

AKD 926

The



SERIES MGA
(Twin Cam)

WORKSHOP MANUAL





Series MGA Twin-Cam

WORKSHOP MANUAL

NOTE

Refer to the end of the appropriate Section for the latest instructions when carrying out work on the vehicle.

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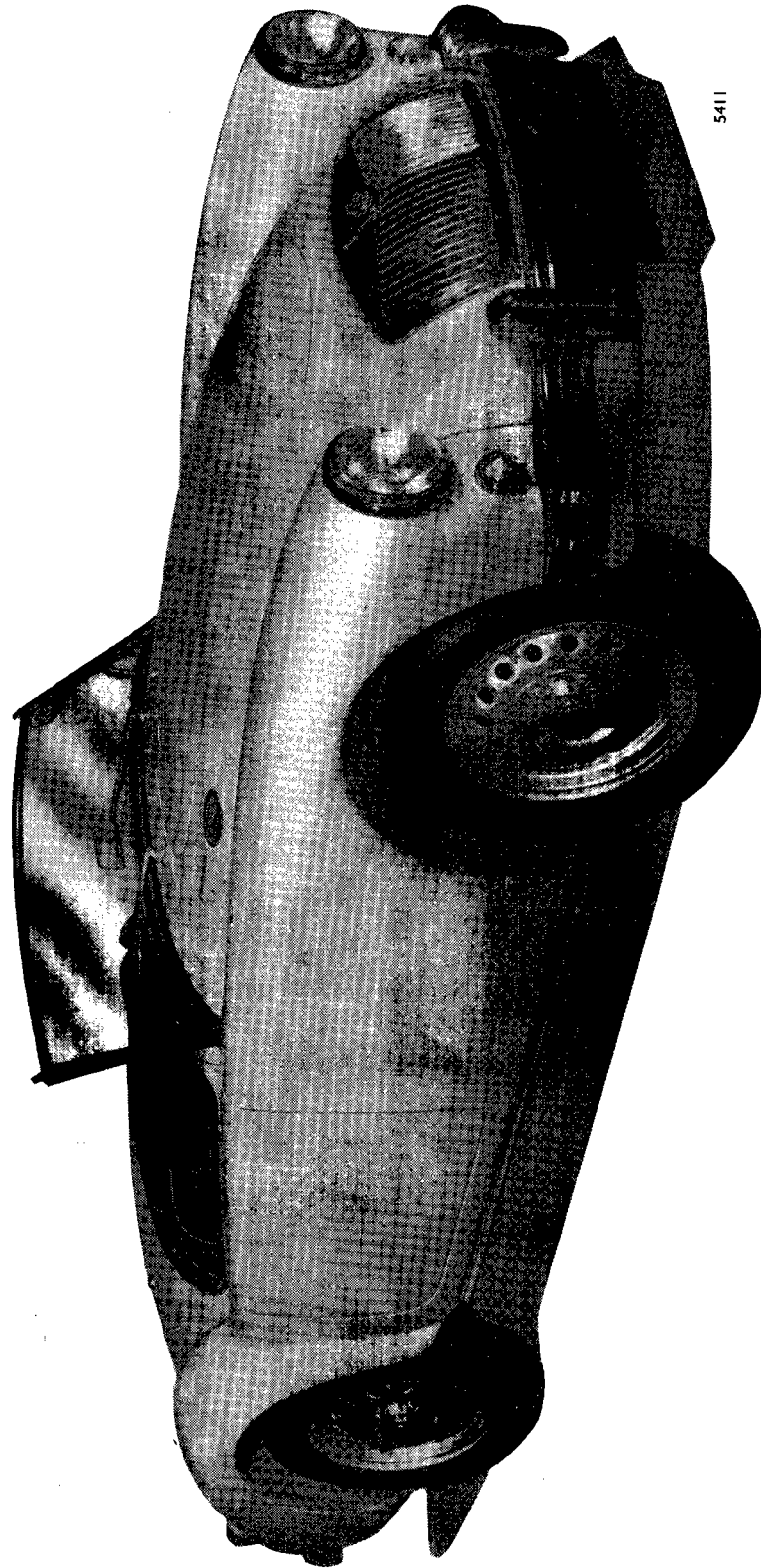
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COWLEY, OXFORD, ENGLAND

THE M.G. (Series MGA Twin-Cam) TWO-SEATER



5411

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General Information

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GENERAL DATA

ENGINE

Type	BC16GB.
Number of cylinders	4.
Bore	2.969 in. (75.41 mm.).
Stroke	3.5 in. (89 mm.).
Capacity	96.906 cu. in. (1588 c.c.).
Firing order	1, 3, 4, 2.
Compression ratio	9.9 to 1.
Capacity of combustion chamber (valves fitted)	86.6 c.c. (5.28 cu. in.).
Valve operation	Twin overhead camshafts.
B.M.E.P.	163 lb./sq. in. (11.46 kg./cm. ²) at 4,500 r.p.m.
Torque	105 lb. ft. (14.5 kg. m.) at 4,500 r.p.m.
Cooling system	Thermo-siphon, pump- and fan-assisted.
Oversize bore:	
First .. .. .	.010 in. (.254 mm.).
Maximum .. .. .	.040 in. (1.016 mm.).

CRANKSHAFT

Main journal diameter	2 in. (50.8 mm.).
Minimum regrind diameter	1.96 in. (49.78 mm.).
Crankpin journal diameter	1.8759 to 1.8764 in. (47.65 to 47.66 mm.).
Crankpin minimum regrind diameter	1.8359 in. (46.64 mm.).
Main-bearings	
Number and type	3. Shell type.
Material (bottom half)	Steel-backed, lead-indium-plated.
Material (top half)	Steel-backed, lead-indium-plated.
Length	1.5 in. (38.1 mm.).
End-clearance .. .. .	.006 in. max. (.152 mm.).
End-thrust	Taken by thrust washers at centre main bearing.
Running clearance .. .. .	.002 to .0037 in. (.051 to .094 mm.).

CONNECTING RODS

Length between centres	6.5 in. (165.1 mm.).
Big-end bearings	
Material (bottom half)	Steel and lead-indium.
Material (top half)	Steel and lead-indium.
Bearing side-clearance .. .. .	.008 to .012 in. (.203 to .305 mm.).
Bearing diametrical clearance .. .. .	.002 to .0037 in. (.051 to .094 mm.).

PISTONS

Type	Aluminium alloy.
Clearances:	
Bottom of skirt .. .. .	.0035 to .0066 in. (.090 to .168 mm.).
Top of skirt .. .. .	.0058 to .0083 in. (.147 to .211 mm.).
Oversizes	+ .010 in., + .020 in., + .030 in., + .040 in. (+ .254 mm., + .508 mm., + .762 mm., + 1.016 mm.).

PISTON RINGS

Compression:	
Plain	Top ring.
Tapered	2nd and 3rd ring.
Width .. .. .	.054 to .055 in. (1.37 to 1.39 mm.).

GENERAL DATA—*continued*

Thickness .. .. .	..	..	..	..	..	..	..	..	..	·124 to ·131 in. (3·15 to 3·33 mm.).
Fitted gap .. .. .	..	..	..	..	..	..	..	..	..	·008 to ·013 in. (·20 to ·33 mm.).
Clearance in groove .. .. .	..	..	..	..	..	..	..	..	..	·0015 to ·0035 in. (·038 to ·089 mm.).
Oil control type .. .. .	..	..	..	..	..	..	..	..	..	Microland scraper.
Width .. .. .	..	..	..	..	..	..	..	..	..	·1552 to ·1562 in. (3·94 to 3·99 mm.).
Thickness .. .. .	..	..	..	..	..	..	..	..	..	·124 to ·131 in. (3·15 to 3·33 mm.).
Fitted gap .. .. .	..	..	..	..	..	..	..	..	..	·008 to ·013 in. (·20 to ·33 mm.).
Clearance in groove .. .. .	..	..	..	..	..	..	..	..	..	·0015 to ·0035 in. (·038 to ·090 mm.).

GUDGEON PIN

Type .. .. .	..	..	..	..	..	..	..	..	..	Fully floating.
Fit .. .. .	..	..	..	..	..	..	..	..	..	Hand push fit at room temperature.
Diameter .. .. .	..	..	..	..	..	..	..	..	..	·875 in. (22·22 mm.).

