

Laboratory Ball Mill, 2 kg, Motor Driven

Operating Manual

Laboratory Equipment

Intended use

Motor-driven rotational ball mill for grinding hard and brittle sample materials into fine powder for laboratory sample preparation.

Intended users

Trained laboratory personnel in analytical, materials, pharmaceutical, mineral and teaching laboratories.

Read this manual completely before first use and keep it with the product. This document provides general operating, care and safety guidance. Where the product is supplied with manufacturer labeling or instructions, those take precedence. For questions, a replacement copy, or a digital copy of this manual, email sales@scimedstore.com.

1. Safety

Safety warnings and cautions

- Connect only to a grounded outlet with the supply voltage marked on the unit.
- Unplug the unit before loading, unloading, cleaning or maintenance.
- Do not allow liquids to enter the motor housing or electrical parts.
- Keep hands, hair, loose clothing and tools away from rotating parts while the mill is running.
- Make sure the container lid is closed and secured before starting the mill.
- Do not grind flammable, explosive or reactive materials. Follow your laboratory's safety procedures for hazardous or toxic powders.
- Wear eye protection, gloves and, where dust may be released, a suitable dust mask when opening the container.
- Place the mill on a stable, level surface that can bear its weight.

2. Package contents

- Ball mill unit
- SS 304 grinding container
- Stainless steel grinding balls (mixed sizes)

Check contents on receipt. Report missing or damaged items to sales@scimedstore.com within 48 hours of delivery.

3. Specifications

Capacity	2 kg batch
Rotation speed	80 RPM (fixed)
Motor	Single-phase AC motor
Grinding container	SS 304 cylindrical container, removable
Grinding media	Stainless steel balls, mixed sizes (typically 6-25 mm), 500 g-1 kg included
Final particle size	Typically 10-100 μm depending on material and grind time
Power supply	220 V AC single-phase (110 V/60 Hz on request)
Body	Steel frame, powder-coated exterior

4. Unpacking and setup

- 1 Unpack the unit and check the container and grinding balls are present and undamaged.
- 2 Place the mill on a stable, level bench with clearance around the rotating parts.
- 3 Check that the supply voltage marked on the unit matches your local supply.
- 4 Clean the container and balls before first use.
- 5 Connect the power cord to a grounded outlet.

5. Operation

Loading the container

- 1 Switch off and unplug the mill.
- 2 Remove the container and open the lid.
- 3 Add grinding balls to roughly 30-40% of the container volume.
- 4 Add the sample, filling to about 30-50% of the container to leave head space.
- 5 Close the lid and secure it firmly.
- 6 Place the container in the mill and secure it in position.

Grinding

- 1 Plug in the unit and switch on with the power switch.
- 2 Allow the mill to run for the time required by your method; grind time depends on the material and target particle size.
- 3 Check for unusual noise or vibration; stop immediately if observed.
- 4 Switch off and wait for rotation to stop completely before touching the container.
- 5 Unplug the unit before removing the container.

Unloading

- 1 Allow the container to cool if warm.
- 2 Open the lid carefully in a ventilated area to avoid dust release.
- 3 Separate the powder from the grinding balls using a sieve.
- 4 Transfer the sample to a labeled container.
- 5 Clean the container and balls before the next sample to avoid cross-contamination.

6. Cleaning and disinfection

- Switch off and unplug the mill before cleaning.
- Wash the container and grinding balls with water and laboratory detergent, or a suitable solvent for the sample type; rinse and dry fully to prevent corrosion.
- For contamination-sensitive work, run a cleaning grind with clean sand or a blank material, then wash.
- Wipe the exterior with a damp cloth; do not pour water on the body or motor.
- Remove powder residue from the frame and rollers with a brush or vacuum.

7. Maintenance and storage

- Inspect grinding balls and container for wear; replace worn media as needed.
- Check the lid seal and fasteners before each use.
- Check the power cord for damage regularly.

- Store in a clean, dry place with the container and balls dry.
- Refer motor or electrical repairs to qualified service personnel.

8. Troubleshooting

Problem	Likely cause	What to do
Mill does not start	No power or loose plug	Check the outlet, plug and power switch; have the fuse checked by qualified personnel.
Excessive vibration or noise	Unbalanced load, container not secured, or uneven bench	Stop, check container mounting and load, and place on a level surface.
Powder leaks from container	Lid not tight or seal worn	Stop, clean the rim, retighten or replace the seal.
Particle size too coarse	Insufficient grind time or ball charge	Increase grind time or adjust ball quantity per your method.
Motor overheats	Overload or prolonged continuous running	Reduce batch size, allow cooling periods, and check ventilation.

9. Disposal

- Dispose of ground samples per your laboratory's chemical or waste procedures.
- Dispose of the unit as electrical/electronic waste in accordance with local regulations.

10. Warranty and support

Products are covered by SciMed's standard warranty (12 months from purchase unless a different period is stated on your invoice). Warranty terms: scimedstore.com/pages/warranty.

Support, spare parts and additional copies of this manual: sales@scimedstore.com. Please include your order number and a photo of the product or issue.

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