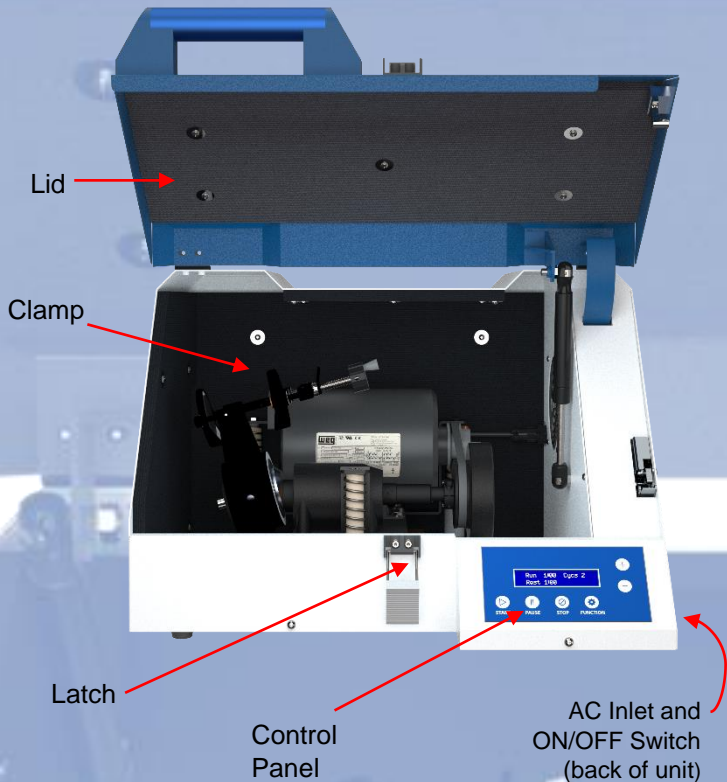


## BM-400/BM-450 Mixer/Mill

Rock and Mineral Grinder for Spectroscopy Applications

### Quick Start Guide

For 115V (04578-12, 04578-10) and 230V (04578-13, 04578-11)



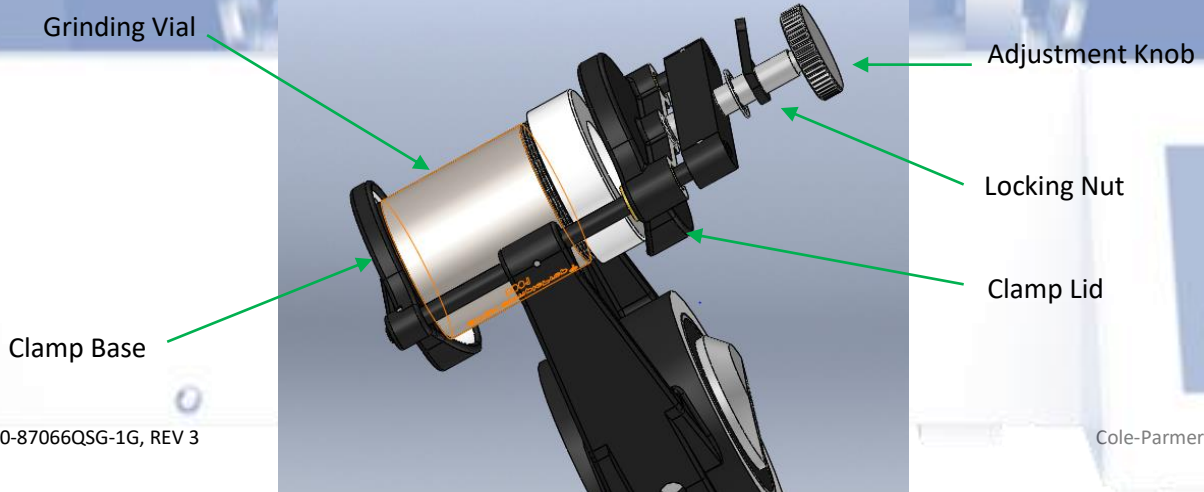
### How To Operate BM-400/BM-450 Mixer/Mill®

- Set up the Mixer/Mill® in a well ventilated, unconfined space. The unit should be operated on a flat, hard, stable benchtop due to the vigorous motion and vibration generated during operation.
- Tilt the cabinet, and remove the two bolts on the bottom. They hold the floating base plate to the cabinet for shipping.
- Push the black rubber spacer down over the right rear tapered post. Aluminum spacers have probably been installed on the front and left rear tapered posts; if there are plastic ties securing those spacers, remove them. Then push the lined coil springs down on the posts – the long spring on the front post, and the two shorter springs on the two rear posts. Lift the floating base plate and place it on top of the springs; each bracket has a pin that fits into the spring/hose assembly.
- Cut the tie that holds down the clamp, and make sure the control cable is plugged into its receptacle on the right inner side of the cabinet.

