



OPERATING INSTRUCTIONS
FOR THE
BMW MOTORCYCLE
R 68

BAYERISCHE MOTOREN WERKE
AKTIENGESELLSCHAFT
MÜNCHEN 13

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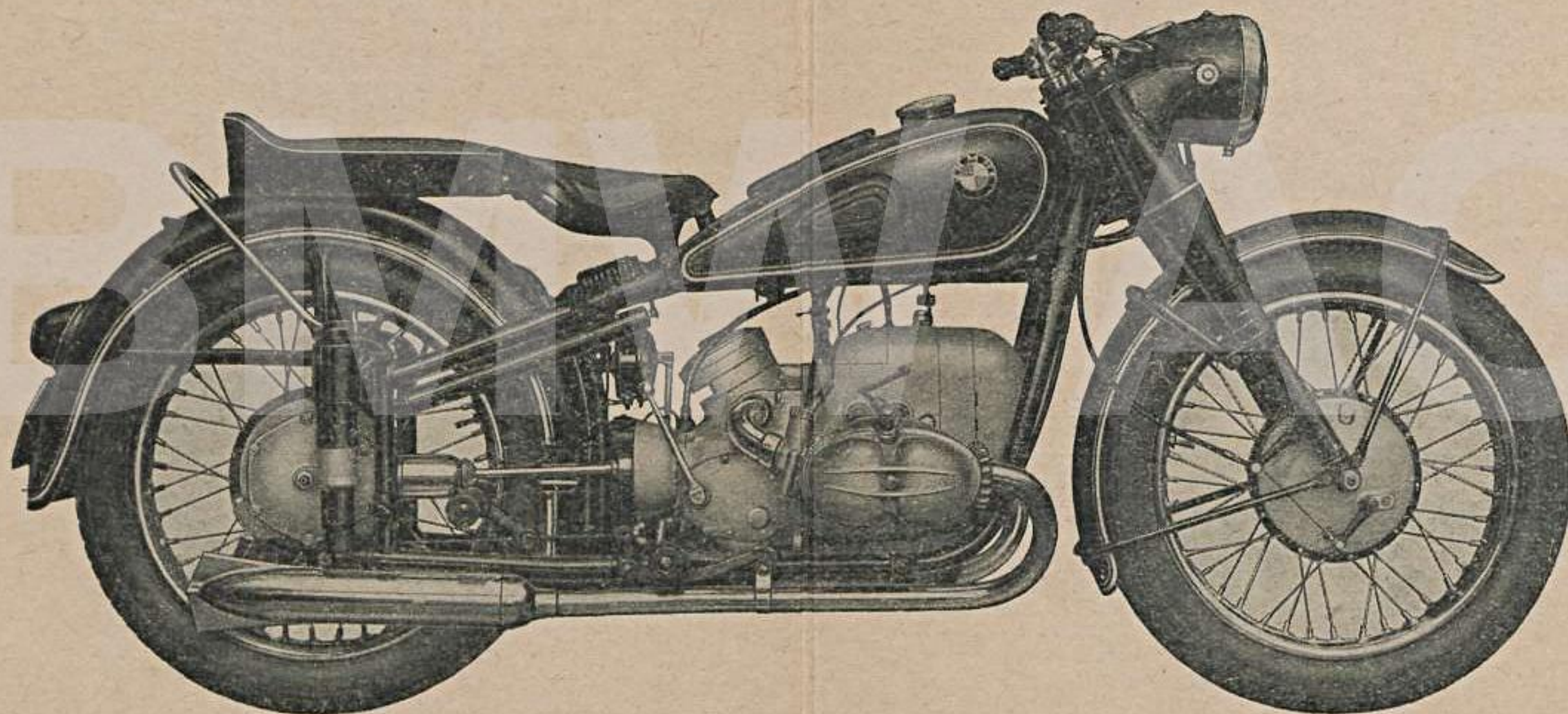
Dear Sir,

In its design and appearance the BMW R 68 sports machine follows very closely the layout set by the R 67/2 model, but its engine is fitted with high-duty crankshaft bearings and high-powered, though basically similar to the R 67/2 power unit. Therefore many chapters of the delivered R 51/3-R 67/2 manual may still be observed for handling the Sports model, such as: Description of motorcycle, controls, installing wheels and tires, brake adjustment, checking for operating safety, cleaning and servicing,

taking the motorcycle out of service, lubricating chart and wiring diagram. The only difference are the technical data which are published in these present operating instructions for the BMW R 68 Sports model, by separate folder, as a supplement to the R 51/3-R 67/2 manual.

