GENERAL DATA

(948 c.c.)

ENGINE

Type	9CG.
Number of cylinders	4.
Bore	2·478 in. (62·94 mm.).
Stroke	3·00 in. (76·2 mm.).
Capacity	57·87 cu. in. (948 c.c.).
Firing order	1, 3, 4, 2.
Compression ratio: High	9 : 1.
Low	8·3 : 1.
Capacity of combustion chamber (valves fitted)	24·5 c.c.
Valve operation	Overhead, by push-rod.
Oversize bore: 1st	·010 in. (·254 mm.).
Max.	·040 in. (1·016 mm.).
Torque (H.C.)	52·8 lb.ft. (7·3 km. g.m) at 3000 r.p.m.

Crankshaft

Main journal diameter	1·7505 to 1·7510 in. (44·46 to 44·47 mm.).
Minimum regrind diameter	1·7105 in. (43·45 mm.).
Crankpin journal diameter	1·6254 to 1·6259 in. (41·28 to 41·30 mm.).
Crankpin minimum regrind diameter	1·5854 in. (40·27 mm.).

Main bearings

Number and type	3 shell type.
Material: Bottom half	Steel-backed, lead-indium-lined.
Top half	Steel-backed, lead-indium-lined.
Length	1·1875 in. (30·16 mm.).
End-clearance	·002 to ·003 in. (·051 to ·076 mm.).
End-thrust	Taken by thrust washers at centre main bearing.
Diametrical clearance	·001 to ·0025 in. (·025 to ·063 mm.).
Undersizes	—·010 in., —·020 in., —·030 in., —·040 in., (—·254 mm., —·508 mm., —·762 mm., —1·02 mm.).

Connecting rods

Length between centres	5·75 in. (14·605 cm.).

Big-end bearings

Material: Bottom half	Steel-backed, lead-indium-lined.
Top half	Steel-backed, lead-indium-lined.
Bearing side clearance	·008 to ·012 in. (·203 to ·305 mm.).
Bearing diametrical clearance	·001 to ·0025 in. (·025 to ·063 mm.).

Pistons

Type	Flat crown, aluminium alloy, anodized.
Clearances: Bottom of skirt	·0016 to ·0022 in. (·040 to ·056 mm.).
Top of skirt	·0036 to ·0042 in. (·0914 to ·1067 mm.).
Oversizes	+·010 in., +·020 in., +·030 in., +·040 in. (+·254 mm., +·508 mm., +·762 mm., +1·02 mm.).

Piston rings

Compression: Plain	Top ring.
Tapered	Second and third rings.
Width (plain)	·069 to ·070 in. (1·75 to 1·78 mm.).
Thickness	·103 to ·109 in. (2·62 to 2·78 mm.).
Fitted gap	·007 to ·012 in. (·178 to ·30 mm.).
Clearance in groove	·0015 to ·0035 in. (·038 to ·089 mm.).
Oil control type	Slotted scraper.
Width	·124 to ·125 in. (3·15 to 3·175 mm.).
Thickness	·103 to ·109 in. (2·62 to 2·78 mm.).
Fitted gap	·007 to ·012 in. (·178 to ·30 mm.).
Clearance in groove	·0015 to ·0035 in. (·038 to ·089 mm.).

GENERAL DATA—*continued*

(948 c.c.—*continued*)

Gudgeon pin	
Type	Semi-floating.
Fit in piston	·0001 to ·00035 in. (·0025 to ·009 mm.).
Fit in connecting rod	·0001 to ·0006 in. (·0025 to ·015 mm.).
Diameter (outer)	·6244 to ·6246 in. (15·86 to 15·865 mm.).
Valves	
Seat angle: Inlet and exhaust	45°.
Head diameter: Inlet	1·151 to 1·156 in. (29·23 to 29·36 mm.).
Exhaust	1·000 to 1·005 in. (25·4 to 25·53 mm.).
Stem diameter: Inlet	·2793 to ·2798 in. (7·094 to 7·107 mm.).
Exhaust	·2788 to ·2793 in. (7·081 to 7·094 mm.).
Valve lift	·312 in. (7·925 mm.).
Valve stem to guide clearance: Inlet	·0015 to ·0025 in. (·038 to ·063 mm.).
Exhaust	·002 to ·003 in. (·051 to ·076 mm.).
Valve rocker clearance: Running (cold)	·012 in. (·305 mm.); ·015 in. (·381 mm.) for competition work.
Valve rocker bush bore (reamed)	·5630 to ·5635 in. (14·30 to 14·31 mm.).
Valve timing	
Timing markings	Dimples on timing wheels.
Chain pitch and number of pitches	$\frac{3}{8}$ in. (9·52 mm.). 52 pitches.
Inlet valve: Opens	5° B.T.D.C.
Closes	45° A.B.D.C.
Exhaust valve: Opens	51° B.B.D.C.
	21° A.T.D.C.
Valve rocker clearance: timing	·029 in. (·74 mm.).
Valve guides	
Length: Inlet and exhaust	1·687 in. (42·86 mm.).
Diameter—inlet and exhaust: Outside	·4695 to ·470 in. (11·92 to 11·94 mm.).
Inside	·2813 to ·2818 in. (7·145 to 7·177 mm.).
Fitted height above head	$\frac{19}{32}$ in. (15·1 mm.).
Valve springs	
Free length: Inner	1·672 in. (42·47 mm.).
Outer	1·75 in. (44·45 mm.).
Fitted length: Inner	1·179 in. (29·95 mm.).
Outer	1·291 in. (32·79 mm.).
Number of working coils: Inner	$6\frac{1}{2}$.
Outer	$4\frac{1}{2}$.
Pressure: Valve open: Inner	30 lb. (13·6 kg.).
Outer	88 lb. (39·9 kg.).
Valve closed: Inner	18 lb. (8·17 kg.).
Outer	52 lb. (23·6 kg.).
Tappets	
Type	Bucket.
Diameter	·8120 in. (20·62 mm.).
Length	1·505 in. (38·23 mm.).
Camshaft	
Journal diameters: Front	1·6655 to 1·666 in. (42·304 to 42·316 mm.).
Centre	1·62275 to 1·62325 in. (41·218 to 41·231 mm.).
Rear	1·3725 to 1·3735 in. (34·862 to 34·887 mm.).
End-float	·003 to ·007 in. (·076 to ·178 mm.).
Bearing: number and type	3. Steel-backed white metal.
Inside diameter (reamed in position): Front	1·667 to 1·6675 in. (42·342 to 42·355 mm.).
Centre	1·62425 to 1·62475 in. (41·256 to 41·369 mm.).
Rear	1·3745 to 1·3750 in. (34·912 to 34·925 mm.).
Clearance	·001 to ·002 in. (·025 to ·051 mm.).

GENERAL DATA—*continued*

(948 c.c.—*continued*)

ENGINE LUBRICATION SYSTEM

Oil pump

Type	Eccentric rotor or vane type.
Relief pressure valve operates	60 lb./sq. in. (4·2 kg./cm.²).
Relief valve spring: Free length	2·859 in. (72·63 mm.).
Fitted length	2·156 in. (54·77 mm.).

Oil filter

Type	Full-flow.
Capacity	1 pint (1·2 U.S. pints, ·57 litre).

