

Laboratory Ball Mill, 2 kg Heavy Duty, 110-220V

Operating Manual

Laboratory Equipment

Intended use

Motor-driven rotational ball mill for grinding hard and brittle materials to fine powder for laboratory sample preparation, such as mineral, cement, ceramic, coal, pharmaceutical and teaching applications.

Intended users

Trained laboratory personnel. Students only under direct supervision.

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 any maintenance.
- Do not allow liquids to enter the motor housing. Do not operate with wet hands.
- Keep hands, hair, loose clothing and tools away from rotating parts. Never reach into the mill while it is running.
- Make sure the container lid is fully closed and secured before starting.
- Wear safety glasses and gloves; use a dust mask or work under extraction when handling fine or hazardous powders.
- Do not grind flammable, explosive or reactive materials.
- Place the mill on a stable, level surface that can bear its weight and vibration.

2. Package contents

- Ball mill unit
- SS 304 grinding container
- Stainless steel grinding balls

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 heavy-duty AC motor
Power supply	110-220V AC
Grinding container	SS 304 cylindrical container, removable
Grinding media	Stainless steel balls, mixed sizes 6-25 mm, approx. 500 g-1 kg included
Typical final particle size	10-100 um, depending on material and grinding time
Body	Steel frame, powder-coated

4. Unpacking and setup

- 1 Unpack the unit and check the items against the package contents list.
- 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 Inspect the grinding container, lid seal and balls for damage.
- 5 Clean the container and balls before first use (see Cleaning).
- 6 Connect the power cord to a grounded outlet with the power switch off.

5. Operation

Loading the container

- 1 Make sure the unit is switched off and unplugged.
- 2 Open the grinding container and add grinding balls.
- 3 Add the dry sample. Do not exceed the 2 kg capacity and leave free space so the balls can tumble.
- 4 Wipe the lid seal area clean and close the lid securely.
- 5 Mount the container on the mill and secure it as designed.

Grinding

- 1 Plug in the unit and switch it on with the power switch.
- 2 Check that the container rotates smoothly without abnormal noise or vibration.
- 3 Grind for the time required by your method. Harder materials need longer grinding times.
- 4 Do not leave the mill unattended for long runs without periodic checks.
- 5 Switch the unit off and wait for rotation to stop completely.

Unloading

- 1 Unplug the unit before removing the container.
- 2 Remove the container and open it carefully to limit dust release.
- 3 Separate the powder from the balls using a sieve or by pouring carefully.
- 4 Transfer the sample to a labeled container.

6. Cleaning and disinfection

- Switch off and unplug the unit before cleaning.
- Empty the container and balls and remove remaining powder with a brush.
- Wash the SS 304 container and balls with water and mild detergent, rinse and dry fully to prevent corrosion.
- Clean thoroughly between different samples to avoid cross-contamination.
- Wipe the frame with a dry or slightly damp cloth. Do not let liquids enter the motor housing.

7. Maintenance and storage

- Store the unit in a clean, dry place. Store the container and balls dry.
- Check the power cord, container seal and mounting parts regularly.
- Replace worn grinding balls and damaged containers.
- Refer motor and electrical repairs to qualified service personnel. Do not open the motor housing.

8. Troubleshooting

Problem	Likely cause	What to do
Unit does not start	No power, loose cord or blown fuse	Check the outlet and cord; have the fuse checked by qualified personnel.
Excessive vibration or noise	Unit not level, container not secured or overloaded	Switch off, level the unit, secure the container and reduce the load.
Powder leaks from the container	Lid not closed or seal dirty or worn	Clean the seal area and close the lid securely; replace a worn seal.
Grinding is too coarse	Grinding time too short or too much sample	Increase grinding time or reduce sample quantity.
Motor stops during operation	Overload or overheating	Switch off, unplug, let the motor cool and reduce the load. Contact service if it repeats.

9. Disposal

- Dispose of ground samples and residues according to your laboratory's waste procedures and local regulations.
- Dispose of the unit as electrical waste in accordance with local regulations. Do not discard in household waste.
- Worn steel balls and containers can be recycled as scrap metal.

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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