



GENERAL

INFORMATION





SECTION A.

D A T A .

INDEX TO
SUB-SECTIONS.

	<u>SUB-SECTION</u>
ENGINE AND CHASSIS DATA	EA.1



4½ LITRE BENTLEY MARK VI.

DATA.

ENGINE

GENERAL.

- TYPE - Side exhaust valves with overhead inlet valves operated by push rods and totally enclosed rockers.
- NUMBER OF CYLINDERS - Six.
- BORE - 3.500" (approx: 89 m/m).
- STROKE - 4.500" (approx: 113 m/m).
- CUBIC CAPACITY (piston displacement) - 260 cu.ins. (4,256 c.c.).
- RATED HORSE-POWER - 29.4 on R.A.C. Rating.
- COMPRESSION RATIO - 6.4: 1.
- FIRING ORDER - 1-4-2-6-3-5.

CYLINDER BLOCK.

- TYPE - Mono-bloc casting, integral with crankcase.
- MATERIAL - Cast Iron with top 2.5" of cylinder bores chromium plated. Separate exhaust valve guides, of either bronze or cast iron, depending on chassis series.

CYLINDER HEAD.

- TYPE - Detachable.
- MATERIAL - Aluminium alloy with nickel chrome steel inlet valve inserts (seats). Cast iron inlet valve guides.

CRANKSHAFT.

- TYPE - Seven main journals. Fully machined and balanced. Detachable balance weights.
- DIAMETER OF MAIN JOURNALS - 2.750".
- DIAMETER OF CRANKPINS - 1.999".
- END FLOAT - .002 - .008".
- CRANKSHAFT DAMPER - Internal. Combined spring drive and friction damper.



MAIN BEARINGS.

- NUMBER OFF TYPE - Seven.
- TYPE - Copper, lead-indium lined steel sheets.
- CLEARANCE ON INTERNAL DIAMETER - .002" - .0035".

CONNECTING RODS.

- TYPE - "H" Section - Fully machined and balanced.
- GUDGRON PIN BUSH - Pressed in rod.
- BIG END BEARINGS (TYPE) - Copper, lead-indium lined steel shells.
- CLEARANCE ON INTERNAL DIAMETER - .0015" - .003".

PISTONS.

- MATERIAL - Aluminium Alloy.
- COMPRESSION RINGS - Two.
- SCRAPER RINGS - One.
- RING GAP (When fitted) - .012" Compression rings.
.008" Scraper Rings.

CAMSHAFT.

- NUMBER OF JOURNALS - Four.
- BEARINGS - Four Babbit lined steel shells.
- DRIVE - Helical toothed fabric gear.
- THRUST TAKEN - Front.
- END FLOAT - .002" - .006". Thrust plate in position.

VALVES AND FITTINGS.

- One overhead inlet valve per cylinder.
One side exhaust valve per cylinder.
Gland packing on inlet valve stems to control air leakage and lubrication.
- VALVE SPRINGS (INLET)
 - OUTER SPRING - Free length - 1.850".
Rate - 174 lbs. per inch.
 - INNER SPRING - Free length - 1.525".
Rate - 64 lbs. per inch.
- VALVE SPRING (EXHAUST) - Free length - 1.940".
Rate - 108 lbs. per inch.
- TAPPETS - Barrel type, flat face.
- TAPPET CLEARANCE - Inlet valves -.006" Engine
Exhaust " -.012" cold.



LUBRICATION SYSTEM.

TYPE
OIL CIRCULATION
SUMP CAPACITY
OIL PUMP

- Pressure throughout.
- 7.3 Galls. per min. at 4000 r.p.m.
- 16 pints.
- Gear-Type with floating intake strainer.

RELIEF VALVE
H.P. SPRING
L.P. SPRING

- Dual type.
- Free length - 1.8125".
- Rate - 5.54 lbs. per inch.
- Free length - 1.750".
- Rate - .295 lbs. per inch.

BY-PASS FILTER
MAKE AND TYPE

- British Filters Ltd. Type "General".

FUEL SYSTEM

AIR CLEANER.

MAKE

- "A" Series - Bentley Motors (1931) Ltd.
- "B" Series and onwards - A.C.