VALVES AND VALVE GEAR

Valves

Seat angle:										
Inlet .. .. .	..	..	..	..	..	..	..	..	..	45°.
Exhaust .. .. .	..	..	..	..	..	..	..	..	..	45°.
Head diameter:										
Inlet .. .. .	..	..	..	..	..	..	..	..	..	1·59 in. (40·38 mm.).
Exhaust .. .. .	..	..	..	..	..	..	..	..	..	1·44 in. (36·58 mm.).
Stem diameter:										
Inlet .. .. .	..	..	..	..	..	..	..	..	..	·342 in. (8·68 mm.).
Exhaust .. .. .	..	..	..	..	..	..	..	..	..	·342 in. (8·68 mm.).
Valve lift .. .. .	..	..	..	..	..	..	..	..	..	·375 in. (9·52 mm.).
Valve stem to guide clearance:										
Inlet .. .. .	..	..	..	..	..	..	..	..	..	·00155 to ·00255 in. (·0394 to ·0635 mm.).
Exhaust .. .. .	..	..	..	..	..	..	..	..	..	·00155 to ·00255 in. (·0394 to ·0635 mm.).
Valve clearance .. .. .	..	..	..	..	..	..	..	..	..	·016 to ·017 in. (·406 to ·432 mm.) (cold).
Chain pitch and number of pitches .. .. .	..	..	..	..	..	..	..	..	..	·375 in. (9·52 mm.), 132 pitches.
Inlet valve:										
Opens .. .. .	..	..	..	..	..	..	..	..	..	20° B.T.D.C.
Closes .. .. .	..	..	..	..	..	..	..	..	..	50° A.B.D.C.
Exhaust valve:										
Opens .. .. .	..	..	..	..	..	..	..	..	..	50° B.B.D.C.
Closes .. .. .	..	..	..	..	..	..	..	..	..	20° A.T.D.C.

VALVE GUIDES

Length:										
Inlet .. .. .	..	..	..	..	..	..	..	..	..	2 $\frac{1}{16}$ in. (52·39 mm.).
Exhaust .. .. .	..	..	..	..	..	..	..	..	..	2 $\frac{7}{16}$ in. (61·91 mm.).
Diameter:										
Inlet: Outside .. .. .	..	..	..	..	..	..	..	..	..	·5645 to ·5655 in. (14·33 to 14·36 mm.).
Inside .. .. .	..	..	..	..	..	..	..	..	..	·3438 to ·3443 in. (8·73 to 8·74 mm.).
Exhaust: Outside .. .. .	..	..	..	..	..	..	..	..	..	·5645 to ·5655 in. (14·33 to 14·36 mm.).
Inside .. .. .	..	..	..	..	..	..	..	..	..	·3438 to ·3443 in. (8·73 to 8·74 mm.).
Fitted height above head:										
Inlet .. .. .	..	..	..	..	..	..	..	..	..	·750 in. (19·05 mm.).
Exhaust .. .. .	..	..	..	..	..	..	..	..	..	·844 in. (21·43 mm.).

GENERAL DATA—*continued*

VALVE SPRINGS

Free length:		
Inner .. .. .	.. .. .	2·3 in. (58·42 mm.).
Outer .. .. .	.. .. .	2·54 in. (64·51 mm.).
Fitted length:		
Inner .. .. .	.. .. .	1·62 in. (41·15 mm.).
Outer .. .. .	.. .. .	1·78 in. (45·21 mm.).
Number of working coils:		
Inner .. .. .	.. .. .	7·8.
Outer .. .. .	.. .. .	6.
Pressure:		
Valve open .. .. .	.. .. .	Inner 65 lb. (29·5 kg.). Outer 125 lb. (56·7 kg.).
Valve closed .. .. .	.. .. .	Inner 42 lb. (19·1 kg.). Outer 84 lb. (38·1 kg.).

TAPPETS

Type .. .. .	.. .. .	Inverted bucket.
Diameter:		
Body .. .. .	.. .. .	1·5 in. (38·1 mm.).
Working face .. .. .	.. .. .	1·5 in. (38·1 mm.).
Length .. .. .	.. .. .	1·25 in. (31·75 mm.).

CAMSHAFTS

Journal diameters: .. .. .	.. .. .	1·250 to 1·2505 in. (31·75 to 31·76 mm.).
End-float .. .. .	.. .. .	·001 to ·005 in. (·025 to ·127 mm.).
Bearing: number and type .. .. .	.. .. .	3. D2 bimetal bearings.
Inside diameter .. .. .	.. .. .	1·2515 to 1·2525 in. (31·788 to 31·813 mm.).
Clearance .. .. .	.. .. .	·001 to ·0025 in. (·0254 to ·0635 mm.).

HALF-SPEED SHAFT

Journal diameters:		
Front .. .. .	.. .. .	1·78875 to 1·78925 in. (45·43 to 45·44 mm.).
Centre .. .. .	.. .. .	1·72875 to 1·72925 in. (43·91 to 43·92 mm.).
Rear .. .. .	.. .. .	1·62275 to 1·62325 in. (41·22 to 41·23 mm.).
End-float .. .. .	.. .. .	·003 to ·006 in. (·076 to ·152 mm.).
Bearing: number and type .. .. .	.. .. .	3. Thinwall steel-backed white metal.
Inside diameter (reamed in position):		
Front .. .. .	.. .. .	1·790 in. (45·47 mm.).
Centre .. .. .	.. .. .	1·730 in. (43·94 mm.).
Rear .. .. .	.. .. .	1·624 in. (41·25 mm.).
Clearance .. .. .	.. .. .	·001 to ·002 in. (·025 to ·051 mm.).

ENGINE LUBRICATION SYSTEM

Oil pump

Type .. .. .	.. .. .	Eccentric rotor.
Relief pressure valve operates .. .. .	.. .. .	50 lb./sq. in. (3·52 kg./cm. ²).
Relief valve spring:		
Free length .. .. .	.. .. .	3 in. (76·2 mm.).
Fitted length .. .. .	.. .. .	2 $\frac{5}{8}$ in. (54·77 mm.) at 16 lb. (7·26 kg.) load.

Oil filter

Type .. .. .	.. .. .	External renewable element, full-flow.
Capacity .. .. .	.. .. .	$\frac{1}{2}$ pint (·6 U.S. pints, ·28 litre).

GENERAL DATA—continued

Oil pressure							
Idling .. .. .	..	..	..	..	..	..	10 to 15 lb./sq. in. (.7 to 1.05 kg./cm. ²).
Running .. .. .	..	..	..	..	..	..	50 to 60 lb./sq. in. (3.52 to 4.22 kg./cm. ²).
TORQUE WRENCH SETTINGS							
Cylinder head nuts .. .. .	..	..	..	..	..	..	70 lb. ft. (9.68 kg. m.).
Main bearing nuts .. .. .	..	..	..	..	..	..	70 lb. ft. (9.68 kg. m.).
Clutch assembly to flywheel .. .. .	..	..	..	..	..	..	35 to 40 lb. ft. (4.84 to 5.53 kg. m.).
FUEL SYSTEM							
Carburetter							
Make and type .. .. .	..	..	..	..	..	..	S.U. twin H6 semi-downdraught.
Diameter .. .. .	..	..	..	..	..	..	1½ in. (44.45 mm.).
Needle .. .. .	..	..	..	..	..	..	OA6.
Jet .. .. .	..	..	..	..	..	..	.10 in. (2.54 mm.).
Piston spring .. .. .	..	..	..	..	..	..	Red, 4½ oz. (128 gm.).
AIR CLEANER							
Make and type .. .. .	..	..	..	..	..	..	Vokes—oil-wetted.
FUEL PUMP							
Make and type .. .. .	..	..	..	..	..	..	S.U. electric, large capacity.
Delivery test .. .. .	..	..	..	..	..	..	12.5 gal./hr. (54.28 litres/hr.).
Suction lift .. .. .	..	..	..	..	..	..	33 in. (83.8 cm.).
Output lift .. .. .	..	..	..	..	..	..	48 in. (121.9 cm.).
COOLING SYSTEM							
Type .. .. .	..	..	..	..	..	..	Pressurized radiator. Thermo-siphon, pump- and fan-assisted.
Thermostat setting .. .. .	..	..	..	..	..	..	50 to 55° C. (122 to 131° F.).
Quantity of anti-freeze:							
15° frost .. .. .	..	..	..	..	..	..	1½ pints (1.8 U.S. pints, .85 litre).
25° frost .. .. .	..	..	..	..	..	..	2 pints (2.4 U.S. pints, 1.14 litres).
35° frost .. .. .	..	..	..	..	..	..	3½ pints (4.2 U.S. pints, 2 litres).
IGNITION SYSTEM							
Sparking plugs .. .. .	..	..	..	..	..	..	Champion N3.
Size .. .. .	..	..	..	..	..	..	14 mm.
Plug gap .. .. .	..	..	..	..	..	..	.025 in. (.64 mm.).
Coil .. .. .	..	..	..	..	..	..	Lucas HA12.
Distributor .. .. .	..	..	..	..	..	..	Lucas, type DM2.
Distributor contact points gap .. .. .	..	..	..	..	..	..	.014 to .016 in. (.35 to .40 mm.).
Suppressors .. .. .	..	..	..	..	..	..	Lucas No. 78106A fitted on each H.T. cable.
Timing .. .. .	..	..	..	..	..	..	T.D.C.
CLUTCH							
Make and type .. .. .	..	..	..	..	..	..	Borg & Beck 8ARG. Single dry plate.
Diameter .. .. .	..	..	..	..	..	..	8 in. (20.3 cm.).
Facing material .. .. .	..	..	..	..	..	..	Wound yarn, reinforced.

