THE
AUSTIN
'A40' SPORTS

THE following information relates only to the differences between the Austin 'A40' Sports and the Saloon Model. It must, therefore, be used in conjunction with the preceding 'A40' Maintenance Instructions, in order that the vehicle may receive all the periodical attentions necessary to maintain its operating efficiency.

SPECIFICATION

ENGINE: Bore 2.578 ins. (65.48 mm.); stroke 3.5 ins. (89 mm.); capacity 73.17 cu. in. (1,200 c.c.); b.h.p. 50 at 4,800 r.p.m.; max. torque 62 lbs. ft. at 2,400 r.p.m., compression ratio 7.2 to 1.

Type: Four cylinders cast integral with crankcase. Full length water jackets. Detachable cast iron head carrying overhead valve rocker gear and connections for the heater unit. Forged steel crankshaft supported by three detachable "Thinwall" bearings. Forged steel connecting rods with detachable "Thinwall" big-end bearings.

Pistons: Split skirt pistons in aluminium alloy with alumilite finish. One compression, one taper and one oil control ring fitted.

Valves: Overhead valves operated by push-rods. Exhaust valves of heat and corrosion-resisting steel. Inlet valves of silicon chrome alloy steel. Valve oil seals are fitted.

Lubrication: Pressure gear pump forces oil to all main, big-end, camshaft and overhead valve rocker-shaft bearings. Holes in the big-end bearings provide for jet lubrication of the cylinder walls and the front camshaft bearing provides a controlled feed of oil to the timing chain. Both main and big-end bearing oil feeds are of a patented design which ensure longer crankshaft life. A by-pass filter is fitted. Oil capacity 7 pints (4 litres).

Cooling: Circulation by centrifugal type pump with thermostat control. Patented radiator to prevent loss of cooling water through expansion. Cooling system capacity 14 pints (7.3 litres).

Fuel System: Rear tank of 8¾ gallons (37 litres) capacity. AC mechanical pump feed to twin S.U. carburetters with twin air cleaners. The rocker cover vent pipe is connected to the air cleaner and the aluminium alloy induction manifold incorporates a stainless steel hot spot.

Mountings: Flexible inclined "live" rubber mountings, front and rear, with integral torque reaction stops.

CLUTCH: Flexible dry single-plate Borg and Beck clutch. The clutch pedal is isolated from the clutch housing by a special adjustable linkage.

GEARBOX: The gearbox has four forward speeds and reverse. Steering column mounted gear lever, with synchromesh engagement for second, third and top. The third motion shaft is extended in a special housing which provides additional bearings for propeller shaft load. Oil capacity 3 pints (1.71 litres).

TRANSMISSION: Hardy Spicer propeller shaft with needle roller bearing universal joints. The sliding splines of the propeller shaft are housed in the rear end of the gearbox which ensures that they are constantly provided with lubricant.

REAR AXLE: Spiral bevel three-quarter floating. The pinion is carried by pre-loaded taper roller bearings. Oil capacity 2¼ pints (1.28 litres). Axle ratio: 5.14 to 1.

STEERING: Cam gear with 14 to 1 ratio, and provision for taking up wear. Left- or right-hand steering available.

SUSPENSION: Front: Independent coil springs. Wishbones mounted on "Metalastik" rubber bushes with shoulders to take thrust loads. Control by double-acting hydraulic shock absorbers.

Rear: Long semi-elliptic reverse camber springs, underslung and fitted with zinc interleaves. Mounted on silent-bloc bushes and controlled by double-acting hydraulic shock absorbers, interconnected by an anti-roll torsion bar.

BRAKES: Girling hydraulic with two leading shoes on the front wheels. The pistol grip type handbrake is mounted under the fascia close to the steering column, and operates mechanically on the rear wheels only.

WHEELS AND TYRES: Pressed steel disc wheels with ventilation slots. Spare wheel carried in rear luggage compartment.

JACKING: Stevenson jack operated by a wheelbrace lifts either right or left side of the car.

FRAME: Welded pressed steel frame with full length box section side members and box section front and rear cross members. The centre part of the frame is stiffened by cross bracing which ensures great torsional and diagonal stiffness.

