TECHNICAL DATA R66 1937-41

(SOURCE OF INFORMATION - B.M.W.)

ENGINE (AS OR SIMILAR TO RS, R6, R51, R61, R71, R51/2)

BORE x STROKE	69.8 x 78		
CCM	597		
COMP. RATIO	6.8:1	ANOTHER SOURCE GIVES	
MAX. R.P.M.	5300	CONTINUOUS 5400	MAX. 6000
H.P. (DIN)	30	30	32

ENGINE OIL CAPACITY 2 LITRES SUMMER SAE 40 WINTER SAE 20

PISTONS HEPOLITE 7966 6:1 C.R.
7918 10:1 C.R.

CARBS

FISCHER AMAL 6/420/S
MAIN JET 100
SLIDE 6/5
NEEDLE 2.67 2ND. GROOVE FROM TOP - ANOTHER SOURCE GIVES 3RD
AIR SCREW OPEN 1 TURN APPROX. - ANOTHER SOURCE GIVES 1½ TURNS APPROX.

GEARBOX (AS OR SIMILAR TO RS, R6, R51, R61, R71, R51/2, R51/3)

RATIOS 1ST 3.6 :1
2ND. 2.28:1
3RD. 1.71:1
4TH 1.3:1

OIL CAPACITY 0.75 LITRES SUMMER SAE 40 WINTER SAE 20

REAR DRIVE (AS OR SIMILAR TO RS, R6, R51, R61, R71, R51/2, R51/3)

RATIO 3.1 :1 SOLO - GIVES 4.68:1 TOP GEAR
CROWN WHEEL 36 TEETH
PINION 10 TEETH

RATIO 4.38:1 SIDECAR - GIVES 5.7:1 TOP GEAR
CROWN WHEEL 35 TEETH
PINION 8 TEETH

OIL CAPACITY 0.4 LITRES ANOTHER SOURCE GIVES MOBILOIL EPW1 SUMMER SAE 40 WINTER SAE 20

BRAKES

DRUM DIAMETER 200 mm
LINING DIMENSIONS 180 mm x 25mm x 4mm

WHEELS

TYRES FRONT 3.50 x 19 PRESSURE 1.4 ATMOS (1.75 SIDECAR) (ANOTHER SOURCE GIVES 1.9)
(RIM 3.00 x 19)
REAR 3.50 x 19 PRESSURE 1.9 ATMOS (2.6 SIDECAR)
(RIM 3.00 x 19)

SUSPENSION (AS OR SIMILAR R51, R61, R71, R51/2, R51/3)

FRONT 2 x 0.1 LITRES OIL - ANOTHER SOURCE GIVES MOBILOIL AF
REAR GREASE EVERY 2000 km

ELECTRICAL

DYNAMO 45 WATT BOSCH RD 45/6 2800 RS 15 -
IGNITION BATTERY & COIL - BATTERY 7 AMP/HR. W2 DL9 - BOSCH
PLUGS BOSCH W225 T1 OR BERU K225 b 1/14 - ANOTHER SOURCE GIVES BOSCH W175 T1 WITH 0.5mm GAP
PLUG GAP 0.6 - 0.7mm (FOR SPORTS ENGINE 240)
CONTACT BREAKER GAP 0.4mm

MAIN DIMENSIONS

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

WEIGHT

UNLADEN 187 kg
MAX. LADEN 300 kg – ANOTHER SOURCE GIVES 397 kg.

PERFORMANCE

SOLO CONTINUOUS 115 km/hr.
SOLO MAX. 140 km/h. – ANOTHER SOURCE GIVES 130
SIDECAR CONTINUOUS 95 km/hr.
SIDECAR MAX. 115 km/h. – ANOTHER SOURCE GIVES 100
FUEL CAPACITY 14 LITRES TOTAL 1 LITRE RESERVE – ANOTHER SOURCE GIVES RESERVE 2.5 LITRE APPROX.
RANGE 270 km SOLO 260 km SIDECAR
FUEL CONSUMPTION SOLO 5.2 LITRES/100 km @ 95 km/hr.
SIDECAR 5.4 LITRES/100 km @ 75 km/hr
OIL CONSUMPTION 0.1 LITRES/100 km.
H.P. (DIN)/LITRE 50.

