

# BL Motorcycles Ltd

Professional Workshop Manual - English Translation

## MZ - MZ\_ES\_175\_250\_1973\_Manual\_de\_intretinere

Note:

Unfortunately, some pages are missing from the data available to me (scan). Therefore, the missing sections have been replaced by the corresponding text passages from the operating manual of the ES 175/2 and ES 250/2 from '69. This concerns chapters 2.2 to 2.4, 3.2 and 7.

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Dear MZ Friend! Please do not put this operating manual aside unread because you assume you already know everything it contains. Although most people are familiar with vehicle technology today, even an old motorcycle hand can still learn something from time to time!

Motorcycles have been built in Zschopau for five decades. All the prerequisites are therefore in place at the factory for your vehicle to be reliable and safe - but whether it remains so now depends on you. This is not to say that you should treat your MZ like a raw egg, but if you follow what we recommend below about running in, the right fuels, maintenance and care, you will find that your MZ is indestructible. Therefore, heed our advice, your MZ will thank you for it! We wish you a good trip!

VEB MOTORRADWERK ZSCHOPAU

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Wiring Diagram

Image 1. ES 175/2 - ES 250/2

1. Technical Data

1. 1. Engine

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Working Method Two-stroke loop scavenging Two-stroke loop scavenging

Cooling Type Air (wind) Air (wind)

Number of Cylinders 1 1

Stroke/Bore 65/58 65/69

Displacement 172 cm<sup>3</sup> 244 cm<sup>3</sup>

Compression Ratio 9.5...10 : 1 9.5...10 : 1

Power 10.7 kW = 14.5 DIN-HP = 16.0 SAE-HP at 5000...5400 rpm 14.0 kW = 19.0 DIN-HP = 21.0 SAE-HP at 5000...5500 rpm

Max. Torque 2.0 kpm at 4700...5000 rpm 2.7 kpm at 4700...5000 rpm

Lubrication Mixture lubrication 33:1 (two-stroke oil) Mixture lubrication 33:1 (two-stroke oil)

Connecting Rod Bearing

(on crank pin and piston pin) caged needle bearing caged needle bearing

Crankshaft Main Bearing 2 bearings 6305 c 003 f 2 bearings 6305 c 003 f

1 bearing 6302 1 bearing 6302

Lubrication of the Crankshaft Main Bearings by transmission lubricant by transmission lubricant

Fuel VK 88 (RON 88) VK 88 (RON 88)

1. 2. Carburetor Operating Instructions for MZ Motorcycles ES 175/2 and ES 250/2

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ES 175/2 ES 250/2

BVF 26 N 1-2 (Starting Carburetor) BVF 28 N 1-3 (Starting Carburetor)

Carburetor Values:

Passage in mm 26 28

Main Jet 105 115

Needle Jet 67 67

Partial Load Needle No. D1 with 7 Notches D1 with 7 Notches

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Needle Position from Above 4...5 \*) (4th for the Run-in Period) 3...4 \*) (4th for the Run-in Period)

Starting Jet 90 100

Idle Jet 35 40

Idle Air Screw 1 1/2...2 1/2 Turns Open 2...3 Turns Open

Air Filter Dry Air Filter in the Intake Silencer

\*) Always observe the Spark Plug Condition!

## 1. 3. Electrical System

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ES 175/2 ES 250/2

Ignition Battery Ignition Battery Ignition

Timing 3.0-5.0 mm before TDC 3.0-5.0 mm before TDC

Breaker Contact Gap 0.3 mm 0.3 mm

Spark Plug Isolator M 14/260 Isolator M 14/260

Electrode Gap 0.6 mm 0.6 mm

Generator DC, 6V, 60W, briefly 90W DC, 6V, 60W, briefly 90W

Charging Indicator Lamp (red) in the speedometer (red) in the speedometer

Regulator RSC 60/6, under the left side panel RSC 60/6, under the left side panel

Battery 6V, 12 Ah (Lead-Acid Flat Battery)

Ignition Coil 6V, under left fairing

Headlight Fixed - Light Exit 170 mm

Dimmer Switch on the Handlebar Left

Tail Light Combined with Light Exit 95 mm

Brake Light Contact on the Rear Brake Lever

Turn Signals on Both Sides at the Handlebar End (Switch on the Handlebar Right)

Flasher Unit in the Headlight Housing Operating Instructions for MZ Motorcycles ES 175/2 and ES 250/2

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Horn Under the Fuel Tank

High Beam is Activated by Push Button Under the Dimmer Switch

## 1. 4. Transmission

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ES 175/2 ES 250/2

Clutch on the Left Crankshaft Stub - in Oil Bath (5 Friction Plates with Cork Content)

Shifting Foot Shift

Number of Gears 4 4

Gear Ratio

1st Gear 2.77:1

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2nd Gear 1.80:1

3rd Gear 1.23:1

4th Gear 0.92:1

Neutral Indicator Electrical Indicator Lamp (Green) in the Speedometer

1. 5. Power Transmission Operating Instructions for MZ Motorcycles ES 175/2 and ES 250/2

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ES 175/2 ES 250/2

Ratio Engine-Transmission 2.43:1 by Helical Spur Gears 28:68 Teeth

Ratio Transmission-Rear Wheel 2.65:1 = 17:45 Teeth 2.14:1 = 21:45 Teeth

by Roller Chain 12.7 x 7.75 x 8.51 mm = 1/2 x 5/16 Inch (With Sidecar: 2.65:1 = 17:45 Teeth)

1. 6. Chassis

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ES 175/2 ES 250/2

Frame Single Tube Frame, Welded. Elastic Engine Mounting in Rubber Blocks

Type of Suspension Front and Rear Swinging Arm Front

Spring Struts with Oil Shock Absorbers, 142 mm Travel

Rear Spring Struts with Oil Shock Absorbers, 105 mm Travel, Spring Hardness Adjustable

Wheels Wire Spoke Wheels with Uncranked Spokes

Rim Size Operating Instructions for MZ Motorcycles ES 175/2 and ES 250/2

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Front 1.85 B x 16

Rear 2.15 B x 16

Tires

Front 3.00 - 16

Rear 3.50 - 16

Tire Pressure (at Overpressure)

Front 1.5 at 1.5 at

Rear 1.9 at for Solo Riding 1.9 at for Solo Riding

Rear 2.1 at for Passenger Riding 2.1 at for Solo Riding and Sidecar Operation

2.6 at for Sidecar Operation with Passenger

Brakes Full Hub Brakes Full Hub Brakes

1. 7. Dimensions and Masses

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ES 175/2 ES 250/2

Wheelbase 1325 mm

Length 2090 mm