<tr>
<td>33 1/3</td>
<td>-19</td>
<td>-2</td>
<td>-36</td>
</tr>
<tr>
<td>50</td>
<td>-36</td>
<td>-33</td>
<td>-48</td>
</tr>
</tbody>
</table>

WHEELS AND TYRES

**Jacking up**

The jack is designed to lift one side of the car at a time. Apply the hand brake, and block the wheels on the opposite side of that being jacked, using a wood block jammed tight against the tyre tread.

Remove the plug from the jacking socket located on the door sill panel and insert the lifting arm of the jack into the socket. Make certain that the jack lifting arm is pushed fully into the socket and that the base of the jack is on firm ground.

The jack should lean slightly outwards at the top to allow for the radial movement of the car as it is raised.

**WARNING.** Do not work beneath the vehicle with the lifting jack as the sole means of support. Place suitable supports under the front side members or rear axle to give adequate support and safety while working.

**Jack maintenance**

If the jack is neglected it may be difficult to use in a roadside emergency. Examine it occasionally, clean off accumulated dust, and lightly oil the thread to prevent the formation of rust.

**WHEELS Preventive maintenance**

Owners are recommended to check wheel nuts on pressed type wheels for tightness each week. Take care not to overtighten (torque wrench setting 44 to 46 lb. ft. (6-08 to 6.36 kg. m.).

Slacken the four nuts securing the road wheel to the hub; turn anti-clockwise to loosen and clockwise to tighten. Raise the car with the jack to lift the wheel clear of the ground and remove the nuts. Withdraw the road wheel from the hub. When refitting the road wheel locate the wheel on the hub, lightly tighten the nuts (1) with the wheel nut spanner (securing nuts (1) must be fitted with the taper side towards the wheel), and lower the jack. Fully tighten the wheel nuts, tightening them diagonally and progressively, at the same time avoid over-tightening.

The wheel centre trim (2) must be removed and fitted to the wheel in use.

Replace the jack socket plug.
Wheels and Tyres

**Wire type**
Use the spanner to slacken the octagonal hub nuts.

**Removing and refitting**
Always jack up a wheel before using the hammer, and always hammer the nuts tight.

Locknuts are marked 'LEFT' or 'RIGHT' to show to which side of the car they must be fitted, and also with the word 'UNDO' and an arrow.

Before replacing a wheel wipe all serrations, threads, and cones of the wheel and hub and then lightly coat them with grease. If a forced change is made on the road, remove, clean, and grease as soon as convenient.

**Maintenance**
When the car is new, after the first long run or after 50 miles of short runs, jack up the wheels and hammer the nuts to make sure that they are tight.

Once a year remove the wheels for examination and regreasing.

**Spare wheel**
The spare wheel is secured to the floor of the luggage compartment.

The spare wheel supplied with new cars is inflated above the recommended running pressure. The pressure must be checked and adjusted before use.

---

**TYRES**

**Tyre markings**
Max. load and inflation figures. Tyres are marked with the maximum load and inflation pressure figures. When fitting replacement tyres ensure that they are to the same specification and marking. The permissible load and tyre pressures are shown on page 59 of this handbook.

Wear indicator. Tyres fitted as original equipment have wear indicators incorporated in their tread pattern. When the tyre tread has worn down until 0.06 in. of the tread is remaining the wear indicator bar will appear across the full width of the tread pattern.

**Tyre maintenance**
Tyres, including the spare, must be maintained at the pressures recommended (see 'GENERAL DATA'); check with an accurate tyre gauge at least once a week, and regulate as necessary. Pressures should be checked when the tyres are cold; do not reduce the pressure in warm tyres where the increase above the normal pressure is due to temperature. See that the valve caps are screwed down firmly by hand. The cap prevents the entry of dirt into the valve mechanism and forms an additional seal on the valve, preventing any leakage if the valve core is damaged. The spare wheel supplied with new cars is inflated above the recommended running pressure. The pressure must be checked and adjusted before use.

Excessive local distortion can cause the casing of a tyre to fracture and may lead to premature tyre failure. Tyres should be examined, especially for cracked walls, exposed cords, etc. Flints and other sharp objects should be removed from the tyre tread; if neglected, they may work through the cover. Any oil or grease which may get onto the tyres should be cleaned off by using fuel sparingly. Do not use paraffin (kerosene), which has a detrimental effect on rubber.

**Repairs**
When repairing tubes, have punctures or injuries vulcanized. Ordinary patches should only be used for emergencies. Vulcanizing is absolutely essential for tubes manufactured from synthetic rubber.

**Replacement**
Radial-ply tyres are standard equipment and replacements must be of the radial-ply type.

**Wheel and tyre balancing**
Unbalanced wheel and tyre assemblies may be responsible for abnormal wear of the tyres and vibration in the steering. Consult your Distributor/Dealer.
**BRAKES**

**Brake and clutch master cylinder**

The level of the fluid in the brake master cylinder reservoir is visible through the plastic reservoir (1); the level must be maintained up to the position marked (2) on the side of the reservoir.

To check the level of the fluid in the clutch master cylinder reservoir (3), remove the plastic filler cap. The fluid level must be maintained at the bottom of the filler neck.

Use only Lockheed Universal Brake Fluid (Series 329S) or Castrol Girling Brake Fluid; alternatively, use a brake fluid conforming to F.M.V.S.S. D.O.T.3 specification with a minimum boiling-point of 260°C (500°F). Before refitting the filler caps check that the breather holes (indicated by the arrows) in the caps are clear. The centre disc (4) of the brake reservoir cap may be removed for cleaning.

**Brake pedal**

A free movement of 3/4 in. (3-2 mm.) (A), measured at the pedal pad must be maintained on the pedal. To adjust the free movement, slacken the stop light switch locknut (1) and turn the switch (2) clockwise to decrease or anti-clockwise to increase the clearance. Tighten the stop light switch locknut.

**Front brakes**

Adjustment of the disc brakes to compensate for friction pad wear is automatic and manual adjustment is therefore not required. Before the lining material (arrowed) has worn down to the minimum permissible thickness of 5/16 in. (1-6 mm.) or will have done so before the next inspection is due, the brake pads must be renewed. Special equipment is required, and new pads should be fitted by an authorized Distributor or Dealer.

**Rear brakes**

Excessive brake pedal travel is an indication that the rear brake-shoes require adjusting. The brakes on both rear wheels must be adjusted to regain even and efficient braking.

Adjusting

Block the front wheels, fully release the hand brake and jack up each rear wheel in turn. Turn the adjuster (arrowed) in a clockwise direction (viewed from the centre of the car) until the wheel is locked, then turn the adjuster back until the wheel is free to rotate without the shoes rubbing. Repeat the adjustment on the other rear brake.

Inspecting rear brake linings

Inspect the linings for wear, and clean out the dust from the backplate assembly and drum.

Refit the drum and road wheel and adjust the brake-shoes.

Replacing brake-shoes or pads

When it becomes necessary to renew the brake-shoes or pads it is essential that only genuine shoes or pads, with the correct grade of lining, are used. Always fit new shoes or pads as complete axle sets, never individually or as a single wheel set. Serious consequences could result from out-of-balance braking due to mixing of linings.

Replacement brake-shoes or pads are obtainable from your Distributor or Dealer.
Brakes

Hand brake
The hand brake is automatically adjusted with the rear brakes. If there is excessive movement of the hand brake lever, consult your Distributor or Dealer.

Lubrication
Charge the nipples on the hand brake balance lever (2) and hand brake cable (1) with one of the recommended greases.

Preventive maintenance
In addition to the recommended periodical inspection of brake components it is advisable as the car ages, and as a precaution against the effects of wear and deterioration, to make a more searching inspection and renew parts as necessary.

