HORNET and ELF

Workshop Manual

A B M C SERVICE PUBLICATION

GENERAL DATA

ENGINE

Type	8WR.
Number of cylinders	4.
Bore	2·478 in. (62·94 mm.).
Stroke	2·687 in. (68·26 mm.).
Capacity	51·7 cu. in. (848 c.c.).
Firing order	1, 3, 4, 2.
Compression ratio	8·3 : 1.
Capacity of combustion chamber (valves fitted)	1·49 cu. in. (24·5 c.c.).
Valve operation	Overhead by push-rod.
B.M.E.P.	128 lb./sq. in. (9 kg./cm.²) at 2,900 r.p.m.
Torque	44 lb. ft. (6·08 kg. m.) at 2,900 r.p.m.
● Compression pressure	150 lb./sq. in. (10·5 kg./cm.²).
Engine idle speed (approx.)	500 r.p.m. ●
Oversize bore: 1st	+·010 in. (·254 mm.).
Max.	+·040 in. (1·016 mm.).

CRANKSHAFT

Main journal diameter	1·7505 to 1·751 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 41·29 mm.).
Crankpin minimum regrind diameter	1·5854 in. (40·27 mm.).
Main bearings	
Number and type	3 shell type.
Material	Steel-backed white metal.
Length	1·187 in. (30·16 mm.).
End-clearance	·002 to ·003 in. (·051 to ·076 mm.).
End-thrust	Taken on centre main bearing.
Running clearance	·0005 to ·002 in. (·013 to ·051 mm.).

CONNECTING RODS

Length between centres	5·75 in. (14·605 cm.).
Big-end bearings	
Material	Steel-backed lead-bronze with lead-indium-plated surface, or steel-backed copper-lead with lead-tin-plated surface.
Bearing side-clearance	·008 to ·012 in. (·203 to ·305 mm.).
Bearing diametrical clearance	·001 to ·0025 in. (·025 to ·063 mm.).

PISTONS

Type	Split skirt.
Clearances: Bottom of skirt	·0006 to ·0012 in. (·015 to ·030 mm.).
Top of skirt	·0026 to ·0032 in. (·066 to ·081 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	Second and third rings.
Width	·069 to ·070 in. (1·75 to 1·78 mm.).
Thickness	·095 to ·101 in. (2·41 to 2·56 mm.).
Fitted gap	·007 to ·012 in. (·178 to ·305 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	·095 to ·101 in. (2·41 to 2·56 mm.).
Fitted gap	·007 to ·012 in. (·178 to ·305 mm.).
Clearance in groove	·0015 to ·0035 in. (·038 to ·089 mm.).

GUDGEON PIN

Type	Clamped in little-end.
Fit in piston	Hand push-fit.
Diameter (outer)	·624 in. (15·86 mm.).

VALVES AND VALVE GEAR

Valves

Seat angle: Inlet	45°.
Exhaust	45°.
Head diameter: Inlet	1·093 to 1·098 in. (27·76 to 27·89 mm.).
Exhaust	1·000 to 1·005 in. (25·40 to 25·53 mm.).
Stem diameter: Inlet	·2793 to ·2798 in. (7·096 to 7·109 mm.).
Exhaust	·2788 to ·2793 in. (7·081 to 7·096 mm.).
Valve lift	·285 in. (7·24 mm.).
Valve stem to guide clearance: Inlet	·0015 to ·0025 in. (·038 to ·064 mm.).
Exhaust	·002 to ·003 in. (·051 to ·076 mm.).
Valve rocker clearance: Running	·012 in. (·305 mm.) (cold).
Timing	·019 in. (·48 mm.).
Timing markings	Dimples on timing wheels, marks on flywheel.
Chain pitch and number of pitches	$\frac{3}{8}$ in. (9·525 mm.). 52.
Inlet valve: Opens	5° B.T.D.C.
Closes	45° A.B.D.C.
Exhaust valve: Opens	40° B.B.D.C.
Closes	10° A.T.D.C.

