The

Series MGA 1500, MGA 1600, and MGA 1600 (Mk. II)

NOTE

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

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INTRODUCTION

This Manual has been prepared to provide the service operator with the necessary information for the maintenance and repair of the M.G. (Series MGA, MGA 1600, and MGA 1600 [Mk. II]).

The Manual also serves as a ready-reference book for service supervision and covers items of procedure for the guidance of both the fully qualified and the less-experienced mechanic.

UNIT ARRANGEMENT

In the Manual the complete vehicle is divided into Sections each of which deals with an assembly or major component and carries a reference letter. Where necessary, a Section is divided into two or three parts, having a single, a double, or a treble reference letter. In such cases the double-letter Section refers specifically to Series MGA 1600 and MGA 1600 (Mk. II) cars and the treble-letter Section refers to the Series MGA 1600 and MGA 1600 (Mk. II) fitted with centre-lock wheels and Dunlop disc brakes. These Sections should always be used in conjunction with the corresponding single-letter Section. Where there is no double-letter or treble-letter Section the information contained in the single-letter Section refers to all models.

NUMBERING OF PAGES AND ILLUSTRATIONS

The pages and illustrations are numbered consecutively within each Section, and the Section title and letter(s) are shown at the top of each page.

SERVICE TOOLS

Use of the correct tools contributes to an efficient, economic, and profitable repair. References have therefore been made to such tools throughout the Manual.

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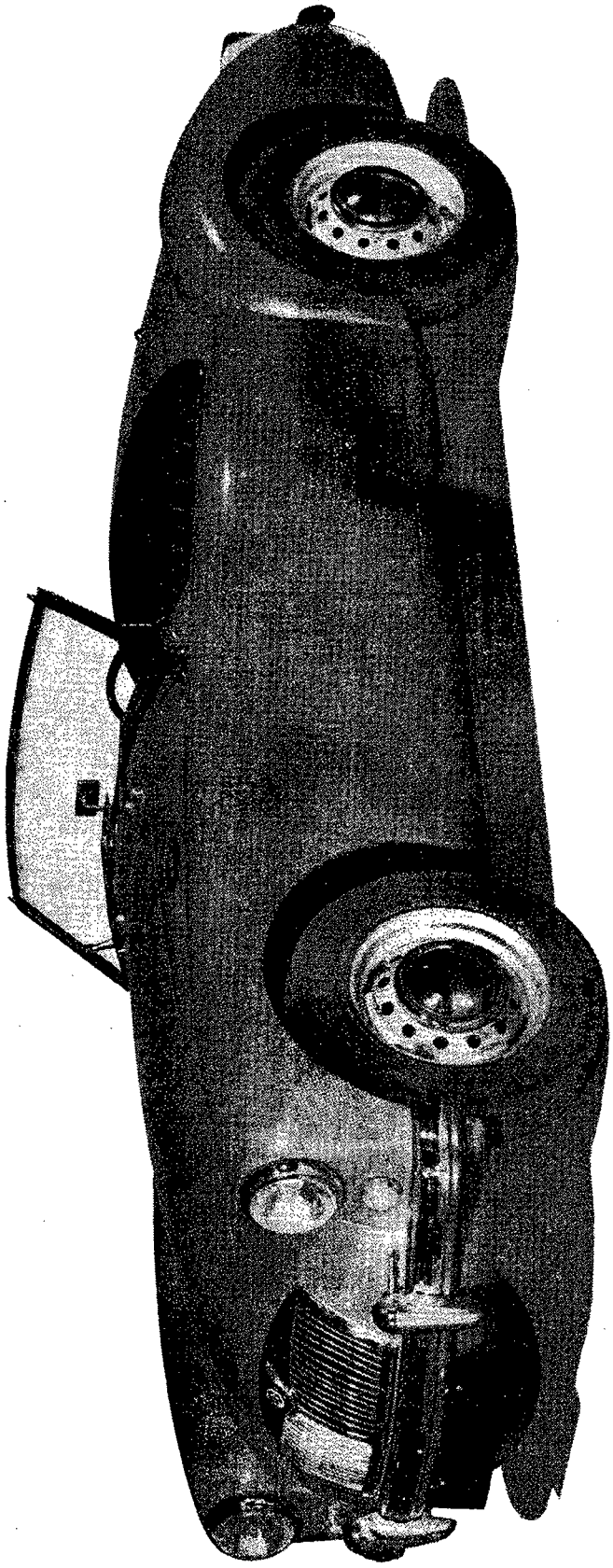

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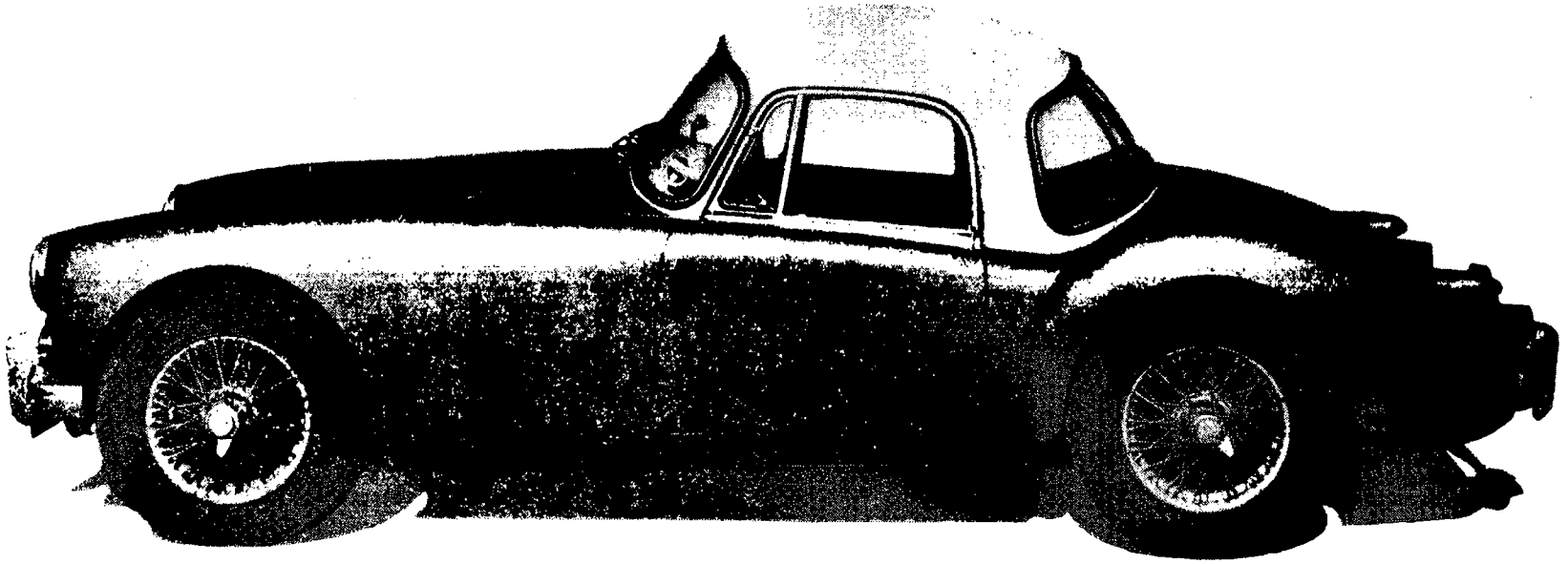

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THE M.G. (Series MGA 1600—Mk. II) TOURER

GENERAL DATA

(Series MGA)

ENGINE

Type	15GB.
(From Car No. 61504)	15GD.
Number of cylinders	4.
Bore	2·875 in. (73·025 mm.).
Stroke	3·5 in. (89 mm.).
Capacity	90·88 cu. in. (1489 c.c.).
Firing order	1, 3, 4, 2.
Compression ratio	8·3 : 1.
Capacity of combustion chamber (valves fitted)	2·3 to 2·4 cu. in. (38·2 to 39·2 c.c.).
Valve operation	Overhead by push-rod.
B.M.E.P.	130 lb./sq. in. at 3,500 r.p.m.
Torque	77·4 lb. ft. at 3,500 r.p.m.
Cooling system	Thermo-siphon, pump- and fan-assisted.
Oversize bore : 1st	·010 in. (·254 mm.).
Max.	·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: Top and bottom halves	Steel-backed white metal.
Length	1·375 in. (34·925 mm.).
End-clearance	·002 to ·003 in. (·051 to ·076 mm.).
End-thrust	Taken by thrust washers at centre main bearing.
Running clearance	·0005 to ·002 in. (·0127 to ·0508 mm.).
Undersizes	—·010 in., —·020 in., —·030 in., —·040 in. (—·254 mm., —·508 mm., —·762 mm., —1·016 mm.).

CONNECTING RODS

Length between centres	6·5 in. (165·1 mm.).

Big-end bearings

Material: Top and bottom halves	Steel-backed lead-indium or lead-tin.
Bearing side-clearance	·008 to ·012 in. (·203 to ·305 mm.).
Bearing diametrical clearance	·0001 to ·0016 in. (·002 to ·04 mm.).
Undersizes	—·010 in., —·020 in., —·030 in., —·040 in. (—·254 mm., —·508 mm., —·762 mm., —1·016 mm.).