It is recommended that:
(1) Disc brake pads, drum brake linings, hoses, and pipes should be examined at intervals no greater than those laid down in the Passport to Service.
(2) Brake fluid should be changed completely every 18 months or 18,000 miles whichever is the sooner.
(3) All fluid seals in the hydraulic system should be renewed, and all flexible hoses should be examined and renewed if necessary every 3 years or 36,000 miles (60,000 km.) whichever is the sooner. At the same time the working surface of the piston and of the bores of the master cylinder, wheel cylinders, and other slave cylinders should be examined and new parts fitted where necessary.

Care must be taken always to observe the following points:
(a) At all times use the recommended brake fluid.
(b) Never leave fluid in unsealed containers. It absorbs moisture quickly and this can be dangerous if used in the braking system.
(c) Fluid drained from the system or used for bleeding is best discarded.
(d) The necessity for absolute cleanliness throughout cannot be over-emphasized.

Battery
The battery must be kept clean and dry, and the terminals should be smeared with petroleum jelly. The vehicle must be level when the electrolyte in the cells is being checked.

More frequent topping-up of the electrolyte levels may be necessary in hot weather or when long journeys are made.

DO NOT USE A NAKED LIGHT WHEN CHECKING THE LEVELS.

NOTE.—Do not leave the battery in a discharged state for any length of time. When not in regular use have the battery fully charged, and every fortnight give a short refresher charge to prevent permanent damage to the battery plates.

‘Pacemaker’ (Type A9, AZ9, A11, AZ11). The electrolyte levels (1) are visible through the translucent battery case or may be checked by fully raising the vent cover (2) and tilting it to one side. The electrolyte level in each cell must be maintained so that the separator plates (3) are just covered. To avoid flooding, the battery must not be topped up within half an hour of it having been charged from any source other than the generating system fitted to the car.

To top up the levels raise the vent cover and pour distilled water into the trough (4) until all the rectangular filling slots (5) are full and the bottom of the trough is just covered. Press the cover firmly into position; the correct quantity of distilled water will automatically be distributed to each cell. In extremely cold conditions, run the engine immediately after topping-up to mix the electrolyte.

Electrical

Polarity
The electrical installation on this car is NEGATIVE (−) earth return and the correct polarity must be maintained at all times. Reversed polarity will permanently damage semi-conductor switches in the alternator and tachometer, and the radio transistors (when fitted).

Before fitting a radio or any other electrical equipment, make certain that it has the correct polarity for installation in this vehicle.

Battery
Fig. 1
The battery must be kept clean and dry, and the terminals should be smeared with petroleum jelly. The vehicle must be level when the electrolyte in the cells is being checked.

More frequent topping-up of the electrolyte levels may be necessary in hot weather or when long journeys are made.

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Fig. 5

Fig. 1
Electrical

FUSES

Fig. 2

The fuses are housed under the fuse cover (1) mounted in the engine compartment adjacent to the battery.

Fuse connecting 1-2. The fuse (2) protects one parking lamp, one tail lamp, one number-plate lamp, and one front and rear side marker lamp.

Fuse connecting 3-4. The fuse (3) protects one parking lamp, one tail lamp, one number-plate lamp, and one front and rear side marker lamp.

Fuse connecting 5-6. The fuse (4) protects the circuits which operate only when the ignition is switched on. These circuits are for the direction indicators, brake stop lamps, reverse lamps and seat belt warning.

Fuse connecting 7-8. The fuse (5) protects the equipment which operates independently of the ignition switch, namely horns, interior and luggage compartment lamps, headlamp flasher, brake failure warning lamp, door and seat belt audible warning, and the cigar-lighter (if fitted).

Two spare fuses (6) are provided and it is important to use the correct replacement fuse. The fusing value, current rated 17 amp. continuous (35 amp. blow rated), is marked on a coloured slip of paper inside the glass tube of the fuse.

Line fuses

Fig. 2

Auxiliary equipment—white/green and green/pink wiring. The 17 amp. continuous current rated (35 amp. blow rated) line fuse (7) protects the windscreen wiper, windscreen washer, heater blower motor and radio circuits when the ignition switch is in position '1'.

Seat belt and starter motor interlock control unit—brown and brown/purple wiring. The 500 mA. continuous current rated line fuse (8) protects the circuits within the control unit. Under no circumstances must any alteration be made to the specified fuse rating.

Hazard warning. The 17 amp. continuous current rated (35 amp. blow rated) line fuse (9) protects the hazard warning lamps and is located behind the hazard warning switch. It is accessible only when the centre console is withdrawn (see page 39).
Warranty Applicable to the Emission Control System

British Leyland Motors Inc., 600 Willow Tree Road, Leonia, New Jersey 07605, warrants to the ultimate purchaser and each subsequent purchaser of the vehicle that it has been designed, built and equipped so as to conform at the time of sale with all U.S. emission standards applicable at the time of manufacture, and that it is free from defects in materials and workmanship which would cause it not to meet these standards for five years from the first retail delivery of the vehicle or 50,000 miles, whichever occurs first. Failures which result from lack of proper maintenance or from misuse or abuse of the vehicle or engine are not covered by this Warranty.

Like any other piece of complicated machinery, your car will need regular attention and service to make sure that the Emission Control System continues to function properly. This is the owner's responsibility. The manufacturer cannot guarantee that emissions will not rise to unacceptable levels if maintenance of the System is not carefully and regularly done as provided in this manual.

The Warranty guarantees the Emission Control System to be free of 'defects'. Ordinary wear and tear on the vehicle and the engine, sufficient to require replacement of parts and components at regular intervals, is not evidence of a 'defect'. As these may affect performance of the Emission Control System, the owner should have these regularly inspected during the Recommended Service Procedures, and replaced where necessary. Some of these replacement items (such as spark plugs) are scheduled for regular replacement under the Maintenance Guidelines. Other illustrations: mufflers and other parts of the exhaust system will normally require replacement during five years; engine valves must be regularly inspected, and replaced where necessary, in order to make sure that emissions will not rise to unacceptable levels. No condition is regarded as a 'defect' if it results from a failure to follow recommended service instructions, including component replacement as indicated.

Use of Unleaded Fuels. Regular use of unleaded or low-lead gasolines may cause difficulties with the engine and will result in malfunctions of the Emission Control System. The anti-wear additives found in leaded gasolines are necessary to avoid difficulties of this type. While an occasional tankful of unleaded or low-lead fuel is unlikely to cause such problems, conditions attributable to sustained use of such fuels will not be considered 'defects'.

These examples are given to show the limits on the manufacturer's responsibility under the Emission Control System Warranty. As in the case of other non-warranty work, the owner will be charged by the dealer for labor, parts and lubricants. We are sure you will find this money well spent as your contribution to cleaner air and an improved environment.

generally speaking, driven each day for at least several miles, some components of the Emission Control System may deteriorate more rapidly than would otherwise be expected, and this does not show a 'defect'.
Radio (if fitted). A separate additional line fuse protects the radio. See the instructions supplied with the radio for the correct fuse ratings.

To change a line fuse, hold one end of the cylindrical fuse holder (10), push in, and twist the other end (11). Remove the fuse (12) from the cylindrical holder.

Blown fuses
The units which are protected by the fuses can be identified from the wiring diagram. A blown fuse is indicated by the failure of all the units protected by it, and is confirmed by examination of the fuse when withdrawn.

Before renewing a blown fuse inspect the wiring of the units that have failed for evidence of a short-circuit or other fault.

Accessories
If an electrical accessory is being fitted and it is required to operate independently of the ignition circuit it should be connected to terminal '8' on the fuse block; if it is required to operate only when the ignition is switched on, connect it to terminal '6'. The terminal numbers are marked on the fuse block.

HEADLAMPS
Light unit
To remove a light unit, remove the outer rim retaining screw (1) and withdraw the outer rim (2). Unscrew the three inner rim retaining screws (3), remove the inner rim (4), withdraw the light unit (5), and disconnect the three-pin plug (6).

To fit a light unit, connect the three-pin plug, position the light unit in the headlamp body ensuring that the three lugs formed on the outer edge of the light unit engage in the slots formed in the body, and fit the inner retaining rim. Refit the outer rim.