The R 68 is a solo machine and not intended to be used with side car.

Bayerische Motoren Werke AG. reserve the right to alter design or any constructional details of the R 68 sports machine.



BMW Motorcycle R 68

Maintenance Service

1. Before Starting

- a) Fill battery with electrolyte, charge, discharge and recharge.
- b) Check oil levels (engine, gearbox, rear wheel drive and front wheel fork), replenish pursuant to these instructions.
- c) Moisten air filter with oil and sling off excess oil.
- d) Check vehicle for operating safety (steering, tire pressures, brakes, lights).

2. After the first 300 miles

- a) Change oils in engine (clean magnetic drain plug), check oil level in gearbox and rear wheel drive.
- b) Grease universal joint of propeller shaft and oil brake lever joints.

3. After the first 600 miles

- a) Change oils in engine, gearbox and rear wheel drive (clean magnetic drain plugs, drop and clean sump, wash oil pump fine strainer in petrol).
- b) Grease all lubrication points (universal joint, right and left rear wheel suspension, brake pedal, twist grip throttle and saddle suspension unit, with grease, all joints of brake operating levers and clutch release lever, with oil).
- c) Check play in steering head, adjust if necessary.
- d) Check wheel axles as well as all screws and nuts for tight fit (tighten hub spindle nuts only by means of the toolkit mandril without using an extension).
- e) Check plays of Bowden cables (carburettor 0.5 mm = .02").
- f) Check valve clearances with engine cold (intake 0.15—0.20 mm = .006—.008", exhaust 0.20—0.25 mm = .008—.01").
- g) Change sparking plugs Bosch W 175 T 1 for Bosch W 240 T 1 (electrode gap = 0.6 mm).
- h) Clean carburettors, eventually adjust idling position.
- i) Check braking effect.

4. After the first 1200 miles and thereafter every 900 miles

- a) Change oil in engine (clean magnetic drain plug). Check oil levels in gear box and rear wheel drive, replenish if necessary.
- b) — i) See 3. b) — i).
- k) Remove air filter for intake air at intervals as required by the different air conditions (dust), at least once in 900 miles and clean with petrol. When the cleaned filter is dry, moisten same with engine oil and sling off excess oil.

5. After the first 3000 miles and thereafter every 3000 miles

- a) Remove wheels, dismantle wheel hubs and renew grease.
- b) Check wheels and seat support, have remedy play, if any.
- c) Have your agent check the contact breaker gap (0.35—0.45 mm = .014").

6. After the first 4000 miles and thereafter every 6000 miles

- a) Change oil in gear box and rear wheel drive (clean magnetic drain plug).
- b) When changing oil in engine remove sump and clean oil pump gauze filter with petrol.
- c) Check oil level in front wheel fork. Refill when dampering effect has been lowered or springing has become too hard. In very cold weather mix one part of kerosene (paraffin) with three parts of fork oil.
- d) Let your agent check the dynamo.

7. Every 4—6 weeks

Check acid level of battery and, if too low, refill with distilled water. **The built-in splash protection box must be exempt from acid.**

For details regarding checking for operating safety, cleaning and servicing, lubrication and instructions for taking

the motorcycle out of service, refer to the annexed R 51/3 · R 67/2 manual.

When at high speeds riding becomes unsafe due to vibrations as well as after a tire replacement or accident the wheels must be balanced.

This will best be done by mounting balance weights available from BMW, or in case of emergency by winding a lead wire around a spoke nipple on the wheel side which was found to be too light and securing the wire coil by means of an insulating tape.

