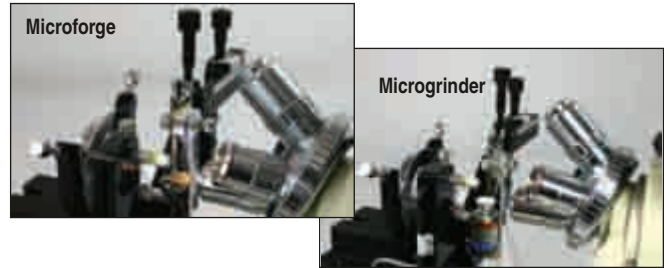


# pipette pullers

## MF-5 and MG-5 Microforge-Grinding Center

**Glass micropipette polishing, shaping, tipping, bending, beveling, and grinding - all in one compact platform**



- Glass micropipette tip polishing, shaping, tipping, bending, beveling, and grinding all in one compact platform.
- Quick changeable platinum heater and microgrinder as center tools.
- Precise, convenient movement controls for heater/grinder, pipette locations, and optical focus.
- Universal pipette holder for one to seven barrel pipette holding and 0-180 degree beveling.
- Up to 40x long working distance objective and 20x eyepiece optics combination, plus scale eyepiece for precision measurement.
- Adjustable precision power supply for variable grinder speed and heating level.
- Pressurized air for pipette tip clearing, expanding and cooling. Foot switch controllable.

The MFG-5 Microforge/Grinding Center is designed for precise and efficient modification of micropipette and multi-pipette tips. This unique apparatus combines a precision microforge with a full-function microgrinder in a compact platform.

The optical system of the MFG-5 is based on a high-power, horizontally mounted, binocular microscope. A precision focusing system, with a dual-axial pipette holder, can conveniently and precisely position single or multi-barrel pipettes. The pipette holder is capable of rotating through 180° to allow a multitude of beveling angles and pipette bending positions.

The MFG-5 uses high quality optical components which include 10x and 20x wide field eyepieces, and 4x, 10x/0.25, and 40x/0.6 long working distance plan achromatic objectives. The 10x wide field scale eyepiece can be used as an independent and accurate measurement tool. Two high intensity LED's provide a powerful light source.

An included foot switch, or a heat/speed adjustment dial, can be used to regulate the attached heater or grinder. In addition to the included heater/grinder foot switch, the MFG-5A has a second foot switch for the regulation of pressurized air. Air from an external source is connected to the Microforge/Grinding Center and, when the foot switch is activated, is directed to an output channel. Pressure air from this source can be used for clearing a pipette of dust after grinding, or for expanding or cooling a pipette during forging.

The MFG-5 can be purchased comprised of the microforge only, the microgrinder only, or comprised of both components. For the latter system, the microgrinder and the microforge mini-heater can be quickly and easily exchanged since both components use the same quick connector and temperature/speed control system. Finally, the MFG-5 can be combined with a PMP-102 or a PMP-107 micropipette/multipipette puller to assemble a complete micropipette production work station.

### Specifications

Pipette Movement	Two-axial manipulator and coarse-fine focusing adjustment
Heater Movement	Three-dimensional adjustment
Pipette Holder	180 degree turnable for single or multipipette holding
Body	Horizontal Binocular microscope
Eyepiece	10x, 20x/WF Optional 10x Scaled
Objective Lenses	4x, 10x/0.25, 40x Optional: 25x, 40x/0.6 Long Working Distance
Heater	Platinum wire
Light	Two super bright white LED's
Air In/Output	Optional air jet foot switch, in/output tubing and connector
Microgrinder	Optional changeable microgrinder One foot switch
Accessory	Extra foot switch
Power Supply	20W, 120/240VAC

Order #	Model	Product
W4 64-1610	MF-5	Microforge
W4 64-1611	MG-5	Microgrinder
W4 64-1612	MFG-5	Microforge-Grinding Center
W4 64-1613	MFG-5A	Microforge-Grinding Center w/ Air
W4 64-1614	MF-5E	Microforge 220/240VAC
W4 64-1615	MG-5E	Microgrinder 220/240VAC
W4 64-1616	MFG-5E	Microforge-Grinding Center 220/240VAC
W4 64-1617	MFG-5AE	Microforge-Grinding Center with Air 220/240VAC