

## SM-200 Shatterbox

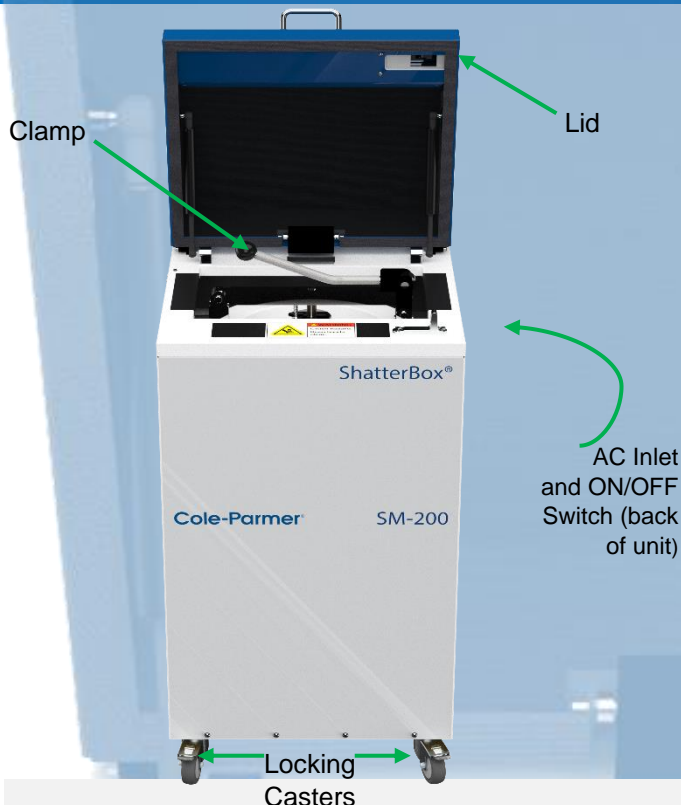
Rock and Mineral Grinder (Ring and Puck Mill) for Spectroscopy Applications

### Quick Start Guide

For 115V (04578-25)



For Product Information



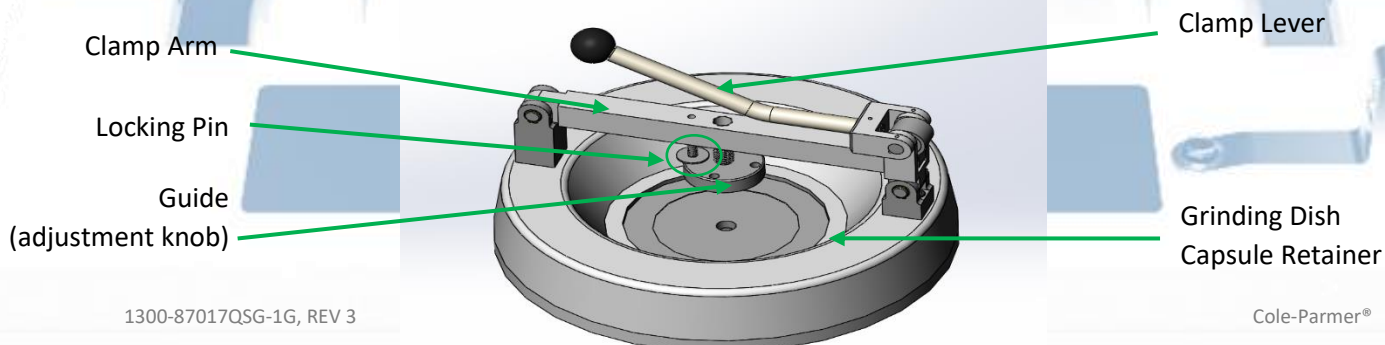
### How To Operate SM-200 Shatterbox®

- Lock casters. Connect the powercord to the AC Inlet located at the back of unit. Power On the unit.
- Never operate the Shatterbox without a grinding container and friction disc clamped firmly in place.
- The cam-action of the clamp makes it possible to hold any Shatterbox grinding container firmly in place without applying excessive pressure to the lever. The clamp can also be adjusted easily for containers of different heights, or to compensate for wear.
- **It is absolutely necessary to adjust the clamp properly before using Shatterbox.**
- **If the lever meets strong resistance, STOP! The clamp is not properly adjusted and must be loosened. Overtightening the clamp can break the cam mechanism.**

**Step 1.** First swing the clamp lever to the right side of the cabinet and the clamp arm to the left. Then place a grinding container squarely in the recess of the capsule retainer. (If the container is not firmly seated, it can work itself loose during grinding.)

