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Harvard MP II Mini-Peristaltic Pump User's Manual

MP II Mini-Peristaltic Pump 70-2027



HARVARD
APPARATUS

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⚠ - No User Serviceable Parts Inside

Serial Numbers

All inquires concerning our product should refer to the serial number of the unit. The Serial number is located on the side of the chassis.

Calibrations

This produt does not require calibration.

Warranty

Harvard Apparatus warranties this instrument for a period of one year from date of purchase. At its option, Harvard Apparatus will repair or replace the unit if it is found to be defective as to workmanship or material.

This warranty does not extend to damage resulting from misuse, neglect or abuse, normal wear and tear, or accident.

This warranty extends only to the original customer purchaser.

IN NO EVENT SHALL HARVARD APPARATUS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR USE, OR OF ANY OTHER NATURE.** Some states do not allow this limitation on an implied warranty, so the above limitation may not apply to you.

If a defect arises within the one-year warranty period, promptly contact ***Harvard Apparatus, Inc. 84 October Hill Road, Holliston, Massachusetts 01746-1388*** using our U.S. only toll free number 1-800-272-2775 or dial (508) 893-8999. Goods will not be accepted for return unless an RMA (returned materials authorization) number has been issued by our customer service department. The customer is responsible for shipping charges. Please allow a reasonable period of time for completion of repairs, replacement and return. If the unit is replaced, the replacement unit is covered only for the remainder of the original warranty period dating from the purchase of the original device.

This warranty gives you specific rights, and you may also have other rights which vary from state to state.

Repair Facilities and Parts

Harvard Apparatus stocks replacement and repair parts. When ordering, please describe parts as completely as possible, preferably using our part numbers. If practical, enclose a sample or drawing. We offer a complete reconditioning service.

CAUTION

This pump is not registered with the FDA and is not for clinical use on human patients.

CAUTION
NOT FOR CLINICAL USE ON HUMAN PATIENTS

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Specifications

Specifications

Output Pressure	Minimum 20 p.s.i. (1.38 bars)
Power	115/230 VAC, 50/60 Hz, universal power supply, 10 watts
Power Supply	12 VDC 800 mA 2.5 mm connector, with detachable IEC 320 line cord with ground.
Dimensions, H x W x D	189 x 114 x 105 cm (3.5 x 4.5 x 4 in)
Weight	0.96 kg (2.1 lb)
Tubing ID	1/16 inch
Flow Rates	0.8 to 12.25 ml/min per tube

Catalog No.	Product
70-2027	Harvard MPII: Mini-Peristaltic Pump with universal power supply
55-4148	Pump Head Tubing Pieces. These silicone pump head tubing pieces have connectors on each end for 1/16 in ID tubing, pkg. of 10

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Description

The Harvard MPII Mini-Peristaltic pump takes only one size of tubing, 1.6 mm ID x 3.2 mm OD (1/16 x 1/8 in). It can be used with either a single tube or two tubes simultaneously.

Two front panel controls provide flow rates from approximately 0.8 to 12.25 ml/min. The control knob provides variable adjustment from 0 to 100% of the selected flow rate range. The second control is a two position toggle switch marked x1, x2 which selects low or high flow rates, see table to right.

The easy-loading four-roller pump head is on top of the stout metal box. The back of the pump head effortlessly rotates into an 'open' position and either one or two tubes can be dropped into slots. The loaded section simply rotates back against spring loaded jaws and locks into place. The tubing is automatically in proper wiping contact with the pump head rollers. Each Pump is provided with a 12.5 mm (0.5 in) rod clamp on the back so that multiple pumps can be mounted vertically on a lattice rod.

Location Requirements for the MP II Mini-Peristaltic Pump

- A Sturdy, level, clean and dry surface
- Minimum of one inch (2 cm) clearance around the pump
- Adequate power supply
- Room temperature 4°C to 40°C (40°F to 104°F)
- Relative humidity 20% to 80%
- A well ventilated room

Power Requirements

The MP II Mini Peristaltic Pump requires 12 VDC at 800 mA. The power receptacle has a 2.5 mm center pin, which is the positive polarity. One (1) universal power supply is provided for 120/230 VAC operation. Plug the output connector into the rear receptacle of the Mini Peristaltic pump. The universal power transformer automatically adjusts the supply voltage. The North American plug can be replaced with a similar power cord with an IEC 320 plug. Observe the color coding of the international line cord.