Operating Instructions:

Before Starting:

- | | |
|-----------------|--|
| Fill fuel tank | petrol station fuel of at least 80 octane. Capacity of tank approx. 4.5 U.S.gallons=3.75 Imp.gallons of which 1½ quarts constitute reserve fuel, sufficient for approx. 15 miles. |
| Oil in engine | as summer lubricating oil use SAE 40
as winter lubricating oil use SEA 20 (see lubricants page 11).
Fill in oil up to top mark on dip stick. To measure, only insert stick, do not screw it on. Never fill in too much oil.
When changing oil, also remove rocker covers from cylinder heads to allow the last traces of old oil to run out, moreover wash magnetic drain plug with petrol and clean it carefully from chips. |
| Oil in gear box | fill in oil graphited (see lubricants page 11) up to lower threads of level plug hole.
When changing oil, wash magnetic drain plug with petrol and clean it carefully from chips. |

Oil in rear wheel drive

use gear oil type SAE 90 graphited, (see lubricants page 11) fill up to lower threads of level plug hole.

When changing oil, wash magnetic drain plug with petrol and clean it carefully from chips.

Check tire pressure:
driver alone
driver and passenger

front wheel
21 psi
21 psi

rear wheel
25 psi
27 psi

Starting Engine:

open fuel cock
give gas:

turn cock to "A" (open)

in cold weather
(below 0° C = 30° F)
with a cold engine

open the throttle twist grip slightly, tickle both carburettors uniformly. Close starter slide (choke) on filter.

with a warm engine

open the throttle twist grip slightly. Do not tickle carburettors. Do not close starter slide (choke) on filter.

turn over the engine

with ignition cut out and gears shifted to neutral (red and green lamps are out) by actuating kickstarter twice.

start engine

push ignition lever forwards in driving direction to the advanced spark position. Switch on the ignition (red and green lamps light up). Give the kickstarter pedal a short, purposeful kick. When engine starts, open starter slide (choke) once more.

allow engine to warm up

at medium speed, never race your engine (if engine is cold, warm up for at least 1 minute). Warm up engine at 12—18 m.p.h. remaining in second until sufficient momentum has been acquired, only then shift to a higher gear. This is of great importance as it prevents undue wear and tear of cylinders.

Riding:

disengage clutch	pull the lever on the left handlebar back towards the grip.
shift to first gear	depress gear change pedal (green light goes out).
engage clutch	when the gear is engaged, open the throttle slightly and gently release the clutch lever.
shifting from first over neutral to second, third and top gear	always disengage clutch before shifting and close throttle. Raise gear change pedal, then engage clutch and open throttle as required.
shifting from top to third, second and over neutral to first gear	always disengage clutch before shifting, leaving throttle a bit open, depress gear change pedal, then engage clutch and open throttle as required.
speed	never exceed maximum speeds as listed on page 12 The high speed sports engine designed for a maximum of revolutions requires particularly during the running-in period proper handling at low speeds by mostly using the lower gears. It is recommended to engage the top motion gear only after having attained a speed of 36 m.p.h.
riding uphill and using fuels with a tendency of pinking	with heavy engine loads pull the ignition lever back to the retarded spark position towards the handlebar, as far as required.
riding downhill	shift to next lower gear and, if necessary, shift once more. A good rule: In general, ride up and downhill in the same gear.
stopping	close throttle. When speed has slowed down sufficiently, de-clutch and apply brake slowly. Shift to neutral with gear change pedal.

turning off engine cut out the ignition. Never have ignition switched on for any length of time, if engine is standing still. Turn off fuel cock when motorcycle is parked (turn to Z=closed).

The R 68 in delivered trim is fitted with Bosch W 175 T 1 sparking plugs but they are to be used only for the running-in period until the machine has covered 600 miles. Thereupon (after 600 miles) the Bosch W 240 T 1 sparking plugs have to be installed, which also belong to the regular outfit and are contained in the tool box.

Non-fulfilment of this instruction can entail serious damages on the engine and might invalidate eventual guarantee claims.