Oil pressure

Normal running	30 to 60 lb./sq. in. (2·1 to 4·22 kg./cm.²).
Idling (minimum)	10 to 25 lb./sq. in. (·7 to 1·7 kg./cm.²).

TORQUE WRENCH SETTINGS

Cylinder head nuts	40 lb. ft. (5·5 kg. m.).
Main bearing set screws	60 lb. ft. (8·3 kg. m.).
Connecting rod bolts	35 lb. ft. (4·8 kg. m.).
Flywheel securing bolts	40 lb. ft. (5·5 kg. m.).
Steering-wheel nut	40 lb. ft. (5·5 kg. m.).
Road wheel nuts	45 lb. ft. (6·22 kg. m.).
Rear damper bolts	25 lb. ft. (3·4 kg. m.).
Front hub nuts	25 to 65 lb. ft. (3·4 to 8·9 kg. m.).

FUEL SYSTEM

Carburetters

Make and type	S.U. twin HS2 semi-downdraught.
Diameter	1¼ in. (31·75 mm.).
Jet	·090 in. (2·29 mm.).
Needles	Standard V3. Rich V2. Weak GX.
Piston spring	Light blue.

Fuel pump

Make and type	A.C. 'Y' type. Mechanical.
Delivery rate	40 pints/hr. (48 U.S. pints/hr., 22·8 litres/hr.).
Delivery pressure	1·5 to 2·5 lb./sq. in. (·105 to ·175 kg./cm.²).

Air cleaners

Type	Paper element.

COOLING SYSTEM

Type	Pressurized radiator. Thermo-siphon, pump- and fan-assisted.
Thermostat setting	65 to 70° C. (149 to 158° F.).
Blow-off pressure	7 lb./sq. in. (·49 kg./cm.²).

IGNITION SYSTEM

Sparking plugs	Champion N5.
Size	14 mm.
Plug gap	·024 to ·026 in. (·625 to ·660 mm.).
Coil	Lucas Type LA12.
Distributor	Lucas Type DM2P4.
Distributor contact points gap	·014 to ·016 in. (·36 to ·40 mm.).
Static ignition setting: High compression	4° B.T.D.C.
Low compression	1° B.T.D.C.

GENERAL DATA—*continued*

(948 c.c.—*continued*)

CLUTCH

Type	Single dry plate.
Diameter	6¼ in. (16 cm.).
Facing material	Wound yarn.
Pressure springs	6.
Colour	Yellow and dark green.
Damper springs	4.
Colour	Light grey.

GEARBOX

Number of forward speeds	4.
Synchromesh	Second, third, and top gears.
Ratios: Top	1·0 : 1.
Third	1·357 : 1.
Second	1·916 : 1.
First	3·200 : 1.
Reverse	4·114 : 1.
Overall ratios: Top	4·22 : 1.
Third	5·726 : 1.
Second	8·085 : 1.
First	13·504 : 1.
Reverse	17·361 : 1.
Speedometer gear ratio	5/13.

STEERING

Type	Rack and pinion.	
Steering-wheel turns—lock to lock	2¼.	
Steering-wheel diameter	16 in. (40·6 cm.).	
Camber angle	¾°.	Static unladen condition.
Castor angle	3°.	
King pin inclination	6¾°.	
Toe-in	0 to ⅛ in. (0 to 3·175 mm.).	
Steering lock angle of outer wheel with inner wheel at 20°	18½°.	

FRONT SUSPENSION

Type	Independent. Coil springs.
Free length	9·4 in. (23·8 cm.).
Mean coil diameter	3·625 in. (9·2 cm.).
Number of effective coils	7.
Working load	750 lb. (340 kg.).
Spring rate	271 lb. in. (3·127 kg. m.).
Dampers (front)	Lever arm type.

REAR SUSPENSION

Type	Quarter-elliptic.
Spring details: Number of leaves	15.
Thickness of leaves	5 at 5/32 in. (3·97 mm.), 10 at ⅛ in. (3·18 mm.).
Width of leaves	1¾ in. (44·45 mm.).
Working load	375 lb. (170 kg.).
Free camber	3 7/32 in. (81·76 mm.).
Dampers (rear)	Lever arm type.

GENERAL DATA—*continued*

(948 c.c.—*continued*)

PROPELLER SHAFT

Type	Tubular. Reverse spline.
Make and type of joints	Hardy Spicer. Needle-roller.
Propeller shaft length (between centres of joints)	26¼ in. (66·6 cm.).
Diameter	1¾ in. (44·45 mm.).

REAR AXLE

Type	Three-quarter-floating.
Ratio	9/38 (4·22 : 1).

ELECTRICAL EQUIPMENT

System	12-volt. Positive earth.
Charging system	Compensated voltage control.
Battery	Lucas BT7A (BTZ7A Export).
Battery capacity	43 amp.-hr. (at 20-hour rate).
Starter motor	Lucas 4-brush M35G/1.
Dynamo	Lucas C39.
Maximum output	19 amps.
Field coil resistance	6·1 ohms ± 5%.
Control box	Lucas RB106.
Cut-out: Cut-in voltage	12·7 to 13·3.
Drop-off voltage	8·5 to 11·0.
Reverse current	5·0 amps. (max.).
Regulator RB106/2 (at 3,000 r.p.m. dynamo speed):	
Open-circuit setting at 20° C. (68° F.)	16·0 to 16·6 volts.
For ambient temperatures other than 20° C. (68° F.) the following allowances should be made to the above setting:	
For every 10° C. (18° F.) above 20° C. (68° F.) subtract ·1 volt.	
For every 10° C. (18° F.) below 20° C. (68° F.) add ·1 volt.	

BRAKES

Type	Lockheed hydraulic.
Front	Two leading shoes.
Rear	Single leading shoe.
Drum size	7 in. (17·78 cm.).
Lining dimensions: Front and rear	6¾ in. × 1¼ in. (17·14 cm. × 3·175 cm.).
Total lining area	67·5 sq. in. (435·37 cm.²).

WHEELS

Type	Ventilated disc. 4-stud fixing.

TYRES

Size	5·20—13.
Tyre pressures—normal and fully loaded: Front	18 lb./sq. in. (1·27 kg./cm.²).
Rear	20 lb./sq. in. (1·41 kg./cm.²).
Tyre pressures—for sustained speeds in excess of 80–85 m.p.h. (129–136 km.p.h.) increase pressure to: Front	24 lb./sq. in. (1·69 kg./cm.²).
Rear	26 lb./sq. in. (1·83 kg./cm.²).

CAPACITIES

	Imp.	*U.S.*	*Litres*
Engine sump (including filter)	6·5 pts.	7·8 pts.	3·7
Gearbox	2·25 pts.	2·7 pts.	1·3
Rear axle	1·5 pts.	1·8 pts.	·85
Cooling system	10 pts.	12 pts.	5·68
Fuel tank	6 gal.	7·2 gal.	27·3

GENERAL DIMENSIONS

Wheelbase	6 ft. 8 in. (2·03 m.).
Overall length	11 ft. $5\frac{5}{8}$ in. (3·49 m.).
Overall width	4 ft. 5 in. (1·35 m.).
Overall height	4 ft. $1\frac{3}{4}$ in. (1·25 m.).
Ground clearance	5 in. (12·7 cm.).
Turning circle: Left lock	32 ft. $1\frac{1}{2}$ in. (9·79 m.).
Right lock	31 ft. $2\frac{1}{2}$ in. (9·51 m.).
Track: Front	3 ft. $9\frac{3}{4}$ in. (1·16 m.) (static unladen condition).
Rear	3 ft. $8\frac{3}{4}$ in. (1·14 m.).
Vehicle weight (dry)	1,400 lb. (635 kg.).