PISTONS

Type	Aluminium alloy.
Clearances: Bottom of skirt	·0017 to ·0023 in. (·043 to ·051 mm.).
Top of skirt	·0035 to ·0042 in. (·090 to ·106 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 rings.
Width	·0615 to ·0625 in. (1·56 to 1·58 mm.).
Thickness	·111 to ·118 in. (2·81 to 3·0 mm.) to Engine No. 40824. ·119 to ·126 in. (3·02 to 3·2 mm.) from Engine No. 40825.

GENERAL DATA—*continued*

Fitted gap	·008 to ·013 in. (·20 to ·33 mm.).
Clearance in groove	·0015 to ·0035 in. (·038 to ·089 mm.).
Oil control type	Slotted scraper.
Width	·1552 to ·1562 in. (3·94 to 3·99 mm.).
Thickness	·111 to ·118 in. (2·81 to 3·0 mm.) to Engine No. 40824. ·119 to ·126 in. (3·02 to 3·2 mm.) from Engine No. 40825.
Fitted gap	·008 to ·013 in. (·20 to ·33 mm.).
Clearance in groove	·0016 to ·0036 in. (·040 to ·091 mm.).

GUDGEON PIN

Type	Clamped.
Fit	·0001 to ·00035 in. (·0025 to ·009 mm.). Hand push fit at 68° F. (20° C.).
Diameter	·6869 to ·6871 in. (17·447 to 17·4523 mm.).

VALVES AND VALVE GEAR

Valves

Seat angle: Inlet and exhaust	45°.
Head diameter: Inlet	1½ in. (38·1 mm.).
Exhaust	1 $\frac{8}{32}$ in. (32·54 mm.).
Stem diameter: Inlet and exhaust	·342 in. (8·68 mm.).
Valve lift	·357 in. (9·06 mm.).
Valve stem to guide clearance: Inlet	·00155 to ·00255 in. (·0394 to ·0635 mm.).
Exhaust	·00105 to ·00205 in. (·027 to ·052 mm.) to Engine No. 4044. ·002 to ·003 in. (·051 to ·076 mm.) from Engine No. 4045.
Valve rocker clearance: Running	·017 in. (·432 mm.) (hot).
Timing	·060 in. (1·52 mm.).
Timing markings	Dimples on timing wheels.
Chain pitch and number of pitches	$\frac{3}{8}$ in. (9·52 mm.), 52 pitches.
Inlet valve: Opens	16° B.T.D.C.
Closes	56° A.B.D.C.
Exhaust valve: Opens	51° B.B.D.C.
Closes	21° A.T.D.C.

VALVE GUIDES

Length: Inlet	1$\frac{7}{8}$ in. (47·63 mm.).
Exhaust	2 $\frac{8}{32}$ in. (57·94 mm.).
Diameter: Inlet: Outside	·5635 in. (14·31 mm.).
Inside	·3438 in. (8·73 mm.).
Exhaust: Outside	·5635 in. (14·31 mm.)
Inside	·3438 in. (8·73 mm.).
Fitted height above head	·625 in. (15·87 mm.).

VALVE SPRINGS

Free length: Inner	1 $\frac{31}{32}$ in. (50 mm.).
Outer	2 $\frac{3}{64}$ in. (51·99 mm.).
Fitted length: Inner	1 $\frac{7}{16}$ in. (36·51 mm.).
Outer	1 $\frac{9}{16}$ in. (39·69 mm.).
Number of working coils: Inner	6½.
Outer	4½.
Pressure: Valve open	Inner 50 lb. (22·7 kg.). Outer 105 lb. (47·6 kg.).
Valve closed	Inner 30 lb. (13·6 kg.). Outer 60½ lb. (27 kg.).

GENERAL DATA—*continued*

TAPPETS

Type	Barrel with flat base.
Diameter: Body	$\frac{13}{16}$ in. (20·64 mm.).
Length	2·293 to 2·303 in. (58·25 to 58·5 mm.).

ROCKERS

Outside diameter before fitting	·751 in. (19·07 mm.).
Inside diameter (reamed in position)	·616 to ·620 in. (15·65 to 15·74 mm.).
Bore of rocker arms	·7485 to ·7489 in. (19·01 to 19·02 mm.).
Rocker ratio	1·426 : 1.

CAMSHAFT

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 ·007 in. (·076 to ·178 mm.).
Bearing: number and type	3. Thinwall steel-backed white metal.
Outside diameter (before fitting)	Front 1·920 in. (48·76 mm.), centre 1·860 in. (47·24 mm.), rear 1·754 in. (44·55 mm.).
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. (·0254 to ·0508 mm.).

ENGINE LUBRICATION SYSTEM

Oil pump

Type	Eccentric rotor.
Relief pressure valve operates	75 to 80 lb./sq. in. (5·3 to 5·6 kg./cm.^{2}).
Relief valve spring: Free length	3 in. (76·2 mm.).
Fitted length	$2\frac{5}{32}$ in. (54·77 mm.) at 16 lb. (7·26 kg.) load.
Identification colour	Red spot.

Oil filter

Type	Tecalemit (element Part No. 1H779) or Purolator (element Part No. 1H1054) up to Engine No. 26932. Tecalemit or Purolator (element Part No. 8G683) from Engine No. 26933.
Capacity	$\frac{1}{2}$ pint (·28 litre).

Oil pressure

Normal running: Minimum	10 to 25 lb./sq. in. (·7 to 1·7 kg./cm.^{2}).
Maximum	50 to 75 lb./sq. in. (3·5 to 5·2 kg./cm.^{2}).

TORQUE WRENCH SETTINGS

Cylinder head nuts	50 lb. ft. (6·91 kg. m.).
Main bearing nuts	70 lb. ft. (9·7 kg. m.).
Connecting rod set screws	35 lb. ft. (4·83 kg. m.).
Clutch assembly to flywheel	25 lb. ft. (3·46 kg. m.).
Road wheel nuts	60 to 62·5 lb. ft. (8·3 to 8·65 kg. m.).
Gudgeon pin clamp	25 lb. ft. (3·45 kg. m.).
Manifold stud nuts	25 lb. ft. (3·45 kg. m.).
Water pump securing bolts	25 lb. ft. (3·45 kg. m.).
Clutch to flywheel bolts	35 to 40 lb. ft. (4·8 to 5·5 kg. m.).
Oil filter centre-bolt	15 lb. ft. (2·07 kg. m.).
Brake calliper securing bolts	45 to 50 lb. ft. (6·22 to 6·91 kg. m.).

GENERAL DATA—*continued*

FUEL SYSTEM

Carburetter

Make and type	S.U. twin H4 semi-downdraught.
Diameter	1½ in. (38·1 mm.).
Needle	GS.
Jet	·090 in. (2·29 mm.).
Piston spring	Red.

AIR CLEANER

Make and type	Vokes—oil-wetted.

FUEL PUMP

Make and type	S.U. electric—high pressure.
Delivery test	10 gal. per hr. (45·4 litres per 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	70 to 75° C. (158 to 167° F.).
Quantity of anti-freeze: 15° frost	1 pint (·57 litre).
25° frost	1½ pints (·85 litre).
35° frost	2 pints (1·1 litres).

IGNITION SYSTEM

Sparking plugs	Champion N5, was NA8.
Size	14 mm.
Plug gap	·024 to ·026 in. (·625 to ·660 mm.).
Coil	Lucas HA12.
Distributor	Lucas. Type DM2. Later models DM2.P4.
Distributor contact points gap	·014 to ·016 in. (·35 to ·40 mm.).
Suppressors	Lucas No. 78106A fitted on each H.T. cable.
Timing	7° B.T.D.C.

CLUTCH

Make and type	Borg & Beck A6–G. Single dry plate.
Diameter	8 in. (20·3 cm.).
Facing material	Wound yarn—Borglite.
Pressure springs	6.
Colour	Black and yellow. Cream and light green: commencing Engine No. 16225.
Damper springs	6.
Colour	White with light-green stripes.
Release lever ratio	9 : 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.

GENERAL DATA—*continued*

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	2⅝.
Steering-wheel diameter	16½ in. (419·10 mm.).
Camber angle	1° positive to ½° negative on full bump.
Castor angle	4°.
King pin inclination	9° to 10½° on full bump.
Toe-in	Wheels parallel.
Track: Front	Disc wheels 47½ in. (1·203 m.). Wire wheels 47⅞ in. (1·216 m.).
Rear	Disc wheels 48¾ in. (1·238 m.). Wire wheels 48¾ in. (1·238 m.).

FRONT SUSPENSION

Type	Independent coil.	
Spring detail:	*To Car No.* 15151	*From Car No.* 15152
Coil diameter (mean)	3·238 in. (82·24 mm.).	3·28 in. (82·25 mm.).
Diameter of wire	·498 in. (12·66 mm.).	·54 in. (13·72 mm.).
Free height	9·28±$\frac{1}{16}$ in. (23·49 cm.±1·6 mm.).	8·88±$\frac{1}{16}$ in. (22·55 cm.±1·6 mm.).
Number of free coils	7·5.	7·2.
Static laden length	6·60±$\frac{1}{32}$ in. (16·76 cm.±·8 mm.).	
Static laden length at load of	1,095±20 lb. (497±9·1 kg.).	
Maximum deflection	4 in. (10·16 cm.).	
Dampers (front)	Piston type.	

REAR SUSPENSION

Type	Semi-elliptic.
Spring detail:	
Number of leaves	6.
Width of leaves	1¾ in. (44·45 mm.).
Gauge	$\frac{7}{32}$ in. (5·56 mm.).
Working load	450 lb. (203·7 kg.).
Free camber	3·60 in. (91·44 mm.).
Dampers (rear)	Piston type.