**Step 1.** Connect the powercord to the AC Inlet located at the back of unit. Power On the BM-400/BM-450 Mixer/Mill®. Upon start-up, Cole-Parmer will appear briefly on the display screen followed by run time.

**Step 2.** Place the sample loaded vial into the clamp. Screw down the clamp lid with the adjustment knob to fit firmly against the vial cap. Screw down the locking nut to secure vial in the clamp.

**Step 3.** Close the lid and fasten the manual latch

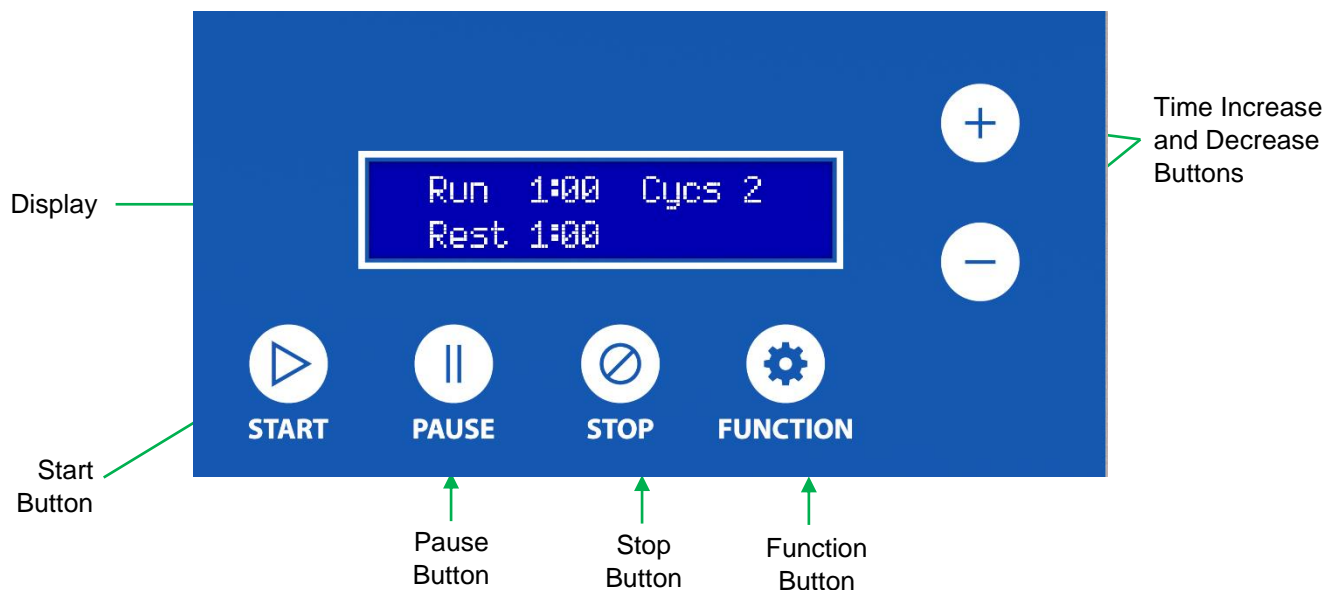


## Changing the Run Parameters

**NOTE:** Never run the Mixer/Mill® with the clamp lid not screwed down on the vial cap. Damage will result to the mill. It is critical that the locking nut is firmly screwed down on the clamp lid.

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

- Step 4.** To set a programmed run push the FUNCTION button to access parameters window. Continue to press the Function button to select the Run, Cycles, and Rest. Press the plus (+) button to increase the selected parameter or press the minus (-) button to decrease the parameter.
- Step 5.** To exit the Function programming screen push the STOP button.
- Step 6.** Push the START button to begin a programmed run. The timer counts down in 1-second increments, showing the time left in the run. When the timer reaches zero and the motor shuts off, the timer will display RUN COMPLETE for 4 seconds while the rotary latch stays locked. This allows the clamp mechanism to slow down. When the rotary latch releases the lid (with an audible click), the timer display will return to its prior setting. Never try to open the lid before the rotary latch releases; this can damage the rotary latch.
- Step 7.** 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 on the display. To resume the run, close lid and push START; the timer will briefly display the exact number of seconds left in the run and then continue to count down in 1-second increments. To abort the run, push STOP; RUN COMPLETE will be displayed for four seconds and the rotary latch will release.



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

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