

TECHNICAL DATA R61 1937-41

(SOURCE OF INFORMATION B.M.W.)

359

ENGINE (AS OR SIMILAR R5, R6, R51, R66, R71, R51/2)

BORE X STROKE 70 x 78 mm

CCM 600

COMP. RATIO 5.6 & 5.8:1

MAX. RPM 4500

H.P. (DIN) 18
ENGINE OIL CAPACITY 2 LITRES SUMMER SAE 40 WINTER SAE 20

PISTONS HEPOLITE 8559

CARBS

2 FISCHER AMAL M75/426/SR & SL

MAIN JET 85

SLIDE 5/4

NEEDLE 2.69 - 2ND GROOVE FROM TOP

AIR SCREW OPEN 1 1/2 TURNS APPROX

GEAR BOX (AS OR SIMILAR R5, R6, R51, R66, R71, R51/2, R51/3)

RATIOS 1ST 3.6:1

2ND 2.28:1

3RD 1.7:1

4TH 1.3:1

OIL CAPACITY 0.75 LITRES SUMMER SAE 40 WINTER SAE 20

REAR DRIVE (AS OR SIMILAR R5, R6, R51, R66, R71, R51/2, R51/3)

RATIO 3.89:1 SOLO GIVES 5.05:1 TOP GEAR

CROWN WHEEL 35 TEETH

PINION 9 TEETH

RATIO 4.62:1 SIDECAR GIVES 6.0:1 TOP GEAR

CROWN WHEEL 37 TEETH

PINION 8 TEETH

ANOTHER SOURCE GIVES MOBIL OIL EPW1

OIL CAPACITY 0.4 LITRES SUMMER SAE 40 WINTER SAE 20

BRAKES

DRUM DIAMETER 200 mm

LINING DIMENSIONS 180 mm x 25 mm x 4 mm

WHEELS

TYRES FRONT 3.50 x 19 PRESSURE 1.4 ATMOS (1.75 ATMOS. SIDECAR)
(RIM 300 x 19)

REAR 3.50 x 19 PRESSURE 1.9 ATMOS (2.6 ATMOS. SIDECAR)
(RIM 300 x 19)

SUSPENSION (AS OR SIMILAR R51, R66, R71, R51/2, R51/3)

FRONT 2 x 0.1 LITRES OIL ANOTHER SOURCE GIVES MOBIL OIL AF

REAR GREASE - EVERY 2000 km

ELECTRICAL

ANOTHER SOURCE GIVES:-
RS 21

DYNAMO BOSCH RD45/6 2800 RS 15 45 WATT

IGNITION BATTERY & COIL - BATTERY BOSCH 7 AMP MR. 6 B 7 DIN 72 311

PLUGS BOSCH W17S T1 OR BERU IK 17S b 1/14

PLUG GAP 0.6 - 0.7 mm - ANOTHER SOURCE GIVES 0.5 mm

CONTACT BREAKER GAP 0.4 mm

MAIN DIMENSIONS

WHEEL BASE 1400 mm
 GROUND CLEAR. 120 mm
 LENGTH 2130 mm
 WIDTH 815 mm
 HEIGHT 960 mm

WEIGHT

UNLADEN 185 kg
 MAX. LADEN 300 kg

PERFORMANCE

SOLO CONTINUOUS 95 km/hr.
 SOLO MAX. 110 km/hr.
 SIDECAR CONTINUOUS 80 km/hr.
 SIDECAR MAX. 95 km/hr.
 FUEL CAPACITY 14 LITRES TOTAL 1 LITRE RESERVE - 2.5 LITRES APPROX.
 RANGE 300 km SOLO 250 km SIDECAR
 FUEL CONSUMPTION SOLO 4.7 LITRES/100 km @ 75 km/hr.
 SIDECAR 5.6 LITRES/100 km @ 63 km/hr.
 OIL CONSUMPTION 0.1 LITRES/100 km.
 H.P. (DIN) / LITRE 30.