PROPELLER SHAFT

Type	Tubular. Reverse spline.
Make and type of joints	Hardy Spicer. Needle roller.
Propeller shaft length (between centres of joints)	31⅛ in. (79·69 cm.).
Overall length	38$\frac{13}{32}$ in. (97·44 cm.).
Diameter	2 in. (50·8 mm.).
Type (with 15GD series power unit)	Tubular, incorporating sliding spline joint.
Overall length (fully extended)	32$\frac{11}{16}$ in. (83·03 cm.).
Overall length (fully compressed)	31¼ in. (80·65 cm.).
Length between centres of joints (fully extended)	30$\frac{5}{16}$ in. (77 cm.).
Length between centres of joints (fully compressed)	29⅜ in. (74·65 cm.).
Diameter (main tube)	2 in. (50·8 mm.).

GENERAL DATA—*continued*

REAR AXLE

Make and type	B.M.C. 'B' type, three-quarter-floating.
Ratio: Standard	10/43.
Optional	9/41.
Adjustment	Shims.

ELECTRICAL EQUIPMENT

System	12-volt. Positive earth.
Charging system	Compensated voltage control.
Battery: Type	Lucas SG9E.
Type (Export only)	Lucas STGZ9E (dry-charged).
Voltage	6-volt (2 off).
Capacity (20-hr. rate)	58-amp.-hr.
Starter motor	Lucas 4-brush M35G.
Dynamo	Lucas C39PV2.
	Lucas C40/1 ('MGA 1600' after Engine No. 16GA6272).

BRAKES

Type	Lockheed hydraulic (front and rear).
Size	10 in. × 1¾ in. (25·4 cm. × 44·45 mm.).
Front	2 leading shoes.
Rear	Single leading shoe.
Drum size	10 in. (254 mm.) (front and rear).
Lining dimensions	9·6 in. × 1¾ in. (24·38 cm. × 44·45 mm.).
Lining area: Front	67·2 sq. in. (433·55 cm.²).
Rear	67·2 sq. in. (433·55 cm.²).
Material	Ferodo DM12.

WHEELS

Type: Ventilated disc	4J × 15.
Wire (optional)	4J × 15, 48-spoke.

TYRES

Size			5·60—15.
Tyre pressures: Normal:	Front		17 lb./sq. in. (1·2 kg./cm.²).
	Rear		20 lb./sq. in. (1·4 kg./cm.²).
Fast motoring:	Front		21 lb./sq. in. (1·48 kg./cm.²).
	Rear		24 lb./sq. in. (1·69 kg./cm.²).
Competition work and sustained high-speed motoring	Front		23 lb./sq. in. (1·62 kg./cm.²).
	Rear		26 lb./sq. in. (1·83 kg./cm.²).

CAPACITIES

	Imp.	*U.S.*	*Litres*
Engine sump (including filter)	7½ pts.	9 pts.	4·25
Gearbox	4½ pts.	5·4 pts.	2·56
Rear axle	2¼ pts.	2·7 pts.	1·28
Cooling system	10 pts.	12 pts.	5·67
Steering rack	½ pt.	·6 pt.	·28
Fuel tank	10 gal.	12 gal.	45·4
Brake system	1 pt.	1·2 pts.	·568

GENERAL DATA—*continued*

GENERAL DIMENSIONS

Wheelbase	94 in. (238·8 cm.).
Overall length	156 in. (396·2 cm.).
Overall width	58 in. (147·3 cm.).
Overall height	50 in. (127·0 cm.).
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)	1,988 lb. (901·81 kg.).
Turning circles	28 ft. (8·534 m.).

GENERAL DATA
(MGA 1600)

ENGINE

Type	16GA.
Number of cylinders	4.
Bore	2·968 in. (75·39 mm.).
Stroke	3·5 in. (89 mm.).
Capacity	96·9 cu. in. (1588 c.c.).
Firing order	1, 3, 4, 2.
Compression ratio	8·3 : 1.
Capacity of combustion chamber (valves fitted)	2·36 cu. in. (38·7 c.c.).
Valve operation	Overhead by push-rod.
B.M.E.P.	135 lb./sq. in. (9·5 kg./cm.²) at 4,000 r.p.m.
Torque	87 lb. ft. (12·03 kg. m.) at 3,800 r.p.m.
Cooling system	Thermo-siphon, pump- and fan-assisted.
Oversize bore: 1st	·010 in. (·254 mm.).
Max.	·040 in. (1·016 mm.).
Maximum b.h.p. (standard)	79·5 at 5,600 r.p.m.

CRANKSHAFT
Main bearings } Refer to Series MGA data on preceding pages.

CONNECTING RODS

Length between centres	6·5 in. (165·1 mm.).
Big-end bearings	
Material: Top and bottom halves	Steel and lead-indium.
Bearing side-clearance	·008 to ·012 in. (·203 to ·305 mm.).
Bearing diametrical clearance	·0010 to ·0025 in. (·025 to ·063 mm.).
Undersizes	—·010 in., —·020 in., —·030 in., —·040 in. (—·254 mm., —·508 mm., —·762 mm., —1·016 mm.).

PISTONS
Refer to Series MGA data on preceding pages.

PISTON RINGS

Compression: Plain	Top ring.
Tapered	2nd and 3rd rings.
Width	·0615 to ·0625 in. (1·56 to 1·58 mm.).
Thickness	·141 to ·148 in. (3·57 to 3·76 mm.).
Fitted gap	·009 to ·014 in. (·229 to ·356 mm.).
Clearance in groove	·0015 to ·0035 in. (·038 to ·089 mm.).
Oil control type	Slotted scraper.
Width	·1552 to ·1562 in. (3·94 to 3·99 mm.).
Thickness	·135 to ·142 in. (3·43 to 3·61 mm.).
Fitted gap	·009 to ·014 in. (·23 to ·36 mm.).
Clearance in groove	·0016 to ·0036 in. (·040 to ·091 mm.).

GUDGEON PIN
Refer to Series MGA data on preceding pages.

VALVES AND VALVE GEAR

Valves	
Seat angle: Inlet and exhaust	45°.
Head diameter: Inlet	$1\frac{1}{2}$ in. (38·1 mm.).
Exhaust	$1\frac{9}{32}$ in. (32·54 mm.).

Stem diameter: Inlet	·342 in. (8·68 mm.).
Exhaust	·342 in. (8·68 mm.).
Valve lift	·350 in. (8·89 mm.).
Valve stem to guide clearance: Inlet	·00155 to ·00255 in. (·0394 to ·0635 mm.).
Exhaust	·002 to ·003 in. (·051 to ·076 mm.).
Valve rocker clearance: Running	·015 in. (·38 mm.) (cold).
Timing	·021 in. (·53 mm.).
Timing markings	Dimples on timing wheels.
Chain pitch and number of pitches	$\frac{3}{8}$ in. (9·52 mm.), 52 pitches.
Inlet valve: Opens	16° B.T.D.C.
Closes	56° A.B.D.C.
Exhaust valve: Opens	51° B.B.D.C.
Closes	21° A.T.D.C.

VALVE GUIDES

Length: Inlet	$1\frac{7}{8}$ in. (47·63 mm.).
Exhaust	$2\frac{13}{64}$ in. (55·95 mm.).
Diameter: Inlet and exhaust: Outside	·5635 to ·5640 in. (14·31 to 14·32 mm.).
Inside	·34425 to ·34475 in. (8·744 to 8·757 mm.).
Fitted height above head	·625 in. (15·87 mm.).

VALVE SPRINGS
TAPPETS
ROCKERS
CAMSHAFT

Refer to Series MGA data on preceding pages.

ENGINE LUBRICATION SYSTEM

Oil pump

Type	Eccentric rotor.
Relief pressure valve operates	50 lb./sq. in. (3·5 kg./cm.²).
Relief valve spring: Free length	3 in. (76·2 mm.).
Fitted length	$2\frac{5}{32}$ in. (54·77 mm.) at 16 lb. (7·26 kg.) load.
Identification colour	Red spot.

Oil filter

Type	Tecalemit or Purolator.
Capacity	1 pint (1·2 U.S. pints, ·57 litre).

Oil pressure

Normal running: Minimum	15 lb./sq. in. (1·05 kg./cm.²).
Maximum	50 lb./sq. in. (3·5 kg./cm.²).

TORQUE WRENCH SETTINGS. Refer to Series MGA data on preceding pages.

FUEL SYSTEM

Carburetter

Make and type	S.U. twin H4 semi-downdraught.
Diameter	$1\frac{1}{2}$ in. (38·1 mm.).
Needle	No. 6.
Jet	·090 in. (2·29 mm.).
Piston spring	Red.

AIR CLEANER AND FUEL PUMP. Refer to Series MGA data on preceding pages.

COOLING SYSTEM. Data as for Series MGA on preceding pages except:

Thermostat opening temperature: Crack open	68° C. (154° F.)
Fully open	83° C. (181° F.)

from Engine No. 16GA4788.

Filler cap spring pressure — 7 lb. (3·18 kg.) from Car No. 71832.

GENERAL DATA—*continued*

IGNITION SYSTEM

Sparking plugs	Champion N5.
Size	14 mm.
Plug gap	·024 to ·026 in. (·625 to ·660 mm.).
Coil	Lucas HA12.
Distributor	Lucas Type DM2. Later models DM2.P4.
Distributor contact points gap	·014 to ·016 in. (·35 to ·40 mm.).
Suppressors	Lucas No. 78106A fitted on each H.T. cable.
Static timing	7° B.T.D.C.