WEIGHTS OF COMPONENTS

Engine	246 lb. (111·5 kg.).
Gearbox	44 lb. (19·95 kg.).
Axle	83 lb. (37·64 kg.).

GENERAL DATA
(1098 c.c.)

The following information is applicable to the 1098-c.c.-engined car and should be used in conjunction with the preceding specification for the 948-c.c.-engined car.

ENGINE

Type	10CG.
Bore	2·543 in. (64·58 mm.).
Stroke	3·296 in. (83·72 mm.).
Capacity	67 cu. in. (1098 c.c.).
Compression ratio	8·9 : 1 (or 8·1 : 1).
Capacity of combustion chamber (valves fitted)	1·8 cu. in. (28·2 c.c.).
Valve operation	Overhead by push-rod.
Oversize bore: 1st	+·010 in. (·254 mm.).
Max.	+·020 in. (·508 mm.).
Torque	H.C. 62 lb.ft. (8·6 kg.m.) 3250 r.p.m. L.C. 61 lb.ft. (8·4 kg.m.) 3250 r.p.m.

Main bearings

Length	$1\frac{1}{16}$ in. (27 mm.).

Pistons

Type	Solid skirt.
Clearances: Bottom of skirt	·0005 to ·0011 in. (·013 to ·028 mm.).
Top of skirt	·0021 to ·0037 in. (·053 to ·094 mm.).
Oversizes	+·010 in., +·020 in. (+·254 mm., +·508 mm.).

Piston rings

Compression: Type: Top ring	Plain, internally chamfered (chrome-faced).
Second and third rings	Tapered.
Width: Top ring	·062 to ·0625 in. (1·575 to 1·587 mm.).
Second and third rings	·0615 to ·0625 in. (1·558 to 1·587 mm.).
Thickness	·106 to ·112 in. (2·69 to 2·84 mm.).
Clearance in groove	·002 to ·004 in. (·051 to ·102 mm.).
Oil control: Type	Slotted scraper.
Thickness	·106 to ·112 in. (2·69 to 2·84 mm.).

Gudgeon pin

Type	Fully floating.
Fit in piston	Hand push fit.

Valves

Head diameter: Inlet	1·213 to 1·218 in. (30·81 to 30·94 mm.).

TORQUE WRENCH SETTINGS

Rocker bracket nuts	25 lb. ft. (3·4 kg. m.).
Sump to crankcase	6 lb. ft. (·8 kg. m.).
Cylinder side covers	2 lb. ft. (·28 kg. m.).
Timing cover—$\frac{1}{4}$ in. UNF. bolt	6 lb. ft. (·8 kg. m.).
Timing cover—$\frac{5}{16}$ in. UNF. bolt	14 lb. ft. (1·9 kg. m.).
Water pump	17 lb. ft. (2·3 kg. m.).
Water outlet elbow	8 lb. ft. (1·1 kg. m.).
Oil filter	16 lb. ft. (2·2 kg. m.).
Oil pump	9 lb. ft. (1·2 kg. m.).
Manifold to cylinder head	15 lb. ft. (2·1 kg. m.).
Rocker cover	4 lb. ft. (·56 kg. m.).
Crankshaft pulley nut	70 lb. ft. (9·6 kg. m.).
Distributor clamp bolt: Fixed nut type	50 lb.in. (·576 kg.m.).
Fixed bolt type	30 lb.in. (·345 kg.m.).

Suspension and steering

Steering lever to hub bolts	30 to 35 lb. ft. (4·1 to 4·8 kg. m.).
Steering-wheel nut	41 lb. ft. (5·76 kg. m.).
Road wheel nuts	60 to 63·5 lb. ft. (8·3 to 8·7 kg. m.).
Disc to hub	40 to 45 lb. ft. (5·5 to 6·2 kg. m.).
Front swivel hub to calliper	45 to 50 lb. ft. (6·2 to 7 kg. m.).

GENERAL DATA—*continued*

(1098 c.c.—*continued*)

FUEL SYSTEM

Carburetters

Needles: Standard	GY.
Weak	GG.
Rich	M.
Piston spring	Blue.

COOLING SYSTEM

Thermostat setting	
Standard	82° C. (180° F.)
Hot climates	74° C. (165° F.).
Cold climates	88° C. (190° F.).

IGNITION SYSTEM

Distributor	25D4.
Vacuum advance starts	4 in. Hg (101·6 mm. Hg).
Vacuum advance maximum	13 in. Hg (330·2 mm. Hg).
Centrifugal advance starts	400 r.p.m. (distributor).
Centrifugal advance maximum	15 to 17° at 2,750 r.p.m. (distributor).
Dwell angle	60±3°.
Static ignition setting: High compression	5° B.T.D.C.
Low compression	3 to 5° B.T.D.C.
Stroboscopic timing	8° B.T.D.C. at 600 r.p.m. (engine).

CLUTCH

Diameter	7¼ in. (184 mm.).
Pressure springs	6.
Colour	Red.
Damper springs	4.
Colour	Maroon/light green.

GEARBOX

Ratios: Reverse	4·120 : 1.
Overall ratios: Reverse	17·32 : 1.

ELECTRICAL EQUIPMENT

Battery	Lucas N9 or NZ9.
Dynamo	Lucas C40/1.
Maximum output	22 amps.
Field coil resistance	6·0 ohms.
Control box	Lucas RB 106/2

BRAKES

Type	Lockheed hydraulic; disc front, drum rear; leading and trailing shoes.

Front

Disc diameter	8·25 in. (209·5 mm.).
Pad area (total)	18 sq. in. (116·1 cm.²).
Swept area (total)	135·28 sq. in. (871 cm.²).
Lining material	Ferodo DA3.
Minimum pad thickness	1/16 in. (1·59 mm.).

Rear

Drum diameter	7 in. (177·8 mm.).
Lining dimensions	6·68 in. × 1·25 in. × ·187 in. (169·8 mm. × 37·5 mm. × 4·75 mm.).
Swept area (total)	55 sq. in. (342 cm.²).
Lining material	Ferodo AM8.

GENERAL DATA—*continued*

(1098 c.c.—*continued*)

GENERAL DIMENSIONS

Track: Front	3 ft. $9\frac{5}{16}$ (1·16 m.) (static unladen condition).
Rear	3 ft. $8\frac{3}{4}$ in. (1·14 m.)
Vehicle weight (dry)	1,466 lb. (665 kg.).

WEIGHTS OF COMPONENTS

Engine	253 lb. (114·7 kg.).

GENERAL DATA

SPRITE (Mk. III) and MIDGET (Mk. II)

The following information is applicable to the Sprite (Mk. III) and Midget (Mk. II) and should be used in conjunction with the preceding specifications.