Beam setting
Two adjusting screws are provided on each headlamp for setting the main beams. The screw (7) is for adjusting the beam in the vertical plane, and the screw (8) is for horizontal adjustment. The beams must be set in accordance with local regulations; resetting and checking should be entrusted to your Distributor or Dealer, who will have special equipment available for this purpose.
Electrical

LAMPS
Parking and direction indicator lamps
Fig. 4
To gain access to the parking and direction indicator bulb, unscrew the two retaining screws (1) and withdraw the rim (2) and lens (3).

Stop, tail, and direction indicator lamps
Fig. 5
Remove the lens retaining screws (1) and slide the lens upwards to gain access to the direction indicator and stop/tail bulbs.

Number-plate lamp
Fig. 6
To change a bulb, remove the two screws (1), pull the lens (2) clear of the lamp body and unclip the bulb (3) from its contacts. When refitting, ensure that the lens engages in the seal lip and that the connectors are correctly fitted.

Side marker lamps
Fig. 7
(1) Front (amber). To renew a bulb, remove the securing screw (1) and lift off the lamp lens, noting that one end is secured by a locating tab (2). When refitting, ensure that the sealing rubber is positioned correctly and that the lens tab (2) is located beneath the lamp body rim before refitting the securing screw.
(2) Rear (red). To gain access to the bulb (3), the rubber lips retaining the chrome bezel and lamp lens should be eased open with a screwdriver and the bezel (1), and lens (2), removed. When refitting ensure that the thick end of the wedge-shaped lens faces rearwards.

Reverse lamps
Fig. 8 (A)
To renew a bulb, remove the two securing screws and withdraw the lens. Press the bulb down towards the lower contact and withdraw it from the lamp. Fit one end of the new bulb into the hole in the lower contact, then press the top of the bulb into the lamp until the point of the cap engages in the hole in the upper contact.

Interior courtesy lamp
Fig. 8 (B)
To replace a defective bulb, remove the two screws securing the lamp lens. Withdraw the festoon-type bulb from the retaining clips.

Luggage compartment lamp
Fig. 8 (C)
The lens is held in the lamp by four locating lugs. To gain access to the bulb, gently squeeze the sides of the lens together and withdraw it from the lamp. The bulb may then be withdrawn from its contacts.
Access to the bulbs is gained from the back of the fascia and/or by removing the centre console.

**Centre console.** Remove the four screws (12) securing the centre console. Withdraw the console, tilting the top forward slightly to clear the under edge of the fascia.

**Heater control lamp bulb.** Remove the push-fit bulb holder (1) from the control and remove the bayonet fixing type bulb (2).

**Instrument panel lamp bulbs.** Remove the push-fit bulb holders (3) from the instruments and unscrew the bulb (4).

**Warning lamp bulbs.** Remove the push-fit bulb holders (5) from the lamps and remove the bayonet type fixing bulbs (6). To remove the ignition and high beam warning bulbs the centre console must also be withdrawn.

**Lights and heater booster switch bulbs.** Remove the push-fit bulb holders (7) from the switches and remove the bayonet type fixing bulbs (8). To remove the lights switch bulb the centre console must also be withdrawn.

**Brake failure warning lamp.** Remove the retaining spring clip (9) and withdraw the holder/test-push assembly from the fascia. Through the two pivot holes in the holder depress the pivot legs (10) and remove the test-push rocker from its holder. Unscrew and remove the bulb (11).

**Hazard switch bulb.** Withdraw the centre console. Remove the push-fit bulb holder (13) from the switch, and remove the bayonet fixing type bulbs (14).

**Hazard warning lamp bulb.** Withdraw the centre console. Remove the push-fit bulb holder (15) from the lamp and remove the bayonet fixing type bulb (16).

**Seat belt warning lamp bulb.** Withdraw the centre console. Remove the push-fit bulb holder (17) from the lamp and remove the bayonet fixing type bulb (18).

**Cigar lighter illumination bulb.** Withdraw the centre console. Squeeze the sides of the bulb hood (19) and remove the hood. Remove the bulb holder (20) from the hood clip and remove the bayonet fixing type bulb (21).
### Electrical

<table>
<thead>
<tr>
<th>Replacement bulbs</th>
<th>Volts</th>
<th>Watts</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headlamp—sealed beam</td>
<td>12</td>
<td>50/40</td>
<td>GLB 380</td>
</tr>
<tr>
<td>Sidelamp (with flasher)</td>
<td>12</td>
<td>5/21</td>
<td>GLB 380</td>
</tr>
<tr>
<td>Stop/tail</td>
<td>12</td>
<td>5/21</td>
<td>GLB 380</td>
</tr>
<tr>
<td>Reverse</td>
<td>12</td>
<td>18</td>
<td>BFS 273</td>
</tr>
<tr>
<td>Number-plate lamp</td>
<td>12</td>
<td>6</td>
<td>GLB 501</td>
</tr>
<tr>
<td>Direction indicator</td>
<td>12</td>
<td>21</td>
<td>GLB 382</td>
</tr>
<tr>
<td>Side marker lamp, front and rear</td>
<td>12</td>
<td>2</td>
<td>BFS 501</td>
</tr>
<tr>
<td>Ignition warning</td>
<td>12</td>
<td>2</td>
<td>GLB 281</td>
</tr>
<tr>
<td>Main beam</td>
<td>12</td>
<td>2</td>
<td>GLB 281</td>
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<td>Direction indicator warning lamp</td>
<td>12</td>
<td>2</td>
<td>GLB 987</td>
</tr>
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<td>Brake warning lamp</td>
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<td>GLB 280</td>
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<td>Panel illumination lamp</td>
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<td>2</td>
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<td>Cigar-lighter illumination</td>
<td>12</td>
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<td>BFS 643</td>
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<td>Luggage compartment lamp</td>
<td>12</td>
<td>6</td>
<td>GLB 254</td>
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<tr>
<td>Courtesy lamp</td>
<td>12</td>
<td>6</td>
<td>GLB 254</td>
</tr>
<tr>
<td>Hazard warning lamp</td>
<td>12</td>
<td>2</td>
<td>GLB 987</td>
</tr>
<tr>
<td>Seat belt warning lamp</td>
<td>12</td>
<td>2</td>
<td>GLB 281</td>
</tr>
<tr>
<td>Switch illumination</td>
<td>12</td>
<td>2</td>
<td>GLB 281</td>
</tr>
<tr>
<td>Heater rotary control illumination</td>
<td>12</td>
<td>2</td>
<td>GLB 281</td>
</tr>
</tbody>
</table>

### Windscreen Wiper and Washer

#### Wiper arms
To re-position a wiper arm on the spindle, hold the spring clip (1) clear of the retaining groove in the spindle and withdraw the arm. Replace the arm in the required position and push it down onto the spindle (2) until it is secured in position by the retaining clip.

#### Wiper blade
To renew a wiper blade pull the arm away from the windscreen. Hold the fastener (3) and the spring retainer (4) away from the wiper arm (5) and withdraw the blade assembly from the arm.

Insert the end of the wiper arm into the spring fastener of the new blade and push the blade into engagement (6) with the arm.

To ensure efficient wiping it is recommended that wiper blades are renewed annually.

### Fuel Pump
Fuel is delivered to the carburetters by an S.U. electric fuel pump. The pump is situated beneath the luggage compartment on the right-hand side.

### Alternator
The following precautions must be observed to prevent inadvertent damage to the alternator and its control equipment.

- **Polarity.** Ensure that the correct battery polarity (negative ground) is maintained at all times; reversed battery or charger connections will damage the alternator rectifiers.

- **Battery connections.** The battery must never be disconnected while the engine is running.

### Windscreen Washer
The windscreen washer system should be checked for correct operation and the reservoir refilled if necessary every week and before a long journey in addition to the mileage intervals given in "MAINTENANCE SUMMARY".

