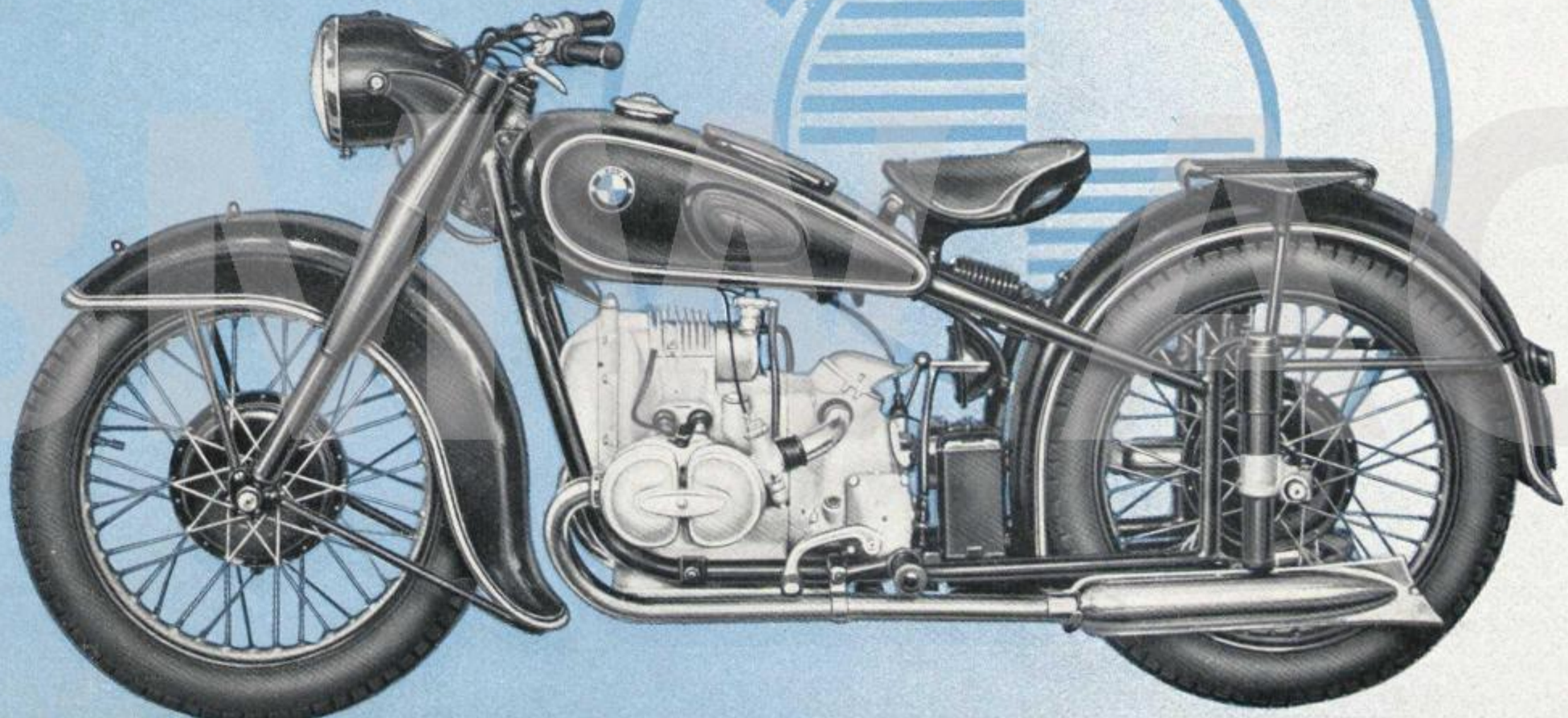