CLUTCH

Make and type	Borg & Beck A6–G. Single dry plate.
Diameter	8 in. (20·3 cm.).
Facing material	Wound yarn—Borglite.
Pressure springs	6.
Colour	Black and yellow. Cream and light green: from Engine No. 16225.
Damper springs	6.
Colour	White with light-green stripes.
Release lever ratio	9 : 1.

GEARBOX

Refer to Series MGA data on preceding pages.

STEERING

Type	Rack and pinion.
Steering-wheel turns—lock to lock	$2\frac{3}{4}$.
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 (MGA 1600):	
Front	Disc wheels $47\frac{1}{2}$ in. (1·203 m.). Wire wheels $47\frac{7}{8}$ in. (1·216 m.).
Rear	Disc wheels $48\frac{3}{4}$ in. (1·238 m.). Wire wheels $48\frac{3}{4}$ in. (1·238 m.).
Track (MGA 1600 with Dunlop disc brakes):	
Front	$47\frac{29}{32}$ 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	$8{\cdot}88 \pm \frac{1}{16}$ in. (22·55 cm. $\pm$1·6 mm.).
Number of free coils	7·2.
Static laden length	$6{\cdot}60 \pm \frac{1}{32}$ in. (16·76 cm. $\pm$·8 mm.).
Static laden length at load of	1,095 $\pm$20 lb. (497 $\pm$9·1 kg.).
Maximum deflection	4 in. (10·16 cm.).
Dampers (front)	Piston type.

GENERAL DATA—*continued*

REAR SUSPENSION

Type	Semi-elliptic.
Spring detail:	
Number of leaves	6.
Width of leaves	1¾ in. (44·45 mm.).
Gauge	$\frac{7}{32}$ in. (5·56 mm.).
Working load	450 lb. (203·7 kg.).
Free camber	3·60 in. (91·44 mm.).
Dampers (rear)	Piston type.

PROPELLER SHAFT

Type	Tubular, flanged type.
Propeller shaft length	30½ in. (77·47 cm.).
Overall length	32 $\frac{11}{16}$ in. (82·98 cm.).
Diameter	2 in. (50·8 cm.).
Make and type of joints	Hardy Spicer needle roller.

REAR AXLE
ELECTRICAL EQUIPMENT — Refer to Series MGA data on preceding pages.

BRAKES

Type	Lockheed hydraulic; disc front, drum rear.
Lining material	DON24.
Disc material	DON55.
Lining dimensions	9·63 in. × 1·7 in. (244·6 mm. × 43·2 mm.).
Total lining area (rear)	65·48 sq. in. (422·36 cm.²).
Number of rivets (per shoe)	12.
Disc diameter	11 in. (27·9 cm.).

BRAKES (MGA 1600 with Dunlop disc brakes)

Type	Dunlop disc (front and rear).
Disc diameter	11 in. (27·9 cm.).
Fluid	Wakefield Crimson (S.A.E. 70.R3).

WHEELS
TYRES — Refer to Series MGA data on preceding pages for Series MGA 1600.

WHEELS (MGA 1600 with Dunlop disc brakes)

Type	Ventilated disc, 4J × 15. Centre lock.

TYRES (MGA 1600 with Dunlop disc brakes)

Size		5·90—15. Road Speed.
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).

GENERAL DATA—*continued*

CAPACITIES

	Imp.	*U.S.*	*Litres*
Engine sump (including filter)	7½ pts.	9 pts.	4·25
Gearbox	4½ pts.	5·6 pts.	2·56
Rear axle	2¼ pts.	2·7 pts.	1·28
Cooling system	10 pts.	12 pts.	5·67
Steering rack	½ pt.	·6 pt.	·28
Fuel tank	10 gal.	12 gal.	45·4
Brake system	1 pt.	1·2 pts.	·568
Oil cooler	¾ pt.	·9 pt.	·426

GENERAL DIMENSIONS

Wheelbase	94 in. (238·8 cm.).
Overall length	156 in. (396·2 cm.).
Overall width	58 in. (147·3 cm.).
Overall height	50 in. (127·0 cm.).
Ground clearance	6 in. (15·24 cm.).
Turning circles (MGA 1600)	30 ft. 6 in. (9·296 m.).
Turning circles (MGA 1600 with Dunlop disc brakes)	Right-hand 32 ft. 1 in. (9·78 m.). Left-hand 32 ft. 6 in. (9·91 m.).

WEIGHTS

Fully equipped with tools, spare wheel, oil, water, and 2 gallons (2·5 U.S. gal., 9·1 litres) of fuel	2,016 lb. (914 kg.).
Engine (dry)	359 lb. (162·84 kg.).
Gearbox (dry)	67¼ lb. (30·50 kg.).
Rear axle (dry)	117½ lb. (53·32 kg.).

GENERAL DATA
(Series MGA 1600—Mk. II)

ENGINE

Type	16GC.
Number of cylinders	4.
Bore	3·0 in. (76·2 mm.).
Stroke	3·5 in. (89 mm.).
Capacity	99·5 cu. in. (1622 c.c.).
Firing order	1, 3, 4, 2.
Compression ratio: High	8·9 : 1.
Low	8·3 : 1.
Capacity of combustion chamber (valves fitted)	2·624 cu. in. (43·0 c.c.).
Valve operation	Overhead by push-rod.
Maximum horse-power (standard): High compression	90 at 5,500 r.p.m.
Low compression	85 at 5,500 r.p.m.
B.M.E.P.: High compression	148 lb./sq. in. (10·4 kg./cm.²) at 4,000 r.p.m.
Low compression	140 lb./sq. in. (9·84 kg./cm.²) at 3,000 r.p.m.
Torque: High compression	97 lb. ft. (13·1 kg. m.) at 4,000 r.p.m.
Low compression	92 lb. ft. (12·72 kg. m.) at 3,000 r.p.m.
Cooling system	Thermo-siphon, pump- and fan-assisted.
Oversize bore: 1st	·010 in. (·254 mm.).
Max.	·040 in. (1·016 mm.).

CRANKSHAFT

Refer also to Series MGA data on preceding pages.

Main bearings

Journal length: Front	1·528 to 1·544 in. (38·817 to 39·224 mm.).
Intermediate	1·471 to 1·473 in. (37·363 to 37·414 mm.).
Rear	1·494 to 1·498 in. (37·940 to 38·049 mm.).
Bearing length	1·25 in. (31·75 mm.).
Diametrical clearance	·001 to ·0027 in. (·0254 to ·0685 mm.).

CONNECTING RODS

Refer also to Series MGA data on preceding pages.

Small-end bore	·750 to ·7512 in. (19·05 to 19·08 mm.).

Big-end bearings

Diametrical clearance	·001 to ·0025 in. (·0254 to ·063 mm.).

PISTON RINGS

Compression: Top ring	Plain.
Second and third rings	Tapered.
Width	·0615 to ·0625 in. (1·56 to 1·58 mm.).
Thickness	·125 to ·132 in. (3·175 to 3·35 mm.).
Fitted gap	·009 to ·014 in. (·229 to ·356 mm.).
Clearance in groove	·0015 to ·0035 in. (·038 to ·089 mm.).
Oil control type	Slotted scraper.
Width	·1552 to ·1562 in. (3·94 to 3·99 mm.).
Thickness	·125 to ·132 in. (3·175 to 3·35 mm.).
Fitted gap	·009 to ·014 in. (·23 to ·36 mm.).
Clearance in groove	·0016 to ·0036 in. (·040 to ·091 mm.).

GENERAL DATA—*continued*

GUDGEON PIN

Type	Clamped.
Fit	·0001 to ·0006 in. (·0025 to ·0152 mm.). Hand push fit at 68° F. (20° C.).
Diameter: Outer	·7499 to ·7501 in. (19·047 to 19·050 mm.).
Inner	·3215 in. (7·94 mm.).
Length	2·693 to 2·703 in. (68·402 to 68·656 mm.).

VALVES AND VALVE GEAR

Valves

Seat angle: Inlet	45°.
Exhaust	45°.
Head diameter: Inlet	1·562 to 1·567 in. (39·6 to 39·8 mm.).
Exhaust	1·343 to 1·348 in. (34·11 to 34·23 mm.).
Stem diameter: Inlet	·342 in. (8·68 mm.).
Exhaust	·342 in. (8·68 mm.).
Valve lift	·350 in. (8·89 mm.).
Valve stem to guide clearance: Inlet	·00155 to ·00255 in. (·0394 to ·0635 mm.).
Exhaust	·002 to ·003 in. (·051 to ·076 mm.).
Valve rocker clearance: Running	·015 in. (·38 mm.) (cold)
Timing	·021 in. (·53 mm.).
Timing markings	Dimples on timing wheels.
Chain pitch and number of pitches	$\frac{3}{8}$ in. (9·52 mm.), 52 pitches.
Inlet valve: Opens	16° B.T.D.C.
Closes	56° A.B.D.C.
Exhaust valve: Opens	51° B.B.D.C.
Closes	21° A.T.D.C.

VALVE GUIDES

Length: Inlet	$1\frac{5}{8}$ in. (41·275 mm.).
Exhaust	$2\frac{13}{64}$ in. (55·95 mm.).
Diameter: Inlet and exhaust: Outside	·5635 to ·5640 in. (14·31 to 14·32 mm.).
Inside	·34425 to ·34475 in. (8·744 to 8·757 mm.).
Fitted height above head	·625 in. (15·87 mm.).