GENERAL DATA—*continued*

Pressure springs	6.
Colour	Light grey.
Damper springs	6.
Colour	Maroon and light green.
Release lever ratios	11·7 : 1.

GEARBOX

Number of forward speeds	4.
Synchromesh	Second, third, and fourth gears.
Ratios:	
Top	1·0 : 1.
Third	1·374 : 1.
Second	2·214 : 1.
First	3·64 : 1.
Reverse	4·76 : 1.
Overall ratios:	
Top	4·3 : 1.
Third	5·908 : 1.
Second	9·520 : 1.
First	15·652 : 1.
Reverse	20·468 : 1.
Speedometer gears ratio	5/12.

STEERING

Type	Rack and pinion.
Steering wheel turns—lock to lock	2 $\frac{3}{8}$.
Steering wheel diameter	16 $\frac{1}{2}$ in. (419·10 mm.).
Camber angle	1° positive to $\frac{1}{2}$ ° negative on full bump.
Castor angle	4°.
King pin inclination	9° to 10 $\frac{1}{2}$ ° on full bump.
Toe-in	Wheels parallel.
Track:	
Front	47 $\frac{3}{8}$ in. (1·217 m.).
Rear	48 $\frac{7}{8}$ in. (1·242 m.).

FRONT SUSPENSION

Type	Independent coil.
Spring detail:	
Coil diameter (mean)	3·28 in. (82·25 mm.).
Diameter of wire	·54 in. (13·72 mm.).
Free height	9·09 in. \pm $\frac{1}{8}$ in. (23·09 cm. \pm 1·6 mm.).
Number of free coils	7·2.
Static laden length	6·6 in. (16·76 cm.).
Static laden length at load of	1,193 lb. (541 kg.).
Dampers	Piston type.
Damper settings:	
Rebound: Blow-off	1,150 lb. in. (13·3 kg. m.) at 180°/sec. at 18° C.
Time setting	725 lb. in. (8·3 kg. m.) at 20°/sec. at 18° C.
Compression: Blow-off	550 lb. in. (6·3 kg. m.) at 180°/sec. at 18° C.
Time setting	350 lb. in. (4·0 kg. m.) at 20°/sec. at 18° C.

GENERAL DATA—*continued*

REAR SUSPENSION

Type	Semi-elliptic.
Spring detail:	
Number of leaves	6.
Width of leaves	1 $\frac{3}{4}$ in. (44.45 mm.).
Gauge	$\frac{7}{8}$ in. (5.56 mm.).
Working load	450 lb. (203.7 kg.).
Free camber	3.60 in. (91.44 mm.).
Dampers	Piston type.
Damper settings:	
Rebound: Blow-off	1,300 lb. in. (15 kg. m.) at 180°/sec. at 18° C.
Time setting	175 lb. in. (2.01 kg. m.) at 20°/sec. at 18° C.
Compression: Blow-off	400 lb. in. (4.6 kg. m.) at 180°/sec. at 18° C.
Time setting	175 lb. in. (2.01 kg. m.) at 20°/sec. at 18° C.

PROPELLER SHAFT

Type	Tubular, flanged.
Make and type of joints	Hardy Spicer. Needle roller.
Propeller shaft length (between centres of joints)	30 $\frac{5}{16}$ in. (76.99 cm.).
Overall length	32 $\frac{11}{16}$ in. (83.0 cm.).
Diameter	2 in. (50.8 mm.).

REAR AXLE

Make and type	B.M.C. 'B' type, three-quarter-floating.
Ratio	10/43.
Adjustment	Shims.

ELECTRICAL EQUIPMENT

System	12-volt. Positive earth.
Charging system	Compensated voltage control.
Battery	Two. 6-volt. Lucas SG9E.
Starter motor	Lucas 4-brush M35G1.
Dynamo	Lucas C39PV2.
Control box	Lucas RB106/2.
Cut-out:	
Cut-in voltage	12.7 to 13.3.
Drop-off voltage	8.5 to 11.
Reverse current	5 amps. (max.).
Regulator:	
At 1,500 r.p.m. dynamo speed:	
Open circuit setting at 20° C. (68° F.)	15.4 to 16.4 volts.
For ambient temperatures other than 20° C. the following allowances should be made to the above setting:	
For every 10° C. (18° F.) above 20° C. subtract .1 volt.	
For every 10° C. (18° F.) below 20° C. add .1 volt.	

BRAKES

Type	Dunlop disc (front and rear).
Disc diameter	11 in. (27.9 cm.).
Fluid	Wakefield Crimson (S.A.E. 70.R1).

GENERAL DATA—*continued*

WHEELS

Type Ventilated disc, 4J×15.

TYRES

Size 5·90—15.

Tyre pressures:

Normal: Front 18 lb./sq. in. (1·27 kg./cm.²).

Rear 20 lb./sq. in. (1·4 kg./cm.²).

Fast motoring: Front 22 lb./sq. in. (1·55 kg./cm.²).

Rear 24 lb./sq. in. (1·69 kg./cm.²).

Competition work and sustained high- speed motoring	Front	.. .. .	24 lb./sq. in. (1·69 kg./cm. ²).
	Rear	.. .. .	26 lb./sq. in. (1·83 kg./cm. ²).

CAPACITIES

	<i>Imp.</i>	<i>U.S.</i>	<i>Litres</i>
Engine sump (including filter)	13 pts.	15·6 pts.	7·38
Gearbox	4 $\frac{3}{4}$ pts.	5·7 pts.	2·69
Rear axle	2 $\frac{3}{4}$ pts.	3 $\frac{1}{4}$ pts.	1·56
Cooling system	13 $\frac{1}{2}$ pts.	16·2 pts.	7·7
Steering rack	$\frac{1}{2}$ pt.	·6 pt.	·28
Fuel tank	10 gal.	12 gal.	45·4

GENERAL DIMENSIONS

Wheelbase	94 in. (2·388 m.).
Overall length	156 in. (3·962 m.).
Overall width	58 in. (1·473 m.).
Overall height	50 in. (1·27 m.).
Ground clearance	6 in. (15·24 cm.).
Weight: fully equipped with tools, spare wheel, oil, water, and 2 gallons of fuel (2·5 U.S. gal., 9·1 litres)	2,185 lb. (991 kg.).
Turning circles:	
Right hand	32 ft. 1 in. (9·78 m.).
Left hand	32 ft. 6 in. (9·91 m.).