ENGINE

Torque	H.C. 65 lb.ft. (8·9 kg.m.) at 3500 r.p.m. L.C. 64 lb.ft. (8·8 kg.m.) at 3250 r.p.m.

Crankshaft

Main journal diameter	2·0005 to 2·0010 in. (50·79 to 50·80 mm.).

FUEL SYSTEM

Carburetters

Needles	Standard AN. Rich H6. Weak GG.

Fuel pump

Make and type	S.U. (electrical) Type AUF200.
Delivery rate	56 pints/hr. (67 U.S. pints/hr., 32 litres/hr.).
Delivery pressure	2·5 to 3·0 lb./sq. in. (·17 to ·21 kg./cm.²).

REAR SUSPENSION

Type	Semi-elliptic.
Spring details: Number of leaves	5.
Thickness of leaves	$\frac{11}{64}$ in. (4·37 mm.).
Width of leaves	$1\frac{1}{2}$ in. (38·10 mm.).
Working load	375 lb. (170 kg.).
Free camber	4·437 (112·7 mm.).

TYRES

Tyre pressures—for sustained speeds in excess of 80–85 m.p.h. (129–136 km.p.h.) increase pressure to: Front	22 lb./sq. in. (1·55 kg./cm.²).
Rear	24 lb./sq. in. (1·69 kg./cm.²).

WEIGHTS

Vehicle weight (dry)	1,490 lb. (676 kg.).

GENERAL INFORMATION

CONTROLS, INSTRUMENTS, SWITCHES

Gear lever

The gear change lever positions are clearly shown in the diagram.

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

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

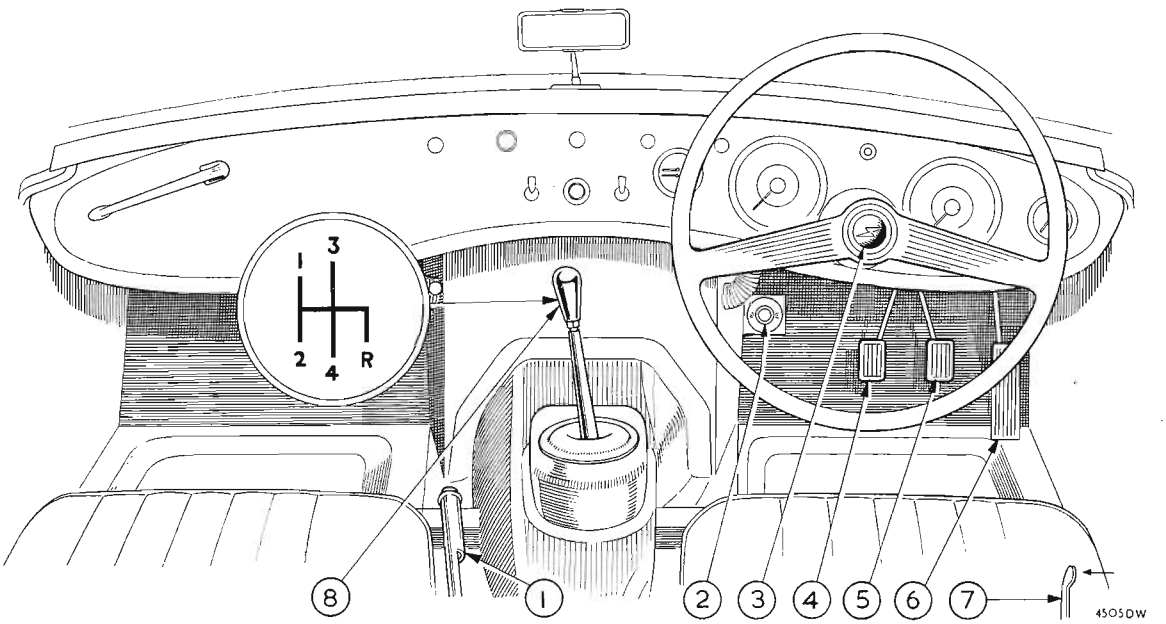
Pedals

The left-hand pedal operates the clutch, the centre pedal the brakes, and the right-hand pedal the accelerator.

Do not allow the foot to rest on the clutch pedal while driving or excessive wear of the operating mechanism will result.

Hand brake

The hand brake is applied by pulling upwards on the lever situated between the driver's and passenger's seats. The ratchet mechanism will hold the brake in the 'on' position and will be heard engaging as the lever is pulled. To release the hand brake pull upwards on the lever, depress the button on the end, and push the lever downwards to the 'off' position.



Driving controls—right-hand drive

1. Hand brake.
2. Headlamp dip switch.
3. Horn switch.
4. Clutch pedal.
5. Brake pedal.
6. Accelerator pedal.
7. Seat adjuster lock.
8. Gear lever.

Headlamp dip switch

The foot-operated dip switch is mounted on the floor to the left of the clutch pedal. It is of the repeating type, lowering the beams on one application and raising them on the next. The headlamp beam warning light glows when the beams are in the raised position.

Direction indicators and horn

The direction indicator switch is mounted on the fascia above the ignition switch. To operate, move the switch to the left or right according to whichever indicator is required; a warning light flashes green when the indicators are in use.

The horn is operated by pressing the button in the centre of the steering-wheel.

Windtone horns

These horns are fitted as optional extra only.

Ignition switch

The switch is situated in the centre of the fascia and is operated by a removable key, which is turned clockwise to switch on the ignition.

Starter switch (marked 'S')

Pull the knob smartly and firmly to operate the starter motor. Release it immediately the engine starts. If the engine fails to start first time wait until the starter motor has come to rest before operating the control again.

Choke or mixture control (marked 'C')

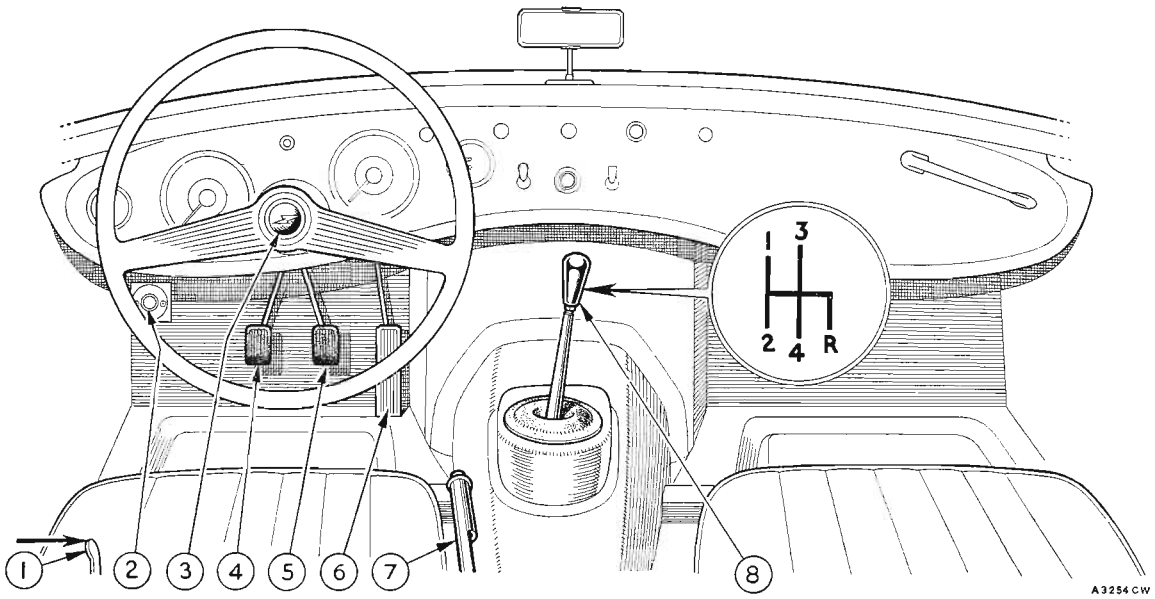
Pull out the control to its limit when starting the engine from cold. Return the control to its normal running position (pushed right in) as soon as possible after starting the engine.