#### Washer reservoir
To fill the reservoir, remove the cap (1) and lift the reservoir (2) from its mounting.

In cold weather the washer reservoir should be filled with a mixture of water and a recommended washer solvent to prevent the water freezing.

On no account should radiator anti-freeze or methylated spirits (denatured alcohol) be used in the windscreen washer.

**Jet adjusting.** Turn the jet (3) using a small screwdriver to adjust the height of the spray. The spray should strike the top of the windscreen.
The ignition timing is set dynamically to give optimum engine performance with efficient engine emission control. Electronic test equipment must be used to check the ignition timing setting and the automatic advance (see 'GENERAL DATA'). Checking and adjustment to the ignition timing setting should be carried out by your Austin MG Dealer control service station.

The dynamic ignition timing must be checked after cleaning, resetting, or renewing of the distributor contacts.

Basic tuning data will be found on the Vehicle Emission Control Information Label located in the engine compartment.

**Distributor**

Cleaning contacts. Inspect the contact points (1) and, if burned, clean with fine emery cloth or fine carborundum stone. Wipe the contacts clean with a fuel-moistened cloth. Renew pitted or worn points.

Lubrication. Very lightly smear the pivot post (2) and around the cam (3) with grease. Add a few drops of oil through the hole in the contact breaker plate to lubricate the centrifugal weights and around the screw (5) in the centre of the cam spindle (do not remove this screw as clearance is provided for oil to pass).

Avoid over-lubricating. Carefully wipe away all surplus lubricant and see that the contact breaker points are perfectly clean and dry.

Contact breaker gap. Turn the crankshaft until the points are fully open. Check the contact gap (1) with a feeler gauge (see 'GENERAL DATA'); the gauge should be a sliding fit in the gap.

If the gap varies appreciably from the gauge thickness, slacken the contact plate securing screw (6) and adjust the gap by inserting a screwdriver in the notched hole (7) at the end of the plate and turning clockwise to decrease and anti-clockwise to increase the gap. Tighten the securing screw. Turn the crankshaft and recheck the gap. Refit the rotor, wipe the inside of the distributor cover clean and refit.

Contact set renewing. Remove the nut (8) and lift the top insulating bush and both leads from the stud. Remove the securing screw (6) with its spring and plain washer, and lift off the one-piece contact set. If removal of the moving contact only is required leave the securing screw (6) in position.

**Spark plugs**

The spark plugs should be cleaned, preferably with an air-blast service unit.

Check the plug gaps, and reset if necessary to the recommended gap (see 'GENERAL DATA'). To reset, use a special Champion spark plug gauge and setting tool; move the side electrode, never the centre one.

When refitting the plugs make sure that the washers are not defective in any way.

Screw the plug down by hand as far as possible, then use a spanner for tightening only. Always use a tubular box spanner to avoid possible damage to the insulator, and do not under any circumstances use a movable wrench. Never overtighten a plug, but ensure that a good joint is made between the plug body, washer, and cylinder head. Wipe clean the outside of the plugs before reconnecting the H.T. leads.

When fitting new spark plugs ensure that only the recommended type and grade are used (see 'GENERAL DATA').
ENGINE

LUBRICATION

Checking

Fig. 1

The level of the oil in the engine sump is indicated by the dipstick (3) on the right-hand side of the engine. Maintain the level at the 'MAX' mark on the dipstick and never allow it to fall below the 'MIN' mark. The oil level should always be checked before a long journey.

The filler (2) is on the forward end of the rocker cover and is provided with a quick-action cap. The filler cap also incorporates a filter for the crankcase emission control system.

Draining

To drain the engine oil, remove the drain plug (1) located on the right-hand side at the rear of the sump. This operation should be carried out while the engine is warm.

Clean the drain plug; check that its copper sealing washer is in a satisfactory condition, and refit.

Filling

Fill the engine with the correct quantity of recommended oil. Run the engine for a short while then allow it to stand for a few minutes before checking the level with the dipstick.

Oil filter changing

Fig. 1

The oil filter is a disposable cartridge type.

To renew, unscrew the cartridge (4) from the filter head (5) and discard the cartridge.

NOTE. If difficulty in unscrewing the cartridge is experienced, consult your Distributor or Dealer.

Smear the new seal (6) with engine oil and fit it into its groove in the new cartridge. Screw the cartridge to the filter head using hand force only.

Refill the engine with the correct quantity of a recommended lubricant, start the engine and check for oil leakage.

DRIVE BELT

Alternator

Fig. 2

Tension. When correctly tensioned, a total deflection of 1/2 in. (13 mm) under moderate hand pressure, should be possible at the midway point of the longest belt run between the pulleys.

Adjusting. To adjust the belt tension, slacken the securing bolts (1) and adjusting link nuts (2), and move the alternator to the required position. Apply any leverage necessary to the alternator end bracket (3) only and not to any other part; to avoid damaging the drive-end bracket the lever should preferably be of wood or soft metal. Tighten the bolts and re-check the belt tension. DO NOT OVERTIGHTEN as this will impose an excess loading on the drive bearings.

VALVE ROCKER CLEARANCE

Checking

Fig. 3

Remove the rocker cover and insert a 0.012 in. feeler gauge between the valve rocker arms and valve stems (inset). The gauge should be a sliding fit when the engine is cold. Check each clearance in the following order:

Adjusting

Check No. 1 valve with No. 8 fully open. Check No. 8 valve with No. 1 fully open.

Slacken the adjusting screw locknut on the opposite end of the rocker arm and rotate the screw clockwise to reduce the clearance or anti-clockwise to increase it. Retighten the locknut when the clearance is correct, holding the screw against rotation with a screwdriver.
EMISSION CONTROL SYSTEMS

You and each subsequent owner of the car are urged to make sure that the recommended maintenance procedures are carried out at the intervals specified. For the emission controls to continue to function effectively, it is strongly recommended that you arrange for regular maintenance inspections to be carried out by your Austin MG Dealer or by any other qualified service outlet which regularly performs such service on British Leyland cars.

You have been provided with a Passport to Service which contains an inspection and maintenance schedule up to 50,000 miles or 5 years.

You should have the maintenance record completed by your Austin MG Dealer (or by other dealer or station equipped to render such service) at the regular mileage intervals indicated in the Schedule. The Handbook and Passport to Service should be handed to subsequent purchasers of the vehicle at the time of sale so that the maintenance instructions are available and that the record of maintenance can be continued.

You are also urged to study with care the section covering ‘MALFUNCTION IDENTIFICATION’. Study of this section will be of aid to you in detecting possible malfunctions of the emission controls so that necessary service measures can immediately be taken.

IMPORTANT

Your attention is particularly drawn to the following:

1. Maintenance and service charges applicable to the emission control system are not covered by the warranty and are not reimbursable, unless shown to have been caused by defects in materials and workmanship covered by the warranty.

2. Our MG engines have not been designed for regular use of unleaded or low lead gasoline and use of such fuels cannot be recommended as they could have a detrimental effect on engine components, resulting in loss of performance, excess exhaust emissions and possibly complete engine failure.

General description

This section gives a general description of the crankcase, exhaust and fuel evaporative emission control systems fitted to this vehicle and the function of their individual components. It must be emphasized that correct carburettor adjustment and ignition timing which have been pre-set at the factory are essential for the efficient functioning of the exhaust emission controls. Should it become necessary to check these settings this work should be carried out by an Austin MG or British Leyland Dealer who has the specialist equipment and training to undertake these adjustments.

The basic engine tuning data will be found on the emission control information label located in the front of the engine compartment.

Crankcase Emission Control

The engine crankcase breather outlet incorporates an oil separator flame-trap which is connected by hoses to the controlled depression chamber between the piston and the throttle disc valve of the carburettor(s). Piston blowby fumes are drawn into the chamber where they combine with the engine inlet charge for combustion in the engine cylinders in the normal way. Fresh filtered air is supplied to the engine crankcase through a hose connected between the engine valve rocker cover and the charcoal canister of the fuel evaporative emission control system.
Emission Control Systems

Exhaust Emission Control

The exhaust emission control system is designed to give the required degree of control of the carbon monoxide, unburnt hydrocarbons and oxides of nitrogen content of exhaust gases.

