



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-102 Programmable Micropipette Puller



Description and Applications

The PMP102 is a state of the art microprocessor controlled glass micropipette puller. It pulls a glass pipette horizontally to two identical micropipettes each time. Varied micropipettes, such as patch clamp electrodes, intracellular electrodes, injection micropipette, hold cell pipette and microneedles all can be pulled out by sophisticated preset sequences or sequences programmed and created by users. To achieve these versatility and the higher degree of reproducibility, many advanced technologies are applied on this micropipette puller.

Product Features

● Exclusive Optical-Digital Taper Measurement

An exclusive optical-digital ruler in the PMP102 performs precise real-time taper the

Pulled Samples from Preset Sequences:

SEQ1 H/P	SEQ11 PH/P
100 um	SEQ12 RH/P
SEQ2 H/P	SEQ13 RH/P
SEQ3 H/P	SEQ14 RH/P
SEQ4 H/P	SEQ15 RH/P
SEQ5 H/P	SEQ16 RH/P
SEQ6 PH/P	SEQ17 RH/P
SEQ7 PH/P	SEQ18 RH/P
SEQ8 PH/P	SEQ19 RH/P
SEQ9 PH/P	SEQ20 RH/P
SEQ10 PH/P	SEQ21 RH/P
SEQ22 RH/P	

set point dynamically. As a result, the puller always provides precise heating power, despite of many times of pipette pulling or thermal/electrical characteristic changing. The heater can also be set to automatically search the melting point for different glass pipettes. Plus a powerful computerize tip sensing function, pulled measurement and pull length controlling the puller can finish multistep tip pulling precisely and automatically.

● Computerize Real-Time Feedback Heater Control

Inside the PMP102, there is an advanced microcontroller to perform real-time heater monitoring and close loop controlling. If a heating level is selected and preset, the microcontroller will measure the actual heating power during heating power on. The measurement is real-time displayed and feedback to the control unit to produce heat matching

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

There are 30 expertise preset sequences and 30 backup sequences in total 99 user programmable and savable pulling sequences with 18 steps in each sequence. The 30 preset sequences are created and concluded by expertise endeavor with many successful practices, which cover mostly major kinds of different glass micropipette applications. Moreover, each finishing PMP-102 comes with 22 physical pulled samples from preset sequences on the unit. Users can easily select the right sequence by viewing the physical pulled samples. The preset sequences are convenient and important, not only because they can pull mostly different micropipettes but also they can be copied as templets to create new sequences with only minor parameter change. Users can easily program different pipette tip size, tip length and tip shape in different sequence for special applications. Time, heat level, heat control and action parameters all can be programmed in the unit.

● Pneumatic Pulling Force and Very Compact Size

A simple 30-60 psi pressure air source is only pressure input to the PMP-102. With precise regulated pressure controlling the PMP-102 pulls with more controllable, much even and consistent dragging characteristics than gravity or magnetic force. Within a very compact size, the PMP102 can precisely and automatically perform single to multistep pulling without manual interrupt. A precision micro-linear ball bearing rail and advanced pneumatic components are used to provide no fault pulling movement. A simple keypad and full information display LCD let users read all pulling parameters directly and control easily. With many advanced features, pulling an ideal micropipette is no longer an uncertainty of hand skill, but a reproducible automatic processing in the PMP-102.

Specifications:

Pipette	Single barrel, 1mm-3mm O.D. borosilicate or aluminosilicate glass capillary tubing.	Sequences	99 savable	Pressure air input	30-60 psi
Pulling force	Pneumatic	Steps	18 /per sequence	Display	20x4 LCD
Heater	Nichrome coil	Preset sequences	30 and 30 backup	Actions	Pull 1, Pull 2, Pull 2/Cool, Cool Air and Return.
Heater control	Microcontroller	Physical samples	22	Input Voltage	Preset 110 or 240 VAC
Heating Level	76 general heat levels (24-99), 54 automatic heat levels (45-98).	Taper length setting	0.5 - 20 mm	Power consumption	Maximum 150 watts
		Pressure 1 regulator	0.1 - 10 psi, adjustable	Dimension	18"L x 8"W x 11"H
		Pressure 2 regulator	0.1 - 60 psi, adjustable	Weight	23 lbs.
		Cool air pressure	0.5 - 30 psi, adjustable		

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PMP-102LD Programmable Micropipette Puller



PMP-102LD Specifications:

Pipette	Single barrel, 1mm-3mm O.D. borosilicate or aluminosilicate glass capillary tubing.
Pulling force	Pneumatic
Heater	Nichrome coil
Heater control	Microcontroller
Heating Level	76 general heat levels (24-99), 54 automatic heat levels (45-98)
Sequences	99 savable
Steps	18/per sequence
Preset sequences	35 and 35 backup
Physical samples	22
Taper length pull	0.5 - 35 mm
Pressure 1	0.1 - 10 psi, adjustable
Pressure 2	0.1 - 60 psi, adjustable
Cool air pressure	0.5 - 30 psi, adjustable
Air pressure input	30-60 psi
Display	20x4 LCD
Actions	Pull 1, Pull 2, Pull 2/Cool, Cool Air and Return.
Input Voltage	Selected 110 or 240 VAC
Power used	Maximum 150 watts
Dimension	18"L x 8"W x 11"H
Weight	25 lbs..