Do not use the control when the engine is warm.

Windshield wiper switch

Move the switch lever downwards to set the wipers in motion. The blades are automatically parked when the switch is returned to the 'off' position.

The windshield wipers will operate only if the ignition is also switched on.



Driving controls—left-hand drive

1. Seat adjuster lock.
2. Headlamp dip switch.
3. Horn switch.
4. Clutch pedal.
5. Brake pedal.
6. Accelerator pedal.
7. Hand brake.
8. Gear lever.

Lighting switch

Move the lever downwards to switch on the side and tail lamps, and into the fully down position for the head, side, and tail lamps.

Panel light switch

This is situated on the lower edge of the fascia below the speedometer. No light will be obtained unless the side-lamps are in operation.

Windshield washer (optional extra)

To operate the washer press the control knob at the far left-hand side of the fascia. In cold weather it is important to fill the reservoir with a mixture of water and Trico to prevent freezing of the water in the container and on the windshield.

Do not use radiator anti-freeze solution in the windshield-washing equipment.

Heating and demisting system (optional extra)

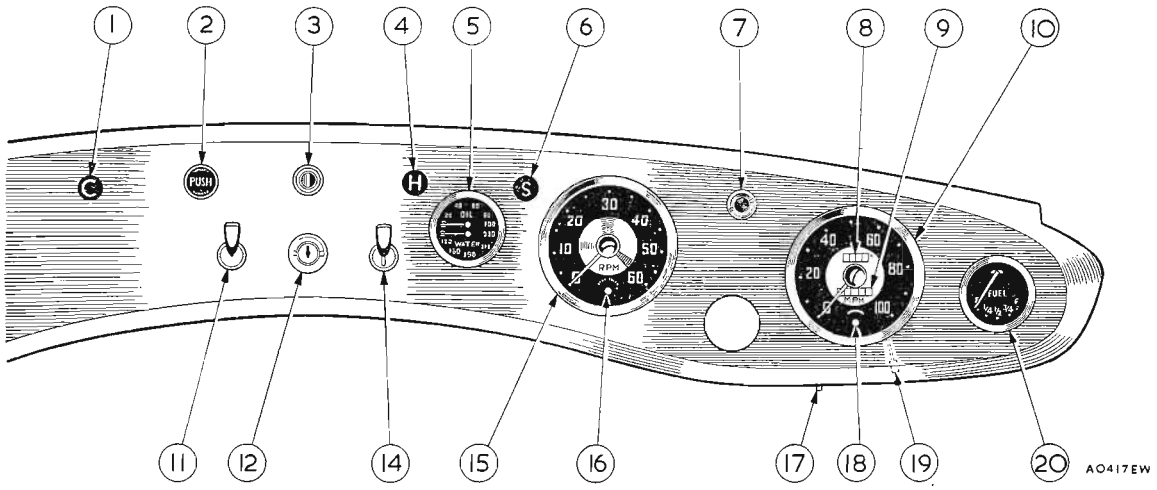
The heating and demisting system is provided for two purposes: (*a*) heating the interior of the car, (*b*) demisting and defrosting the windshield.

Air for the heater is drawn from a forward-facing intake via an auxiliary blower which should only be needed at speeds below 25 m.p.h. (40 km.p.h.). A shut-off valve is incorporated in the heater intake to prevent fumes from entering the car in traffic. The valve must always be open when heating is required. A water tap is fitted at the rear of the engine. In summer conditions this tap may be shut off and the heating system may then be used for cool air ventilation.

The heating and ventilating system is operated by a single control located on the fascia and marked 'H'. To close the shut-off valve pull out the knob, and to bring the blower into operation push in the knob and turn in a clockwise direction. Two doors located forward at either side of the gearbox tunnel control distribution of air between screen and car interior. For heating open the doors; for defrosting and demisting close the doors.

Speedometer

In addition to showing the car speed this has total distance and trip recorders. The trip recorder can be set to zero by pushing the resetting knob upwards and turning it anti-clockwise.



Instruments and switches—right hand-drive

1. Choke control.
2. Windshield washer control.
3. Direction indicator switch.
4. Heater switch.
5. Oil pressure and water temperature gauge.
6. Starter switch control.
7. Direction indicator warning lamp.
8. Trip mileage indicator.
9. Total mileage indicator.
10. Speedometer.
11. Windshield wiper switch.
12. Ignition switch.
14. Lighting switch.
15. Tachometer.
16. Ignition warning light.
17. Panel light switch.
18. Headlamp main beam warning light.
19. Trip mileage resetting knob.
20. Fuel gauge.

Tachometer (optional extra)

The speed of the engine is indicated by this dial, which is calibrated in hundreds of revolutions per minute. Normal use of the engine will not require speeds over 5,000 r.p.m.; with care and under favourable conditions between 5,500 and 6,000 r.p.m. may be attained, but this speed must not be exceeded.

Water temperature gauge

The needle registers the coolant temperature only when the ignition is switched on. The normal running temperature is 164° F. (73° C.). Should there be a sudden change from the usual running temperature, immediate attention should be given to the cooling system and the cause of the trouble rectified.

Oil pressure gauge

The normal working pressure when the engine is warm is 30 to 60 lb./sq. in. (2·1 to 4·2 kg./cm.^{2}) with a proportionately lower idling pressure. Should the gauge fail to register, stop the engine immediately, and investigate and rectify the trouble before starting the engine again.

Fuel gauge

This shows the amount of fuel in the tank and operates only when the ignition is switched on.