VALVE SPRINGS

Free length: Inner	$1\frac{31}{32}$ in. (50 mm.).
Outer	$1\frac{59}{64}$ in. (48·8 mm.).
Fitted length: Inner	1·449 in. (36·8 mm.).
Outer	1·575 in. (40 mm.).
Number of working coils: Inner	$6\frac{1}{2}$.
Outer	$4\frac{1}{2}$.
Load: Full lift: Inlet and exhaust	Inner 50 lb. (22·7 kg.). Outer 113 lb. (51·2 kg.).
No lift: Inlet	Inner 28 to 32 lb. (12·7 to 14·51 kg.). Outer 53 to 57 lb. (24 to 25·8 kg.).
Exhaust	Inner and outer 53 to 57 lb. (24 to 25·8 kg.).

TAPPETS
ROCKERS
CAMSHAFT

Refer to Series MGA data on preceding pages.

GENERAL DATA—*continued*

LUBRICATION

Refer also to Series MGA data on preceding pages.

Normal pressure: Running	70 lb./sq. in. (4·9 kg./cm.²) at 30 m.p.h.
Idling	15 lb./sq. in. (1·05 kg./cm.²) at 500 r.p.m.

TORQUE WRENCH SETTINGS
FUEL SYSTEM
AIR CLEANER AND FUEL PUMP

Refer to Series MGA data on preceding pages.

COOLING SYSTEM

Thermostat opening temperature	150·8° F. (66° C.).

IGNITION SYSTEM

Static ignition timing: High compression	10° B.T.D.C. (up to Engine No. 4003). 5° B.T.D.C. (from Engine No. 4004).
Low compression	10° B.T.D.C.

CLUTCH

Make and type	Borg & Beck 8A6–G single dry plate.
Facing material	Wound yarn.
Friction plate damper springs	6. Maroon and light green.
Pressure springs	6. Light grey.
Minimum free length	2·27 in. (57·658 mm.).
Rate	282 lb. in. (3·24 kg. mm.).
Total spring load (mean)	1,200 lb. (544·3 kg.).
Test length	1·56 in. (39·624 mm.).
Load	195 to 205 lb. (88·45 to 92·98 kg.).

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	4·1 : 1.
Third	5·633 : 1.
Second	9·077 : 1.
First	14·924 : 1.
Reverse	19·516 : 1.
Speedometer gears ratio	5: 12.

STEERING
FRONT SUSPENSION
REAR SUSPENSION
PROPELLER SHAFT

Refer to Series MGA data on preceding pages.

GENERAL DATA—*continued*

REAR AXLE

Make and type	B.M.C. 'B' type, three-quarter-floating.
Ratio	10/41.

ELECTRICAL EQUIPMENT
BRAKES
WHEELS
Refer to Series MGA data on preceding pages.

TYRES

Size	5·60—15 Gold Seal nylon (tubed).
Pressures:	
Normal use including motorways up to 100 m.p.h.: Front	21 lb./sq. in. (1·47 kg./cm.²).
Rear	24 lb./sq. in. (1·68 kg./cm.²).
Maximum or near-maximum performance: Front	24 lb./sq. in. (1·68 kg./cm.²).
Rear	27 lb./sq. in. (1·89 kg./cm.²).
Size	5·90—15 Road Speed RS5 (tubed).
Pressures:	
Normal use: Front	17 lb./sq. in. (1·19 kg./cm.²).
Rear	20 lb./sq. in. (1·40 kg./cm.²).
Maximum or near-maximum speeds sustained for lengthy periods or for competition use: Front	24 lb./sq. in. (1·68 kg./cm.²).
Rear	27 lb./sq. in. (1·89 kg./cm.²).

CAPACITIES
GENERAL DIMENSIONS
Refer to Series MGA data on preceding pages.

WEIGHTS

Kerbside weight	2,016 lb. (914·4 kg.).
Shipping weight	1,987 lb. (901·2 kg.).
Engine and clutch (dry)	355 lb. (136·0 kg.).

GENERAL INFORMATION

CONTROLS

Hand brake

The hand brake lever is located alongside the driver's seat and operates the rear wheel brakes only.

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

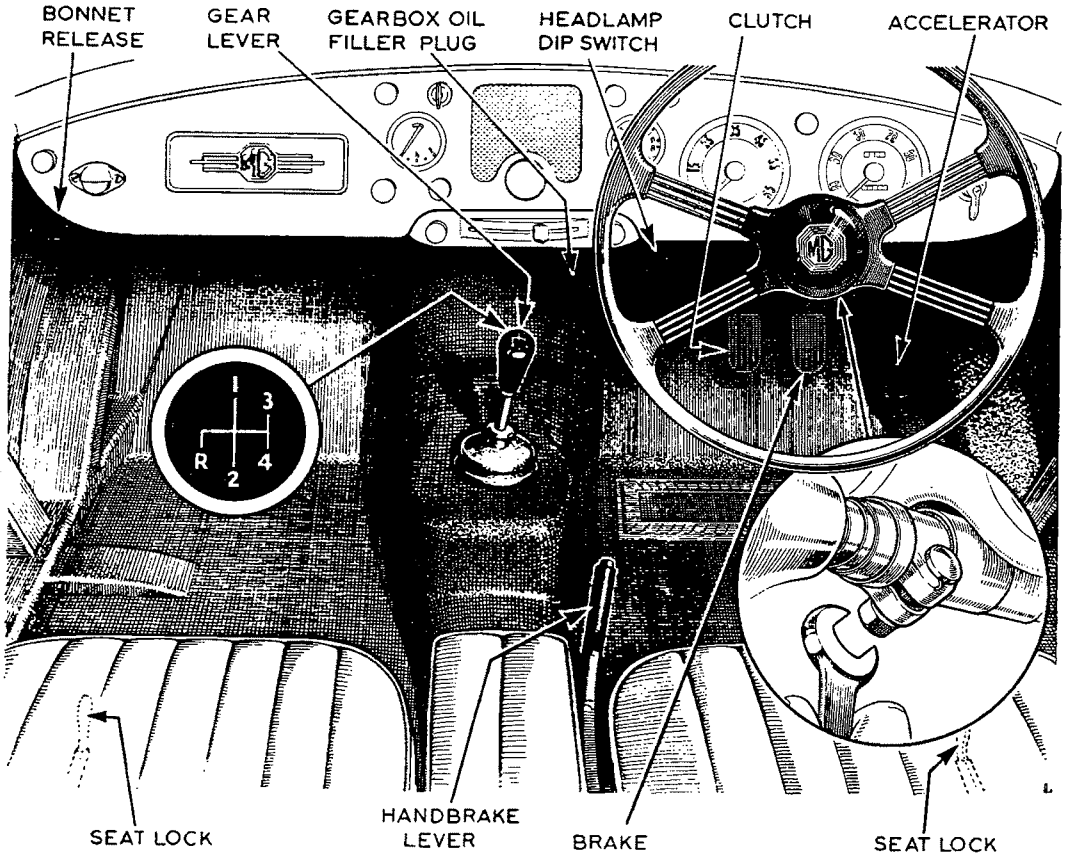
The pedal operates the hydraulic brakes on all four wheels and will also operate the twin stop warning lamps when the ignition is switched on.

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.



The location of the driving controls

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.

Steering column adjustment

This enables the steering wheel to be placed in the most comfortable driving position after slackening a clamp bolt below the wheel hub.

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.

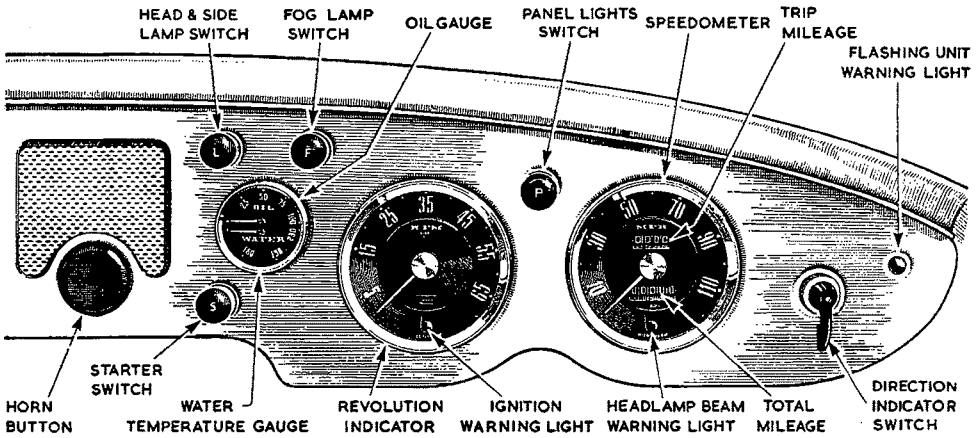
The bonnet is still held by the safety catch, which must be released before the bonnet can be raised.

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.)

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 beams 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 5,000 r.p.m. and great care must be taken if the needle does approach the amber sector of the dial, which commences at 5,500 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.

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 lb./sq. in. and 80 lb./sq. in. (2·1 kg./cm.^{2} 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. 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'.

