



# Products and Applications for the Life Science Laboratory

*Wireless Mouse Control Micromanipulators*  
*Wireless Mouse Control Microinjection Combo*  
*Microinjection Work Station*  
*Microinjectors*  
*Microperfusion Systems*  
*Multi-Channel Microfluidic Pump*  
*Single Barrel Micropipette Pullers*  
*Multi-barrel Micropipette Pullers*  
*Quartz Micropipette Puller*  
*Microforge-Grinding Centers*  
*Inverted Microscope*

**MDI**®

**MicroData Instrument, Inc.**

# PMP-107 Programmable Multipipette Puller



Unpulled and Pulled 7, 4-barrel Pipettes

## Description and Applications

The PMP107 is a state of the art microprocessor controlled multi-barrel glass micropipette puller. It can pull single barrel or multi-barrel (3, 4 or 7-barrel) glass pipette horizontally. Varied micropipettes from single to 7-barrel can be produced as patch clamp electrodes, intracellular electrodes, injection needles, holding pipette for precision multichannel drug, agents injection and perfusion. All can be pulled out by sophisticated preset sequences or sequences programmed and created by users.

## Product Features

### Programmable Rotation Twist and Precision Pulling

The PMP-107 can automatically heat, twist and pull one to seven barrel pipette. There is no need for any manual rotation or any inconsistent timing interrupt control. The whole pulling processing is programmable and under control of a preset sequence. The rotation (twist) angle is programmable. Rotation and pulling can act simultaneously or separately with preset pulling distance, which can twist a multipipette with adjustable spirality. The spiral pulling can adhere separate multibarrel tips to a precise point but still with separate requiring tiny openings.

### Exclusive Optical-Digital Ruler Measurement

There is an exclusive optical-digital ruler in the PMP-107 to perform precise taper length setting, real-time measurement and tip sensing.

### Computerize Real-Time Feedback Heater Control

An advanced microprocessor real-time heater monitoring and close loop precise controlling.

## Specifications

<b>Pipettes applied</b>	Single, 3, 4 or 7- barrel	<b>Cooling pressure</b>	Adjustable 1 - 30 psi
<b>Pipette barrel O.D.</b>	1-1.5 mm (1-5 mm for single barrel)	<b>Rotation control</b>	Programmable 90, 135, 180 or 225 turning degree
<b>Pulling force</b>	Adjustable pneumatic: P1(0.1-10 psi), P2( 0.1-60 psi)	<b>Pressure air input</b>	30-60 psi
<b>Heater</b>	Nichrome coil	<b>Actions</b>	Pull 1, Pull 2, Pull 2/Cool, Rotation, Rotation/pull, Cool Air and Return.
<b>Heater control</b>	Microcontroller	<b>Display</b>	20x4 LCD
<b>Heating levels</b>	74 (24-99) general , 64 (45-98) automatic.	<b>Input voltage</b>	110 or 240 VAC
<b>Total sequences</b>	99 programmable and savable	<b>Power consumption</b>	Maximum 150 watts
<b>Sequence max. steps</b>	18	<b>Dimension</b>	14L x 11W x 7H inch.
<b>Preset sequences</b>	16 for single, 3, 4 and 7-barrel.	<b>Weight</b>	About 18 lbs.
<b>Taper length setting</b>	Optical ruler 0.5 - 30 mm		

## Expertise Preset Pulling Sequences and Physical Pulled Samples from 99 Programmable Savable Sequences for Reliable Reproduction and Creation

Every PMP-107 is well tested and preset pulling sequences for pulling single, 3, 4 and 7-barrel multipipettes. There are total 99 user programmable and savable pulling sequences with maximum 18 steps in each sequence, plus physical pulled samples of single and multi-barrel micropipettes. A user will easily select the right sequence or just change a few step parameters to fit their special need. The preset sequences are convenient and important, not only because they can pull different multibarrel pipettes but also as convenient copy templates to create new sequences with only minor parameter change for special applications. The PMP-107 has an easy copy program function.

## Pneumatic Pulling Force and Compact Size

With only input simple 30-60 psi pressure air source, the PMP-107 can produce precise controlled pneumatic pressures pulling force, which gives more controllable, even and consistent dragging characteristics. Within a very compact size, the PMP-107 can precisely and automatically perform twisting and multiparameter multi-pulling without inconsistent manual interrupt. Using a PMP-107, pulling a multipipette is no longer an uncertainty of manual hard work, but a reproducible automatic processing.