Warning lamps

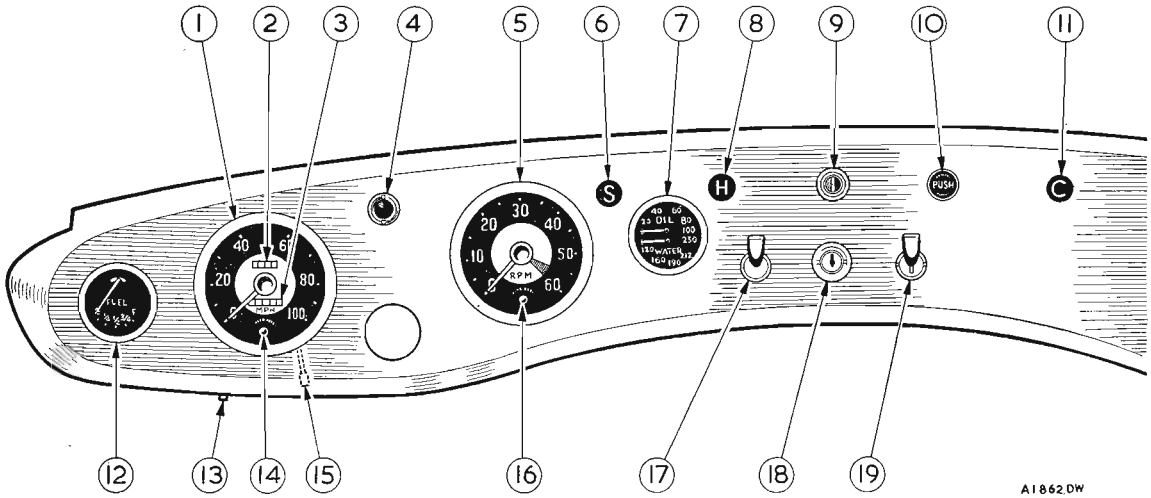
The headlamp main beam warning light is in the lower half of the speedometer dial. Coloured dark red to avoid dazzle, the warning lamp glows when the headlamps are in the raised position and is extinguished when the beams are dipped for approaching traffic.

In the lower half of the tachometer dial is the ignition warning light. The bright-red light will go out as the engine speed is increased; should it glow at all engine speeds, the dynamo is not charging the battery, and after ascertaining that the dynamo belt is not broken the circuit should be examined.

The warning lamp immediately above the steering-wheel flashes green when the direction indicators are operated.

Bonnet release

The bonnet lock is released by pulling the control knob marked 'B' located below the fascia and on the left-hand side of the gearbox tunnel. Insert a finger under the left-hand front edge of the bonnet and push the safety catch rearwards to fully release the bonnet and allow it to be lifted into the open position.



Instruments and switches—left-hand drive

1. Speedometer.
2. Trip mileage indicator.
3. Total mileage indicator.
4. Direction indicator warning light.
5. Tachometer.
6. Starter switch control.
7. Oil pressure and water temperature gauge.
8. Heater switch.
9. Direction indicator switch.
10. Windshield washer control.
11. Choke control.
12. Fuel gauge.
13. Panel light switch.
14. Headlamp main beam warning light.
15. Trip mileage resetting knob.
16. Ignition warning light.
17. Windshield wiper switch.
18. Ignition switch.
19. Lighting switch.

Luggage compartment

The luggage compartment is locked by the ignition key. Located within this compartment are the spare wheel and tool kit.

Spare wheel and jack

The spare wheel is retained in position horizontally on the floor of the luggage compartment by webbing straps.

The spare wheel should always be maintained in good repair and inflated to the correct pressure, otherwise its value in an emergency is reduced and tiresome roadside pumping may be involved. It should also be exchanged with the road wheels periodically to ensure even wear on all tyres—every 3,000 miles (4800 km.) is recommended.

The jack and ratchet handle are also housed in the luggage compartment. When using the jack, always ensure that the jack lug is properly engaged in the socket below the front doors (normally closed by a rubber plug).

Fuel filler

The fuel filler is located towards the rear on the right-hand side of the body. The tank is sealed by a cap which must be turned anti-clockwise for removal.

A locking filler cap can be supplied as an optional extra.

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.

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)	$\frac{1}{4}$"	$\frac{5}{16}$"	$\frac{3}{8}$"	$\frac{7}{16}$"	$\frac{1}{2}$"	$\frac{9}{16}$"	$\frac{5}{8}$"	$\frac{3}{4}$"	$\frac{7}{8}$"	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	·994	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. When this occurs the spanner size is shown in heavy type in the above table.

CAR NUMBER IDENTIFICATION CODE

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—Austin-Healey, 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
G—M.G.	R—Riley
H—Healey	W—Wolseley

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—3000–3999 c.c.	L—Up to 799 c.c.

3rd Prefix Letter—Body type

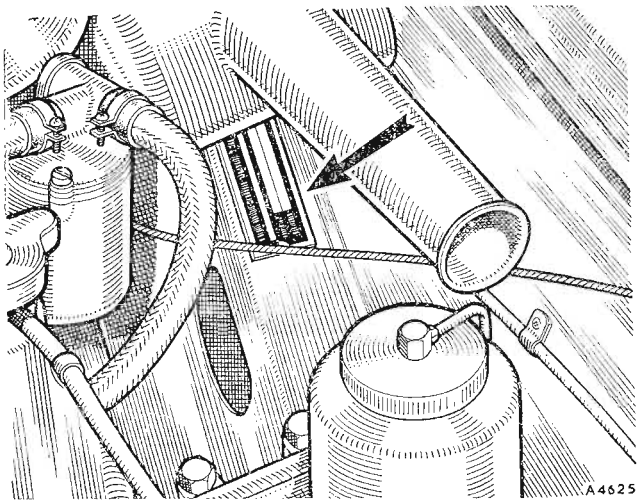
A—Ambulance	J—Convertible	P—Hard-top	T—4-seat Tourer
C—Chassis	K—Truck	Q—Chassis and Cab	U—Pick-up
D—Coupé	L—Hire Car	R—Chassis and Scuttle	V—Van
E—G.P.O. Engineers	M—Limousine	S—4-door Saloon	W—Dual-purpose
G—G.P.O. Mail	N—2-seat Tourer	2S—2-door Saloon	X—Taxi
H—Hearse			

4th Prefix—Series of model (1, 2, etc., used to record a major change).

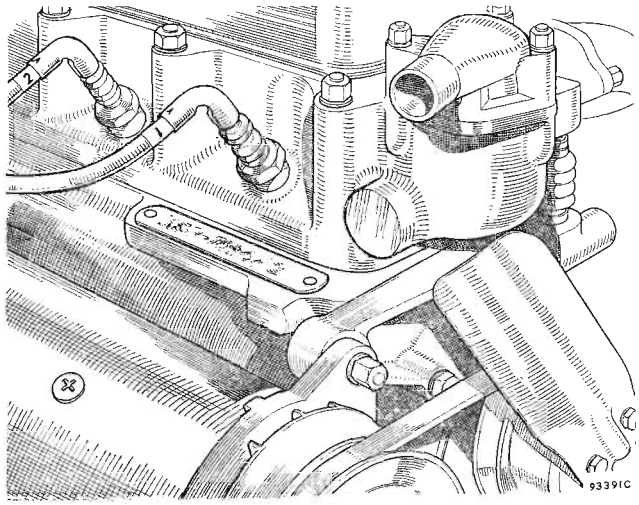
5th Prefix (used when vehicles differ from standard R.H.D.)—L—Left-hand drive.