The main feature of the exhaust emission control system is a combination of the engine modification and air injection techniques and consists of modified carburetters, modified ignition timing, and air injection into the exhaust ports.

The quantity of air-polluting elements in the gases leaving the exhaust pipe is reduced by adding air to the hot gases immediately they leave the combustion chambers of the engine. The injection of air into the exhaust gases promotes a continued conversion of the undesirable hydrocarbon and carbon monoxide components of the exhaust gases to relatively harmless carbon dioxide and water.

An air pump mounted on the front of the engine, and belt driven from the water pump pulley, supplies air under pressure through hoses and a check valve and distribution manifold to injectors in each exhaust port in the engine cylinder head. The check valve prevents high pressure exhaust gases from blowing back into the air pump due to, for example, pump drive failure.

Air from the pump is also supplied to a gulp valve, the outlet of which is connected to the engine inlet manifold. A small bore sensing pipe connected between the inlet manifold and the diaphragm chamber of the gulp valve relays changes in manifold depression to the valve which will open under certain conditions such as those created by deceleration or engine overrun.

When the gulp valve opens a small quantity of air is admitted directly into the inlet manifold to lean off the rich air/fuel mixture which is present in the manifold under conditions immediately following throttle closure. This mixture, having been reduced to a burnable condition, combines with engine inlet charge for combustion in the engine cylinders in the normal way.

The carburetters are manufactured to a special exhaust emission specification and are tuned to give the maximum emission control consistent with retaining vehicle performance and driveability. The metering needle is arranged in such a manner that it is always lightly spring loaded against the side of the jet to ensure consistency of fuel metering. A spring loaded valve incorporated in the throttle disc limits the inlet manifold depression and ensures that during conditions of engine overrun the air/fuel mixture enters the engine cylinders in a burnable condition consistent with low emission levels.

The ignition distributor is tuned with slightly retarded ignition at low engine r.p.m. compared with non-emission equipped vehicles, and the timing is balanced between mechanical and vacuum characteristics to give optimum timing consistent with low emissions.

Fuel Evaporative Loss Control

To prevent air pollution by vapours from the fuel tank and carburettor vents, the control equipment stores the vapour in a charcoal filled canister while the engine is stopped and disposes of it via the engine crankcase emission control system when the engine is running.

The fuel tank venting is designed to ensure that vapours are vented through the control system even when the car is parked on an inclined surface.

A capacity limiting device in the fuel tank ensures sufficient free capacity is available after filling to accommodate fuel which would otherwise be displaced as a result of a high temperature rise. The inclusion of a small separation tank in the vapour line prevents liquid fuel from being carried with the vapour to the storage canister.

---

Fig. 2 The layout of the fuel evaporative loss control system

- Oil separator/flame trap
- Breather pipe
- Restrictor connection
- Purge line
- Air vent pipe
- Sealed oil filler cap
- Charcoal adsorption canister
- Vapour lines
- Fuel tank

- Sealed fuel filler cap
- Vapour line
- Vapour tube
- Capacity limiting tank
- Separation tank
- Fuel pipe
- Fuel pump
- Fuel line filter
Emission Control Systems

MALFUNCTION IDENTIFICATION
Check the following items regularly for visual signs of a malfunction and also if any of the Driving Symptoms listed should persistently occur. If you are unable to locate and/or correct the malfunction you are advised to contact your Austin MG Dealer immediately.

Visual Checks
1. Condition and adjustment of drive belts.
2. Baked or overheated hose between air pump and check valve.
3. All hoses for security, damage and deterioration.
5. Oil filler cap for sealing.

Driving Symptoms
1. Violent backfire in exhaust system.
2. Hesitation to accelerate on re-opening the throttle after sudden throttle closure.
3. Engine surges (erratic operation at varying throttle openings).
4. Engine idles erratically or stalls.
5. Noisy air pump.
6. Ignition warning light on above idle speed (slack or broken fan belt).
7. Smell of fuel vapours.
9. Lack of power.
10. High fuel consumption.
11. Engine misfires (engine jerks on cruise and acceleration).
12. High temperature indicated (overheating of coolant).

MAINTENANCE OPERATIONS
All items marked + in the 'MAINTENANCE SUMMARY' given on pages 60 and 61 are emission control related.

Adsorption canister
Fig. 3
The charcoal adsorption canister must be renewed every 24,000 miles or 24 months.
To renew the canister, disconnect the air vent pipe (1), vapour pipes (2) and purge pipe (3) from their connections on the canister. Remove the securing bracket nut and bolt (4), collecting the spacer, and remove the canister.
When refitting, ensure that all connections to the canister are tightened securely.

Gulp valve
Fig. 4
To renew, disconnect the hoses (1) and sensing pipe (1) from the gulp valve. Unscrew the mounting screws and nuts (2) and remove the gulp valve (3). Fit the new valve, re-connect the hoses and sensing pipe, ensuring that all joints are made secure and airtight.

Fuel line filter

Purge line restrictor
To check, disconnect the purge line from the rocker cover elbow. Examine the orifice of the restriction formed in the elbow for obstruction. Clear any dirt or deposits from the restrictor orifice, using a length of wire.
Emission Control Systems

**AIR PUMP**
The air pump should be checked for correct functioning every 24,000 miles or 24 months.

**Drive belt**
*Fig. 5*

**Tension.** When correctly tensioned, a total deflection of ½ in. (13 mm.) under moderate hand pressure, should be possible at the midway point of the longest belt run between the pulleys.

**Adjusting.** To adjust the belt tension, slacken the securing bolts (1) and adjusting link nuts (2), and move the air pump to the required position. Tighten the bolts and re-check the belt tension. **DO NOT OVERTIGHTEN** as this will impose an excess loading on the drive bearings.

**Air cleaner**
*Fig. 6*

The element of the air pump air cleaner must be renewed every 12,000 miles (20000 km.) or 12 months; more frequent changes may be necessary in dusty operating conditions.

Unscrew the self-locking nut (1), withdraw the cover (2) and discard the element (3). Clean the inside of the cover thoroughly and re-assemble using a new element.

**Filler caps**
Both the engine oil filler cap and the fuel tank filler cap are non-venting and form a seal on the filling apertures.

**Lubrication**

**Controlling Maladjustment or the fitting of parts not to the required specification may render these features ineffective.**

**Carburetter**
*Fig. 2*

The air cleaner covers and elements should only be removed when the elements are being renewed. To fit new elements, remove the interconnecting bracket securing nut (1) and unscrew the air cleaner bolts (2) from the mounting plate (3). Lift off the assembly, remove the cover (5) and re-assemble using a new element.

**Drive belt**
*Fig. 5*

**Adjusting.** To adjust the belt tension, slacken the securing bolts (1) and adjusting link nuts (2), and move the air pump to the required position. Tighten the bolts and re-check the belt tension. **DO NOT OVERTIGHTEN** as this will impose an excess loading on the drive bearings.

**Air cleaner**
*Fig. 6*

The element of the air pump air cleaner must be renewed every 12,000 miles (20000 km.) or 12 months; more frequent changes may be necessary in dusty operating conditions.

Unscrew the self-locking nut (1), withdraw the cover (2) and discard the element (3). Clean the inside of the cover thoroughly and re-assemble using a new element.

**Filler caps**
Both the engine oil filler cap and the fuel tank filler cap are non-venting and form a seal on the filling apertures.

**IT IS ESSENTIAL TO THE SATISFACTORY OPERATION OF THE EVAPORATIVE LOSS SYSTEM THAT BOTH CAPS ARE ALWAYS REFITTED CORRECTLY AND TIGHTENED FULLY. A DEFECTIVE CAP OR CAP SEAL MUST BE REPLACED.**

**FUEL SYSTEM**

**AIR CLEANERS**
The elements of the carburettor air cleaners must be renewed every 12,000 miles (20000 km.) or 12 months; more frequent changes may be necessary in dusty operating conditions.