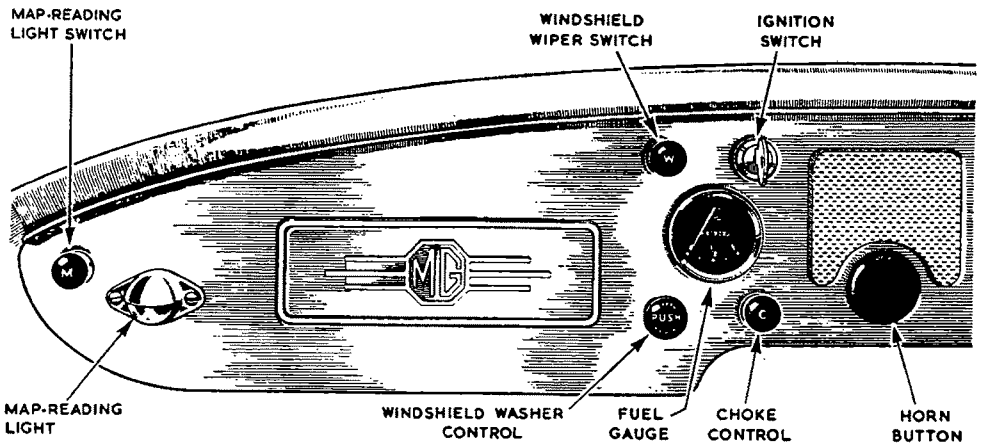
Turn the knob clockwise and pull out again to switch on the headlamps.

See **'Headlamp beam dip switch'** and **'Main beam warning light'.**

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.



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

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 are also switched on.

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.

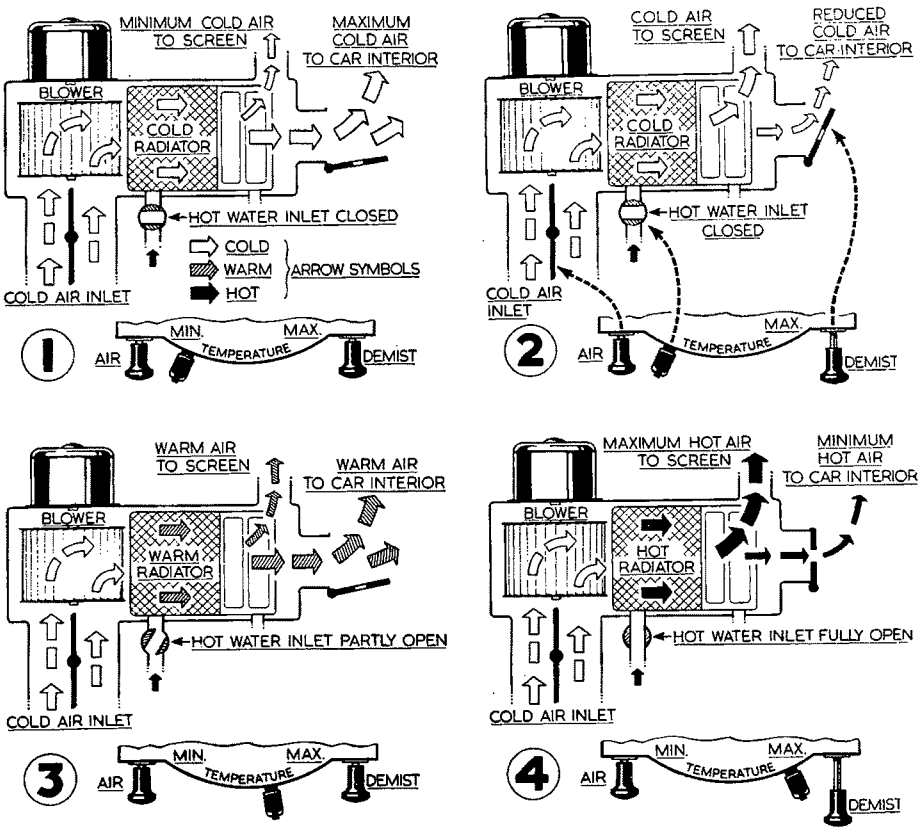
Pull out the control 'W' to set the wiper blades in motion. Push in the knob to switch off the motor and park the blades.

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.



The circulation of the air through the heater unit with the controls positioned as recommended on page General Information 5

HEATING AND DEMISTING EQUIPMENT

The 2·75-kw. heating and demisting unit is fitted as an extra to standard equipment (see Section S.9).

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.

While the control is pushed in it may be turned clockwise to switch on the blower motor, if the ignition is switched on also, and this will increase the flow of air into the car unit and may be used to give a supply of air when the car is stationary.

If the blower motor is switched off by the air control, the knob can be pulled outwards to close the air duct and prevent fresh air entering the car from the toeboard or windshield vents. The blower cannot be switched on while the knob is pulled out.

NOTE.—The heating and demisting equipment control panel fitted to some cars has the blower motor operating switch incorporated in the temperature control lever. These control panels may be identified by the temperature lever knob, which is round and marked 'B'. Pull out the knob to switch on the blower motor.

The left-hand control on these panels will regulate the air supply only.

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.

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

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

(2) *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.

(3) *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.

(4) *Cold weather.* Place the air control in its normal position. Place the temperature lever according to the degree of heating required. Switch on the blower to increase the air supply. (If demisting is required pull out the demist control).

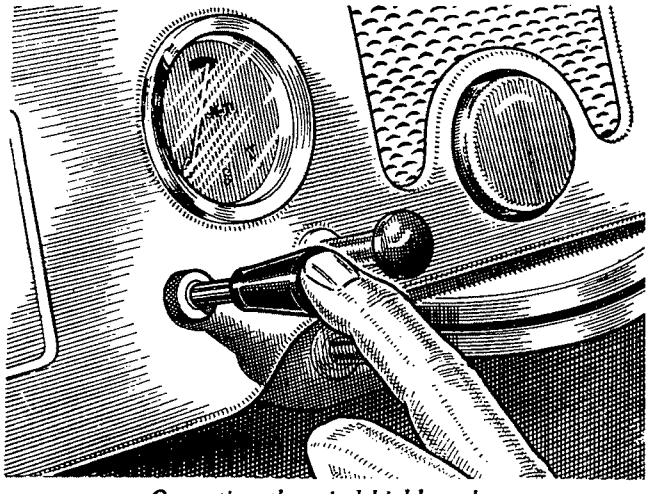
(5) *Severe cold.* Move the temperature control to the right for maximum heating and pull out the demist control fully to give a maximum supply of hot air to the screen. Switch on the blower motor to increase the air flow.

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.



Operating the windshield washer

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

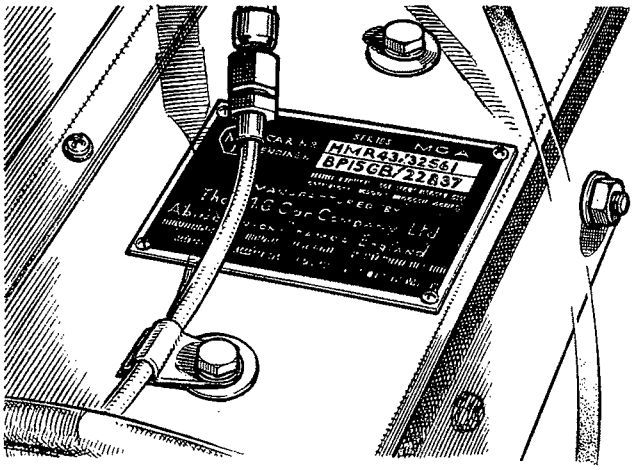
(8) Remove the sidescreens and stow them in the container pockets with the cranked bracket of each screen at opposite ends and facing towards the rear.

(9) Secure the sidescreen container over the folded hood with the six buttons (three on each side).

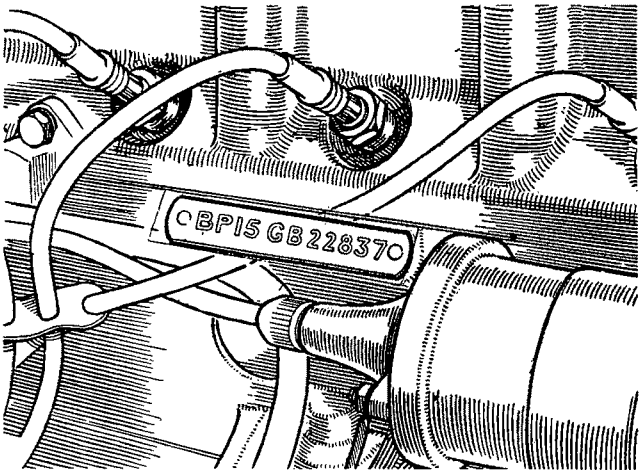
(10) Tighten the sidescreen clamping nut on each door to prevent its possible loss.

SERIAL NUMBERS

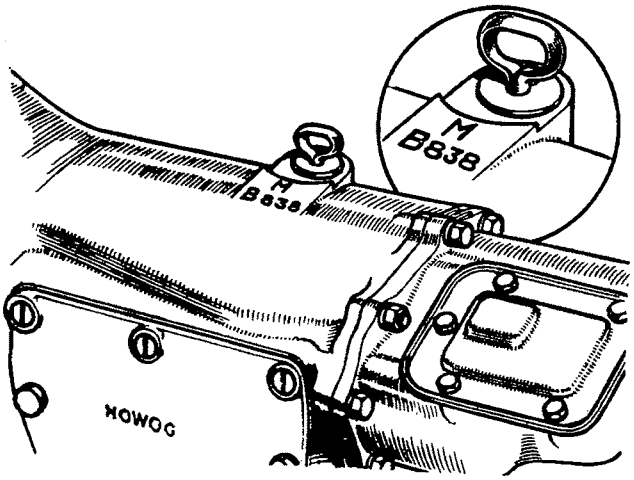
The major components of the vehicle have serial numbers and these will be found in the positions illustrated on pages General Information 6 and 7. When in communication with the Company or your Dealer always quote the engine number and car number complete with prefixes. The registration number is of no assistance and is not required. Write your name and address clearly.