LOCATION OF MAJOR COMPONENT SERIAL NUMBERS

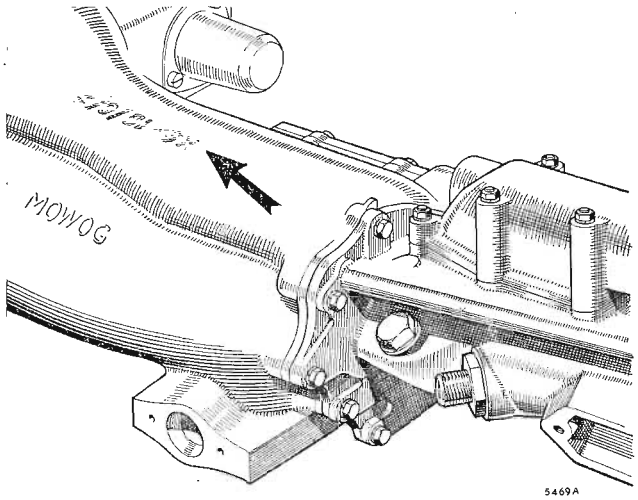
The car and engine numbers must always be quoted in communications between the customer and Dealer and the Dealer and the Company. The registration number is of no assistance and is not required.



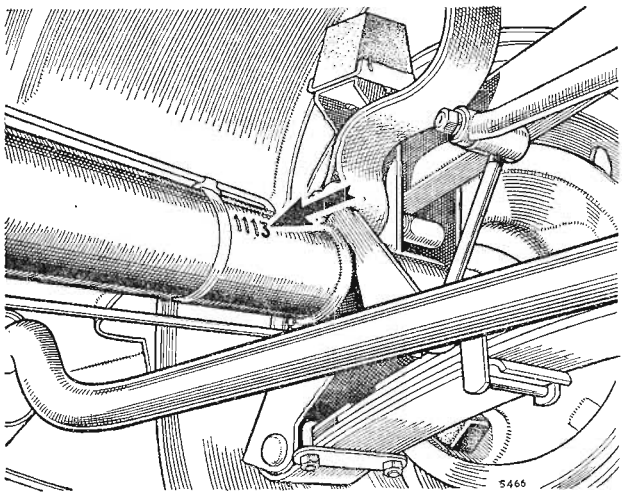
Car (Chassis) Number. This is stamped on a plate mounted on the left-hand inner wheel arch valance under the bonnet



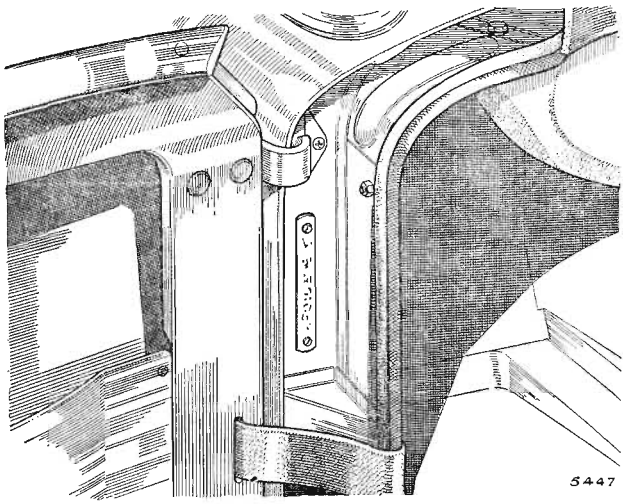
Engine Number. This is stamped on a plate secured to the right-hand side of the cylinder block above the dynamo



Gearbox Number. This is stamped on the top of the gearbox casing



Rear Axle Number. This is stamped on the front of the left-hand rear axle tube adjacent to the spring anchorage



Body Number. This is stamped on a plate secured to the left-hand front door pillar

POWER UNIT SERIAL NUMBER CODING

The engine number on later models comprises a series of letters and numbers, presenting in code the capacity, make, and type of unit, gearbox and ancillaries fitted, and the compression rating 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–Z
- A—Austin
- B—B.M.C. Industrials
- C—Austin-Healey
- 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

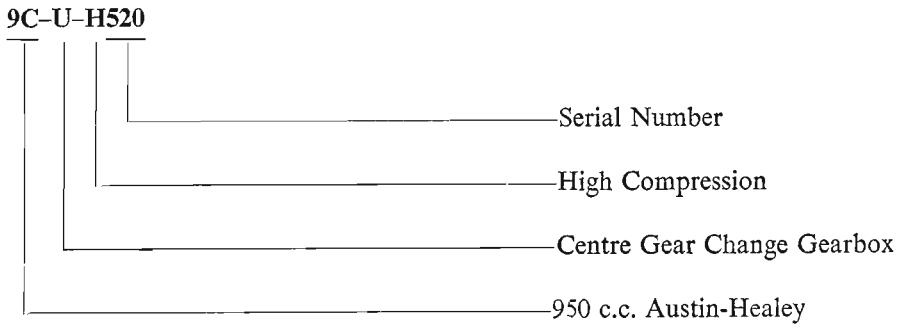
2nd Prefix Group—Gearbox and ancillaries

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

3rd Group—Compression and serial number

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

CODE EXAMPLE



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.

PRESERVATIVE ON EXPORT CARS

To remove the hard film preservative from the external plated parts a cloth dipped in a solution of equal parts of white spirit and fuel should be used. Take care to keep this solvent from anything other than the plated components.

FILLING UP WITH FUEL

Considerable loss of fuel can occur as a result of filling the fuel tank so that 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.

When filling up, therefore:

(1) Avoid overfilling the tank so that 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.

FROST PRECAUTIONS

Water, when it freezes, expands, and if precautions are not taken there is considerable risk of bursting the radiator, cylinder block, or heater (where fitted). Such damage may be avoided by draining the cooling system when the vehicle is left for any length of time in frosty weather, or by adding anti-freeze to the water. When a heater is fitted anti-freeze **must** be used as no provision is made for draining the unit.

Before adding anti-freeze mixture the cooling system must be drained and flushed through by inserting a hose in the filling orifice and allowing water to flow through until clean. The taps should be closed after allowing all the water to drain away and the anti-freeze should be poured in first, followed by the water.

The cooling system is of the sealed type and relatively high temperatures are developed in the radiator header 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 a 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, or Esso Anti-freeze. We also approve the use of any anti-freeze which conforms to Specification B.S.3151 or B.S.3152.

Do not use radiator anti-freeze solution in the windshield-washing equipment (where fitted).

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

Down to	*Down to*
7° *F.* (−14° *C.*)	0° *F.* (−18° *C.*)
15% solution	20% solution
Quantity 1½ pints (·85 litre)	Quantity 2 pints (1·14 litres)

Where temperatures below 0° F. (−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 the makers on this matter.

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.

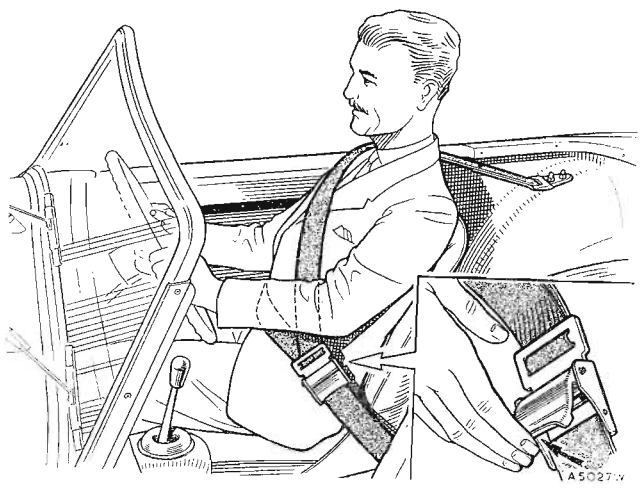
B.M.C. SEAT BELTS

General description

Seat belts are available from B.M.C. Service Ltd. as an accessory. Attachment points have been incorporated in the body construction.