**Carburettor**
*Fig. 2*

The carburettor incorporates features which assist in reducing exhaust emissions. Maladjustment or the fitting of parts not to the required specification may render these features ineffective.

**Lubrication**
*Fig. 2*

**Carburettor.** Unscrew the damper cap at the top of the carburettor and withdraw the damper. Top up with clean engine oil to bring the oil level 1 inch below the top of the carburettor damper tube. Push the damper assembly back into position and screw in the cap. Under no circumstances should heavy bodied lubricant be used. Failure to lubricate the piston damper may cause the piston to flutter and reduce acceleration and have an adverse effect on exhaust emission.

**Throttle.** Lubricate the carburettor throttle and choke control linkages and cables, and the accelerator pedal fulcrum.

**Tuning**
*Fig. 3*

The efficient operation of the engine and exhaust emission control equipment depends not only on correct carburettor settings but also on correct ignition timing, contact breaker and spark plugs and valve rocker clearances. It is essential that these items are checked before adjusting the carburetters. Tuning of the carburetters is confined to setting the idle and fast idle speeds and the mixture setting at idle speed. Adjustments should only be undertaken on cars required to conform with exhaust emission control regulations if the use of a reliable tachometer, carburettor balance meter and an exhaust gas analyser (CO meter) is available.

1. Remove the air cleaners.
2. Top up the carburettor piston dampers with recommended engine oil to the correct level.
3. Check the throttle control for correct functioning.
4. Ensure that the mixture control (choke) will return fully, that the cable has \( \frac{1}{8} \) in. (2 mm.) free play (1) before it starts to pull on the lever and a small clearance exists between the fast idle screws (2) and their cams.
5. Raise each carburettor lifting pin (3), release the pin and check that the piston falls freely onto the bridge of the carburettor, indicated by a distinct metallic click. Consult your Distributor/Dealer if the piston fails to fall freely.
6. Connect a reliable tachometer.
7. Start the engine and run it at a fast idle speed until it attains normal running temperature then run it for a further five minutes.
8. Increase the engine speed to 2,500 rev./min. for 30 seconds.

**NOTE.**—Tuning can now be commenced. If delay prevents the adjustment being completed within three minutes, increase the engine speed to 2,500 rev./min. for 30 seconds and then continue tuning. Repeat this clearing procedure at three minute intervals until tuning is completed.
9. Check the idle speed (tachometer), see ‘GENERAL DATA’ and check the carburetters for balanced air intake using a balance meter.
10. If the balance is not correct, adjust as follows: release a throttle connector (6) between the carburetters and adjust by turning the throttle adjusting screw (4) on one of the carburetters until the balance is correct. Then adjust the idle speed by turning the throttle adjusting screw (4) on each carburettor by the same amount. Re-check the carburettor balance.

Check the throttle shaft pin clearance and adjust if necessary—see paragraph 17.

If a smooth idle at the correct speed and balance is not obtainable adjust the idle speed mixture setting as follows:
11. Stop the engine. Remove each suction chamber and piston, and screw the jets (5) up until they are flush with the bridge of the carburettor or up as far as possible. Turn down the jet adjusting nut (5) on each carburettor two complete turns. Refit the piston and suction chambers and top up the piston damper oil levels.

**NOTE.**—This operation need not be carried out if it is known that the jets are in the same relative position.

---

12. Start the engine. Turn the jet adjusting nut (5) on both carburetters in the same direction, one flat at a time, up to weaken or down to richen, within the limits of the adjustment restrictor until the fastest speed is recorded on the tachometer. Now turn the nuts up slowly until the speed just commences to fall. Turn the nuts down very slowly by the minimum amount until the maximum speed is regained.
13. From this position (lean best idle), turn the jet adjusting nut on both carburetters down (rich) by the amount shown on the Vehicle Emission Control Information Label located in the engine compartment.
14. Using the exhaust gas analyser check that the percentage CO reading is within the prescribed limits. If the reading falls outside the limits reset both jet adjusting screws equally by the minimum amount necessary to bring the reading just within the limits. If a smooth idle at the correct speed or the prescribed CO reading cannot be obtained you should consult your Austin MG Dealer.
15. Recheck the idle speed and carburettor balance and adjust as necessary with the throttle adjusting screws.
16. Set the throttle interconnection clamping levers so that the link pin is 0.012 in. (0.31 mm.) away from the lower edge of the forks (see inset 8) as follows:
17. Stop the engine and slacken both clamping bolts (6) on the throttle spindle interconnection.
18. Insert a 0.012 in. (0.3 mm.) feeler gauge (7) between the throttle shaft stop and the carburettor heat shield. Move each throttle spindle interconnection lever downwards until the lever pin rests on the lower arm of the carburettor throttle fork. Tighten the clamping bolts (6) Fig. 4 on each fork, ensuring that there is approximately \( \frac{1}{8} \) in. (0.79 mm.) end float on the interconnection rod. Remove the feeler gauge. The pins on the throttle spindle lever should then have clearance in the throttle fork.
19. Ensure that \( \frac{1}{8} \) in. (2 mm.) free movement exists before the cable starts to pull on the lever.
20. Run the engine at 1,500 r.p.m. and check the carburetters for balance.
21. Pull out the mixture control knob until the linkage is about to move the carburettor jets. Lock the knob in position.
22. Using the balance meter to ensure equal adjustment, turn the fast idle adjusting screws equally to give the fast idle speed—see ‘GENERAL DATA’.
23. Stop the engine.
24. Refit the air cleaners.
GEARBOX AND REAR AXLE

Gearbox

To gain access to the gearbox combined oil filler and level plug, lift the floor covering on the left-hand side of the gearbox cover and remove the rubber plug. Clean around the filler plug before removing it.

The oil level should be maintained at the bottom of the filler plug aperture threads.

Rear axle

A combined oil filler and level plug is located on the rear of the axle. The oil level should be maintained at the bottom of the plug aperture; ensure that the car is standing level when checking. After topping up the oil level, allow sufficient time for any surplus oil, which may have been added accidentally, to run out of the aperture before replacing the plug.

Ensure that the rear axle oil is not drained when the After-sales Service is carried out.

STEERING AND SUSPENSION

Lubrication

Two lubricating nipples (1) and (2) are provided on each swivel pin. To lubricate, charge the nipples with one of the recommended greases. To ensure full penetration of the lubricant, this operation is best carried out with the car partly jacked up.

Steering connections

The steering tie-rod ball joint at each side is provided with a lubrication nipple (3). To lubricate, charge the nipples with one of the recommended greases.

Front suspension outer fulcrum pins

A lubricating nipple (4) is provided on each of the outer fulcrum pins. To lubricate, charge the nipples with one of the recommended greases.

Steering rack

Inspect the gaiters of the steering rack for leakage of lubricant and deterioration. If leakage of lubricant is evident, consult your Distributor or Dealer.

Front wheel alignment

Incorrect front wheel alignment can cause excessive and uneven tyre wear. The front wheels must be set parallel or toe-in 1/4 in. (3-2 mm.) to each other when the steering is in the straight-ahead position.