CARBURETTER.

TYPE

- Twin - S.U. Expanding Type H.4. with damped piston action and improved piston chamber fixing.

JET NEEDLE

- "A" Series - LB1.
- "B" Series and onwards - SC.

PETROL PUMPS.

MAKE
TYPE

- S.U. Twin Electric.
- Type "L".

PETROL TANK.

CAPACITY

- 18 gallons.

COOLING SYSTEM.

COOLANT PUMP.

- Centrifugal type pump.

FAN.

NUMBER OF BLADES
DRIVE

- 5 - 16" diameter.
- Combined coolant pump and fan driven by Vee belt.



COOLING SYSTEM (contd.).

TEMPERATURE CONTROL.

- Thermostat, allowing a minimum running temperature of 80°C.

COOLANT CAPACITY.

- 3 $\frac{3}{4}$ gallons.

EXHAUST SYSTEM

SILENCERS.

- One front silencer and one rear silencer. The front silencer which is of oval section has one baffle through which pass three long perforated tubes. The rear silencer is circular and consists of a resonator chamber followed by three cylindrical coaxial baffles.

TRANSMISSION

CLUTCH.

MAKE
MODEL
TYPE
CLUTCH PEDAL ADJUSTMENT

- Borg & Beck.
- 10".
- Single dry plate.
- 1 $\frac{1}{4}$ " to 1 $\frac{1}{2}$ " free movement.

GEARBOX.

TYPE

- Four forward speeds and one reverse, with positive interlock in selector mechanism. Synchronesh on 2nd, 3rd and 4th gears.

RATIOS (OVERALL)

- 1st speed - 11.113: 1.
- 2nd speed - 7.520: 1.
- 3rd speed - 5.001: 1.
- 4th speed - 3.727: 1.
- Reverse - 11.767: 1.

REAR AXLE

TYPE
FINAL DRIVE
RATIO

- Semi-floating.
- .650" off-set Hypoid Bevel gears.
- 11:41.



WHEELS AND TYRES

WHEELS.

TYPE

- Bolted on pressed steel wheels with balance weights and covering discs.

SIZE

- 5.00" x 16". Well-base rims.

TYRES.

MAKE

- India Super Silent.

SIZE

- 6.50" x 16".

CARRYING CAPACITY

- 22½ cwt. per axle (nominal maximum).

PRESSURE

- Front 25 lbs./sq.in. } Cold.
- Rear 30 lbs./sq.in. }

BRAKES

GENERAL.

- Mechanically servo assisted. Hydraulic front. Mechanical rear. The foot pedal operates the rear brakes and also engages the servo. The servo motor operates the front brakes and at the same time augments the direct application of the rear brakes. The hand brake operates directly on the rear brakes only.
- Each of the four brakes contain two shoes lined with Perodo which are expanded into a brake drum attached to each road wheel hub. Provision is made for rapid external adjustment of the brakes.

INTERNAL DRUM DIAMETER.

- 12.25" (front and rear).

FRICTION LINING AREA.

- 186 sq.ins.

SERVO MOTOR.

- Dry single disc brake type, driven from the gearbox at approx: 1/10th propeller shaft speed, and is actuated by means of axial cams whose levers are interposed in the rod from the foot brake pedal to the rear brakes intermediate shaft. The servo motor operates equally well for forward or reverse motion of the car.



STEERING

TYPE.

- Cam and roller. Not irreversible.

TOE IN.

- Parallel to $\frac{1}{8}$ ".

CASTOR ANGLE.

- $\frac{30}{4}$.

CAMBER.

- $1\frac{1}{2}^{\circ}$ with 4 passengers.

DIAMETER OF STEERING WHEEL.

- $18\frac{3}{4}$ ".

SUSPENSION

FRONT.

- Independent front wheel suspension. Coil spring, wishbone and anti-roll bar. Hydraulic double acting shock absorbers.

REAR.

- Semi-elliptic springs. Hydraulic double acting shock absorbers with ride control. A normal or harder ride can be obtained at the will of the driver by means of a hand control in the steering column.

ELECTRICAL EQUIPMENT

VOLTAGE.