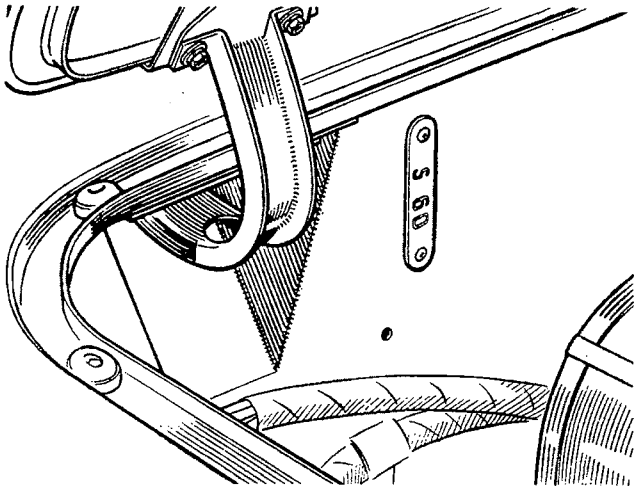
Chassis Number. This is stamped on the identification plate and should be quoted with its prefix. The plate is secured to the top left-hand side of the dash panel



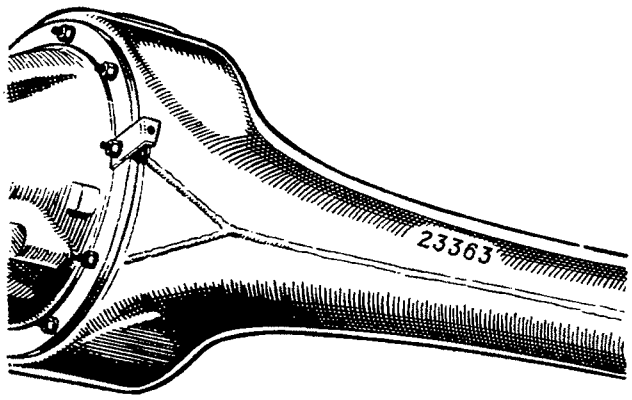
Engine Number (earlier models). This is stamped on the identification plate and also on a plate on the right-hand side of the cylinder block



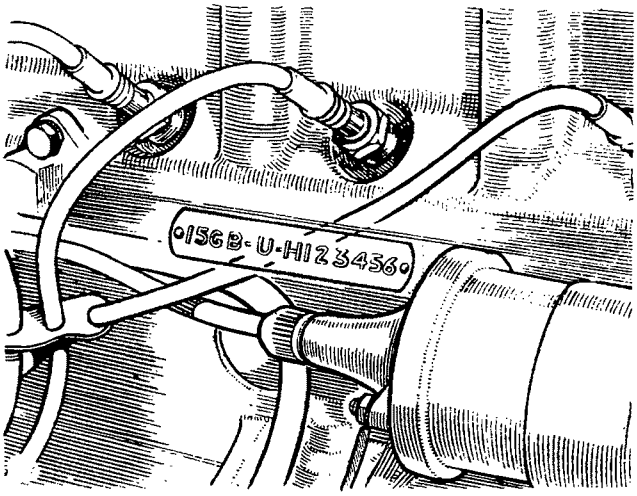
Gearbox Number. Stamped on top of the gearbox casing adjacent to the dipstick



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



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



Engine Number (later models). This is stamped on a plate on the right-hand side of the cylinder block

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, gearbox and 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
- A—Austin
- 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
- L—Low compression

} and serial number of unit

CODE EXAMPLE

15GB/U/H123456

- 123456 — Serial Number
- H — High Compression
- U — Centre Gear Change Gearbox
- 15GB — 1500 c.c. 'MGA'

CAR NUMBER IDENTIFICATION CODE

In order to provide comprehensive information concerning the vehicle the identification plate is stamped with symbols.

The symbols consist of three letters and two figures followed by the usual serial number of the vehicle for cars of one colour, and four letters and two figures followed by the vehicle serial number for vehicles with a duotone finish.

The first letter when related to the code provides indication of the make and model of the vehicle—Morris Minor, M.G. 'MGA', etc.

The second letter provides an indication of the type of vehicle—Saloon, Tourer, Van, etc.

The third letter indicates the colour in which the vehicle is finished or the top colour on duotone vehicles.

The fourth letter indicates the bottom colour in which the duotone vehicle is finished. For duotone vehicles the third and fourth letters are read in the same (colour) column.

The first figure indicates the class to which the vehicle belongs—R.H.D. Home, L.H.D., etc.

The second figure indicates the type of paint used to finish the car—Cellulose, Synthetic, etc.

From this it will be clear that when an owner quotes the code number of his vehicle it is a relatively simple matter to obtain a comprehensive picture of the vehicle concerned by reference to the following tabulated code of symbols.

Model	*Code*	*Type*	*Code*	*Colour*	*Code*	*Class*	*Code*	*Paint*	*Code*
Wolseley 6/80	A	Saloon 4-door	A	Black	A	R.H.D. Home	1	Synthetic	1
Wolseley 4/50	B	Saloon 2-door	B	Light Grey	B	R.H.D. Export	2	Synobel	2
Morris Six	C	Tourer	C	Dark Red	C	L.H.D.	3	Cellulose	3
Morris Oxford	D	2-Seater	D	Dark Blue	D	North America	4	Metallic	4
Morris Cowley	E	Van	E	Mid Green	E	C.K.D.—R.H.D.	5	Primed	5
Morris Minor	F	Truck	F	Beige	F	C.K.D.—L.H.D.	6	Cellulosed body and synthetic wings	6
Morris 5-cwt.	G	Cab	G	Brown	G				
M.G. 'MGA'	H	Mail	H	C.K.D. Finish	H				
M.G. 1½-litre	J	Engineers	J	Dark Grey	J				
M.G. Magnette	K	Chassis	K	Light Red	K				
Riley 1½-litre	L	Traveller	L	Light Blue	L				
Riley 2½-litre	M								
Wolseley 4/44	N								
Quarter-ton	O								
Half-ton	P			Ivory	P				
Wolseley 6/90	R			White	R				
Isis	S			Mid Grey	S				
Wolseley 15/50	T			Light Green	T				
				Dark Green	U				

As an example:

The symbols HDA 43/10101 when decoded give—M.G. 'MGA', 2-seater, Black, North America, Cellulose, Car No. 10101.

Owing to the fact that the technique required to effect repairs to the different paint finishes varies considerably and that the correct paint must be used for such purpose, it is to be noted that the last number(s) of the symbols is of particular importance as it defines the nature of the paint used in the Factory to finish the car.

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:

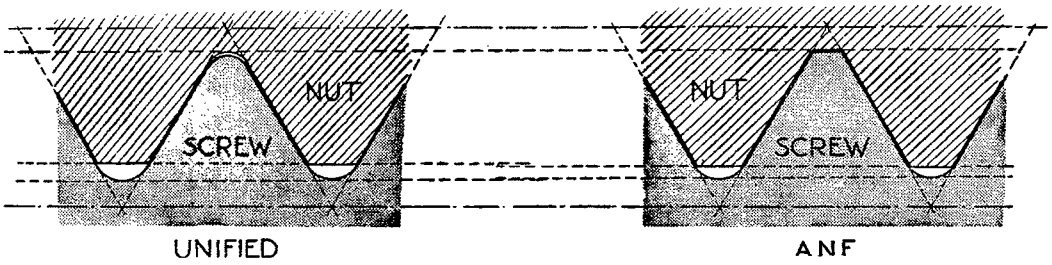
Nuts. By a circular groove turned on the end face of the nut or by connected circles stamped on one flat of the hexagon.

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, B.S.F., or Metric threads.

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



This illustration of the Unified thread and the A.N.F. thread to the same scale indicates their close relationship

Spanners. It is to be noted that all A.N.F.- 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"	5/16"	⅜"	7/16"	½"	9/16"	⅝"	¾"	⅞"	1"
For B.S.F. screws and nuts	·448	·529	·604	·705	·825	·925	1·016	1·207	1·309	1·489
For A.N.F. 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

PART NAME ALTERNATIVES

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

CLAIMS UNDER WARRANTY

Claims for the replacement of material or parts under Warranty must always 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.

FROST PRECAUTIONS

If the car is not stored in a warmed building, steps must be taken to prevent the cooling water from freezing during frosty weather. As a precautionary measure when frost is anticipated an anti-freezing solution must be used in the cooling system. The heater unit fitted to the M.G. (Series MGA) cannot be drained completely by the cooling system drain taps and the use of anti-freeze is essential on this model in freezing weather.

The cooling system is of the sealed type and relatively high temperatures are developed in the radiator upper tank. For this reason anti-freeze solutions having an alcohol base are unsuitable owing to their high evaporation rate producing a rapid loss of coolant and consequent interruption of circulation.

Only anti-freeze of the ethylene glycol type incorporating the correct type of corrosion inhibitor is suitable and owners are recommended to use Bluecol, Shell, Esso Anti-freeze, or any other anti-freeze conforming to Specification B.S.3151 or B.S.3152.