GENERAL INFORMATION

CONTROLS

Hand brake

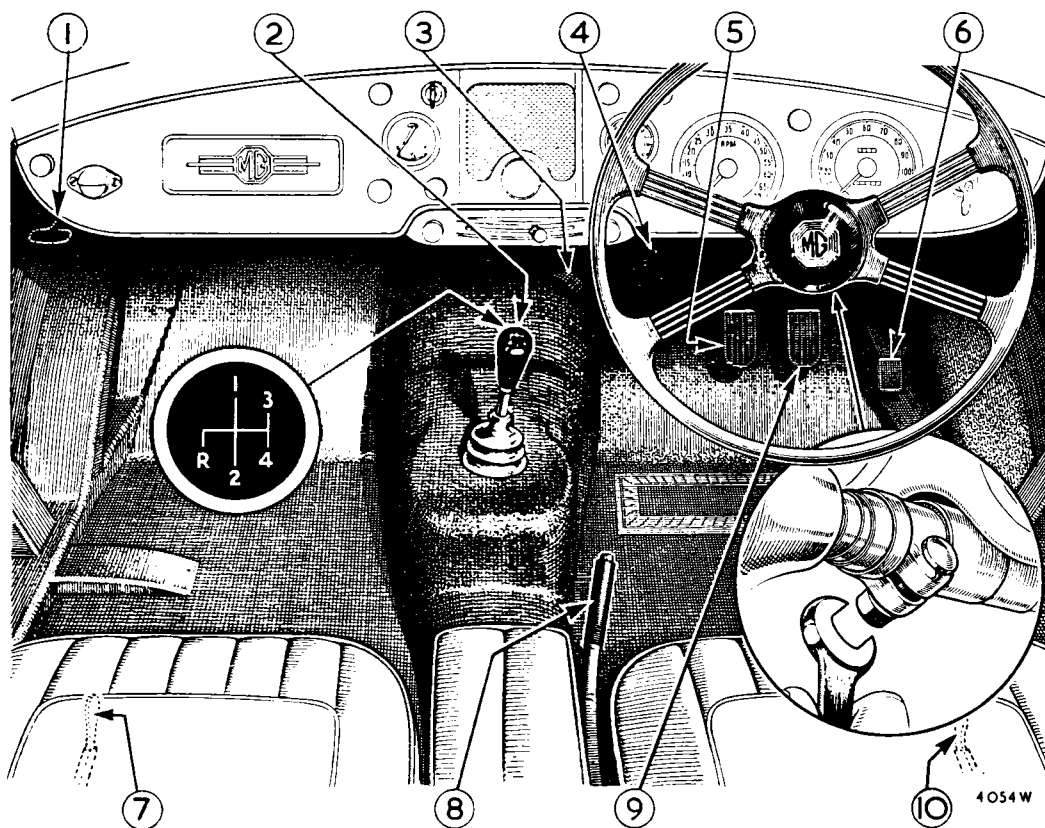
The hand brake lever is located alongside the driver's seat and operates on the rear disc brakes only by means of separately mounted calipers.

To operate, pull up the lever and press the knob in the end with the thumb to lock the lever in position. To release the brakes pull upwards on the lever to automatically release the lock and then push downwards.

Always apply the hand brake when parking.

Brake pedal

The pedal operates the hydraulic disc brakes on all four wheels and will also operate the twin stop warning lamps when the ignition is switched on.



The location of the driving controls

- | | | |
|-----------------------------|------------------|----------------------|
| 1. Bonnet release. | 5. Clutch pedal. | 8. Hand brake lever. |
| 2. Gear lever. | 6. Accelerator. | 9. Foot brake. |
| 3. Gearbox oil filler plug. | 7. Seat lock. | 10. Seat lock. |
| 4. Headlamp dip switch. | | |

Gear lever

The four forward gears and the reverse gear are engaged by moving the lever to the positions indicated in the illustration.

To engage the reverse gear move the lever to the left of the neutral position until resistance is felt, apply side pressure to the lever to overcome the resistance, and then pull it backwards to engage the gear.

Synchromesh engagement is provided on second, third, and fourth gears.

Seat adjustment

A lever is provided at the front of each seat and this must be pressed outwards to release the catches and allow the seat to slide.

GENERAL INFORMATION—*continued*

Steering column adjustment

A steering column which is adjustable for length is available as an optional extra. This enables the steering wheel to be placed in the most comfortable driving position after slackening a clamp bolt below the wheel hub. Always re-tighten the nut securely after adjustment.

Headlamp beam dip switch

This is situated on the left of the clutch pedal and is foot-operated. The switch will dip the headlamp beams on one depression and raise them on the next.

Bonnet lock release

The bonnet is hinged at the rear and the lock is released by pulling on the ring below the instrument panel on the extreme left-hand side of the car.

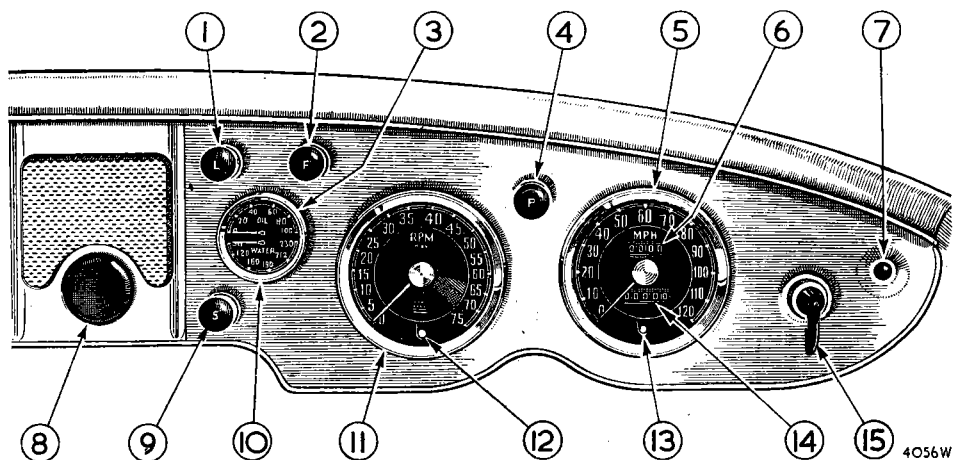
The bonnet is still held by the safety catch, which must be released before the bonnet can be raised.

To re-lock the bonnet in the fully closed position after opening, press downwards on the front of the bonnet until the lock is heard to engage.

INSTRUMENT PANEL

Speedometer

The speedometer also records the trip and total distances. The trip recorder is reset to zero by pushing upwards the knob below the instrument and turning it anti-clockwise.



The right-hand side of the instrument panel (R.H.D.)

- | | |
|----------------------------------|----------------------------------|
| 1. Headlamp and sidelamp switch. | 9. Starter switch. |
| 2. Fog lamp switch. | 10. Water temperature gauge. |
| 3. Oil gauge. | 11. Revolution indicator. |
| 4. Panel light switch. | 12. Ignition warning light. |
| 5. Speedometer. | 13. Headlamp beam warning light. |
| 6. Trip mileage. | 14. Total mileage. |
| 7. Flasher warning light. | 15. Direction indicator switch. |
| 8. Horn button. | |

Main beam warning light

The warning light at the bottom of the speedometer dial glows red when the headlamp main beams are in use as a reminder to dip the beam when approaching other traffic.

Engine revolution indicator

This dial is calibrated in hundreds of revolutions per minute. Normal use of the engine will not require speeds over 6,000 r.p.m. and great care must be taken if the needle does approach the amber sector of the dial, which commences at 6,500 r.p.m. Under favourable conditions the needle may be allowed to enter the amber sector, **but under no circumstances must it enter the red sector.**

GENERAL INFORMATION—*continued*

Ignition warning light

The warning light at the bottom of the revolution indicator dial glows red when the ignition is switched on and will go out again when the engine is started and its speed is increased sufficiently for the dynamo to charge the battery. Should the light glow at all engine speeds, the dynamo is not charging the battery.

Oil pressure gauge

The pressure of the oil should be between 30 and 80 lb./sq. in. (2.1 and 5.6 kg./cm.²) under normal running conditions. Approximately 10 lb./sq. in. (.7 kg./cm.²) should be shown when the engine is idling.