Glass Pipette Samples Pulled by PMP-102LD (with sequence number color marks)

The PMP102LD is an upscale and heavy duty model of the PMP-102 Programmable Micropipette Puller. It keeps all advanced features of the PMP-102, plus applied more heavy duty linear bearing rail and pulling cylinder, higher power and larger heat coil and longer pulling distance ability. There are pipette setting special fixture and broken glass damage avoiding mechanical arrangement design. All these upgrades make the PMP-102LD suitable for pipette pulling larger production application.

PMP-102Q Specifications:

Pipette	Single barrel, thin wall 0.1-1.5mm O.D., 0.7-1.1mm I.D. Fused quartz, fused silica glass capillary tubing.	Pre-pull pressure	0.1 - 60 psi, adjustable.
Pulled taper length	0.5 - 10 mm.	Mid-pull pressure	0.1 - 60 psi, adjustable.
Sequences	99 programmable sequences.	End-pull pressure	0.1 - 60 psi, adjustable.
Steps	18 steps per sequence.	Heat/Pull control	Microcontroller.
Heater	Micro-torch flame.	Actions	Start, Pre-pull, Mid-pull, End-pull, End-pull/Stop Heat, Return, Stop.
Heater gas source	UN2037 butane gas cartridge.	Display	20x4 LCD
Pulling force	Pneumatic force.	Power input	110 / 240 VAC
Input air source	60-80 psi pressure air	Power consumption	30 watts
Gas pressure	0.1 - 10 psi, adjustable.	Dimension	18L x 12W x 11H inch.
		Weight	30 lb.



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 Microforages.

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 programed 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-102Q Programmable
Quartz Micropipette Puller



PMP-102 Programmable
Micropipette Puller

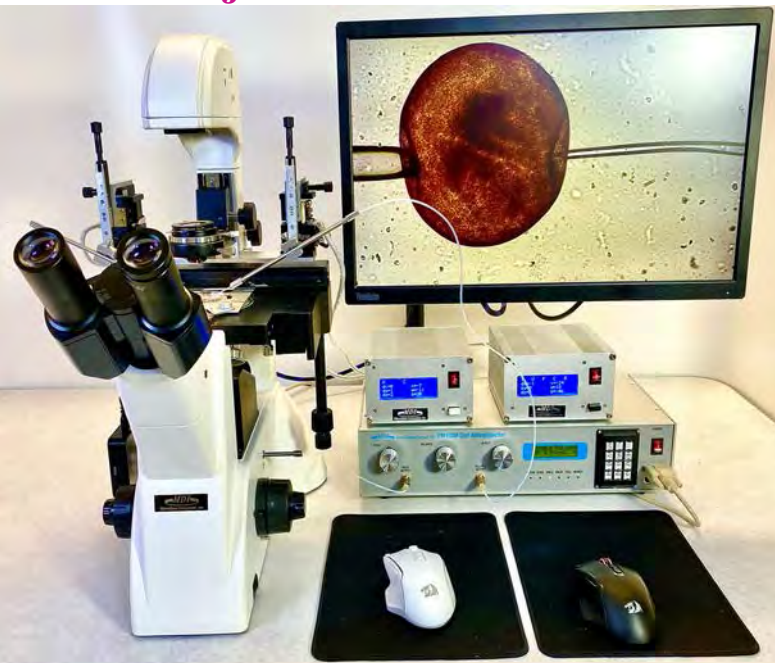


PMP-107Le Programmable
Super Length Multipipette Puller

IMS-03 Inverted Microscope
Microinjection



Mouse Control Micromanipulators and
Microinjection Work Station



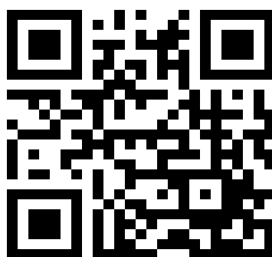
WIRELESS MOUSE COMPLETE CONTROL
3D MICROMANIPULATOR and MICROINJECTOR



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