ENGINE REPAIR DATA

PISTONS

CLEARANCE 0.05–0.07 mm
GROOVE CLEARANCES TOP 0.03–0.05 mm
MIDDLE 0.02–0.04 mm
BOTTOM 0.02–0.04 mm
RING GAP 0.2–0.35 mm COMP. RINGS?
0.25–0.4 mm SCRAPER RINGS?

VALVES

~~ROCKER~~ DIAMETRAL CLEARANCE 0.05–0.1 mm
SEAT OUTER DIAM. 36 mm
TAPPET CLEARANCE COLD INLET 0.15 mm – THAT'S WHAT MY
EXHAUST 0.1 mm INFORMATION SAYS!
ANOTHER SOURCE GIVES INLET 0.1–0.15 mm
EXHAUST 0.1–0.15 mm

CRANKSHAFT

MAX. RUN OUT 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 RUNNING CLEARANCE 0.01–0.03 mm

R66 CONT.

MAIN BEARINGS

HOUSING DIAMETER	FRONT	77mm $^{-0}_{+0.03}$mm	REAR RUNS DIRECT IN HOUSING
	~~REAR~~	~~77mm $^{-0}_{+0.03}$mm~~	
BEARING DIAMETER	FRONT	77mm $^{+0.02}_{+0.039}$mm	
	~~REAR~~	~~77mm $^{+0.02}_{+0.039}$mm~~	
INTERFERANCE	FRONT	0.01–0.03mm	
	~~REAR~~	~~0.01–0.03mm~~	

SIDE CLEARANCE BEARING TO FLYWHEEL 1mm MINIMUM

SIDE CLEARANCE CRANKSHAFT WEB OR OIL FLINGER RING & HOUSING FRONT 1.6–2.5mm

REAR 1.5–2.3mm

CAMSHAFT

BORE DIAMETER IN HOUSING OR COVER

FRONT 45mm $^{+0.009}_{+0.034}$mm

REAR 26mm $^{+0}_{+0.022}$mm

BUSH OR BEARING BODY OUTER DIAMETER

FRONT 45mm $^{+0.017}_{+0.033}$mm

REAR 26mm $^{+0.09}_{+0.12}$mm

INTERFERANCE	FRONT	0–0.01mm
	REAR	0–0.01mm

RUNNING CLEARANCE 0–0.02mm

SIDE CLEARANCE 0.07–0.12mm

TIMING WHEEL TOOTH BACKLASH 0.03–0.05mm

TAPPET DIAMETRAL CLEARANCE 0.04–0.07mm

TIMING

WITH 2mm VALVE CLEARANCE

INLET OPENS 3° AFTER TDC
CLOSES 37° AFTER BDC
EXHAUST OPENS 37° BEFORE BDC
CLOSES 3° BEFORE TDC

IGNITION 12.5mm OR 42° BEFORE TDC.

ANOTHER SOURCE GIVES WITH 0.1mm VALVE CLEARANCE

40° OR 11.3mm
80° OR 27mm
80° OR 27mm
40° OR 11.3mm

LUBRICATION

OIL PUMP SIDE CLEARANCE 0.05–0.1mm

TEST PRESSURE @ 250 RPM 1.5–2 ATMOS MIN.

GEARBOX REPAIR DATA

MAINSHAFT RUNNING CLEARANCE BALL RACE? IF PLAIN 0.05–0.1 mm

MAINSHAFT SIDE CLEARANCE 0.1–0.5mm

LAYSHAFT RUNNING CLEARANCE FRONT & REAR 0.02–0.05mm

LAYSHAFT SIDE CLEARANCE 0.1–0.5mm

SHAFT END FLOATS MAXIMUM 0.1mm

R66 CONT

GEARS 1ST	RUNNING CLEARANCE	0·03 – 0·1 mm
	SIDE CLEARANCE	0·1 – 0·3 mm
2ND	RUNNING CLEARANCE	0·03 – 0·1 mm
	SIDE CLEARANCE	0·1 – 0·3 mm
3RD	RUNNING CLEARANCE	0·03 – 0·1 mm
	SIDE CLEARANCE	0·1 – 0·3 mm
4TH	RUNNING CLEARANCE	0·03 – 0·1 mm
	SIDE CLEARANCE	0·1 – 0·3 mm