Water temperature gauge

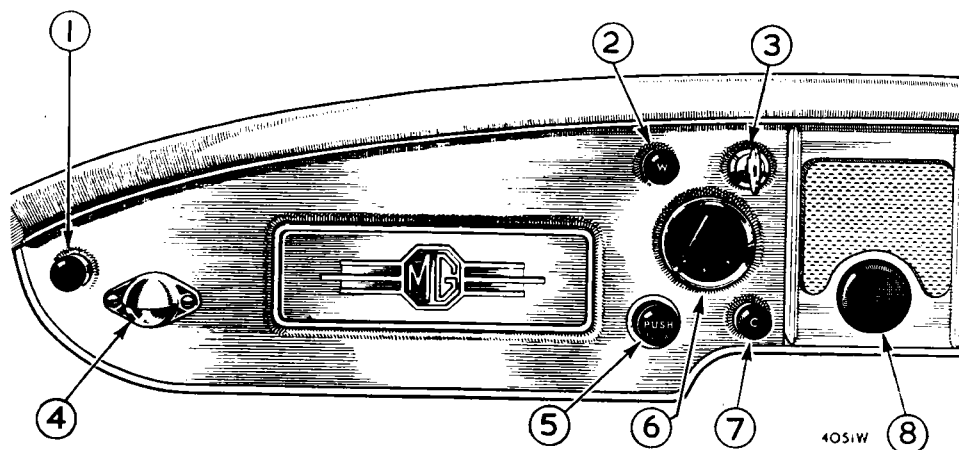
The temperature of the cooling water leaving the cylinder head is indicated by this gauge and should be approximately 160° F. (71° C.) when the engine is running normally.

Starter switch

Pull out the knob marked 'S' to operate the starter motor. The switch must be pushed in immediately the engine starts.

Lamp switch

To switch on the sidelamps, tail lamps, and number-plate illumination lamp pull out the knob marked 'L'. Turn the knob clockwise and pull out again to switch on the headlamps. See 'Headlamp beam dip switch' and 'Main beam warning light'.



The left-hand side of the instrument panel (R.H.D.)

- | | |
|------------------------------|-------------------------------|
| 1. Map-reading light switch. | 5. Windshield washer control. |
| 2. Windshield wiper switch. | 6. Fuel gauge. |
| 3. Ignition switch. | 7. Choke control. |
| 4. Map-reading light. | 8. Horn button. |

Fog lamp switch

A fog lamp is not fitted as standard equipment, but the switch marked 'F' on the instrument panel is connected to the battery and is ready for use when a fog lamp is connected to it.

Pull out the knob to switch on the fog lamp.

Panel lamp switch

To illuminate the instruments turn the control knob 'P' clockwise. The first movement of the knob will switch on the lamps and further turning to the right will dim the lamps.

The panel lamps will only operate when the sidelamps also are switched on.

GENERAL INFORMATION—*continued*

Direction indicator switch

The lever-type switch on the outer edge of the panel controls the flashing indicator unit. The unit will operate only while the ignition is switched on, and flashes the sidelamp and tail lamp on the side of the car to which the switch lever is moved until it is automatically switched off.

While the flashing unit is switched on the warning light next to the switch will show green.

Fuel gauge

This operates only when the ignition is switched on.

Choke or mixture control

To enrich the mixture and assist starting when the engine is cold pull out the knob marked 'C' and lock it in position by turning it anti-clockwise. Turn the knob clockwise and push it inwards to the normal running position as soon as the engine is warm enough to run without the rich mixture.

Never allow the engine to run for any length of time with the knob pulled out.

Ignition switch

The fuel pump and gauge are brought into action by this switch, which is also the master switch for the windshield wipers and direction indicators.

Windshield wiper switch

The windshield wipers are self-parking and operate only when the ignition is switched on.

Pull out the control 'W' to set the wiper blades in motion. Push in the knob to switch off the motor and park the blades.

Map-reading lamp

The map-reading lamp is controlled by the adjacent knob, which must be pulled out to switch on the light. The lamp will only operate while the sidelamps are switched on.

Windshield washer

When windshield-washing equipment is fitted it is operated by the knob marked 'Push' below the fuel gauge.

HEATING AND DEMISTING EQUIPMENT

The 2-75-kw. heating and demisting unit is fitted as an extra to standard equipment.

Fresh air is ducted from the radiator grille to the heating element and blower motor mounted below the bonnet. Water from the engine cooling system is used to heat the element.

Warmed air issues from the toeboard or the windshield demisting vents according to the position of the controls mounted below the instrument panel.

Air

The left-hand knob controls the air supply. When the knob is pushed in the air duct is open and air at atmospheric temperature will enter the car when it is in motion and will issue from the toeboard or demisting vents.

Air blower

Pull out the knob marked 'B' on the temperature control lever to switch on the blower motor, and this will increase the flow of air into the car and may be used to give a supply of air when the car is stationary or travelling at low speed. The blower will only operate when the ignition is switched on.

If the blower motor is switched off and the air control knob is pulled outwards to close the air duct fresh air cannot enter the car from the toeboard or windshield vents.

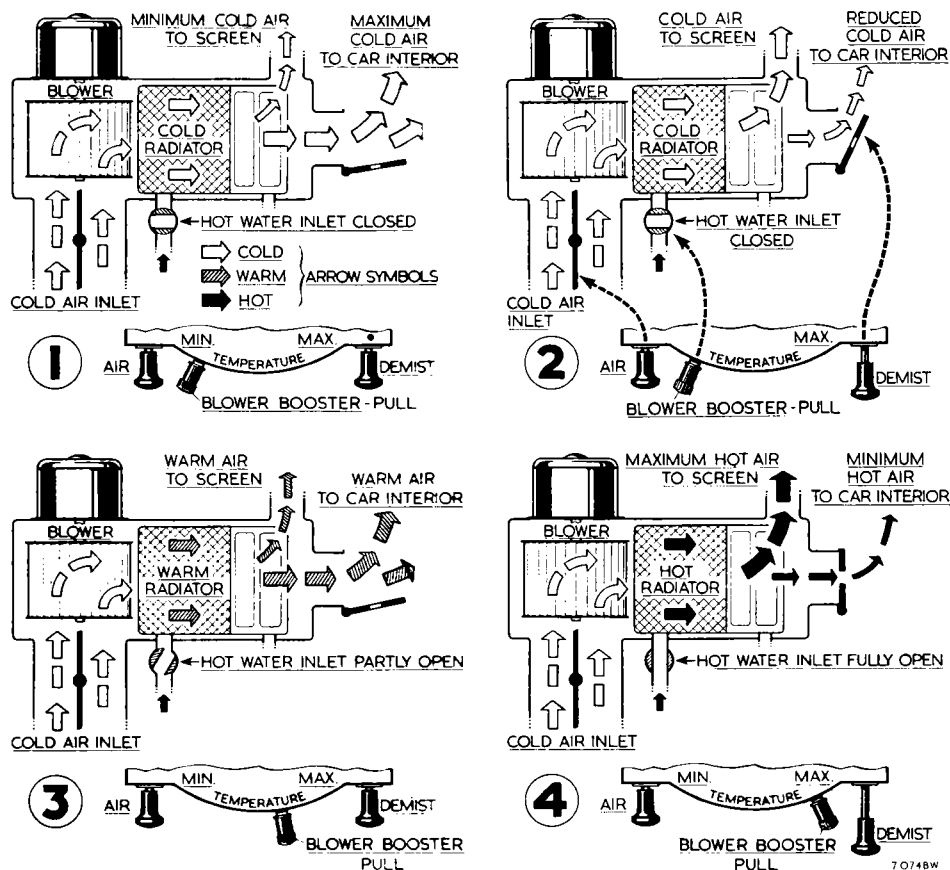
GENERAL INFORMATION—*continued*

Demist

The right-hand knob on the heater unit control panel operates a shutter in the panel above the gearbox cover. When the control is pushed into the normal position the shutter is open and most of the air from the unit will enter the car at the toeboard, while some will issue from the vents below the windshield. As the knob is pulled out the shutter closes and more air is delivered to the car from the demisting vents, giving the maximum supply of air to the windshield. This is the demist position of the control if the blower is switched on and also the defrost position if the heater is operating.

Temperature

The temperature lever operates the water valve on the engine. When the lever is in the left-hand position the hot water supply is cut off and air entering the car through the unit will not be heated. As the lever is moved to the right the water supply is increased and the maximum temperature is obtained.



The circulation of the air through the heater unit with the controls positioned as recommended below

As a general guide, here are some of the more frequently required positions:

No additional ventilation or heating. Pull out the air control, push the temperature control to the left.