ELECTRICAL: 12 volt battery; positive earth; built-in separate head- and side-lights; both head lights have double filament bulbs for dipping; foot controlled dip-switch; twin built-in stop- and tail-lamps; rear number plate lamp; direction indicators; dual windtone horns; windscreen wipers; built-in provision for interior heater (optional extra); compensated voltage control.

BODYWORK: Two-door, four-seater, all-metal sound insulated body with hand-operated folding hood; windscreen and windows of toughened glass; swivelling ventilators on door windows; rear opening doors with concealed hinges; rear built-in luggage compartment; combined ignition, door and luggage compartment key; bonnet lock controlled from inside car.

COACHWORK: Leather upholstery; adjustable front seats; thick carpets with felt underlay; rear window panel can be raised by means of zip fasteners, allowing considerable ventilation in hot weather; practical and attractive fascia with central control panel and full range of instruments.

LEADING DIMENSIONS: Overall length, 13ft. 3½ins.; overall width, 5ft. 1in.; overall height, 4ft. 9ins.; wheelbase, 7ft. 8½ins.; track (front), 4ft. 0½ins.; track (rear), 4ft. 2ins.; ground clearance, 7½ ins.; turning circle, 37ft.; approx. weight, 18 cwt.

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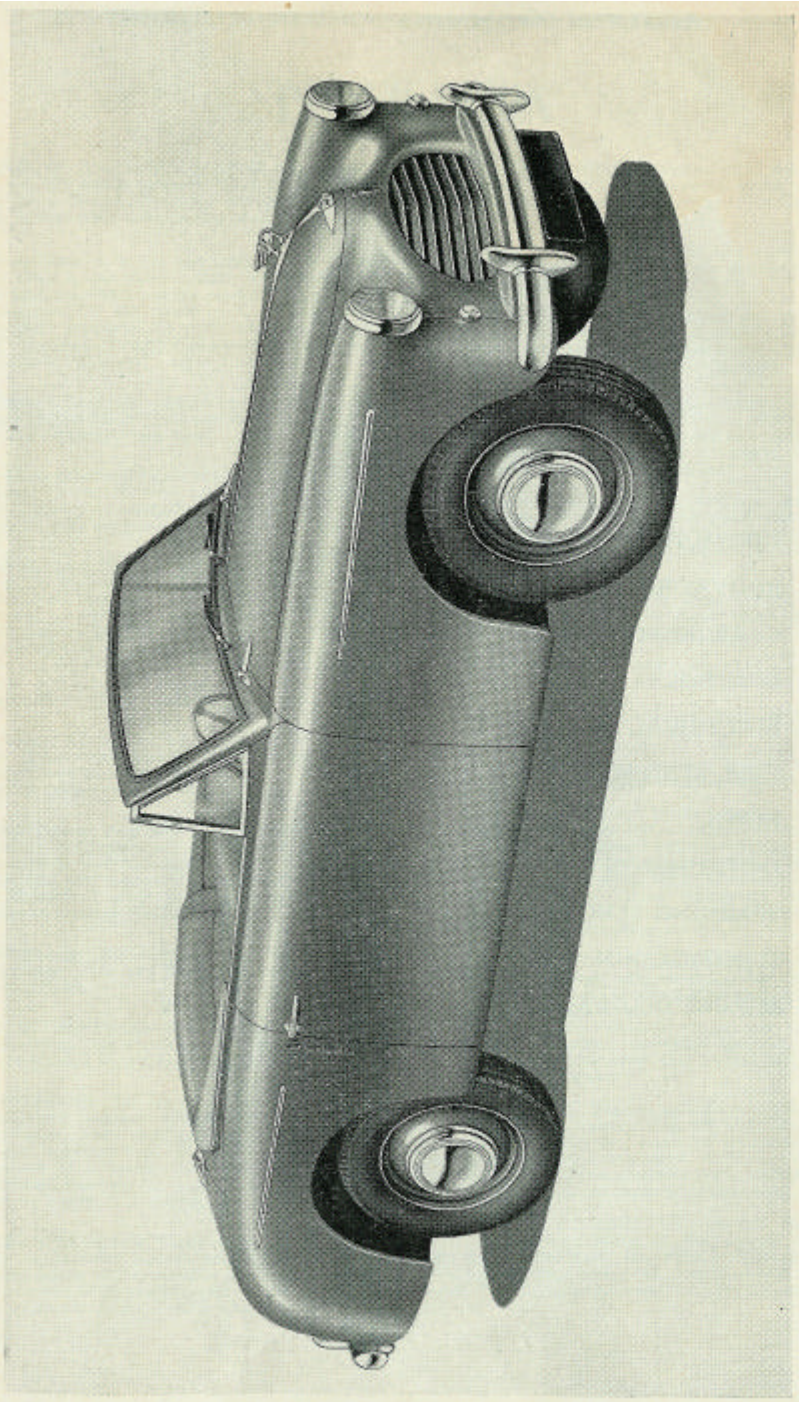
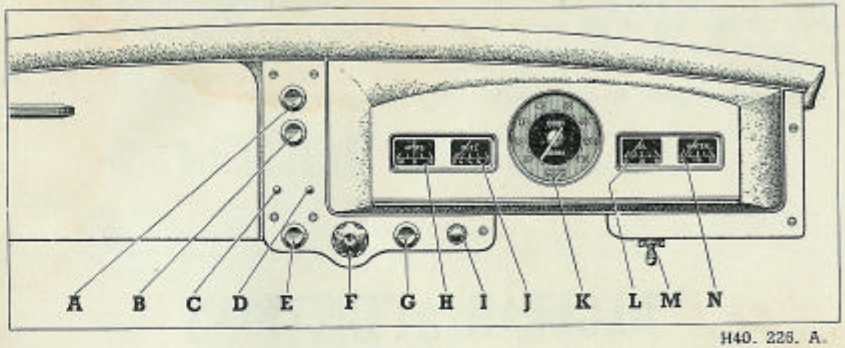