With ·019 in. (·48 mm.) valve rocker clearance (for checking purposes only).

VALVE GUIDES

Length: Inlet and exhaust	1·687 in. (42·86 mm.).
Diameter: Outside: Inlet and exhaust	·469 in. (11·91 mm.).
Inside: Inlet and exhaust	·2813 to ·2818 in. (7·145 to 7·257 mm.).

VALVE SPRINGS

Free length: Inlet and Exhaust	1·625 in. (41·27 mm.).
Number of working coils	$4\frac{1}{2}$.
Pressure: Inlet and exhaust: Valve open	70 lb. (31·8 kg.).
Valve closed	37·5 lb. (17·027 kg.).

TAPPETS

Type	Barrel type.
Diameter	·812 in. (20·64 mm.).
Length	1·5 in. (38·10 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.).
Bearings: Type: Front	White-metal-lined, steel-backed.
Centre and rear	Plain (running in block).
Inside diameter (reamed in position)	1·667 to 1·6675 in. (42·342 to 42·355 mm.).
Clearance: Front	·001 to ·002 in. (·025 to ·051 mm.).
Centre and rear	·00125 to ·00275 in. (·0317 to ·0698 mm.).

ENGINE LUBRICATION SYSTEM

Oil pump

Type	Eccentric rotor.
Relief pressure valve opens	60 lb./sq. in. (4·2 kg./cm.²).
Relief valve spring: Free length	$2\frac{55}{64}$ in. (72·63 mm.).
Fitted length	$2\frac{5}{32}$ in. (54·77 mm.).

Oil filter

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

Oil pressure

Normal running	60 lb./sq. in. (4·2 kg./cm.²).
Idling (minimum)	15 lb./sq. in. (1·05 kg./cm.²).

TORQUE WRENCH SETTINGS

Cylinder head stud nuts	40 lb. ft. (5·5 kg. m.).
Connecting rod big-end bolts	35 lb. ft. (4·8 kg. m.).
Main bearing set screws	60 lb. ft. (8·3 kg. m.).
Flywheel centre-bolt	110 to 115 lb. ft. (15·2 to 15·9 kg. m.).
Gudgeon pin clamp screws	25 lb. ft. (3·4 kg. m.).
Rocker bracket nuts	25 lb. ft. (3·4 kg. m.).
Transmission case to crankcase	6 lb. ft. (·8 kg. m.).
Transmission drain plug	40 to 50 lb. ft. (5·5 to 6·9 kg. m.).
Cylinder side cover	2 lb. ft. (·28 kg. m.).
Second type—deep pressed cover	5 lb. ft. (·7 kg. m.).
Timing cover $\frac{1}{4}$ in. UNF. bolts	6 lb. ft. (·8 kg. m.).
Timing cover $\frac{5}{16}$ in. UNF. bolts	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 bowl	10 to 15 lb. ft. (1·4 to 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.).
Transmission case studs—$\frac{3}{8}$ in. dia. UNC.	8 lb. ft. (1·1 kg. m.).
Transmission case studs—$\frac{5}{16}$ in. dia. UNC.	6 lb. ft. (·8 kg. m.).
Transmission case stud nuts—$\frac{3}{8}$ in. UNF.	25 lb. ft. (3·45 kg. m.).
Transmission case stud nuts—$\frac{5}{16}$ in. UNF.	18 lb. ft. (2·5 kg. m.).
Bottom cover set screws—$\frac{1}{4}$ in. dia. UNC. (change speed tower)	6 lb. ft. (·8 kg. m.).
1st motion shaft nut	150 lb. ft. (20·7 kg. m.).
3rd motion shaft nut	150 lb. ft. (20·7 kg. m.).
Flywheel housing bolts and stud nuts	18 lb. ft. (2·5 kg. m.).
Set screw—driving strap to flywheel	16 lb. ft. (2·2 kg. m.).
Set screw—clutch spring housing to pressure plate	16 lb. ft. (2·2 kg. m.).

