

## Programmable Pipette Pullers



- Two models available:
  - Single-barrel
  - Multi-barrel
- Microprocessor controlled system performs programmable multiple step pulling sequences
- Produces micropipettes for patch clamping, intracellular electrodes, injection micropipettes, micro needles, etc.
- Consistent pulling force by utilizing pneumatic pressure instead of gravity or magnetic fields

The PMP-100D is a state of the art microprocessor controlled horizontal pipette puller that has been designed to pull two identical single barrel pipettes at the same time. The pipettes can be used as patch clamp electrodes, intracellular electrodes, injection micropipette or micro-needles.

The PMP-100 is similar to the PMP-100D, but is designed to pull a single 4- or 7-barrel pipette. Under program control, the PMP-100 can automatically heat, twist and pull a multi-barrel pipette. There is no need for any manual rotation or any inconsistent timing interrupt control.

### Exclusive Optical-Digital Taper Measurement

Instead of a mechanical tip length setting as on other brands of pipette pullers, the PMP-100D and PMP-100 use an exclusive optical-digital ruler to perform precise taper length setting, real-time measuring and controlling. With this feature, a user can handle the taper pulling of pipette tips precisely and very easily. Equipped with a powerful computerized tip sensing function, the PMP-100D and PMP-100 can automatically finish the tip pulling.

### Computerized Heater Control

The PMP-100D and PMP-100 use an advanced microcontroller design to perform real-time heater monitoring and pulling control. Thus, they will always provide precise heating power, despite multiple/consecutive pipette pullings or changes in thermal/electrical characteristics.

### Programmable Sequences for Creation and Reproduction

There are 25 user programmable pulling sequences with 18 steps in each sequence. Users can start the pulling sequence by just pressing the Start button.

### Factory Installed Preset Programs for Major Different Pipette Pulls

Every pipette puller is pre-installed with a number of different pipette pulling programs. With just a few modifications to these steps or parameters new programs can be configured.

### Pneumatic Pulling Force

Both pullers use a precise controlled pneumatic pressure as the pulling force rather than gravity or magnetic fields used by other manufacturers. This technique provides more controlled, even, and consistent dragging characteristics allowing the units to pull an ideal injection tip or micro-electrode tip easily. A precision micro-linear ball bearing rail and advanced pneumatic components are used to provide no fault pulling movement.

### Programming

A simple 4x4 keypad and full information display allows the user to easily control and read all pulling parameters. Programming functions include sequences, steps, time, timing, heater level, heater control, and tip length and actions.

### Specifications

<b>Pulling Force</b>	Pneumatic
<b>Multi-Barrel Pipette</b>	4- or 7-barrel
<b>Each Barrel Pipette</b>	1 mm OD
<b>Heater</b>	Nichrome coil
<b>Heater Control</b>	Microcontroller
<b>Heating</b>	74 general heat levels (24 to 99), 54 automatic heat levels (45 to 98)
<b>Number of Sequences</b>	25
<b>Steps in Each Sequence</b>	18
<b>Taper Length Setting</b>	0.5 to 20 mm
<b>Pressure 1 Regulator</b>	0.1 to 10 p.s.i.
<b>Pressure 2 Regulator</b>	0.1 to 60 p.s.i.
<b>Pressure Gas Input</b>	30 to 60 p.s.i.
<b>Actions</b>	Pull 1, pull 2, pull 2/cool, rotation cool air & return
<b>Display</b>	20 x 4 LCD
<b>Power Input</b>	110/240 VAC
<b>Power Consumption</b>	Max. 150 W
<b>Dimension, H x W x D</b>	17.8 x 27.9 x 35.6 cm
<b>Weight:</b>	
CGS 8237.75	6.8 kg (15 lbs)
CGS 8238.75	5.9 kg (13 lbs)

Catalog No.	Product
CGS 8237.75	PMP-100 Programmable Multi-Barrel Pipette Puller
CGS 8238.75	PMP-100D Programmable Single-Barrel Micropipette Puller
CGS 8239.75	Input Tubing with Connector
CGS 8240.75	Output Tubing with Connector and 4.5 ml vial
CGS 8241.75	Output Tubing with Connector Only
CGS 8242.75	Foot Switch
CGS 8243.75	Remote Key Pad
CGS 8244.75	Rack Mounting Kits with Handles
CGS 8245.75	Unpulled 7-Barrel Pipette for
CGS 8246.75	Unpulled 4-Barrel Pipette
CGS 8247.75	Pipette Holder for Single-Barrel Pipettes
CGS 8248.75	Holder for 4-Barrel Pipettes
CGS 8249.75	Holder for 7-Barrel Pipettes