INSTRUMENTS AND CONTROLS



H40. 226. A.

THE INSTRUMENT PANEL

A—Windscreen wiper control.
B—Panel light switch.
C—Headlight beam warning light.
D—Ignition warning light.
E—Starter control.
F—Ignition and lighting switch.
G—Choke control.
H—Ammeter.
I—Heater motor control.
J—Fuel gauge.
K—Speedometer.
L—Oil pressure gauge.
M—Speedometer trip control.
N—Water temperature gauge.

INSTRUMENTS

Speedometer: Registers the vehicle speed and total mileage. The trip figures at the top of the speedometer can be set to zero by pushing up the knob at the bottom (right) of the speedometer, and turning it to the left.

Oil Pressure Gauge: Indicates the oil pressure in the engine. It does not show the quantity of oil in the sump.

Ammeter: Indicates the flow of current into or out of the battery. With the automatic voltage control system little or no charge is shown when the battery is well charged.

Ignition Warning Light: Glows red when the ignition is switched "on" and fades out when the dynamo is charging the battery.

Headlight Beam Warning Light: A red glow appears when the full headlights are switched on, with the two beams full ahead. The light goes out when the headlights are dipped.

Fuel Gauge: Indicates the contents of the tank when the ignition switch is on. When the tank is being filled, switch off and stop the engine. Switch on again and the needle will record the amount of fuel entering the tank.

Water Temperature Gauge: This records the temperature of the cooling water circulating in the cylinder block and radiator. The correct operating temperature under normal conditions should not be below 164°F.

HAND CONTROLS

Choke Control: For use when starting the engine from cold. Pull out to the limit until the engine fires, and return it to the half-way position for rapid warming up. The choke must be fully released at the earliest possible moment.

Ignition Switch: Turn the key clockwise to switch on. Do not leave the switch "on" when the vehicle is stationary—the red warning lamp is a reminder. The ignition key may also be used for locking the driver's door and the luggage boot.

Lighting Switch: This is the centre moulding which surrounds the ignition switch. Turn clockwise to the first notch to put on the sidelights, and to the second to put on the headlights. The headlights are dipped by foot operation.

Starter Switch Knob: Pull out the control knob to start, and release as soon as the engine fires. If the engine fails to start after a few revolutions, do not

operate the starter again until the engine is stationary.

Heater Control Switch: Turn to the right until a click is heard. This starts the heater fan. The further the control is turned the less will be the speed of the fan, due to the fact that a rheostat is incorporated.