Final drive

Driven gear to differential cage	60 lb. ft. (8·3 kg. m.).
Drive shaft flange nuts	70 lb. ft. (9·6 kg. m.) (and align to next split pin hole).
End cover bolts (differential housing)	18 lb. ft. (2·5 kg. m.).

Suspension and steering

Steering-column/rack pinion clamp bolt	8 to 9 lb. ft. (1·1 to 1·2 kg. m.).
Steering lever to hub bolts	35 lb. ft. (4·8 kg. m.).
Steering lever ball joint nut	20 to 24 lb. ft. (2·77 to 3·32 kg. m.).
Steering knuckle ball pin bottom nut	35 to 40 lb. ft. (4·8 to 5·5 kg. m.).
Steering knuckle ball pin top nut	35 to 40 lb. ft. (4·8 to 5·5 kg. m.).
Steering knuckle ball pin retainer	70 lb. ft. (9·6 kg. m.).
Front hub nut (drive shaft)	60 lb. ft. (8·3 kg. m.).
Rear suspension stub axle nut	60 lb. ft. (8·3 kg. m.) (align to next slot).
Front suspension upper arm pivot pin nut	26 to 28 lb. ft. (3·6 to 3·87 kg. m.).
Steering-wheel nut	41 lb. ft. (5·76 kg. m.).
● Road wheel nuts	42 lb. ft. (5·8 kg. m.). ●

FUEL SYSTEM

Carburetter

Make and type	S.U. Type HS2.
Diameter	1¼ in. (31·75 mm.).
Jet	·090 in. (2·29 mm.).
Needle	Standard EB. Rich M. Weak GG.
Piston spring colour	Red.

Fuel pump

Make and type	S.U. electric. SP and AUF 201.
Delivery rate	56 pints/hr. (67·2 U.S. pts./hr. 28·44 litres/hr.).
Delivery pressure	2½ to 3 lb./sq. in. (·18 to ·21 kg./cm.²).

AIR CLEANER

Type	Paper element.

COOLING SYSTEM

Type	Pressurized radiator, thermo-siphon, thermostat control, pump- and fan-assisted.
Thermostat setting: Standard	82° C. (180° F.).
Cold climates	88° C. (190° F.).

IGNITION SYSTEM

Sparking plugs	Champion N5.
Size	14 mm.
Plug gap	·025 in. (·625 mm.).
Coil	LA12.
Distributor	25D4.
Distributor contact points gap	·014 to ·016 in. (·36 to ·40 mm.).

	Premium fuel distributor	*Regular (Commercial) fuel distributor*
Auto advance commences at	600 r.p.m. (engine).	1,250 r.p.m. (engine).
Maximum advance	30–34° at 3,400 r.p.m.	22–26° at 5,000 r.p.m.
Vacuum advance	10° at 13 in. (330·2 mm.) mercury.	16° at 11 in. (279·4 mm.) mercury.

Static ignition timing	T.D.C.
Stroboscopic ignition timing	3° B.T.D.C. at 600 r.p.m. (engine).

CLUTCH

BMC	Single dry plate.
Diameter	7·125 in. (180·9 mm.).
Facing material	Wound yarn.
Pressure springs	6.
Colour	Red spot.
Damper springs	Nil.

Diaphragm spring clutch

Make	Borg and Beck.
Diameter	7⅛ in. (18⅛ cm.).
Facing material	Wound yarn.
Damper springs	Nil.
Diaphragm spring colour code	Brown.

GEARBOX

Number of forward speeds	4.
Synchromesh	Second, third, and fourth gears.
Ratios: Top	1·0 : 1.
Third	1·412 : 1.
Second	2·172 : 1.
First	3·627 : 1.
Reverse	3·627 : 1.