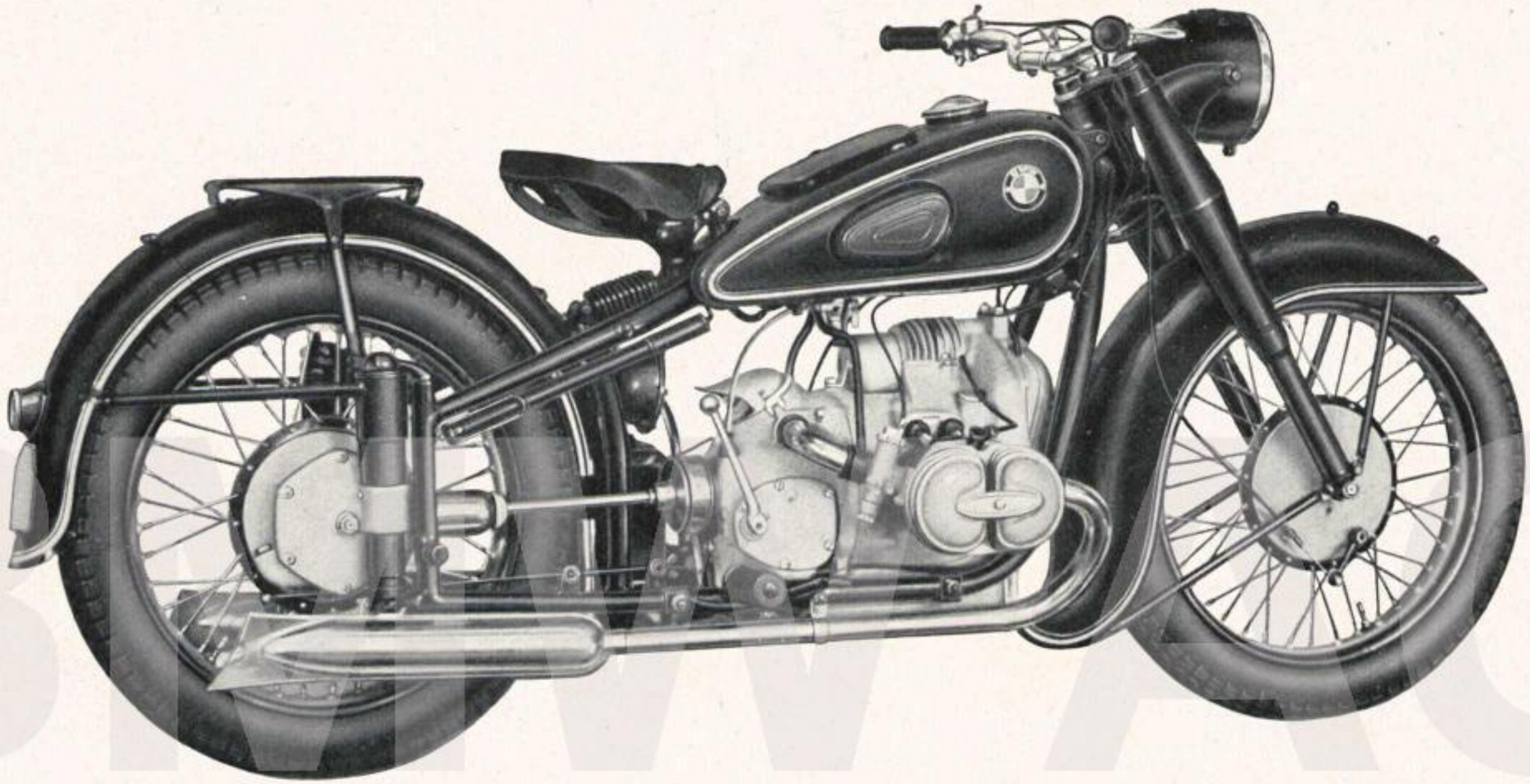
Riding Comfort