Windscreen Wipers: To start the electric wipers gently pull out the wiper control. To park, switch off by pressing the control inwards when the arms are at the end of the stroke. Do not try to push the arms across the windscreen by hand.

Panel Light Switch: Pull out the switch control knob to illuminate the instruments. Only operates when the side-lamps are "on."

REGULAR ATTENTIONS

THE following list of attentions are those which cover components or accessories not common to the 'A40' Saloon and Commercial Vehicles.

All other attentions should be carried out as recommended in the previous pages.

EVERY 1,000 MILES

The Air Filters: Access to the filter elements is gained by removing the top caps, which only involves the release of one screw on each cap. Withdraw the elements, wash thoroughly in petrol, paraffin, or other suitable solvent, and allow to dry. Re-oil the elements with a recommended brand of S.A.E. 20 engine oil, allow to drain, and finally replace in the filters.

EVERY 2,000 MILES

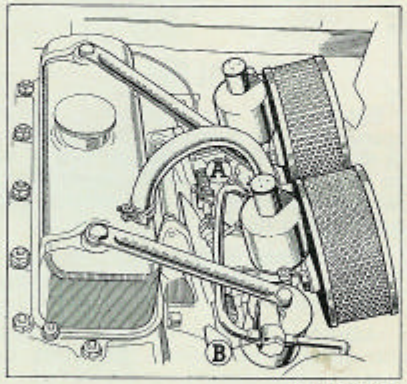
Carburetters: Remove the knurled cap at the top of each carburetter and add a few drops of oil to the suction piston dampers.

EVERY 5,000 MILES

Carburetters: The flow of fuel at the carburetter inlet unions to the float chambers should be checked, and, if necessary, the filters in those unions should be cleaned.

Disconnect the float chamber fuel supply pipes (when the filters may be taken out and cleaned), slacken the float chamber cap nuts, and unscrew the float chamber holding-up bolts. The chambers themselves can then be removed for cleaning.

Be careful not to lose the float levers, pins and needles.



H40. 182. B.

THE AIR FILTERS

A and B are the two fuel intakes to the carburetters which should be checked for tightness occasionally.

EVERY 10,000 MILES

Carburetters: Clean out the suction assembly by removing the two securing screws and lifting off the body in the same plane to avoid damage to the needle.

Lift out the hydraulic damper and wash the assembly in petrol. Dry thoroughly, refit, and replenish the damper with oil. When fully re-assembled, lift the piston to its fullest extent, thus expelling the surplus oil through the top cap, and at the same time lubricating the rod.

This is the only part which requires lubrication, the piston itself and the inside of the suction chamber should be left dry.

The Air Filters: Remove the top caps, and renew the elements.

Sparking Plugs: Renew the sparking plugs, using either Champion NA8 Long Reach or Lodge HL.14. The gaps of these plugs should be maintained at .025".

GENERAL MAINTENANCE

THE following information covers those attentions essential to the satisfactory operation of the car, and which are not already mentioned in the list of "Regular Attentions" or "Service Attentions" given for the 'A40' Somerset.

FUEL SYSTEM

THE CARBURETTERS:

The twin S.U. Carburetters are carefully balanced to ensure that the engine runs perfectly, and it is therefore important that only qualified people are allowed to attend to any major faults:—

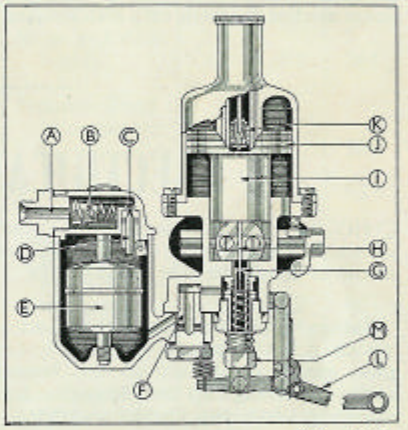
Should the engine run badly, after having previously given good results, look for a minor fault and not a major one.

The two regular maintenance attentions necessary are listed under "Every 2,000 and 5,000 Miles," and are (1) oiling the piston dampers and (2) cleaning the inlet filters.

To obtain the best results always maintain the carburetters in a scrupulously clean condition, and occasionally lubricate the throttle spindles and choke linkages with oil.