Overall ratios: Top	3·765 : 1.
Third	5·317 : 1.
Second	8·176 : 1.
First	13·657 : 1.
Reverse	13·657 : 1.
Speedometer gear ratio	6/17.

STEERING

Type	Rack and pinion.
Steering-wheel turns—lock to lock	2⅓.
Steering-wheel diameter	15¾ in. (40 cm.).
Camber angle	1° positive to 3° positive.
Castor angle	3°.
Swivel hub (king pin) inclination	9° 30′.
Toe-out	1/16 in. (1·6 mm.).
●Lock angle: outer wheel at 20°, inner wheel	23°.●

With vehicle in an unladen condition.

SUSPENSION

Early models, 1961–1964	Rubber cone spring.
Later models 1964 onwards	Hydrolastic suspension.
Front	Levers of unequal length.
Rear	Trailing radius arms.
Toe-in	⅛ in. (3·18 mm.).
Camber	1° positive.
Fluid capacity	4 pints (5 U.S. pints, 2·27 litres).
●Fluid pressure: Early models (unladen)	263 lb./sq. in. (18·49 kg./cm.²).
Later models (unladen)	282 lb./sq. in. (19·74 kg./cm.²).
(Car Nos. given in Section H.10)●	
Radius arm bushes (reamed bore)	·8125 to ·8130 in. (20·63 to 20·65 mm.).

HYDRAULIC DAMPERS (Rubber suspension only)

Type: Front and rear	Tubular telescopic.

DRIVE SHAFTS

Type	Solid shaft, reverse spline.
Make and type of joint	Hardy Spicer. Hemispherical joint.

DIFFERENTIAL

Ratio	3·765 : 1. (64/17).

ELECTRICAL EQUIPMENT

System	12-volt, positive earth.
Charging system	Compensated voltage control.
Battery	Lucas BLT7A, BLTZ7A, BT7A, BTZ7A.
Capacity: BLT7A, BLTZ7A	34 amp.-hr. at 20-hr. rate.
BT7A, BTZ7A	43 amp.-hr. at 20-hr. rate.
Starter motor	Lucas M35G.
Dynamo	Lucas C40.
●Maximum output	22 amps. at 2,250 r.p.m.
Cut-in speed	1,450 r.p.m. at 13·5 volts.●
Control box	Lucas RB106/2.
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 (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, drum, single leading shoe.
Drum size	7 in. (17·8 cm.) diameter.
Lining dimensions: Front or rear	6·75 in. × 1·25 in. (17·14 cm. × 3·17 cm.).
Lining area: Front or rear	33·75 sq. in. (217·7 cm.²).
Lining material	Don 202.

WHEELS

Type: Ventilated disc	3·50B × 10.

TYRES

Size	
Standard	5·20—10 tubeless.
Optional (Radial ply)	145—10 tubeless.
Pressures:	
Standard—normal conditions	Front 24 lb./sq. in. (1·7 kg./cm.²). Rear 22 lb./sq. in. (1·55 kg./cm.²).
fully loaded	Front and rear 24 lb./sq. in. (1·7 kg./cm.²).
Optional (Radial ply), all conditions:	Front 28 lb./sq. in. (1·97 kg./cm.²). Rear 26 lb./sq. in. (1·83 kg./cm.²).

CAPACITIES

Transmission casing (including filter)	8½ pints (10·2 U.S. pints, 4·8 litres).
Cooling system: Including heater	6¼ pints (7·5 U.S. pints, 3·5 litres).
Without heater	5¼ pints (6·3 U.S. pints, 3 litres).
Fuel tank	5½ gallons (6·6 U.S. gallons, 25 litres).
Steering rack	⅓ pint (·44 U.S. pint, ·2 litre).

