



BUEHLER SIMPLIMET 1000 AUTOMATIC MOUNTING
PRESSES

“The Twins”

Operating Instructions

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Introduction

The Buehler Simplimet 1000 Automatic Mounting Presses are new, versatile mounting presses that feature electrohydraulic presses and dual temperature controls over a wide range of mounting pressures. They are designed for easy and quick sample preparation, increasing specimen consistency over manual pressing.

The mounting presses are very simple machines. The presses basically comprise a hydraulic jack (like an automobile jack) with a 1.25" diameter ram, a furnace, and a timer, all with electronic controls.

Safety and Sample Preparation

Safety Hazards and Precautions

- The metallic furnace areas of the Twins can get extremely hot. To prevent accidental burning, make sure you give the Twins and the samples they prepare plenty of time to cool after operation.
- While it is very tempting to mount one of your fingers, or your tongue, it probably isn't the best idea.

Sample Preparation

Specimen Geometry. Avoid irregular or very large shapes. All samples must easily fit within the furnace chamber, and a maximum sample size of approximately $\frac{1}{2}$ " x $\frac{1}{2}$ " x $\frac{1}{2}$ " is recommended. It is generally useful if the specimen you want to evaluate has one relatively flat side that may be placed down on the flat hydraulic ram surface.

- For thick specimens that can stand up on the surface to be evaluated without any external aid, no additional preparation is necessary.
- If your specimen is thin and cannot support itself on the ram surface, place it in a "Sampl-Klip" with the desired surface flush with the flat surface of the ram.

Operation

Instrument Operation

1. Turn on the machine by pressing the gray power button on the control console.
2. Use the blue arrow buttons to raise the ram so that you can place your sample on it.
3. If necessary, use the sample clips to position your sample on the platform, **desired examination surface facing down**.
4. Lower the ram about 2 inches, and fill the chamber with a full scoop of the phenolic resin powder.
5. *If preparing two samples:* Insert the divider (stainless steel disk) in the chamber. Repeat steps 3 and 4 for your second sample.
6. Close the lid (push down) and rotate clockwise to lock. If you have difficulty closing and locking the lid, try pushing down while rotating, or lowering the sample stage a little bit more.
7. Set the mounting parameters by pressing the white button on the left.
 - If you are mounting with phenolic powder, the following settings are recommended:
 - Temperature = 150 °C
 - Pressure = 290 bar
 - Heat Time = 1 minute for samples <2" thick, 2 minutes for ≥ 2 "
 - Cool time = at least 3 minutes
 - For other mounting media, consult the machine's instruction booklet or your professor.
8. When the mounting cycle is complete, rotate the lid to unlock it. The lid may not immediately pop open. If this is the case, do not try to force it open. Instead, simply raise your sample stage, which should safely force the lid open. Remove your sample with tongs or using gloves. **Be careful, the sample will be hot.**
9. Turn off the machine.

Helpful Hints

1. Be sure you pour enough phenolic mounting powder into the chamber to provide for easy holding during subsequent grinding and polishing. Finished samples should be about 1/2" to 3/4" in height. If your mounted sample is too thin, it will make polishing and grinding more difficult.
2. If mounting a very stable object that is unlikely to move or tip over during pressure application, using a phenolic pre-mold is easier than measuring out the necessary amount of powder.
3. Transparent and conductive mounting compounds are available. Mounting with these powders is more difficult, so they should only be used when necessary.