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# PMP-107Le Programmable Super Length Micropipette Puller



The **PMP-107Le Programmable Super Length Micropipette Puller** is specially designed to pull extra long taper and tip for single to multipipette without twisting (no rotation) which can be inserted a long carbon or metal fiber inside the pipette for making a long electrode. The pair of pipette clamps are open ends on the PMP-107Le, an extra long fiber can be left out of both ends of pipette for pulling an extra long electrode. Therefore, the PMP107Le is straight pulling super length puller and excellent for short to long electrode fiber inside pipette pulling.

The PMP-107Le is adopted with all advanced technical features and precision in the PMP-102. The PMP-107Le is equipped with larger and longer heat coil for more heating power range than the PMP-102. An up to 120 mm longer optical ruler and pulling mechanism let the PMP-102Le can pull up to 120 mm longer tip than the PMP-102 can pull. Manufacture preset program sequences give user more choice from short tip to super long tip pulling options.

**Pulled Single-Barrel Pipette Long Tip**

**Pulled Multi-Barrel Pipette Long Tip**

## Specifications:

<b>Pulling Pipette</b>	Single barrel, 1mm-5mm O.D. or pre-attached multi-barrel borosilicate or aluminosilicate glass capillary tubing.	<b>Physical samples</b>	22
<b>Pulling force</b>	Pneumatic	<b>Pressure 1 regulator</b>	0.1 - 10 psi, adjustable
<b>Heater</b>	Nichrome coil	<b>Pressure 2 regulator</b>	0.1 - 60 psi, adjustable
<b>Heater control</b>	Microcontroller	<b>Cool air pressure</b>	0.5 - 30 psi, adjustable
<b>Heating Level</b>	76 general heat levels (24-99), 54 automatic heat levels (45-98).	<b>Pressure gas input</b>	30-60 psi
<b>Sequences</b>	99 savable	<b>Display</b>	20x4 LCD
<b>Steps</b>	18 /per sequence	<b>Actions</b>	Pull 1, Pull 2, Pull 2/Cool, Cool Air and Return.
<b>Preset sequences</b>	30 and 30 backup	<b>Input Voltage</b>	Preset 110 or 240 VAC
<b>Taper length setting</b>	0.5 - 120 mm	<b>Power consumption</b>	Maximum 150 watts
		<b>Dimension</b>	18"L x 8"W x 11"H
		<b>Weight</b>	26 lbs.



# PMP-107Lr Programmable Super Length Multipipette Puller



**The PMP-107Lr Programmable Super Length Multipipette Puller** is specially designed to pull from short to extra long taper and tip for single to multipipette with twisting (rotation) function, which can pull single or bundled 3,4,7 barrel pipettes.

The PMP-107Lr actually is an extra long pulling version of the PMP-107. The PMP-107Lr has all advanced technical features and precision mechanics of the PMP-107, plus a larger and longer heat coil for more heating power range and a 120 mm longer optical ruler and longer pulling mechanism, which let the PMP-102Lr can pull up to 120 mm longer tip than the PMP-107 can pull. Manufacture preset program sequences give user more choices from short tip to super long tip pulling option.

**Pulled 4-barrel Pipette Tip**

**Pulled 7-barrel Pipette Tip**

**Pulled 7-barrel Pipette With 100 mm Long Tip**

## Specifications

<b>Pipettes applied</b>	Single, 3, 4 or 7- barrel	<b>Cooling pressure</b>	Adjustable 1 - 30 psi
<b>Pipette barrel O.D.</b>	1-1.5 mm (1-5 mm for single barrel)	<b>Rotation control</b>	Programmable 90, 135, 180 or 225 turning degree
<b>Pulling force</b>	Pneumatic: P1(0.1-10 psi), P2(0.1-60 psi)	<b>Pressure air input</b>	30-60 psi
<b>Heater</b>	Nichrome coil	<b>Actions</b>	Pull 1, Pull 2, Pull 2/Cool, Rotation, Rotation/pull, Cool Air and Return.
<b>Heater control</b>	Microcontrollor	<b>Display</b>	20x4 LCD
<b>Heating levels</b>	74 (24-99) general , 64 (45-98)	<b>Input voltage</b>	Preset 110 or 240 VAC
<b>Total sequences</b>	automatic.	<b>Power consumption</b>	Maximum 150 watts
<b>Sequence max. steps</b>	99 programmable and savable	<b>Dimension</b>	14L x 11W x 7H inch.
<b>Preset sequences</b>	18	<b>Weight</b>	About 23 lbs.
	16 for single, 3, 4 and 7-barrel.		
<b>Taper length setting</b>	Optical ruler 0.5 - 120 mm		



## Accessories Description:

### IP-1

Standard 6 feet 1/4" O.D. input tubing with connector to PM and 1/4" swift-fit connector for source air. Longer tubing can be selected.