GENERAL DIMENSIONS

Wheelbase	6 ft. 8$\frac{5}{32}$ in. (2·036 m.).
Overall length	10 ft. 8¾ in. (3·27 m.).
Overall width	4 ft. 7½ in. (1·41 m.).
Overall height	4 ft. 5 in. (1·35 m.).
Ground clearance	6$\frac{5}{32}$ in. (15·6 cm.).
Turning circle	31 ft. 7 in. (9·63 m.).
Track: Front	47$\frac{7}{16}$ in. (1·205 m.).
Rear	45$\frac{7}{8}$ in. (1·164 m.).
Kerbside weight—Elf (Rubber suspension models)	1,466 lb. (665 kg.).
Elf (Hydrolastic suspension models)	1,456 lb. (660·4 kg.).
Hornet (Rubber suspension models)	1,423 lb. (645·4 kg.).
Hornet (Hydrolastic suspension models)	1,449 lb. (657·2 kg.).
Dry weight—Elf (Rubber suspension models)	1,408 lb. (638 kg.).
Elf (Hydrolastic suspension models)	1,416 lb. (642·3 kg.).
Hornet (Rubber suspension models)	1,362 lb. (618 kg.).
Hornet (Hydrolastic suspension models)	1,403 lb. (636·4 kg.).
Maximum permissible towing weight (suitable for 1 in 8 gradient in bottom gear)	8 cwt. (406·4 kg.).

WEIGHTS OF COMPONENTS

Engine and transmission assembly	333 lb. (151 kg.).
Flywheel	15½ lb. (7 kg.).
Wheel with tyre	16¾ lb. (7·5 kg.).

GENERAL DATA—*continued*

●(MARK II AND III)●

The following information is applicable to the Mark II and III and should be used in conjunction with the preceding specification.

ENGINE

Type	9WR.
Number of cylinders	4.
Bore	2·543 in. (64·588 mm.).
Stroke	3·00 in. (76·2 mm.).
Capacity	60·96 cu. in. (998 c.c.).
Compression ratio	8·3 : 1.
B.M.E.P.	130 lb./sq. in. (9·14 kg./cm.²) at 2,700 r.p.m.
Torque	52 lb. ft. (7·28 kg. m.) at 2,700 r.p.m.
Compression pressure	150 lb./sq. in. (10·5 kg./cm.²).
Engine idle speed (approx.)	500 r.p.m.
Oversize bores: 1st	+·010 in. (·254 mm.).
2nd	+·020 in. (·508 mm.).

CRANKSHAFT

Main bearings

Material	Steel-backed copper-lead; thin wall.
Running clearance	·001 to ·0027 in. (·025 to ·069 mm.).

CONNECTING RODS

Big-end bearings

Material	Steel-backed copper-lead; thin wall.
Bearing length	·875 in. (22·22 mm.).

PISTONS

Type	Solid skirt.
Clearance: Bottom of skirt (pressure face)	·0005 to ·0011 in. (·013 to ·028 mm.).
Oversizes: 1st	+·010 in. (·254 mm.).
2nd	+·020 in. (·508 mm.).

PISTON RINGS

Compression: Top	Plain, chrome-faced.
Second and third	Tapered.
Width	·0620 to ·0625 in. (1·574 to 1·588 mm.).
Thickness (all rings)	·106 to ·112 in. (2·692 to 2·835 mm.).

GUDGEON PIN

Type	Fully floating, with circlip location.
Fit	Hand push fit.

VALVES AND VALVE GEAR

Valves

Throat diameter: Inlet	·969 in. (24·61 mm.).
Exhaust	·908 in. (23·06 mm.).
Valve lift	·28 in. (7·14 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.).

Bearings: 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	1·6245 to 1·6255 in. (41·261 to 41·287 mm.).
Rear	1·3748 to 1·3755 in. (34·914 to 34·937 mm.).
Running clearance	·001 to ·002 in. (·025 to ·051 mm.).

FUEL SYSTEM

Carburetter

Needle	Standard GX. Rich M. Weak GG.