Brown – High
Blue – Neutral
Green – Ground (earth)

Tubing

The pump is designed for silicone rubber tubing 1/16 inch I.D. x 1/8 inch O.D. only. The pump is supplied with two short lengths of tubing with end connectors fitted. If other tubing materials are used, please verify pump flow rates. Excessively hard tubing may overload the pump motor and cause if to 'stall'.

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Loading the Pump

A hinged black plastic compression clamp holds the tubing against the rollers. Release the clamp by pushing it and rotating it away from the rollers. Insert one or two tube segments and close the clamp tightly until it snaps into position. See page 6 for more detailed instructions and diagrams.

Setting the Direction

A toggle switch has been provided for clockwise or counter clockwise rotation.

Adjusting the Flow Rate

Use the speed range switch x1, x2, and the main speed knob to adjust flow rate.

Flow Rate per tube, ml/min.

(Below values are for a single tube. Using two tubes in parallel will double the flow rate. Values are approximate.)

MPII Flow Rates in ml/min

Switch Setting	With One Tube Min.	With One Tube Max.	With Two Tubes Min.	With Two Tubes Max.
x1	0.8 ml/min	7.00 ml/min	1.6 ml/min	14.00 ml/min
x2	1.5 ml/min	12.25 ml/min	3.0 ml/min	24.50 ml/min

Use a stop watch and measured container to precisely determine the actual flow rate.

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Maintenance

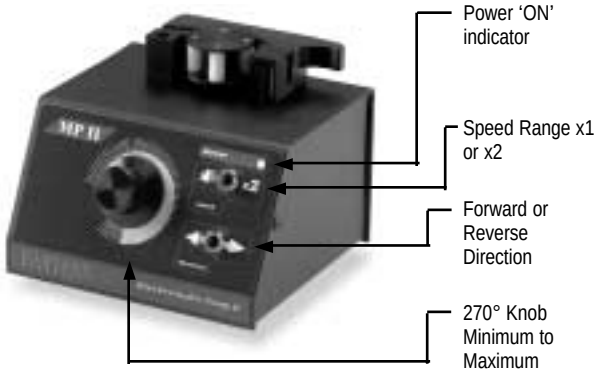
No special maintenance is required other than keeping the pump clean and dry. The pump has a cooling fan. Air enters the pump at the bottom and exits through the top rear. It is important that the air flow not be obstructed. During normal operation, the pump may get warm from the precision stepper motor. This condition is normal.

Output Pressure

The pump will deliver minimum of 20 p.s.i. As with other peristaltic pumps, an increase in fluid back pressure will cause the flow to decrease slightly.

Power Switch

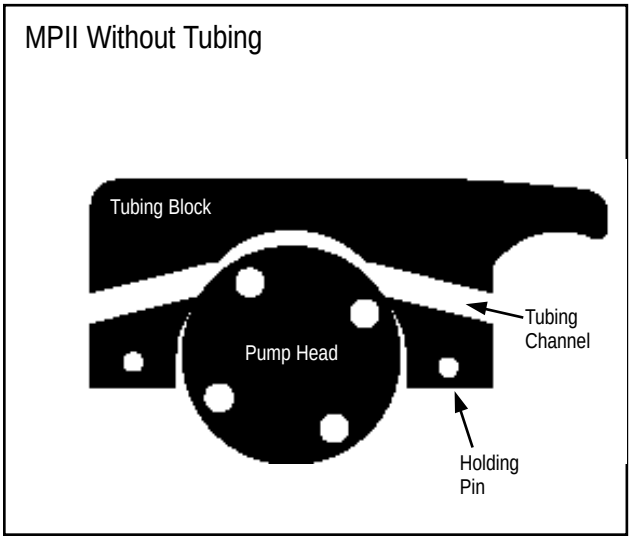
The power switch is located on the rear of the pump.