### OP-2

Teflon output tubing with connector to PM and male luer connector for pipette holders or vials. There are three sizes: 1.8, 2.0, 2.2 mm O.D.. Teflon tubing can be selected.

### OP-4.5, OP-10, OP-30

4.5 ml, 10 ml, or 30 ml vial with In/output tubing from top of vial, and connectors to fit for HOLD1-4-7, OP-2.

### OV-1.5, OV-5, OV-10, OV-30

1.5 ml, 5 ml, 10 ml or 30 ml vial with input female luer on top and output male luer in bottom.

### STB-1.5, STB-4.5, STB-10, STB-30

OV or OP-1.5, 4.5, 5, 10 or 30 ml vial holder. 5x or 8x vial holders can be selected.

**Air Switch** Quick connect 1/4" OD tubing, manual switch air on/off. **T-Connector** Quick connect 3-way 1/4" OD tubing.

**1/4-3/8 Connector** Quick connect 1/4" OD to 3/8" OD tubing.

**UP-3, UP-4, UP-7** Un-pulled 3,4,7-barrel pipette.

**PP-4** Pulled 4-barrel pipette. **PP-7** Pulled 7-barrel pipette.

### HOLD-1

Stainless Steel Pipette holder (L 150 mm, D 6.36 mm) for 1-1.5 mm O.D. single pipette.

### HOLD-1S, HOLD-1SE

Stainless Steel Pipette holder (L 170 mm, D 4.8 mm) for single 1-1.5 mm O.D. pipette.

### HOLD-4

Pipette holder (6.35 mm OD) for 4-barrel pulled pipette with 4x 1/32 I.D. Tygon tubing & female luer connector for 1 mm OD barrel.

### HOLD-7

Pipette holder (6.35 mm OD) for 7-barrel pulled pipette with 4x 1/32 I.D. Tygon tubing & female luer connector for 1 mm OD barrel.

**PM-KP** Remote key pad for PM2000, PM2000B or PM8000.

**RK-1** Rack mounting kits with handles for PM1000 or PM2000.

**RK-2** Rack mounting kits with handles for PM2000B or PM8000.

**FSW** Foot Switch for PM series and Microforges.

**HC-2** Heat coil for PMP-102.

**HC-7** Heat coil for PMP-107.

**HC-7L** Heat coil for PMP-102LD, PMP-107Le or PMP-107Lr.

### MOUSE-1, MOUSE-2

Special mouses can remote control of Injection, Hold and Fill or programmed functions for PM1000 or PM2000, PM2000B, PM8000.

**Optional pressure air source for PM or PMP series:**

**Light and Quiet Portable Air Compressor w/ 1 Gal. Tank**

Ultra quiet - only 56 dB. Oil-free pump.

Lightweight for easy transporting - 29.5 lbs. 1 Gal. steel tank. Powerful 0.6 HP. 1.60 CFM at 40 PSI and 1.20 CFM at 90 PSI. Low amp draw - 4.5 Amp. California Air Tools Cat 1p1060s.



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PMP-107 Programmable Multipipette Puller



PMP-102 Programmable  
Micropipette Puller



IMS-03 Inverted Microscope  
Microinjection



PMP-102Q Programmable  
Quartz Micropipette Puller



PMP-107Le Programmable  
Super Length Multipipette Puller

## Mouse Control Micromanipulators and Microinjection Work Station



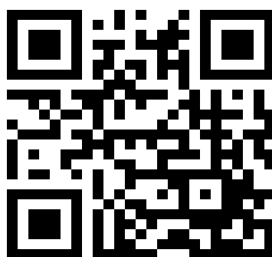
WIRELESS MOUSE COMPLETE CONTROL  
3D MICROMANIPULATOR and MICROINJECTOR



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