In the event of poor running, first make sure the pistons are able to move freely; if they are not, the causes may be as follows:—

1. Dirt in the suction chambers, the cure for which is given under "Every 10,000 Miles."
2. A bent hydraulic damper spoke. Cure: Straighten or replace.
3. A bent jet needle. Cure: Replace. Straightening is not recommended, except in an emergency.
4. An incorrectly centred jet. Cure: Re-centre in the following manner:— Screw the jet-adjusting nut to its weakest position and slacken the jet screw. Gently tap the jet head until the piston falls freely, striking the bridge with an audible click while gradually re-tightening the jet screw.



H70. 28. E.

THE S.U. CARBURETTER

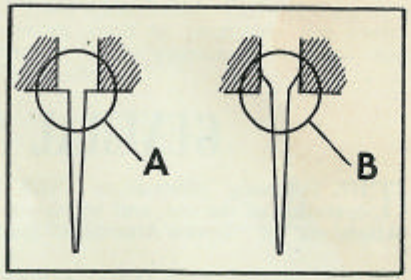
A—Banjo type union. B—Strainer and spring. C—Valve opening. D—Needle valve. E—Float. F—Float chamber union securing bolt. G—Main jet. H—Tapered needle (Model E.K.). I—Piston. J—Suction disc. K—Hydraulic damper. L—Choke lever. M—Main jet adjusting nut.

If the first effort is not successful, repeat the process.

To Adjust the Carburetters: The only adjustments are by means of the jet adjusting nuts and the throttle stop screws. First synchronise the throttles by slackening one of the spindle universal joint clamp screws, unscrewing both throttle-stop screws and shutting both completely —then re-tighten the clamp screw.

Another method is to listen to the hiss of each carburetter with a piece of tube, one end of which should be placed

adjacent to the carburetter intake and the other in the ear, then adjust throttles until the hiss is equal. Now lift the piston of each carburetter in turn; if this causes the engine to speed-up, the mixture is too strong and the jet adjusting nut should be screwed up. If the engine stops immediately the mixture is too weak and the jet should be lowered (unscrewed). If the engine just falters or continues to run, but unevenly, then the adjustment is correct. The only method of altering the mixture strength throughout the whole speed range is by changing the jet needles. To do this, remove the two screws round the base of the suction chamber, then lift off the whole assembly, taking the utmost care not to bend the needle. Slacken the needle grub screw and withdraw the needle: it should be refitted with its shoulder flush with the face of the piston. Some needles are made on a watchmaker's lathe and have square shoulders; others on a centreless grinder and have round shoulders, the part constituting the shoulder is shown in the illustration.



H10. 24. B.
THE CARBURETTER NEEDLE
A and B show the correct fitting for the two types available.

ELECTRICAL EQUIPMENT

SHOULD any fault develop the owner is advised to contact an Austin dealer or the nearest Lucas service depot. The following are adjustments and replacements which an owner should be able to undertake.

Battery: Keep the terminals and battery top clean. Also ensure the security and good electrical contact of the battery positive earthing clip on the engine rear mounting plate, and chassis member.

Headlight Adjustment: The alignment of the lamps is very easily carried out. The lamp beams must be set parallel to the road and to each other.

To carry out the adjustment, proceed as follows:—

Remove the front rim by unscrewing the rim securing screw and lifting off the rim, which is split to facilitate removal. Next remove the rubber dust excluder, when three spring-loaded adjustment screws will be visible, by means of which the setting can be altered as desired. For example, if the beam needs swinging to the left, the screw on the left side of the Light Unit must be tightened.

No focusing device is necessary with this type of lamp, since the bulb is manufactured in such a way that the filament is always positioned correctly with respect to the focal point of the reflector.

Removal of Light Unit: To remove the Light Unit, remove the front rim and dust excluding rubber as previously described above. Press the Light Unit in against the tension of the adjustment screw springs and turn it in an anti-clockwise direction until the heads of the screws can be disengaged from the slotted holes in the Light Unit rim. Do not disturb the setting of the screws when removing the Light Unit or the alignment will be altered.

The bulb is made accessible by removal of the back shell at the rear of the reflector.