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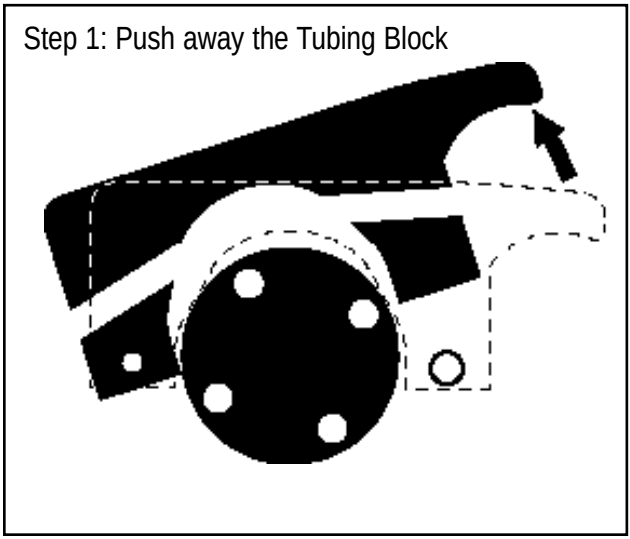
MPII without Tubing:

The Mini Peristaltic pump is sold with one set of tubing segment. To load the tubing, follow these simple instructions.



Step 1: Open Mechanism

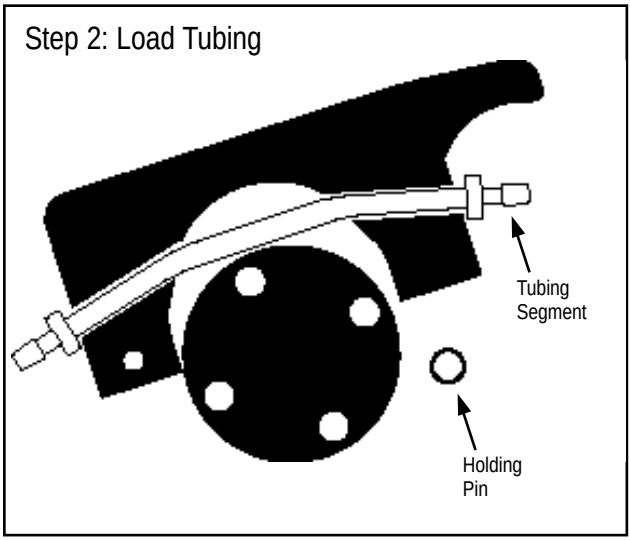
With your thumb or finger, push the tubing block away from the holding pin. Make sure you have enough clearance from the pump head to insert the tubing without obstruction.



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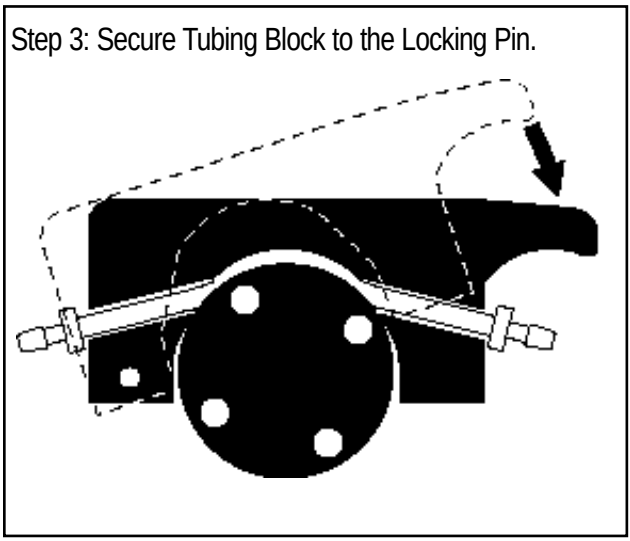
Step 2: Load the Tubing

Insert one or two tubing segments into the tubing channel. A maximum of two tubes can be used.



Step 3: Secure Mechanism

By using your thumb or finger, bring the tubing block to its original position. The tubing is now properly inserted and has the proper built in tolerance.



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Fuse - There is no user fuse used in this unit.

Rod Clamp - A pole clamp has been provided for mounting onto a laboratory lattice rod.

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