To set the wheel alignment correctly requires the use of a special gauge; this work should be entrusted to your Distributor or Dealer.
### GENERAL DATA

<table>
<thead>
<tr>
<th>Engine</th>
<th>Type</th>
<th>Bore (in. (70.61 mm.))</th>
<th>Stroke (in. (81.28 mm.))</th>
<th>Cubic capacity (cu. in. (1274-86 c.c.))</th>
<th>Compression ratio (8:1)</th>
<th>Firing order (1, 3, 4, 2)</th>
<th>Valve rocker clearance (cold) (0.012 in. (3 mm.))</th>
<th>Idle speed (1,000 r.p.m.)</th>
<th>Fast idle speed (1,100 r.p.m. to 1,200 r.p.m.)</th>
<th>Oil pressure: Normal (approx.) (40 to 70 lb./sq. in. (2.81 to 492 kg./cm.²))</th>
<th>Oil pressure: Idling (approx.) (20 lb./sq. in. (1.4 kg./cm.²))</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ignition</th>
<th>Spark plugs: Champion N-9Y</th>
<th>Spark plug gap (0.024 to 0.026 in. (62 to 66 mm.))</th>
<th>Stroboscopic ignition timing (9° B.T.D.C. at 1,500 r.p.m.)</th>
<th>Timing marks</th>
<th>Contact breaker gap (0.014 to 0.016 in. (35 to 40 mm.))</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Fuel system</th>
<th>Recommended octane rating (Regular 91 or above (see page 21))</th>
<th>Carburetters (Two S.U. type HS2)</th>
<th>Carburettor needle (ABC (spring-loaded type))</th>
<th>Pump (S.U. type AUF 305 electric)</th>
</tr>
</thead>
</table>

|--------------|--------------------------|-----------------------------------|-----------------|----------------|----------------|-----------------|

<table>
<thead>
<tr>
<th>Capacities</th>
<th>Fuel tank (evaporative loss) (6½ gallons (7·7 U.S. gallons, 29 litres))</th>
<th>Engine sump (including filter) (61 pints (7·8 U.S. pints, 3·7 litres))</th>
<th>Gearbox (21 pints (2·7 U.S. pints, 1·3 litres))</th>
<th>Rear axle (12 pints (2·1 U.S. pints, 0·9 litres))</th>
<th>Cooling system (with heater) (6 pints (7 U.S. pints, 3·4 litres))</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Track: Front (3 ft. 10½ in. (118·27 cm.))</th>
<th>Track: Rear (3 ft. 10¼ in. (117·63 cm.))</th>
<th>Turning circle: Left lock (32 ft. 1½ in. (9·79 m.))</th>
<th>Right lock (31 ft. 2½ in. (9·51 m.))</th>
<th>Front wheel alignment (Parallel to 0 in. toe-in (0 to 3·2 mm.))</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Wheels and tyres</th>
<th>Wheel size: Pressed spoke (4½ SL x 13)</th>
<th>Tyres (Wire 145SR x 13)</th>
<th>Size (Radial ply)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tyre pressures</th>
<th>Normal car weight (22 lb./sq. in. (1.55 kg./cm.²))</th>
<th>Maximum weight (26 lb./sq. in. (1.83 kg./cm.²))</th>
</tr>
</thead>
</table>

It is recommended that for sustained speeds at near the maximum the above tyre pressures are increased by 4 lb./sq. in. (28 kg./cm.²).

### Weights

<table>
<thead>
<tr>
<th>Loading conditions</th>
<th>Total weight (Front 868 lb. (394 kg.), Rear 878 lb. (398 kg.))</th>
<th>Distribution (Front 1746 lb. (792 kg.), Rear 868 lb. (394 kg.))</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Kerbside</th>
<th>Including full fuel tank and all optional extras (1746 lb. (792 kg.), 866 lb. (394 kg.))</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Normal</th>
<th>Kerbside weight including driver and passenger (2046 lb. (928 kg.), 966 lb. (438 kg.))</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Gross</th>
<th>Maximum weight condition, refer to note below (2196 lb. (996 kg.), 933 lb. (423 kg.))</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Maximum permissible towing weight</th>
<th>1344 lb. (610 kg.)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Towbar hitch load</th>
<th>Maximum 100 lb. (45·4 kg.)</th>
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</thead>
</table>

**NOTE:** Due consideration must be given to the overall weight when fully loading the car. Any loads carried on a luggage rack or downward load from a towing hitch must also be included in the maximum loading.
MAINTENANCE SUMMARY

Basic engine tuning data will be found on the Vehicle Emission Control Information label located in the engine compartment.

Detailed maintenance instructions will be found on the page in brackets after each item.

The following items should be checked weekly by the driver:

- Engine oil level (44)
- Brake fluid level (30)
- Radiator coolant level (25)
- Battery electrolyte level (33)
- Windshield washer reservoir fluid level (41)
- All lights for operation
- Horn operation (12)
- Windshield wipers operation (12)

MAINTENANCE INTERVALS

* These items are emission related

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

LUBRICATION

Lubricate all points (64)

Renew engine oil (44)

Renew engine oil filter (44)

ENGINE

- Check all drive belts; adjust if necessary (45 and 52)
- Check all hoses, vacuum, air and water, for condition and tightness
- Renew all air filter cleaner elements (air pump and carburetter) (52 and 53)
- Check restrictor in rocker cover purge line for obstruction
- Adjust valve rocker clearances (45)
- Check gulp valve operation (renew if necessary)

FUEL SYSTEM

- Renew fuel line filter
- Check condition of fuel filler cap seal
- Check fuel pipes and unions for chafing, corrosion and leaks
- Top up carburetter piston dampers (53)

OSCILLOSCOPE AND COMBUSTION CHECK

- Check distributor points, resistance and dwell (42)
- Renew distributor points (42)
- Check ignition timing and distributor advance or retard characteristics (42)
- Check spark plugs (cruse and unload condition)(43)
- Renew spark plugs (43)
- Check distributor cap and wires
- Check charging system output
- Power check, engine cylinder comparison
- Check engine idle speed (53)
- Check choke and carburetter fast idle setting (53)
- Check exhaust emission (CO HC) at idle

SAFETY

Check/adjust front wheel alignment (57)
Check visually hydraulic pipes, unions for chafing, leaks and corrosion
Check/adjust hand brake operation (32)
Inspect brake pads for wear and discs for condition (31)
Inspect brake linings and pads for wear, drums and discs for condition (31)
Check/adjust headlights (35)
Check tyres visually and report depth of tread, cuts in fabric, exposure of ply or cord structure, lumps or bulges
Check operation of all door locks and window controls
Check condition, operation and security of seats and seat belts/interlock
Check wiper blades for condition (40)

ROAD TEST

Ensure that operation of vehicle is satisfactory and report all items requiring attention

- 24,000 miles or 24-month intervals
  - Renew all drive belts (45 and 52)
  - Check air pump (correct or renew if necessary)
  - Renew adsorption canister (51)
  - Renew distributor cap and wires
- 36,000 miles or 36-month intervals
  - Renew all hydraulic brake seals

The maintenance summary of this and the preceding page is the minimum service required to maintain your vehicle under normal driving conditions. For other than normal driving conditions and those caused by seasonal changes, we recommend that you consult your Dealer.
### SERVICE

**Service**
Your Distributor or Dealer is provided with the latest information concerning special service tools and workshop techniques. This enables him to undertake your service and repairs in the most efficient and economic manner.

**Service parts and accessories**
Genuine BRITISH LEYLAND and UNIPART parts and accessories are designed and tested for your vehicle and have the full backing of the British Leyland Factory Warranty. ONLY WHEN GENUINE BRITISH LEYLAND AND UNIPART PARTS ARE USED CAN RESPONSIBILITY BE CONSIDERED UNDER THE TERMS OF THE WARRANTY.

For more information on UNIPART, see your British Leyland Distributor or Dealer.

Genuine British Leyland and UNIPART parts and accessories are supplied in cartons and packs bearing either or both of these symbols.

![BRITISH LEYLAND and UNIPART logo]

**Identification**
When communicating with your Distributor or Dealer always quote the commission and engine numbers. When the communication concerns the transmission units or body details it is necessary to quote also the transmission casing and body numbers.

- **Commission number.** Stamped on a plate secured to the left-hand side of the bonnet lock platform.
- **Engine number.** Stamped on a plate secured to the right-hand side of the cylinder block.
- **Gearbox number.** Stamped on the left-hand side of the gearbox casing.
- **Rear axle number.** Stamped on the front of the left-hand rear axle tube near the spring seating.