Bulb Fitting:

Headlights: Remove the light rim as described under "Headlight Adjustment" to gain access to the bulbs.

Undo the bayonet catch at the back of the reflector, and the headlight bulb can be removed.

Sidelights: Move back the rubber lip at the bottom of the light and insert a coin under the glass rim. This allows the glass and rim to come completely away, leaving

the bulb in its socket. When replacing the rim and glass locate the top edge first, then allow the rubber lip or cup to overlap the rim, making a watertight joint.

Stop- and Tail-Lights: Move back the rubber lip, insert a coin or screwdriver blade under the glass retaining collar and gently lever the collar out from the lamp body. This will enable the lamp glass to be completely removed, leaving the bulb accessible in its socket.

Rear Number Plate Light: Undo the one bolt and the cover can be removed to give access to the bulb.

Panel Lights: Access to the bulbs is gained by swinging aside the spring clips at the back of the instrument panel and pulling out the bulb holders, from which the bulbs may easily be unscrewed.

Ignition and Headlight Beam Warning Lights: The bulbs can be unscrewed from their holders when pulled out from the back of the warning light panel.

Direction Indicators: To remove a bulb, switch on the indicator, hold it in the out position and then switch off. Withdraw the screw on the underside of the arm and slide off the metal plate, when the bulb can be renewed. When replacing the metal plate, slide it in an upward direction so that the plate engages with the slots on the underside of the spindle bearing.

Fuses: The fuse unit is situated adjacent to the voltage regulator and cut-out on the right-hand side of the engine bulkhead and contains two fuses and two spare.

One fuse protects the accessories which are operative only when the ignition is switched on (e.g., stop-lights, fuel gauge, and direction indicators). The other fuse protects those accessories which can be operated independently of the ignition. If a new fuse blows, the cause of the trouble must be found.