- (1) *Hot weather.* Push in the air and demist controls. Move the temperature control to the left. To increase the supply of air switch on the blower motor.
- (2) *Warm weather.* Set the controls as for hot weather. To increase the supply of air switch on the blower motor. To prevent mist forming on the windshield pull out the demist control partially.
- (3) *Cold weather.* Place the air control in its normal position and the temperature lever according to the heating required. Switch on the blower to increase the air supply. (If demisting is required pull out the demist control.)
- (4) *Severe cold.* Move the temperature control to the right for maximum heating and pull out the demist control fully to give a maximum supply of hot air to the screen. Switch on the blower motor to increase the air flow.

GENERAL INFORMATION—continued

WINDSHIELD WASHER

The washing equipment supplied as an optional fitting is operated by pumping the knob on the instrument panel. As the knob moves towards the panel a jet of cleaning fluid is ejected onto the windshield from nozzles on the scuttle.

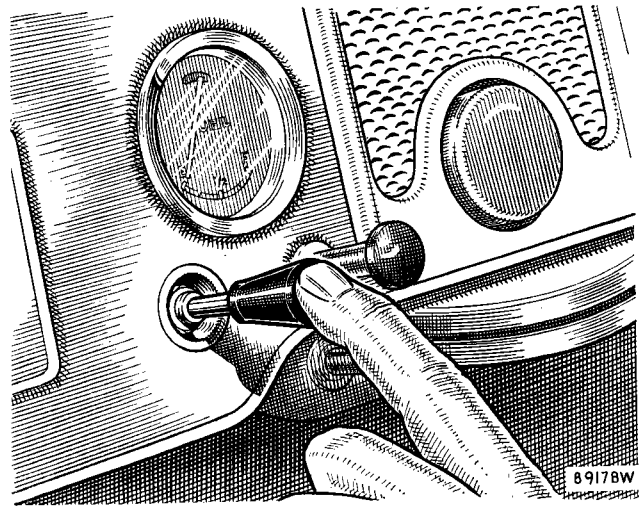
Set the windshield wipers in motion before operating the cleaning jets.

Fluid for the windshield is stored in an unbreakable bottle clipped to the engine bulkhead. When refilling with fluid lift the bottle from its clip and unscrew the cap.

FOLDING THE HOOD

Never fold the hood if it is wet or damp; wait until it is dry.

- (1) Release the hood from the pillars at the top of the windshield by unscrewing the wing bolts.
- (2) Release the rear bottom edge of the hood from the three buttons and the turnbuckle at each side. Pull on the centre knob of each button to release them from their attachment pins.
- (3) Raise the front of the hood slightly to release the tension in the canvas, and pull to the rear the bottom of the hood where it is attached to the tonneau panel to release it from the two anchor brackets on the panel.
- (4) Tip the seats forward, unfasten the sidescreen container, and turn it over onto the tonneau panel to expose the hood stowage compartment.
- (5) Leave the rear window panel suspended over the tonneau panel and collapse the hood into the stowage compartment, pulling the canvas clear of the hood irons and folding it forward over the front hood rail.
- (6) Fold the rear window forward over the hood, pulling out the spare canvas at each side and folding it neatly over the front of the window.
- (7) Push the hood into the stowage compartment and turn the sidescreen container forward to cover the hood.
- (8) Remove the sidescreens and stow them in the container pockets with the cranked bracket of each screen at opposite ends and facing towards the rear.
- (9) Secure the sidescreen container over the folded hood with the six buttons (three on each side).
- (10) Tighten the sidescreen clamping nut on each door to prevent its possible loss.



Operating the windshield wiper

OPTIONAL FITTINGS

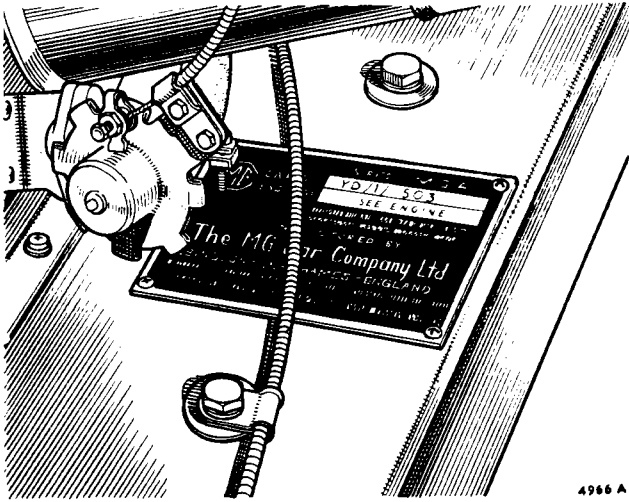
The following items of equipment are available as optional fittings:

- | | |
|---|--|
| Tonneau cover. | Sliding windows. |
| Radiator blind. | Competition windshield assembly. |
| Heating and demisting equipment. | Luggage carrier. |
| Twin horns. | Wing driving mirror. |
| Fog lamps. | Cold air ventilation kit. |
| Cigar lighter. | Ashtray. |
| H.M.V. car radio (provision has been made for easy installation). | Badge bar. |
| Windshield washer. | Sun visors (Coupe only). |
| Detachable hard-top. | Adjustable telescopic steering column. |
| | Competition de-luxe seats. |

SERIAL NUMBERS

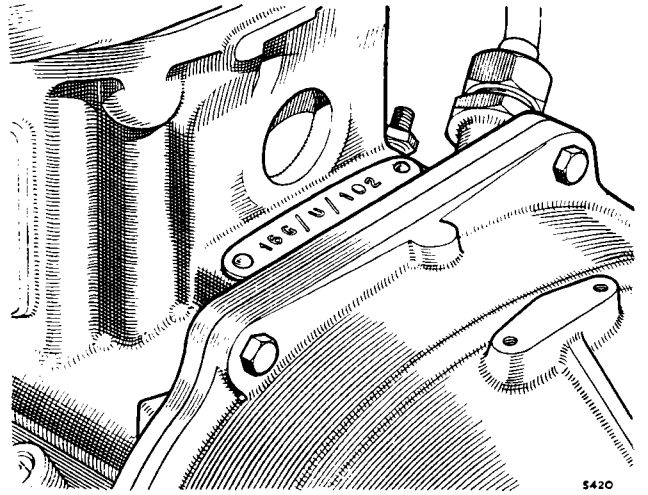
The major components of the vehicle have serial numbers and these will be found in the positions illustrated on the opposite page. When in communication with the Company or your Dealer always quote the engine number and car number complete with prefixes. The registration number is of no assistance and is not required. Write your name and address clearly.

GENERAL INFORMATION—continued



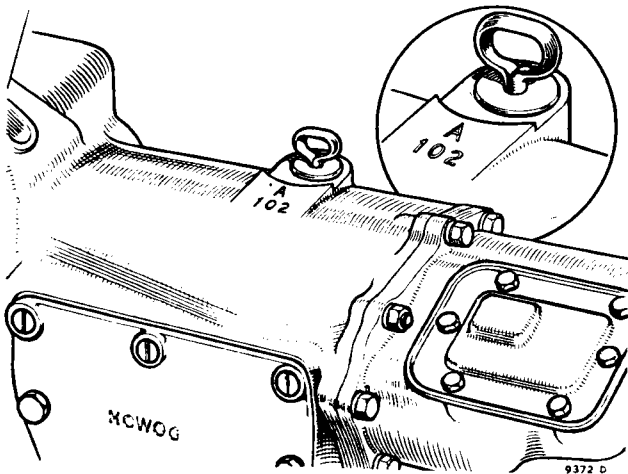
4966 A

Chassis number. This is stamped on the identification plate and should be quoted with its prefix. The plate is secured to the top left-hand side of the dash panel



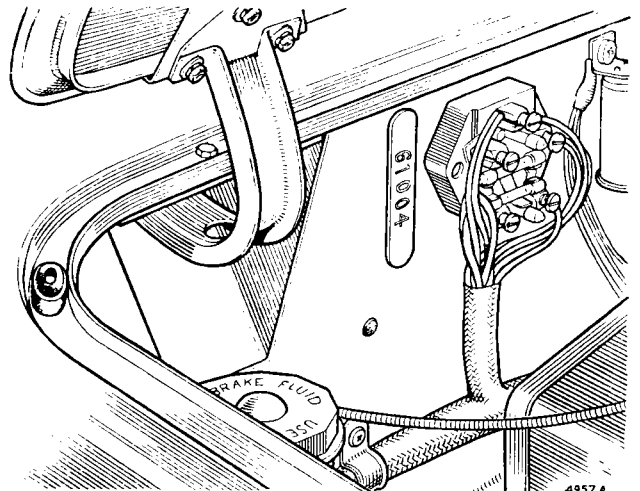
5420

Engine Number. Stamped on a plate at the rear of the engine behind the cylinder block