ANOTHER SOURCE
 GIVES RESERVE

ENGINE REPAIR DATA

PISTONS CLEARANCE 0.05-0.07 mm
 GROOVE CLEARANCES TOP 0.04-0.06 mm
 MIDDLE 0.03-0.05 mm
 BOTTOM 0.03-0.05 mm
 RING GAP 0.2-0.35 mm COMP. RINGS?
 0.25-0.4 mm SCRAPER RINGS?

VALVES

DIAMETRAL CLEARANCE 0.05-0.1 mm
 SEAT OUTER DIAMETER 34 mm
 TAPPET CLEARANCE COLD INLET 0.1 mm
 EXHAUST 0.1 mm
 VALVE SPRING FREE LENGTH 46 mm

CRANKSHAFT

MAX. RUNOUT 0.1 mm
 MAX. JOURNAL OVALITY 0.03 mm

BIG END

DIAMETRAL CLEARANCE NONE
 SIDE CLEARANCE 0.05-0.1 mm
 ROLLER CAGE SIDE CLEARANCE 0.1-0.15 mm

SMALL END

GUDGEON PIN DIAMETRAL CLEARANCE 0.01-0.03 mm

MAIN BEARINGS (~~RUN DIRECT IN HOUSING OR COVER~~)

HOUSING DIAMETER FRONT $77_{-0.03}^{+0.03}$ mm REAR RUNS
 REAR $77_{-0.03}^{+0.03}$ mm DIRECT IN
 BEARING DIAMETER FRONT $77_{-0.039}^{+0.02}$ mm HOUSING.
 REAR $77_{-0.039}^{+0.02}$ mm
 INTERFERENCE FRONT $0.01-0.03$ mm
 REAR $0.01-0.03$ mm
 SIDE CLEARANCE BEARING TO FLYWHEEL 1 mm MINIMUM
 SIDE CLEARANCE CRANKSHAFT WEB OR OIL FLINGER
 RING & HOUSING FRONT $1.6-2.5$ mm
 REAR $1.5-2.3$ mm

CAMSHAFT

BORE DIAMETER IN HOUSING OR COVER FRONT $45_{-0.034}^{+0.009}$ mm
 REAR $26_{-0.022}^{+0.022}$ mm
 BUSH OR BEARING OUTER DIAMETER FRONT $45_{-0.033}^{+0.017}$ mm
 REAR $26_{-0.12}^{+0.09}$ mm
 INTERFERENCE FRONT $0-0.02$ mm REAR $0.07-0.12$ mm
 RUNNING CLEARANCE $0.03-0.08$ mm
 SIDE CLEARANCE $0.05-0.1$ mm
 TIMING WHEEL TOOTH BACKLASH $0.03-0.05$ mm
 TAPPET DIAMETRAL CLEARANCE $0.04-0.07$ mm

TIMING WITH 2 mm VALVE CLEARANCE

INLET OPENS 14° AFTER TDC
 CLOSES 26° AFTER BDC
 EXHAUST OPENS 26° BEFORE BDC
 CLOSES 14° BEFORE TDC
 IGNITION $5-6$ mm BEFORE TDC
 OR 30°

ANOTHER SOURCE GIVES
 WITH 0.1 mm CLEARANCE
 40° OR 11.2 mm
 80° OR 27.3 mm
 80° OR 27.3 mm
 40° OR 11.2 mm

LUBRICATION

OIL PUMP SIDE CLEARANCE $0.05-0.1$ mm
 TEST PRESSURE @ 250 RPM $1.5-2$ ATMOS. MIN.

GEARBOX REPAIR DATA

MAINSHAFT RUNNING CLEARANCE BALL RACE? IF RAIN $0.05-0.1$ mm
 MAINSHAFT SIDE CLEARANCE $0.1-0.5$ mm
 LAYSHAFT RUNNING CLEARANCE FRONT & REAR $0.02-0.05$ mm
 LAYSHAFT SIDE CLEARANCE $0.1-0.5$ mm
 SHAFT END FLOATS MAXIMUM 0.1 mm