IGNITION SYSTEM

Coil	Lucas LA12.
Resistance at 20° C. (68° F.): primary winding	3·2 to 3·4 ohms (cold).
Distributor	Lucas 25D4.
Rotation of rotor arm	Anti-clockwise.
Contact point gap setting	·014 to ·016 in. (·35 to ·40 mm.).
Condenser capacity	·18 to ·24 mF.
Cam closed period	60°±3°.
Cam open period	30°±3°.
Automatic advance	Centrifugal and vacuum.
Serial number	40931E.
Automatic advance commences*	600 r.p.m.
Maximum advance*	26° at 5,000 r.p.m.
Vacuum advance: Commences	5 in. (12·7 cm.) Hg.
Ends	11 in. (27·9 cm.) Hg.
Decelerating check*	24° at 5,000 r.p.m. 18° at 3,400 r.p.m. 8° at 1,300 r.p.m. 2° at 900 r.p.m.
Timing marks	Dimples on timing wheels, marks on flywheel.
Static ignition timing	5° B.T.D.C. (91-octane fuel and above [Research Method]).
Stroboscopic ignition timing*	8° B.T.D.C. at 600 r.p.m. * Camshaft degrees and r.p.m.
Sparking plugs	Champion N5.
Size	14 mm., $\frac{3}{4}$ in. (19 mm.) reach.
Gap	·025 in. (·625 mm.).

CLUTCH

Pressure springs—colour	Black enamel with white spot.
Diaphragm spring colour code	Light green.

BRAKES

Front

Type	Lockheed hydraulic; two-leading-shoe.
Lining dimensions	6·75×1·5 in. (17·14×3·18 cm.).
Lining area (total)	40·5 sq. in. (261·29 cm.²).
Lining material	Don 202.
Wheel cylinder bore (early models)	$\frac{13}{16}$ in. (20·64 mm.).
Wheel cylinder bore (1968 models)	$\frac{15}{16}$ in. (23·81 mm.).

Rear

Wheel cylinder bore (early models)	$\frac{5}{8}$ in. (15·87 mm.).
Wheel cylinder bore (1968 models)	$\frac{3}{4}$ in. (19·05 mm.).

GENERAL DIMENSIONS

Turning circle (1968 models)	28 ft. 6 in. (8·55 m.).

●ELECTRICAL EQUIPMENT

Alternator	Lucas 11AC (12 volts).
Maximum output	43 amperes.
Rotor windings: Resistance	3·8 ± ·2 ohms at 20° C. (68° F.).
Current	3·2 amps. at 12 volts.
Minimum brush length	$\frac{5}{32}$ in. (3·97 mm.).
Brush spring pressure:	
$\frac{25}{32}$ in. (19·84 mm.) compressed length	4 to 5 oz. (113 to 142 gm.).
$\frac{13}{32}$ in. (10·32 mm.) compressed length	$7\frac{1}{2}$ to $8\frac{1}{2}$ oz. (212 to 241 gm.).
Control unit	
Type	Lucas 4TR.
Voltage setting at 3,000 alternator r.p.m.	13·9 to 14·3 volts.
Circuit resistance (max.)	·1 ohm.
Field isolating relay	Lucas 6RA.
Warning light control	Lucas 3AW.●

TORQUE WRENCH SETTINGS

●Alternator	
Brush box fixing screws	10 lb. in. (·115 kg. m.).
Diode heat sink fixings	25 lb. in. (·288 kg. m.).
Through-bolts	45 to 50 lb. in. (·518 to ·576 kg. m.).●

GENERAL DATA

AUTOMATIC

The following information is applicable to the Mk. III Automatic (998-c.c.) and should be used in conjunction with the preceding specification for the Mk. III (998-c.c. engine).