- 12 v.

BATTERY.

MAKE AND TYPE

- Either:-
Dagenite 6.HZD.9S or 6.HZP.9S or,
Exide 6.MXR.9L or 6.MXP.9L.
- $\frac{3}{8}$ " above top of separators.

ELECTROLYTE LEVEL

IGNITION DISTRIBUTOR.

MAKE AND TYPE

- Delco-Remy. Twin contact breaker type, with synchronised contact breaker arms.

ADVANCE MECHANISM

TIMING

CONTACT BREAKER GAP

- Automatic (centrifugal governor).
- T.D.C. (Ignition fully retarded).
- .019" - .021".

IGNITION COILS.

MAKE AND TYPE

- Lucas B.12.



SPARKING PLUGS.

- | | | |
|---------------|---|---------------------------------|
| MAKE AND TYPE | - | Champion N.8 or Lodge CLN type. |
| SIZE | - | 14 m/m. |
| GAP AT POINTS | - | .025". |

DYNAMO.

- | | | |
|-------------|---|--|
| MAKE | - | Lucas - Plain Shunt - Compensated regulator control. |
| TYPE | - | C.45 - PV (4½"). |
| VOLTAGE | - | 12 v. |
| MAX. OUTPUT | - | 17 amps at 13.5 volts. |
| DRIVE | - | Vee belt. |

STARTER MOTOR.

- | | | |
|--------------------------|---|--|
| MAKE | - | Lucas. |
| TYPE | - | M.45.G with Bentley built in reduction gear 1.9: 1 ratio and Bentley Bijur type drive incorporating a friction clutch. |
| PINION TO FLYWHEEL RATIO | - | 14:118. |

HORNS.

- | | | |
|---------------|---|----------------------|
| MAKE AND TYPE | - | Lucas - Model WT.29. |
| SERVICE NO. | - | 69004A and 69005A. |

TRAFFICATORS.

- | | | |
|---------------|---|-------------------------|
| MAKE AND TYPE | - | Lucas - Model RSF. 34L. |
| SERVICE NO. | - | 54003A. |

WINDSCREEN WIPERS.

- | | | |
|---------------|---|-------------------------------|
| MAKE AND TYPE | - | Houdaille - Type "Berkshire". |
|---------------|---|-------------------------------|

LAMP BULBS.

- | | | |
|-----------------------------|---|---|
| HEAD AND CENTRE LAMPS | - | 12v. 48 watt. Centre Contact (Lucas, pre-focus axial filament, No.185). |
| SIDE AND TAIL LAMPS | - | 12v. 6 watt. S.B.C. Centre Contact (Lucas No.207). |
| STOP AND REVERSING LIGHT | - | 12v. 24 watt. S.B.C. Centre Contact (Lucas No.1). |
| INSTRUMENT LIGHTS | - | 12v. 2.4 watt. M.E.S. Cap. |
| WARNING LIGHTS AND MAP LAMP | - | 16v. 3 watt. M.E.S. Cap, 15 m/m Bulb. |
| INTERIOR LIGHTS | - | 12v. 6 watt, Festoon. |
| TRAFFICATORS | - | 12v. 3 watt, Festoon (Lucas No.256). |

RADIO.

- | | | |
|---------------|---|-------------------------|
| MAKE AND TYPE | - | H.M.V. Radiomobile 100. |
|---------------|---|-------------------------|



CHASSIS - GENERAL.

WHEELBASE	-	10' - 0"
TRACK, FRONT	-	4' - 8 $\frac{1}{2}$ "
TRACK, REAR	-	4' - 10 $\frac{1}{2}$ "
OVERALL LENGTH (APPROX)	-	16' - 0"
OVERALL WIDTH (OVER WINGS)	-	5' - 9" front. 5' - 10" rear.
OVERALL HEIGHT (APPROX)	-	5' - 4 $\frac{1}{2}$ " laden. 5' - 6" unladen.
TURNING CIRCLE (OUTSIDE EDGE OF TYRE).	-	R.H. 45' - 0". L.H. 44' - 7".



SPECIAL PROCESSES

AND

SPECIFICATIONS