GEARS 1ST RUNNING CLEARANCE 0.03-0.1mm
 SIDE CLEARANCE 0.1-0.3mm
 2ND RUNNING CLEARANCE 0.03-0.1mm
 SIDE CLEARANCE 0.1-0.3mm
 3RD RUNNING CLEARANCE 0.03-0.1mm
 SIDE CLEARANCE 0.1-0.3mm
 4TH RUNNING CLEARANCE 0.03-0.1mm
 SIDE CLEARANCE 0.1-0.3mm

} RUN WITH SAME CLEARANCES

KICK STARTER SHAFT

RUNNING CLEARANCE 0.02-0.07mm

SIDE CLEARANCE 0.1-0.5mm

KICK STARTER IDLER WHEEL

RUNNING CLEARANCE 0.03-0.1mm

SIDE CLEARANCE 0.1-0.3mm

SELECTOR FORK

RUNNING CLEARANCE 0.05-0.12mm

SUSPENSION REPAIR DATAFRONT FORK

STEERING HEAD BEARINGS 24 OFF 5.5mm DIA

BUSH RUNNING CLEARANCE TOP 0.025-0.1mm

BOTTOM 0.025-0.075mm

SPRING WIRE DIAMETER SOLO 5.5mm

SIDE CAR 6.5mm

REAR PLUNGERS

BUSH RUNNING CLEARANCE 0.04-0.1mm

SPRING WIRE DIAMETER SOLO 7.25mm

SIDE CAR 8mm - ANOTHER SOURCE GIVES 7.5mm

REAR WHEEL DRIVE REPAIR DATA

CROWN WHEEL FLOAT UPWARDS 0.1mm MAX.

SIDEWAYS 0.05mm MAX.

TOOTH BACKLASH 0.1-0.3mm

PROP. SHAFT END FLOAT 0.5mm

~~PROP.~~ PRESSURE FITTING FLANGE CARRIER OR SHOCK ABSORBER
TO PROP. SHAFT. 1500kg MIN.OTHER USEFUL INFORMATION.

BSA DI BANTAM SILENCERS LOOK OK.

BSA BANTAM ^{BATTERY} IS OF CORRECT DIMENSIONS

NSU CAR HEADLAMP RIM & REFLECTOR SUITABLE?

GREEVES BRAKE LININGS SUITABLE?

1964 VW VAN CONTACT BREAKER POINTS SUITABLE

1964 VW VAN CONDENSER SUITABLE

R5, R6, R51, R66, R71 ENGINE PARTS SUIT

R51/2 GIVING PARTS LESS BARRELS, PISTONS & HEADS SUIT

MANY M63 URAL PARTS MAY BE INTERCHANGEABLE

VALVE TIMING - SET CRANKSHAFT & CAMSHAFT SPROCKETS

SO THAT ARROWS POINT TO CENTRE LINE: → ↑ ←

OR SHARE OVERLAP

ADDITIONAL TECHNICAL DATA

AVERAGE PISTON PRESSURE 6 ATMOS.

FLYWHEEL DIA. 225mm

CRANKSHAFT BEARINGS 2 BALL RACE

SMALL END BEARINGS - ROLLER BEARINGS?

PISTON TYPE FLAT TOP

MAX. OVERSIZE 71.5mm - DIA.

2 COMPRESSION RINGS A 70x2.5mm ac DIN 73 102

OR. 2 COMPRESSION RINGS A 70x3mm ac DIN 73 102

1 OIL SCRAPER RING A 70x4mm ac DIN 73 104

OIL PUMP - GEAR TYPE

OIL FILTER - WIRE MESH

AIR FILTER - OIL SOAKED

FUEL FILTER - IN PETROL TAP - GAUZE

ALTERNATIVE CARBS - BING Sa 24/3.4

MAIN JET 42/100

SLIDE ?

NEEDLE POSITION (STOP GROOVE FROM TOP

IDLING JET 35

AIR SCREW OPEN 1.5 TURNS APPROX.

COIL? BOSCH TJ 6/1

SADDLE SPRING WIRE DIA. 5mm

STEERING GEOMETRY

CAMBER (TRAIL?) 65mm

HEAD ANGLE 63°

SADDLE HEIGHT 720mm

WEIGHT ON FRONT WHEEL 85kg

WEIGHT ON REAR WHEEL 99kg } UNLOADED