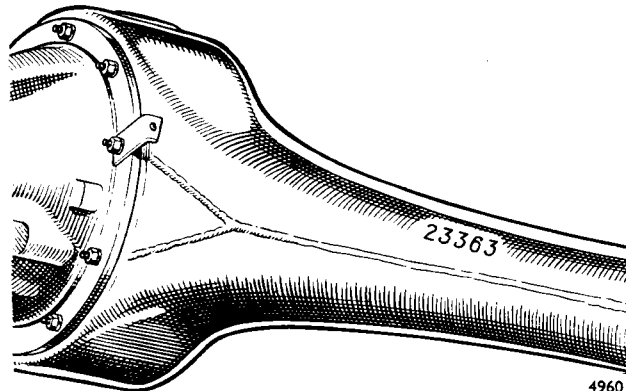
9372 D

Gearbox Number. Stamped on top of the gearbox casing adjacent to the dipstick



4957 A

Body Number. Stamped on a plate secured to the right-hand side of the dash panel



4960

Rear Axle Number. Stamped on the front of the left-hand rear axle tube

GENERAL INFORMATION—*continued*

POWER UNIT SERIAL NUMBER CODING

The engine number on later engines comprises a series of letters and numbers, presenting in code the capacity, make, and type of unit, ancillaries fitted, and the type of compression together with the serial number of the unit.

1st PREFIX GROUP—Cubic capacity, make, and type

1st Prefix number 8—803 c.c.
9—950 c.c.
12—1200 c.c.
15—1500 c.c.
16—1600 c.c.
22—2200 c.c.
25—2500 c.c.
26—2600 c.c.

1st Prefix letter B—B.M.C. Industrials
G—M.G.
H—Miscellaneous special
J—Commercial
M—Morris
R—Riley
W—Wolseley

2nd Prefix letter A—Z used for the variations of engine type

2nd PREFIX GROUP—Gearbox and Ancillaries

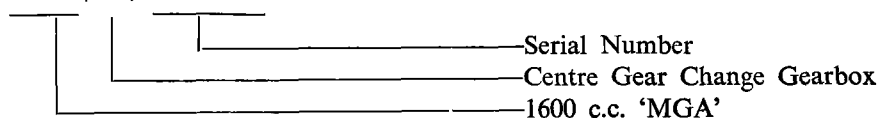
A—Automatic gearbox
M—Manumatic clutch
N—Steering column gear change gearbox
O—Overdrive (Borg-Warner)
P—Police specification
U—Centre gear change gearbox

3rd GROUP—Compression and serial number

H—High compression } and serial number of unit
L—Low compression }

CODE EXAMPLE

1 6 G / U / 1 2 3 4 5 6



GENERAL INFORMATION—*continued*

IDENTIFICATION OF UNIFIED SCREW THREADS

The general standardization of Unified screw threads makes it necessary to identify all nuts, bolts, and set screws with these threads in order to ensure their being matched with correspondingly threaded components and the fitting of correct replacements.

Identification has been standardized and is effected in the following manner:

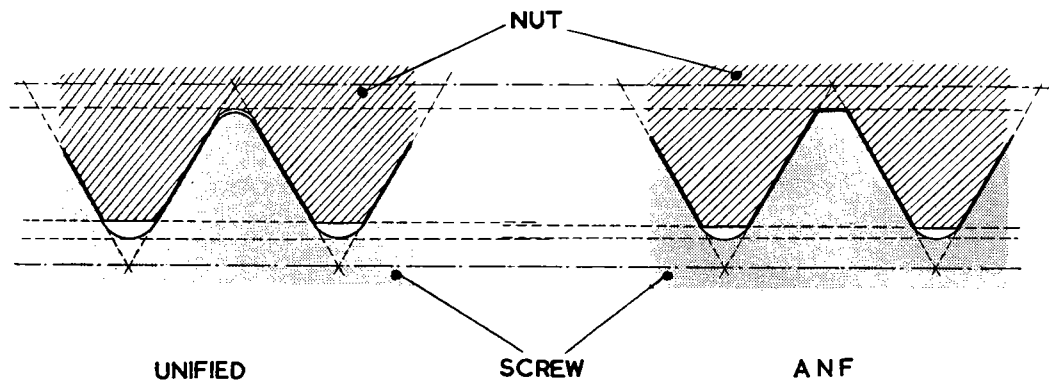
Nuts. By a circular groove turned on the end face of the nut or by connected circles stamped on one flat of the hexagon.

Bolts and set screws. By a circular depression turned on the head or by connected circles stamped on one flat of the hexagon.

Wheel stud nuts. By a notch cut in all the corners of the hexagon.

It is of the utmost importance that any nuts, bolts, or set screws marked with the above identifications are used only in conjunction with associated components having Unified threads and that only replacement parts with Unified threads are used, as these are *not* interchangeable with Whitworth, BSF, or Metric threads.

The Unified thread is, however, interchangeable with the American National Fine (ANF) thread for all practical purposes.



This illustration of the Unified thread and the ANF thread to the same scale indicates their close relationship

Spanners. It is to be noted that all ANF- and Unified-threaded nuts and hexagon-headed bolts are made to the standard American hexagon sizes and that spanners of the appropriate size must be used when tightening or loosening them.

KEY TO SPANNER SIZES (Nominal widths between jaws)

Diameter of screw thread (inches)	¼"	⅝"	⅜"	⅞"	½"	⅝"	⅜"	¾"	⅞"	1"
For BSF screws and nuts	·448	·529	·604	·705	·825	·925	1·016	1·207	1·309	1·489
For ANF screws and nuts	·440	·504	·566	·629	·755	·880	·944	1·132	1·320	1·508
For Unified screws	·440	·504	·566	·630	·755	·817	·943	1·132	1·321	1·509
For Unified nuts (normal)	·440	·504	·566	·692	·755	·880	·943	1·132	1·321	1·509
For Unified nuts (heavy)	—	—	—	—	—	—	1·069	1·258	1·446	—

NOTE.—In the case of some Unified-threaded components the size of the hexagon for the nut is different from that of the bolt. Where this occurs the spanner size is shown in heavy type in the above table.

GENERAL INFORMATION—*continued*

PART NAME ALTERNATIVES

	<i>M.G. Part Name</i>	<i>Alternatives</i>
ENGINE	Gudgeon pin Scraper ring Core plug Oil sump	Piston pin. Small end pin. Wrist pin. Oil control ring. Expansion plug. Welch plug. Sealing disc. Oil pan. Oil reservoir.
CONTROLS	Mixture control	Choke. Strangler.
GEARBOX	Gear lever Change-speed fork First-motion shaft Layshaft	Shift lever. Shift fork. Selector fork. Clutch shaft. First reduction pinion. Main drive pinion. Drive gear. Countershaft.
AXLE	Crown wheel Bevel pinion 'U' bolts Axle shaft Differential gear Differential pinion	Ring gear. Spiral drive gear. Small pinion. Spiral drive pinion. Spring clips. Half-shaft. Hub driving shaft. Jack driving shaft. Sun wheel. Planet wheel.
STEERING	Swivel pin Stub axle Track-rod Draglink	Pivot pin. Steering pin. King-pin. Swivel axle. Cross tube. Side tube. Steering connecting rod.
ELECTRICAL	Dynamo Control box	Generator. Voltage regulator. Cut-out. Voltage control.
EXHAUST	Silencer	Muffler.
BODY	Bonnet Wing	Hood. Mudguard. Fender.

MAINTENANCE ATTENTION

500 miles (800 km.) free service

During the early life of the car, soon after it has completed 500 miles (800 km.), you are entitled to have it inspected free of charge by the M.G. Dealer from whom you purchased it, or, if this should not be convenient, by any other M.G. Dealer by arrangement. This attention given during the critical period in the life of the car makes all the difference to its subsequent life and performance.