When in use the long belt passes from the wheel arch downwards across the chest to the sill with the buckle tongue approximately at its centre. The short belt from the tunnel is adjusted so that the buckle is located just in front of the hip, and the tongue on the long belt is pushed into the buckle until it clicks in the locked position. The long belt is then adjusted so that the wearer is held firmly but comfortably in the seat. For quick release it is only necessary to lift up the buckle lever approximately 90°, which immediately frees the wearer.

Take care to stow the long belt in such a way that you are not tripped when getting out of the car.



The illustration shows the position of the seat belt when correctly worn

MAINTENANCE ATTENTION

Regular servicing, as proved 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

PERIODICAL

Daily

Check oil level in engine. Top up if necessary.
Check water level in radiator. Top up if necessary.

Weekly

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

3,000 miles (4800 km.) service

1. *Engine*
   Top up carburetter piston dampers.
   Lubricate carburetter controls.
   Check fan belt tension.
   Check water level in radiator and top up if necessary.

2. *Brakes*
   Check brakes, and adjust if necessary.
   Make visual inspection of brake lines and pipes.
   Check level of fluid in the hydraulic brake and clutch master cylinder reservoir, and top up if necessary.

3. *Body*
   Lubricate door hinges, door locks, bonnet lock operating mechanism, and safety catch.
   Lightly smear striker plates with suitable grease.

4. *Electrical*
   Check battery and top up to correct level.

5. *Lubrication*
   Change engine oil.
   Top up oil levels in gearbox and rear axle.
   Lubricate all nipples (except steering rack and pinion).

6. *Wheel and tyres*
   Change wheels round diagonally, including spare, to regularize tyre wear.
   Check tyre pressures.

6,000 miles (9600 km.) service

1. *Engine*
   Top up carburetter piston dampers.
   Lubricate carburetter controls.
   Check fan belt tension.
   Check radiator water level and top up if necessary.
   Check valve rocker clearances, and adjust if necessary.

2. *Ignition*
   Check functioning of automatic retard and advance mechanism.
   Lubricate all distributor parts as necessary.
   Check, and adjust if necessary, distributor contact points.
   Clean and adjust sparking plugs.

3. *Brakes*
   Check brakes, and adjust if necessary.
   Make visual inspection of brake lines and pipes.
   Check level of fluid in the hydraulic brake and clutch master cylinder reservoir, and top up if necessary.

4. *General*
   Check rear road spring anchorage bolts.

5. *Body*
   Lubricate door hinges, door locks, bonnet lock operating mechanism, and safety catch.
   Lightly smear striking plates with suitable grease.

6. *Electrical*
   Check battery cell specific gravity readings and top up to correct level.
   Lubricate dynamo bearing.
   Check all lamps for correct functioning.

7. *Lubrication*
   Change oil in engine, gearbox, and rear axle.
   Fit new oil filter element.
   Lubricate all nipples (except steering rack and pinion).

8. *Wheels and tyres*
   Change wheels round diagonally, including spare, to regularize tyre wear.
   Check tyre pressures.
   Check wheel alignment, and adjust if necessary.

9,000 miles (14400 km.) service

Carry out the **3,000 miles (4800 km.) service.**

12,000 miles (19200 km.) service

1. *Engine*
   Remove carburetter suction chambers and pistons, clean, reassemble, and top up dampers.
   Lubricate carburetter controls.
   Check valve rocker clearances, and adjust if necessary.
   Fit new air cleaner paper elements.
   Check fan belt tension.
   Lubricate water pump sparingly.

2. *Ignition*
   Check functioning of automatic retard and advance mechanism.
   Lubricate all distributor parts as necessary.
   Check, and adjust if necessary, distributor contact points.
   Fit new sparking plugs.

3. *Steering*
   Check steering and suspension moving parts for wear.

4. *Brakes*
   Check brakes, and adjust if necessary.
   Make visual inspection of brake lines and pipes.
   Check level of fluid in the hydraulic brake and clutch master cylinder reservoir, and top up if necessary.

5. *Radiator*
   Drain, flush out, and refill radiator.

6. *General*
   Check rear road spring anchorage bolts.

7. *Body*
   Lubricate door hinges, door locks, bonnet lock operating mechanism and safety catch.
   Lightly smear striker plates with suitable grease.

8. *Electrical*
   Check battery cell specific gravity readings and top up to correct level.
   Lubricate dynamo bearing.
   Check all lamps for correct functioning.
   Check headlight beam setting, and reset if necessary.

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

10. *Wheels and tyres*
    Change road wheels round diagonally, including spare, to regularize tyre wear.
    Check tyre pressures.
    Check wheel alignment, and adjust if necessary.

24,000 miles (38400 km.) service

Carry out the **12,000 miles (19200 km.) service,** except engine-flushing, with the following addition:

1. *Engine*
   Remove engine sump and pick-up strainer, clean, and reassemble, filling with fresh oil.

8,000 miles (12800 km.) service

Carry out the **1,000 miles (1600 km.) service.**

9,000 miles (14400 km.) service

Carry out the **3,000 miles (4800 km.) service.**

10,000 miles (16000 km.) service

Carry out the **1,000 miles (1600 km.) service.**

11,000 miles (17600 km.) service

Carry out the **1,000 miles (1600 km.) service.**

12,000 miles (19200 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 rocker clearances, and adjust if necessary.
   Fit new air cleaner element.
   Check dynamo drive belt tension.
   Lubricate water pump sparingly.
   Clean fuel pump sediment chamber and filter.

2. *Ignition*
   Check automatic ignition control, lubricating drive shaft, cam, and advance mechanism.
   Check, and adjust if necessary, distributor contact points.
   Fit new sparking plugs.

3. *Steering*
   Check steering and suspension moving parts for wear.

4. *Brakes*
   Check brakes, and adjust if necessary.
   Make visual inspection of brake lines and pipes.
   Check level of fluid in the hydraulic brake and clutch master cylinder reservoir.

5. *Hydraulic dampers*
   Examine all hydraulic dampers for leaks, and top up if necessary.

6. *Radiator*
   Drain, flush out, and refill radiator.

7. *General*
   Tighten rear road spring anchorage bolts.

8. *Body*
   Check, and tighten if necessary, door hinges and striker plate securing screws.
   Lubricate door hinges, door locks, bonnet lock, and operating mechanism.

9. *Electrical*
   Check battery cell specific gravity readings and top up to correct level.
   Lubricate dynamo bearing.
   Check headlamp beam setting, and reset if necessary.

10. *Lubrication*
    Drain and flush out engine, refilling with fresh oil.
    Fit new oil filter element.
    Change oil in gearbox and rear axle.
    Lubricate all nipples.
    Lubricate steering-rack.
    Repack front hubs with grease.
    Lubricate speedometer and tachometer drive cables.

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

24,000 miles (38400 km.) service

Carry out the **12,000 miles (19200 km.) service,** except engine-flushing, with the following addition:

1. *Engine*
   Remove engine sump and pick-up strainer, clean, and reassemble, filling with fresh oil.