**Step 2.** When the grinding container is in place, swing the clamp arm to the right, so the guide fits over the boss (raised protuberance) in the center of the container lid. Then bring up the clamp lever so that the open gate at its base fits over the end clamp arm; the roller in the clamp lever assembly should rest in the curved recess of the clamp arm. Swing the clamp lever over to the left.

**Step 3.** Adjust the clamp by turning guide (clockwise or counter clockwise) while holding up locking pin (see section 4.4 of manual for more detailed instructions). Close the lid and press Run button.



## Changing the Run Parameters

To change runtime, touch the arrow buttons on the **CONTROL PANEL**. To Start a run press the Run button. To pause a run press the Pause button. To abort the program, touch the STOP button.

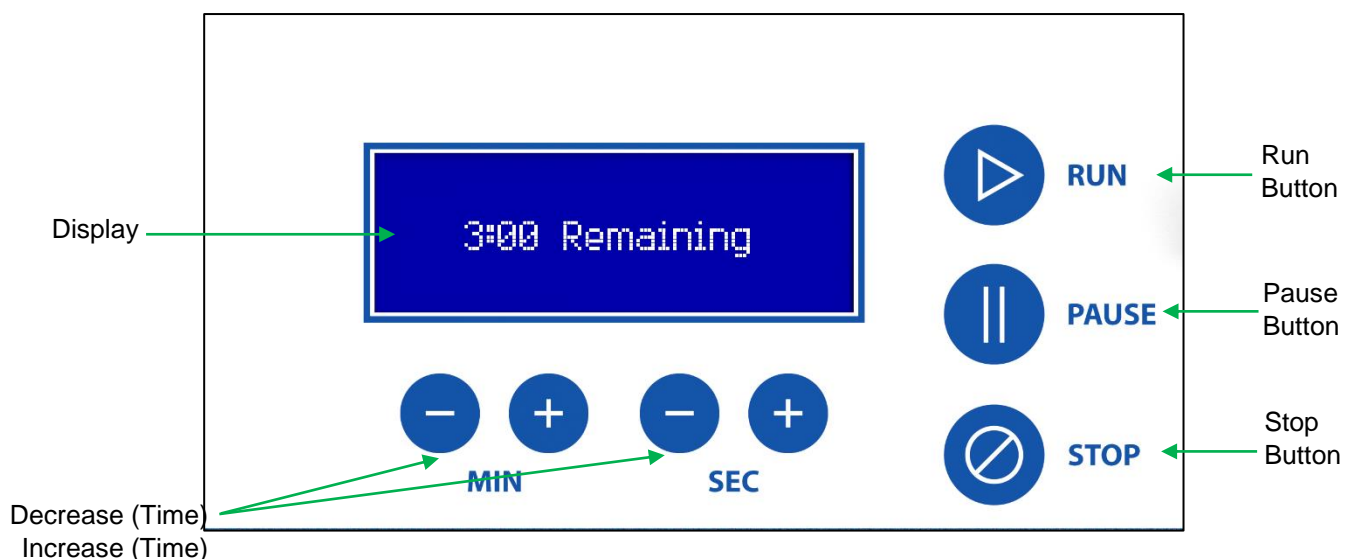
**NOTE:** Before setting the timer and operating the SM-200 Shatterbox, clamp a grinding container firmly in place.

**Caution:** Always use grinding ring/puck that match the material of the container, e.g. steel ring/puck for a steel container, alumina puck for an alumina container, etc. This will limit contamination. An inappropriate choice of puck, such as tungsten carbide in an alumina container, can damage the container.

**Step 4.** To set the runtime use the Plus (+) and Minus (-) buttons to adjust the minutes and seconds. The MIN buttons will change the minute setting in 1 minute increments, and the SEC buttons will change the seconds setting in 5 second increments. Maximum runtime is 10.00 minutes. Minimum runtime is 1.00 minutes.

**Step 5.** Push the RUN button to begin a grinding cycle. There will be a short pause while the lid interlock engages, and then the Mixer/Mill motor will start. The timer counts down 5 seconds at a time, showing the time left in the run. When the timer reaches zero and the motor shuts off, the timer will display RUN COMPLETE for 5 seconds while the lid latch stays locked. This allows the clamp mechanism to slow down. When the interlock releases the lid (with an audible click), the timer display will return to its prior setting. Never try to open the lid before the interlock releases; this can damage the lid latch.

**Step 6.** To have the mill pause during a run and retain the timer setting, push the PAUSE button. The motor will shut off and PAUSED will appear in the display. The lid latch will not release. To resume the run, push RUN; the timer will briefly display the exact number of seconds left in the run and then count down in 5-second increments. To abort the run, push STOP; RUN COMPLETE will be displayed for five seconds and the lid latch will release.



Our Application Specialists at Cole-Parmer are here to help with advice on accessories and grinding protocols.

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