The recommended quantities of anti-freeze for different degrees of frost resistance are:

15° frost (17° F. or −8° C.)	1 pint (·57 litre, 1·2 U.S. pints)
25° frost (7° F. or −14° C.)	1½ pints (·85 litre, 1·8 U.S. pints)
35° frost (−3° F. or −19° C.)	2½ pints (1·42 litres, 3 U.S. pints)

Where temperatures below 0° F. or −18° C. are likely to be encountered a solution of at least 25 per cent. of anti-freeze must be used to ensure immunity from trouble. Consult your local Dealer on this matter.

First decide what degree of frost protection is required before adding anti-freeze to the radiator.

Make sure that the cooling system is watertight and examine all joints, replacing any defective rubber hose with a new one.

Before introducing anti-freeze mixture to the radiator it is advisable to clean out the cooling system thoroughly by draining out the water and swilling out the water passages with a hose inserted in the radiator filler, keeping the drain taps open.

Avoid excessive topping up, otherwise there is a risk of losing valuable anti-freeze due to expansion of the solution. Only top up when the cooling system is at its normal running temperature.

Generally speaking, anti-freeze is not injurious to cellulose paint, provided it is wiped off in reasonable time. It must not, however, be allowed to remain on the paintwork.

Radiator anti-freeze should not be used in windshield-washing equipment.

RUNNING-IN SPEEDS

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.

FILLING UP WITH FUEL

Considerable loss of fuel can occur as a result of filling the fuel tank until the fuel is visible in the filler tube. If this is done and the vehicle is left in the sun, expansion due to heat will cause leakage, with consequent loss of and danger from exposed fuel.

(1) Avoid overfilling the tank until the fuel is visible in the filler tube.

(2) If the tank is inadvertently overfilled, take care to park the vehicle in the shade with the filler as high as possible.

CAR NUMBER IDENTIFICATION CODE (MGA 1600 MODELS)

The car number symbol consists of three letters and one figure followed by a fifth prefix letter (L) if the vehicle is left-hand drive, and then by the serial number of the vehicle.

The first letter when related to the code provides an indication of the make of the vehicle—M.G., etc.

The second letter provides an indication of the model's cubic capacity.

The third letter indicates the type of body—2-seat Tourer, etc.

The first figure indicates the series of model—1, 2, etc.

1st Prefix Letter—Name

A—Austin	M—Morris
C—Austin Cooper	R—Riley
G—M.G.	V—Vanden Plas
H—Healey	W—Wolseley
K—Morris Cooper	

2nd Prefix Letter—Model (cubic capacity)

A—800–999 c.c.	G—1000–1399 c.c.
B—2000–2999 c.c.	H—1400–1999 c.c.
D—3000 c.c. upwards	L—Up to 799 c.c.

3rd Prefix Letter—Body type

A—Ambulance	H—Hearse	P—Hard Top	T—4-seat Tourer
B—Buckboard	J—Convertible	O—Chassis and Cab	U—Pick-up
C—Chassis	K—Truck	R—Chassis and Scuttle	V—Van
D—Coupé	L—Hire-car	S—4-door Saloon	W—Dual-purpose
E—G.P.O. Engineers	M—Limousine	2S—2-door Saloon	X—Taxi
G—G.P.O. Mail	N—2-seat Tourer		

4th Prefix—Series of model (2, 3, etc., used to record a major change).

5th Prefix (used when vehicles differ from standard R.H.D.) D—De-luxe.
L—Left-hand drive.
S—Super De-luxe.

Code Example
GHN 68851

B.M.C. SEAT BELTS

The body of the car incorporates anchorage points to facilitate the fitting of B.M.C. seat belts.

To use the seat belt, position the buckle tongue on the long belt approximately in the centre of the belt and ensure that the upper part of the belt passes over the shoulder; pass the tongue across the body. Adjust the short belt until the buckle is located just in front of the hip and push the tongue into the buckle until it clicks in the locked position. Finally, adjust the long belt until the user is held firmly but comfortably in the seat.

To release the seat belt lift up the buckle lever. After releasing the seat belt the long belt must be stowed in such a way as to give clear access to the doors.

MAINTENANCE ATTENTION

PERIODICAL

Daily

Check oil level in crankcase, and top up if necessary.
Check coolant level in radiator, and top up if necessary.

Weekly

Check tyre pressures, and regulate if necessary.
Check batteries and top up to correct level.

3,000 miles (5000 km.) service

1. *Engine*
   Top up carburetter piston dampers.
   Lubricate carburetter controls.
   Top up coolant in radiator.
   Check fan belt tension.
   Clean and re-oil air cleaner elements.
2. *Clutch*
   Check level of fluid in hydraulic clutch supply tank, and top up if necessary.
   Check free pedal movement (where applicable).
3. *Brakes*
   Check brakes, and adjust if necessary.
   Make a visual inspection of brake lines and pipes.
   Check fluid level in hydraulic brake supply tank, and top up if necessary.
4. *Body*
   Lubricate door locks and hinges, safety catches, bonnet lock operating mechanism, and safety catch.
   Inject oil through key slot.
   Lightly smear dovetails and striking plates with a suitable grease.
5. *Electrical*
   Check batteries and top up to correct level.
6. *Lubrication*
   Change engine oil.
   Top up gearbox and rear axle.
   Lubricate all nipples except steering rack and pinion.
7. *Wheels and tyres*
   Change road wheels round diagonally, including spare, to regularize tyre wear.
   Check tyre pressures.

6,000 miles (10000 km.) service

1. *Engine*
   Top up carburetter piston dampers.
   Lubricate carburetter controls.
   Top up coolant in radiator.
   Check fan belt tension.
   Check valve rocker clearances, and adjust if necessary.
   Clean and re-oil air cleaners.
2. *Ignition*
   Check functioning of automatic advance and retard mechanism.
   Lubricate all distributor parts as necessary.
   Check and adjust distributor contact points.
   Clean and adjust sparking plugs.
3. *Clutch*
   Check level of fluid in hydraulic clutch supply tank, and top up if necessary.
   Check free pedal movement (where applicable).
4. *Brakes*
   Check brakes, and adjust if necessary.
   Make a visual inspection of brake lines and pipes.
   Check fluid level in hydraulic brake supply tank, and top up if necessary.
   Inspect disc brake friction pads and report if attention is required.
5. *Steering*
   Check wheel alignment, and adjust if necessary.
6. *General*
   Tighten rear road spring seat bolts.
7. *Body*
   Lubricate door locks and hinges, safety catches, bonnet lock operating mechanism, and safety catch.
   Inject oil through key slot.
   Lightly smear dovetails and striking plates with a suitable grease.
8. *Electrical*
   Check specific gravity of battery cells and top up to correct level.
   Lubricate dynamo bearing.
   Check all lamps for correct functioning.
9. *Lubrication*
   Change oils in engine, gearbox, and rear axle.
   Fit new oil filter element.
   Lubricate all nipples except steering rack and pinion.
10. *Wheels and tyres*
    Change road wheels round diagonally, including spare, to regularize tyre wear.
    Check tyre pressures.

9,000 miles (15000 km.) service

Carry out the **3,000 miles (5000 km.) service.**

12,000 miles (20000 km.) service

1. *Engine*
   Remove carburetter suction chambers and pistons, clean, reassemble, and top up the damper pistons.
   Lubricate the carburetter controls.
   Check valve rocker clearances, and adjust as necessary.
   Check fan belt tension.
   Clean and re-oil air cleaners.
2. *Ignition*
   Check functioning of automatic advance and retard mechanism.
   Lubricate all distributor parts as necessary.
   Clean and adjust distributor contact points.
   Fit new sparking plugs.
3. *Clutch*
   Check level of fluid in hydraulic clutch supply tank, and top up if necessary.
   Check free pedal movement (where applicable).
4. *Steering*
   Check steering and front suspension moving parts for wear.
   Check wheel alignment, and adjust as necessary.
5. *Brakes*
   Check brakes, and adjust as necessary.
   Make a visual inspection of brake lines and pipes.
   Check fluid level in hydraulic brake supply tank, and top up if necessary.
   Inspect disc brake friction pads and report if attention is required.
6. *Radiator*
   Drain, flush out, and refill the radiator.
7. *General*
   Tighten rear road spring seat bolts.

MAINTENANCE ATTENTION—*continued*

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

8. *Body*
   Lubricate door locks and hinges, safety catches, bonnet lock operating mechanism, and safety catch.
   Inject oil through key slot.
   Lightly smear dovetails and striking plates with a suitable grease.

9. *Electrical*
   Check specific gravity of battery cells and top up to correct level.
   Lubricate dynamo bearing.
   Check all lamps for correct functioning.
   Check headlamp beam setting, and adjust if necessary.

10. *Lubrication*
    Drain off old engine oil, flush out engine, and refill with fresh oil.
    Change oil in gearbox and rear axle.
    Fit new oil filter element.
    Lubricate all grease nipples.
    Lubricate steering rack and pinion.

11. *Wheels and tyres*
    Change road wheels round diagonally, including spare, to regularize tyre wear.
    Check tyre pressures.

24,000 miles (40000 km.) service

Carry out the **12,000 miles (20000 km.) service**, with the following amendment:

1. *Lubrication*
   Remove the engine sump and pick-up strainer, clean the sump, strainer, and crankcase, reassemble, and refill with fresh oil.