**Supplementary tool kit**
To supplement the tool kit a waterproof canvas roll containing the following is obtainable from all Distributors. Part No. AKF 1596 should be quoted.

| 6 spanners: | 1 pair 6 in. pliers. |
| 1/4 in. x 6 in. A.F. | 1 7 in. x 6 in. diameter tommy-bar. |
| 3/8 in. x 6 in. A.F. | 1 1 1/2 in. x 6 in. A.F. tubular spanner. |
| 3/8 in. x 6 in. A.F. | 2 screwdrivers. |
| 3/8 in. x 6 in. A.F. | |

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### RECOMMENDED LUBRICANTS

**RECOMMENDED LUBRICANTS**

<table>
<thead>
<tr>
<th>Component</th>
<th>Class</th>
<th>Sensitivity</th>
<th>Minimum performance</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine, Synchromesh Gearbox, Overdrive, Distributor,</td>
<td>All conditions</td>
<td>S.A.E. 30</td>
<td>Shell Super Motor Oil</td>
<td>SHELL</td>
</tr>
<tr>
<td>Automatic Transmission</td>
<td>S.A.E. 40</td>
<td>Shell Super Motor Oil</td>
<td>Shell Super Motor Oil</td>
<td>SHELL</td>
</tr>
<tr>
<td>Manual Transmission</td>
<td>S.A.E. 70</td>
<td>Shell Super Motor Oil</td>
<td>Shell Super Motor Oil</td>
<td>SHELL</td>
</tr>
<tr>
<td>Sternoil</td>
<td>Sternoil</td>
<td>Sternoil</td>
<td>Sternoil</td>
<td>Sternoil</td>
</tr>
<tr>
<td>Dicair</td>
<td>Dicair</td>
<td>Dicair</td>
<td>Dicair</td>
<td>Dicair</td>
</tr>
<tr>
<td>CASTROL</td>
<td>CASTROL</td>
<td>CASTROL</td>
<td>CASTROL</td>
<td>CASTROL</td>
</tr>
<tr>
<td>To 220°C</td>
<td>To 220°C</td>
<td>To 220°C</td>
<td>To 220°C</td>
<td>To 220°C</td>
</tr>
</tbody>
</table>

**Engine Oil**
- Shell Super Motor Oil
- Esso
- Mobil
- BP

**Proprietary**
- Shell Super Motor Oil
- Esso
- Mobil
- BP

**Grease**
- Sternoil
- Dicair
- CASTROL

**Speciality**
- Shell
- Esso
- Mobil
- BP
NOTE: Ensure that the vehicle is standing on a level surface when checking the oil levels.

WEEKLY

1. ENGINE. Check oil level and top up if necessary.

Lubrication service at 3,000 miles or 3 months

2. ENGINE. Drain and refill with new oil.

3. THROTTLE AND CHOKE. Lubricate throttle and choke control linkages, cables, and accelerator pedal fulcrum.

4. REAR AXLE. Check oil level, and top up if necessary.

5. GEARBOX. Check oil level, and top up if necessary.

6. STEERING TIE-ROD BALL JOINT (2 nipples)

7. FRONT SUSPENSION (6 nipples) Give three or four strokes with a grease gun.

8. HAND BRAKE CABLE (1 nipple)

9. HAND BRAKE COMPENSATING LEVER (1 nipple)

10. WHEELS AND HUBS. Lubricate wire wheel and hub splines.

   LOCKS, HINGES AND LINKAGES. Lubricate all door, bonnet, boot locks and hinges; and the hand brake mechanical linkage.

   FRICTION POINTS. Spray lubricant on all friction points.

‘A’ service every 6,000 miles or 6 months; AND ‘B’ service every 12,000 miles or 12 months.

11. ENGINE OIL FILTER. Remove disposable cartridge, fit new.

12. CARBURETTERS. Top up carburetter piston damper.

13. DISTRIBUTOR. Lubricate all parts as necessary.

Recommended oils and greases are given on page 63
BRITISH
LEYLAND

AKD 8640 (1st Edition)  MIDGET III (U.S.A.)
Consumer Information

Vehicle Stopping Distance
Tire Reserve Load
Acceleration and Passing Ability

Austin Morris Group
Longbridge, Birmingham B31 2TB, England
Publication Part No. AKD 8608
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CONSUMER INFORMATION

Vehicle stopping distance

This figure indicates braking performance that can be met or exceeded by the vehicles to which it applies, without locking the wheels, under different conditions of loading and with partial failures of the braking system. The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicles to which this table applies: MG MIDGET III (GAN 5UE)

A. Fully Operational Service Brake

<table>
<thead>
<tr>
<th>Load</th>
<th>Stopping Distance in Feet from 60 mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>187</td>
</tr>
<tr>
<td>Maximum</td>
<td>198</td>
</tr>
</tbody>
</table>

B. Emergency Service Brakes (with Partial Service Brake System Failure)

<table>
<thead>
<tr>
<th>Load</th>
<th>Stopping Distance in Feet from 60 mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>0</td>
</tr>
<tr>
<td>Maximum</td>
<td>610</td>
</tr>
</tbody>
</table>

Stopping Distance in Feet from 60 mph

Tire reserve load

This table lists the tire size designations recommended by the manufacturer for use on the vehicles to which it applies, with the recommended inflation pressure for maximum loading and the tire reserve load percentage for each of the tires listed. The tire reserve load percentage indicated is met or exceeded by each vehicle to which the table applies.

Description of vehicles to which this table applies: MG MIDGET III (GAN 5UE)

Recommended tire size designations

<table>
<thead>
<tr>
<th>Recommended tire size designations</th>
<th>145—13 Radial-ply</th>
</tr>
</thead>
</table>

Recommended cold inflation pressure for maximum loaded vehicle weight

<table>
<thead>
<tr>
<th>Load</th>
<th>26 lb./sq. in.</th>
<th>30 lb./sq. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tire reserve load percentage

1 The difference expressed as a percentage of tire load rating between (a) the load rating of a tire at the vehicle manufacturer's recommended inflation pressure at the maximum loaded vehicle weight and (b) the load imposed upon the tire by the vehicle at that condition.

WARNING. Failure to maintain the recommended tire inflation pressure or to increase tire pressure as recommended when operating at maximum loaded vehicle weight, or loading the vehicle beyond the capacities specified on the tire placard affixed to the vehicle, may result in unsafe operating conditions due to premature tire failure, unfavorable handling characteristics, and excessive tire wear. The tire reserve load percentage is a measure of tire capacity, not of vehicle capacity. Loading beyond the specified vehicle capacity may result in failure of other vehicle components. Consult the Handbook for the full range of recommended tire pressures.

Acceleration and passing ability

This figure indicates passing times and distances that can be met or exceeded by the vehicles to which it applies in the situations diagrammed below.

The low-speed pass assumes an initial speed of 20 MPH and a limiting speed of 35 MPH. The high-speed pass assumes an initial speed of 50 MPH and a limiting speed of 80 MPH.

NOTICE: THE INFORMATION PRESENTED REPRESENTS RESULTS OBTAINABLE BY SKILLED DRIVERS UNDER CONTROLLED ROAD AND VEHICLE CONDITIONS, AND THE INFORMATION MAY NOT BE CORRECT UNDER OTHER CONDITIONS.

Description of vehicles to which this table applies: MG MIDGET III (GAN 5UE)

SUMMARY TABLE

<table>
<thead>
<tr>
<th>Low-Speed Pass</th>
<th>High-Speed Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 FEET; 10.0 SECONDS</td>
<td>1660 FEET; 19.0 SEGONDS</td>
</tr>
</tbody>
</table>

LOW-SPEED

INITIAL SPEED: 20 MPH

TOTAL PASSING DISTANCE, FEET

LIMITING SPEED: 35 MPH

TOTAL PASSING TIME, SECONDS

HIGH-SPEED

INITIAL SPEED: 50 MPH

TOTAL PASSING DISTANCE, FEET

LIMITING SPEED: 80 MPH

TOTAL PASSING TIME, SECONDS

55' TRUCK CONSTANT 20 MPH

55' TRUCK CONSTANT 50 MPH