This service includes:

1. *Engine*
 - Tighten cylinder head and manifold nuts to recommended pressures.
 - Check tightness of camshaft bearing cap nuts to recommended pressures.
 - Check valve clearances, and reset if necessary.
 - Tighten fan belt if necessary.
 - Check all water connections, and tighten clips if necessary.
 - Examine and clean carburetters, and reset slow-running adjustment if necessary.
2. *Ignition*
 - Examine, and adjust if necessary, sparking plugs and distributor points.
 - Check working of automatic ignition control, and if necessary reset ignition timing.
3. *Clutch*
 - Check clutch pedal for free movement, and bleed if necessary.
 - Check fluid level in master cylinder, and top up if necessary.
4. *Steering*
 - Check front wheel alignment and steering connections; adjust if necessary.
5. *Brakes*
 - Check braking system functionally, and bleed lines if necessary.
6. *Hydraulic dampers*
 - Check fluid level in master cylinder, and top up if necessary.
 - Inspect hydraulic dampers for leaks.
 - Examine oil levels, and top up if necessary.
 - Check mounting bolts for tightness.
7. *Body*
 - Check doors for ease in opening and closing. If necessary, lightly smear with a suitable lubricating agent all dovetails and striking plates.
8. *Electrical*
 - Check electrical system functionally.
 - Examine battery and top up to correct level with distilled water or diluted acid as may be required.
 - Clean and tighten terminals.
9. *General*
 - Check tightness of universal joint nuts, spring clips, and wing (fender) bolts.
10. *Lubrication*
 - Drain oil from engine, gearbox, and rear axle, and refill.
 - Oil and grease all points of car.
11. *Wheels and tyres*
 - Test tyres for correct pressure.
 - Check tightness of wheel nuts.

Regular servicing, as proven by presentation of completed voucher counterfoils, could well enhance the value of your vehicle in the eyes of a prospective purchaser.

ALL MATERIALS CHARGEABLE TO THE CUSTOMER

Daily. Inspect oil level in crankcase. Top up if necessary.
See that the radiator is full of water.

Weekly. Test tyre pressures. (See 'GENERAL DATA'.)

1,000 miles (1600 km.) service

1. *Engine*
 - Top up carburetter piston dashpots.
 - Lubricate carburetter controls.
 - Top up radiator header tank.
2. *Clutch*
 - Check level of fluid in the hydraulic clutch master cylinder.
3. *Brakes*
 - Make visual inspection of brake lines and pipes.
 - Check level of fluid in hydraulic brake master cylinder.
4. *Hydraulic dampers*
 - Examine all hydraulic dampers for leaks.

MAINTENANCE ATTENTION—*continued*

1,000 miles (1600 km.) service—*continued*

5. *Electrical*
Check battery cell specific gravity readings and top up to correct level.
6. *Lubrication*
Top up engine, gearbox, and rear axle oil levels.
Lubricate all grease nipples (except steering rack and pinion and water pump).
7. *Wheels and tyres*
Check tyre pressures.
Check wheel nuts for tightness.

2,000 miles (3200 km.) service

Carry out the 1,000 miles service.

3,000 miles (5000 km.) service

1. *Engine*
Top up carburettor piston dashpots.
Lubricate carburettor controls.
Top up radiator header tank.
Check dynamo drive belt tension.
Clean and re-oil air cleaner elements.
Dismantle oil filter element and bowl and wash in petrol.
2. *Ignition*
Check automatic ignition control, lubricating distributor drive shaft and cam and advance mechanism.
Check, and adjust if necessary, distributor contact points.
3. *Clutch*
Check level of fluid in the hydraulic clutch master cylinder.
4. *Brakes*
Change wheels round diagonally to regularize tyre wear.
Make visual inspection of brake lines and pipes.
Check level of fluid in the hydraulic brake master cylinder.
5. *Hydraulic dampers*
Examine all hydraulic dampers for leaks.
6. *Body*
Lubricate door hinges, bonnet lock, and operating mechanism.

7. *Electrical*

Check battery cell specific gravity readings and top up to correct level.
Lubricate dynamo bearing.

8. *Lubrication*

Change engine oil.
Top up gearbox and rear axle oil levels.
Lubricate all grease nipples (except steering rack and pinion and water pump).

9. *Wheels and tyres*

Check tyre pressures.

4,000 miles (6400 km.) service

Carry out the 1,000 miles service

5,000 miles (8000 km.) service

Carry out the 1,000 miles service, with the following addition:

1. *Engine*
Clean and adjust sparking plugs.

6,000 miles (10000 km.) service

1. *Engine*
Top up carburettor piston dashpots.
Lubricate carburettor controls.
Top up radiator header tank.
Check dynamo drive belt tension.
Lubricate water pump sparingly.
Clean and re-oil air cleaner elements.
Clean carburettor and fuel pump filters.
2. *Ignition*
Check automatic ignition control, lubricating distributor drive shaft and cam and advance mechanism.
Check, and adjust if necessary, distributor contact points.
3. *Clutch*
Check level of fluid in the hydraulic clutch master cylinder.
4. *Brakes*
Change road wheels round diagonally to regularize tyre wear.
Make visual inspection of brake lines and pipes.
Check level of fluid in the hydraulic brake master cylinder.

MAINTENANCE ATTENTION—*continued*

6,000 miles (10000 km.) service—*continued*

5. *Hydraulic dampers*
Examine all hydraulic dampers for leaks and check fluid level in front dampers.
6. *General*
Tighten rear road spring seat bolts.
7. *Body*
Check, and tighten if necessary, door hinges and striker plate securing screws.
Lubricate door hinges, bonnet lock, and operating mechanism.
8. *Electrical*
Check battery cell specific gravity readings and top up to correct level.
Lubricate dynamo bearing.
9. *Lubrication*
Change oil in engine, gearbox, and rear axle. Fit new oil filter element. Lubricate all grease nipples (except steering rack and pinion).
Repack front hub caps with grease.
10. *Wheels and tyres*
Check tyre pressures.
Check wheel alignment.
11. *Test*
Road-test car and report.

7,000 miles (11200 km.) service

Carry out the 1,000 miles service.

8,000 miles (12800 km.) service

Carry out the 1,000 miles service.

9,000 miles (14400 km.) service

Carry out the 3,000 miles service.

10,000 miles (16000 km.) service

Carry out the 1,000 miles service, with the following addition:

1. *Engine*
Fit new sparking plugs.

11,000 miles (17600 km.) service

Carry out the 1,000 miles service.

12,000 miles (20000 km.) service

1. *Engine*
Remove carburetter suction chambers and pistons, clean, reassemble, and top up.
Remove carburetter float-chambers, empty sediment, and refit.
Lubricate carburetter controls.
Check valve clearances, and adjust if necessary.
Clean and re-oil air cleaner elements.
Check dynamo drive belt tension.
Lubricate water pump sparingly.
Clean carburetters and fuel pump filters.
2. *Ignition*
Check automatic ignition control, lubricating distributor drive shaft and cam and advance mechanism.
Check, and adjust if necessary, distributor contact points.
3. *Clutch*
Check level of fluid in the hydraulic clutch master cylinder.
4. *Steering*
Check steering and suspension moving parts for wear.
5. *Brakes*
Change road wheels round diagonally to regularize tyre wear.
Make visual inspection of brake lines and pipes.
Check level of fluid in the hydraulic brake master cylinder.
6. *Hydraulic dampers*
Examine all hydraulic dampers for leaks, and top up if necessary.
7. *Radiator*
Drain, flush out, and refill radiator header tank.
8. *General*
Tighten rear road spring seat bolts.
9. *Body*
Check, and tighten if necessary, door hinges and striker plate securing screws.
Lubricate door hinges, bonnet lock, and operating mechanism.

MAINTENANCE ATTENTION—*continued*

12,000 miles (20000 km.) service—*continued*

10. *Electrical*

Check battery cell specific gravity readings and top up to correct level.

Lubricate trafficators.

Lubricate dynamo bearing.

Check headlamp beam setting, and reset if necessary.

11. *Lubrication*

Drain engine and refill with fresh oil.

Change oil in gearbox and rear axle.

Fit new oil filter element.

Lubricate steering rack and pinion.

Lubricate all grease nipples.

Repack front hub caps with grease.

12. *Wheels and tyres*

Check tyre pressures.

Check wheel alignment.

13. *Test*

Road-test car and report.