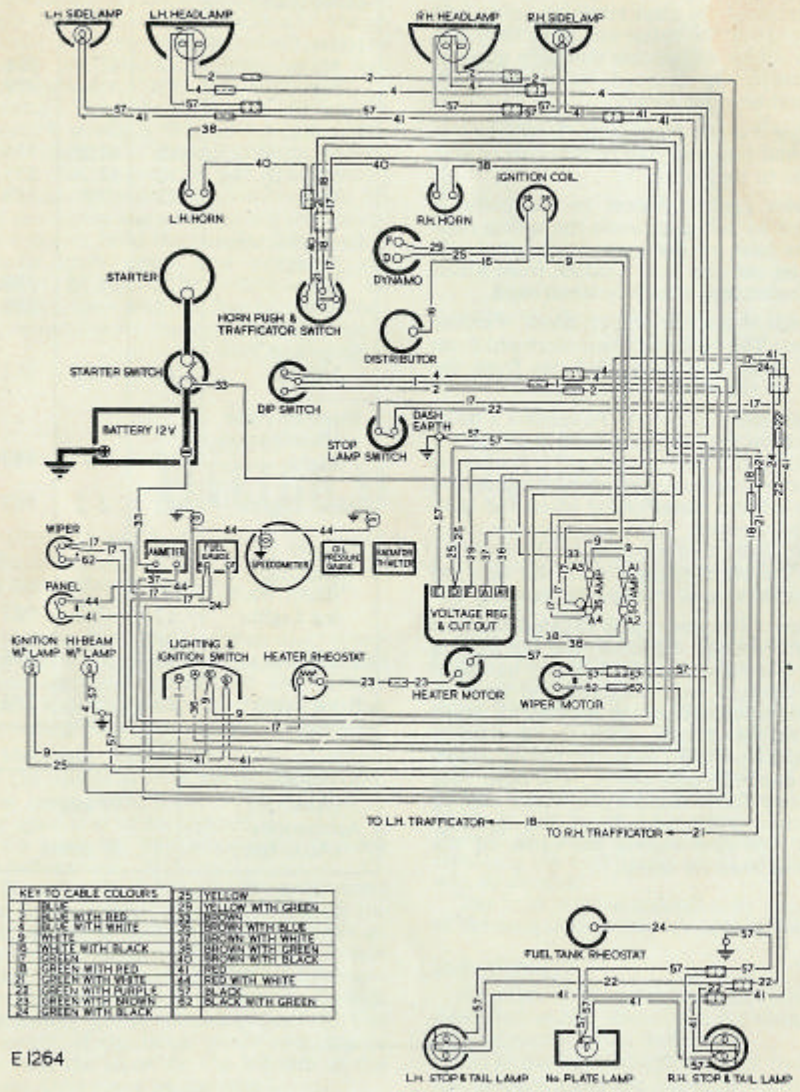
BULBS

	Volts	Watts	Lucas No.
Headlights:—			
HOME:			
Main	12	42/36	354
Side	12	6	989
EXPORT:			
Main (R.H.)	12	42/36	354
Main (L.H.)	12	42/36	355
Side	12	6	989
EUROPE (except France)			
Main	12	35/35	350
Side	12	6	989
Stop- and Tail-Lights	12	18/6	361
Number Plate Illumination Light	12	6	989
Panel Lights	12	2.2	987
Ignition and Headlight Beam Warning Lights	12	2.2	987
Trafficators	12	3	256
Roof Light	12	6	254

FUSES

Accessories (Aux.)	50 amps.
Accessories (Aux. Ign.)	35 amps.

WIRING DIAGRAM



KEY TO CABLE COLOURS			
1	BLUE	29	YELLOW WITH GREEN
2	BLUE WITH RED	32	BROWN
4	BLUE WITH WHITE	36	BROWN WITH BLUE
6	WHITE	37	BROWN WITH WHITE
9	WHITE WITH BLACK	38	BROWN WITH GREEN
10	GREEN	40	BROWN WITH BLACK
18	GREEN WITH RED	41	RED
21	GREEN WITH WHITE	44	RED WITH WHITE
22	GREEN WITH PURPLE	57	BLACK
23	GREEN WITH BROWN	62	BLACK WITH GREEN
A2	GREEN WITH BLACK		

E 1264

THE 'A40' SPORTS MODEL

BODYWORK

DUST on the car may be lightly flicked off with a duster, but on all other occasions the car should be thoroughly washed and dried before a cellulose polish is used. Any attempt to rub dirt off the car will result in severe scratching of the smooth surface of the cellulose. Grease and tar splashes must be very carefully removed with a soft rag dipped in petrol.

The Hood: Before the hood can be lowered the following preliminary operations must be carried out:—

First, release all the hood fasteners at the rear of the car. Next pull the rear seat squab forward and remove the hood well side covers, after which the rear window must be separated from the hood, by releasing the top press studs, and then placed in the rear compartment of the hood well—this being most important if damage to the celluloid window is to be avoided.

Finally lift the hood rail clear of its two securing pegs situated above the windscreen.

The hood itself can now be lowered, although while doing so it will be necessary to press inwards on the jointed rear hood support, in order to prevent it fouling the rear edge of the hood well, and then downward pressure must be exerted on the top hood linkages in order to straighten them—this being most important if the hood is to take up its correct position in the well. Roll up the front part of the hood and stow it as far back as possible in the hood well. It is essential that the whole hood assembly be pressed very compactly into the well provided, in order that the rear seat squab may be returned to its normal position and fastened. Finally, secure the hood well side covers.

Raising the hood is an exact reversal of the above procedure.

The hood is best cleaned by vigorous brushing when thoroughly dry, although if very dirty it is advisable to sponge it down lightly beforehand.

Washing and Polishing: When washing the car, commence from the top and work downward using a slow flood of water and then leather off all surplus moisture.

After washing and drying use a good quality cellulose polish, which will impart a brilliant lustre to the surface of the cellulose.

If the finish shows a tendency to become dull after several months, the use of a liquid polish will restore it to its original condition. Should further protection be desired, then an occasional application of a good wax polish will help considerably in preserving the car's appearance.

Wash chromium plating with soap and warm water. On no account use metal polish or anything of an abrasive nature.

Leather or leather upholstery trimming may be cleaned with a damp cloth and polished with a clean soft rag.

Car Finish: Whilst everything is being done to produce a first-class finish, we are to a large extent dependent on the quality of material that the Paint Manufacturers can supply.

Other Attentions: Door locks, hinges and other small working parts should be given a drop of oil occasionally and checked for security. Sliding seat runners will benefit if very lightly smeared with grease periodically.