ENGINE

Type	9AG.
Compression ratio	9 : 1.
Engine idle speed (approx.)	650 r.p.m.
●B.H.P.	41 at 4,850 r.p.m.
B.M.E.P.	130 lb./in.² (9·14 kg./cm.²) at 2,750 r.p.m.
Torque	52 lb. ft. (7·19 kg.m.) at 2,750 r.p.m.●

LUBRICATION SYSTEM

Oil pump

Type	Hobourn-Eaton.

Oil filter

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

Oil pressure

Normal running speed and temperature	60 lb./sq. in. (4·22 kg./cm.²).
Idling (minimum) at normal running temperature	15 lb./sq. in. (1·05 kg./cm.²)

FUEL SYSTEM

Carburetter

Make and type	S.U. Type HS4.
Diameter	1½ in. (38·1 mm.).
Needle	AC (Standard), HA (Weak), M1 (Rich).

IGNITION SYSTEM

Distributor	Lucas 25D4.
Serial number	H.C. 41134A.
Timing marks	Dimples on timing wheels, marks on converter.
Timing: Static	4° B.T.D.C.
Stroboscopic	6° B.T.D.C. at 600 r.p.m.

DIFFERENTIAL

Ratio	3·27 : 1.

AUTOMATIC TRANSMISSION

Ratios: Top	1·0 : 1.
Third	1·46 : 1.
Second	1·845 : 1.
First	2·69 : 1.
Reverse	2·69 : 1.
Overall ratios: Top	3·76 : 1.
Third	5·49 : 1.
Second	6·94 : 1.
First	10·11 : 1.
Reverse	10·11 : 1.
Speedometer	7/17.

TORQUE CONVERTER

Type	3-element.
Ratio	2 : 1 maximum.
Converter output gear ratio	1·15 : 1.
End-float	·0035 to ·0065 in. (·089 to ·164 mm.)

DRIVE SHAFTS

Make and type of joint	Hardy Spicer, flange joint.

TORQUE WRENCH SETTINGS

Governor to auxiliary pump housing bolts	10 to 15 lb. ft. (1·4 to 2 kg. m.).
Converter centre bolt	110 to 115 lb. ft. (15·2 to 15·9 kg. m.).
Converter (six central bolts)	22 to 24 lb. ft. (3·04 to 3·32 kg. m.).
Converter drain plugs	18 to 20 lb. ft. (2·5 to 2·77 kg. m.).
Converter housing bolts	18 lb. ft. (2·5 kg. m.).
Differential driving flange securing bolts	40 to 45 lb. ft. (5·53 to 6·22 kg. m.).
Gear train bearing caps	12 lb. ft. (1·66 kg. m.).
Gear train carrier strap	12 lb. ft. (1·66 kg. m.).
Input shaft nut	70 lb. ft. (9·6 kg. m.).
Servo unit securing bolts	17 lb. ft. (2·35 kg. m.).
Top and reverse clutch hub nut	150 lb. ft. (20·7 kg. m.).
Transmission to engine securing nut	12 lb. ft. (1·66 kg. m.).
Valve block securing bolts	10 lb. ft. (1·4 kg. m.).
Valve block bolts (securing three sections)	7 lb. ft. (·97 kg. m.).
$\frac{5}{16}$-in. UNF. bolts	18 to 20 lb. ft. (2·5 to 2·77 kg. m.).
$\frac{3}{8}$-in. UNF. bolts	30 lb. ft. (4·15 kg. m.).
Oil filter bowl	10 to 15 lb. ft. (1·4 to 2 kg. m.).

CAPACITIES

Transmission casing (including filter)	13 pints (7·38 litres, 16 U.S. pints).
Refill capacity (approx).	9 pints (5 litres, 11 U.S. pints).

GENERAL DIMENSIONS

Kerbside weight: Saloon (Automatic)	1,390 lb. (630·8 kg.).

WEIGHT OF COMPONENTS

Engine and transmission assembly	357 lb. (162 kg.).
Automatic transmission	112 lb. (50·8 kg.).