by All-Wheel Sprung **BMW R 51/2**



With their experience of over 25 years in motorcycle construction, the BMW engineers who developed the many models of BMW motorcycles seen on roadways the world over and who created the world's fastest vehicle on two wheels plus numerous succesful racing machines, also designed the new BMW motorcycle Model R 51/2. They aimed at the development of a quick-answering engine for high average speeds, combining high efficiency over the entire speed range with a great number of the improvements achieved in decades of experience. The unusual easy control of this racy 24 hp sports engine, with a peak speed of 135 km per hour, allows a smooth, non-jolting operation at a speed as low as 20 km** per hour. The service-proved telescopic springing of front and rear wheels, supplemented by a comfortable well-cushioned saddle assure highest riding qualities and best roadability on all sorts of roads. An endless series of imposing racing victories — the practical evaluation of which benefit every buyer — have proved the safe riding characteristics and superior road-holding qualities of BMW motorcycles. The riding comfort veteran motorcyclists have long dreamed of has become a reality in this model, thanks to the all-wheel sprung frame tested in numerous grueling motorcycle races.*

* *135 km = 84 miles.*

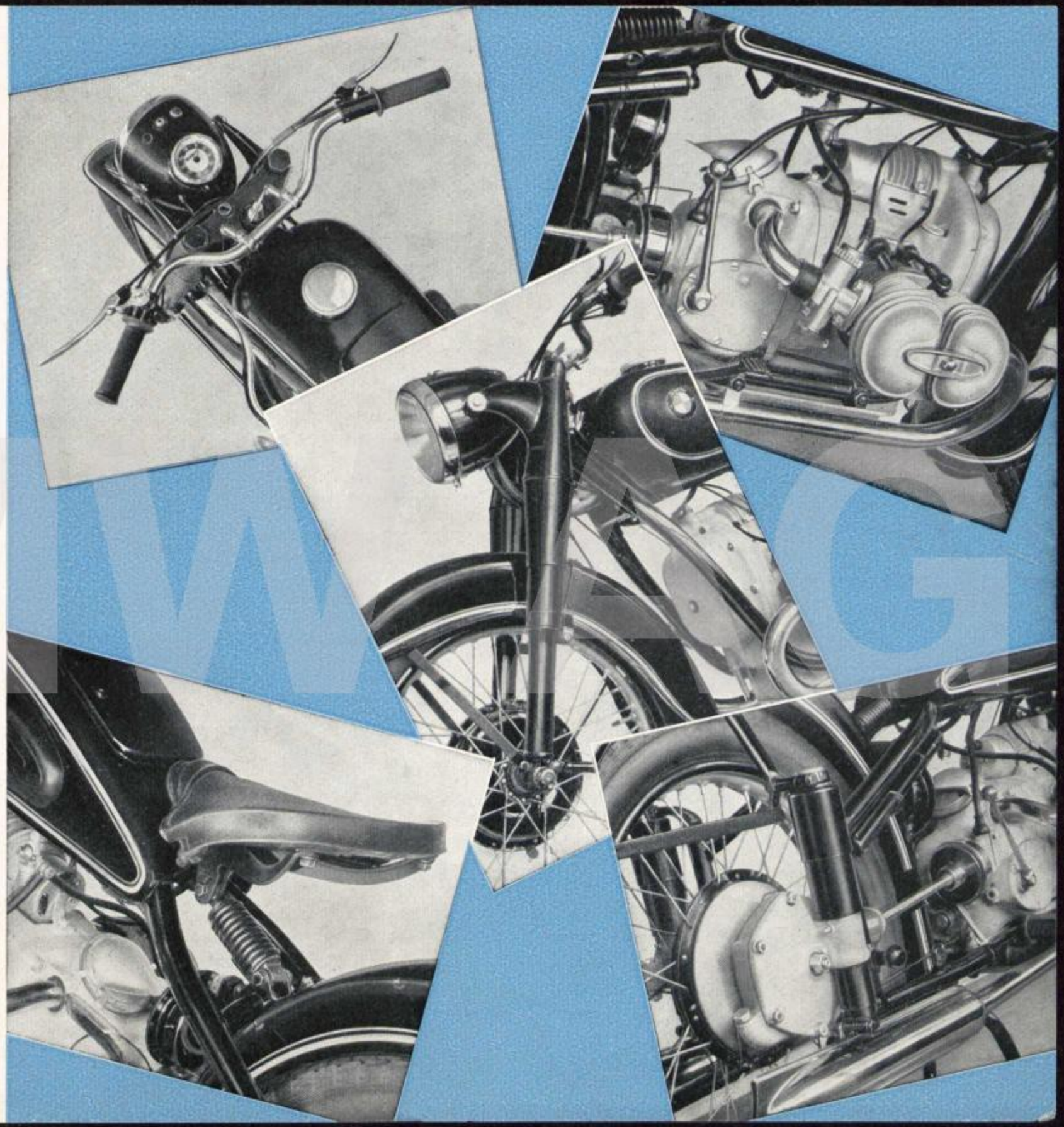
** *20 km = 12 miles.*

Engine:

opposed cylinder-type 24 hp two-cylinder 4 stroke engine, overhead valves, entire valve control in dust- and splash-proof housing. Sectional, rib-type cylinder head cover. Two inclined-draft carburettors with equalizing chamber. Covered common air filter built into gear casing. Crankshaft running on two ball bearings, steel connecting rod mounted on roller bearings. Ignition system protected by dust- and splash-proof covers. Excellent pick-up and power at all speeds combined with practically vibrationless operation.

Frame:

compact, distortion-proof double steel tube frame with ball-type connection for side car. Telescope-type springs on front and rear wheel. All moving parts have dust- and splash-proof covers. Front wheel fork with long, resilient scope springs needing no maintenance whatever. Steering gear lock. Adjustable 22 mm sports type handle-bar with effortless steering arrangement. Easy-to-operate handle-bar controls. Stream-lined 3½ gal. saddle-type fuel tank (incl. 1½ qt. reserve tank) with special cap, built-in tool box, large rubber knee grips. Comfortable saddle with adjustable cushioning. Full-floating axle front and rear wheel, interchangeable, a practical construction when riding with side car. Tires: 3.50 — 19. Efficient internal shoe brakes, 200 mm drum diameter. 6 V/75 watt Bosch dynamo battery ignition system with horn, large head lamp, mileage counter indirectly lighted. Ignition lock. Connecting socket on frame for hand lamp or side car illumination, adjustable foot rests; long foot-operated brake lever. Hinged rear mudguard. Amply dimensioned front mudguard affords efficient splash protection. Removable luggage carrier.



Transmission and Propeller Shaft

Power transmission by single-disc dry clutch. Four speed transmission having practical speed ratios and allowing high average cruising speeds. Dust- and splash-proof pedal arrangement, short, easy shifting. Flexible driving shaft. Auxiliary hand switch. Propeller shaft with universal joint requiring no servicing whatsoever; special helical bevel gears encased in dust- and splash-proof housing.

Technical Dates:

Operation of engine: four strokes with overhead valve
Rated continuous power: 24 hp, 5,800 rpm
Number of cylinders: 2 (opposed cylinder construction)
Bore/stroke: 68 mm
Piston displacement: 494 cub.cm
Compression ratio: 1:6.3
Lubricating system: forced feed lubrication, oil tank in lower part of casing
Spark plug: Bosch W 240 T 1
Gear ratio:

1st gear	3.6 : 1
2nd gear	2.28 : 1
3rd gear	1.7 : 1
4th gear	1.3 : 1

Speed ratio between gearing and rear wheel:

side car:	4.62 : 1,
number o teeth:	9 : 35
solo type:	3.89 : 1,
number of teeth:	7 : 32;

Power transmission from gearing to rear wheel. Totally inclosed propeller shaft with elastic coupling and helical bevel gears
Front wheel spring suspension: telescope fork with double-action oil pressure damper
Rear wheel spring suspension: dust- and splash-proof telescope
Fuel consumption 100 km solo: approx. 4 liters (62 miles per gal.)
Oil consumption 100 km solo: approx. 0.1 liter (62 miles per $^1/_{10}$ qt.)
Overall width: approx. 33 inches
Overall length: approx. 85 inches
Height from saddle to ground: approx. 28 inches
Ground clearance: approx. 5 inches
Weight in operating condition: 400 lbs.
Maximum possible weight: 880 lbs.
Capacity of fuel tank: approx. 3½ gals.
Reserve tank (sufficient for 20 miles): approx. 1½ qts.
Capacity of oil tank: ½ gal.
Maximum speed: solo approx. 84 miles p. hour, with BMW oscillating axle side car "Special" approx. 60 miles p. hour

BMW

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