TECHNICAL DATA

Engine:

rated continuous power	35 h. p., 7000 r. p. m.
number of cylinders	2
bore	72 mm
stroke	73 mm
swept capacity	590 c. c.
compression ratio	7.5-7.7 : 1
valve timing measured at 1 mm = .04" valve clearance:	
intake opens	19°-24° before T.D.C.
intake closes	60°-65° after B.D.C.
exhaust opens	59°-64° before B.D.C.
exhaust closes	20°-25° after T.D.C.
valve clearances with engine cold:	
intake	0.15-0.20 mm = .006-.008"
exhaust	0.20-0.25 mm = .008-.01"

Carburettors:

carburettor type:	
left carburettor	Bing 1/26/9
right carburettor	Bing 1/26/10
carburettor passage	26 mm = 1"

main jet	115
needle jet	1208
idling jet	35
needle position	1
mixing chamber cap	without
pilot air screw opened	1-2 turns
weight of float	7 g
needle number	4
Ignition:	
Magneto ignition	Noris MZ ahd, R
max. advanced ignition	
with manual control	
at advanced spark	42° ± 2° before T.D.C.
retarded ignition with manual	
control at advanced spark	12° ± 2° before T.D.C.
automatic spark timing	30 crankshaft angle degrees
additional manual control	
by ignition lever (normally	
set at advanced spark)	10 crankshaft angle degrees
Sparking plugs:	
for the running-in period	
during the first 600 miles	Bosch W 175 T 1
after the first 600 miles	Bosch W 240 T 1*
electrode gap	0.6 mm
Gear ratios:	1st 2nd 3rd top
	4.0 2.28 1.7 1.3
Rear drive ratio:	3.89 : 1
	(No. of teeth 9/35)
Wheels:	
drop-centre safety rims	2.15 B x 19 (3 x 19)
tires: front wheel	3.5 x 19 ribbed
rear wheel	3.5 x 19 studded
General Dimensions:	
overall width	approx. 28.5"
overall length	" 84"
overall height	" 38"
Weight:	
net weight, ready for operation	424 lbs.

*) or the following sparking plugs: Lodge HHN, Champion L 10 S, Champion J 2.

maximum permissible load	781 lbs.
Fuel and Lubrication:	
fuel	gasoline of at least 80 octane
lubricants	only use service-tes- ted lubricants re- commended by BMW agents
engine	engine oil for summer SAE 40 for winter SAE 20
gear box	as for engine, but with coll.-graphite (3 vol. % = 1.5 cu. in. for 1 U.S. qt. of oil)
rear wheel drive	gear oil SAE 90 with colloidal graphite (5 vol. % = .4 cu. in. for 8 cu. in. of oil)
front wheel fork	engine oil SAE 20 (in very cold wea- ther mix 1 part kero- sene (paraffin) with 3 parts of fork oil)
capacity of fuel tank	approx. 4.5 U.S. gall. = 3.75 Imp. gall.
reserve fuel tank	approx. 1.5 U.S. qts. = .33 Imp. gall. (sufficient for ap- prox. 15 miles)
engine oil capacity	2 U.S. qts. = .44 Imp. gall.
gear box oil capacity	.9 U.S. qts. = .18 Imp. gall. (mixed with graphite)
rear wheel drive oil capacity	8 to 8½ cu. in. (with graphite)

front wheel fork oil capacity	8 cu. in. in each prong of fork
standard fuel consumption	4.6 litres/h =61.5 m.p. Imp. gall. at 62 m. p. h.
oil consumption per 1000 miles	2 pints

Speeds:

maximum speed of run-in motorcycle	
solo normal sitting position	93 m. p. h.
solo rider crouched low with tight clothing	100 m. p. h.

Maximum speeds in the individual gears must not be exceeded.

miles registered on speedometer	miles per hour in			
	1 st gear	2 nd gear	3 rd gear	top gear
0 to 600	15	28	40	50
600 to 1,200	25	40	53	72
over 1,200	28	50	68	

After the first 300 miles you may already exceed for a few seconds the above listed speeds indicated with respect to the running-in period. To have all sliding and revolving parts of your motorcycle well run-in it would be the best policy to vary throttle openings frequently, with gear shifting at the proper moment.

And now, we are wishing you the best of luck with your R 68!