RUN WITH SAME CLEARANCES

KICKSTARTER SHAFT

RUNNING CLEARANCE	0·02 – 0·07 mm
SIDE CLEARANCE	0·1 – 0·5 mm

KICKSTARTER IDLER WHEEL

RUNNING CLEARANCE	0·03 – 0·1 mm
SIDE CLEARANCE	0·1 – 0·3 mm

SELECTOR FORK

RUNNING CLEARANCE	0·05 – 0·12 mm

SUSPENSION REPAIR DATA

FRONT FORK

STEERING HEAD BEARINGS 24 OFF 5·5 mm DIA

BUSH RUNNING CLEARANCE TOP 0·025 – 0·1 mm
BOTTOM 0·025 – 0·075 mm

SPRING WIRE DIAMETER SOLO 5·5 mm
SIDECAR 6·5 mm

REAR PLUNGERS

BUSH RUNNING CLEARANCE 0·04 – 0·1 mm

SPRING WIRE DIAMETER SOLO 7·25 mm
SIDECAR 8 mm – ANOTHER SOURCE GIVES 7·5 mm

REAR WHEEL DRIVE REPAIR DATA

CROWN WHEEL FLOAT UPWARDS 0·1 mm MAX.
SIDEWAYS 0·05 mm MAX.

TOOTH BACKLASH 0·1 – 0·3 mm

PROP. SHAFT END FLOAT 0·5 mm

~~REAR~~. PRESSURE FITTING FLANGE CARRIER OR SHOCK ABSORBER TO PROP. SHAFT 1500 kg. MIN.

OTHER USEFUL INFORMATION

BSA DI BANTAM SILENCERS LOOK O.K.
BSA BANTAM BATTERY IS OF CORRECT DIMENSIONS
NSU CAR HEADLAMP RIM & REFLECTOR SUITABLE?
GREEVES BRAKE LININGS SUITABLE?
CONTACT BREAKER POINTS AS 1964 VW VAN
CONDENSER AS 1964 VW VAN
R5 R6 R51 R61 R71 ENGINE PARTS SUIT
R51/2 ENGINE PARTS LESS BARRELS HEADS & PISTONS SUIT.
MANY M63 URAL PARTS MAY BE INTERCHANGEABLE.
VALVE TIMING - SET CRANKSHAFT & CAMSHAFT SPROCKETS SO THAT ARROWS POINT TO CENTRE i.e. → ↑ ← OR SHARE OVERLAP.

ADDITIONAL TECHNICAL DATA

AVERAGE PISTON PRESSURE 8·8 ATMOS.
FLYWHEEL DIA. 225 mm
CRANKSHAFT BEARINGS - 2 BALL RACE
SMALL END BEARINGS - ROLLER BEARINGS?
PISTON TYPE - FLAT TOP
MAX. OVERSIZE 71·24 mm DIA.
2 COMPRESSION RINGS 69·8 x 2·5 mm A DIN 73 102
1 OIL SCRAPER RING 69·8 x 4·5 mm A DIN 73 104
OR 3 COMPRESSION RINGS 69·8 x 2 mm A DIN 73102
1 OR SCRAPER RING 69·8 x 5 mm A DIN 73 104
OIL PUMP - GEAR TYPE
OIL FILTER - WIRE MESH
AIR FILTER - OIL SOAKED
FUEL FILTER - IN PETROL TAP - GAUZE
ALTERNATIVE CARBS. BING TYPE AJ 1/24
MAIN JET 105
SLIDE? 3
NEEDLE POSITION 2ND GROOVE FROM TOP
IDLING JET 40
AIR SCREW OPEN 1½ TURNS APPROX.
COIL? BOSCH TJ 6/1
SADDLE SPRING WIRE DIA 5 mm.
STEERING GEOMETRY
CAMBER (TRAIL?) 65 mm
HEAD ANGLE 63°
SADDLE HEIGHT 720 mm
WEIGHT ON FRONT WHEEL 87 kg } UNLADEN
WEIGHT ON REAR WHEEL 100 kg }

JRC 21/6/76