



# MityFlex

*Peristaltic Pump*



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### **INSTRUCTION MANUAL**

Serial No. \_\_\_\_\_



010505

**World Precision Instruments**



MITYFLEX™ variable speed drive is powered by DC gearmotors. A specially designed electronic speed control system provides smooth acceleration control over the entire flow range. The three position on/off switch allows the user to maintain speed setting when unit is turned off or reversed. This unit is designed for continuous operation at any speed.

## Features

**ELECTRICAL:** 115 VAC, 60 Hz

**PRIMING:** Unit is self priming and will hold vacuum when off.

**OPERATION:** Pump can run dry without damaging the motor or drive unit, however the tubing life will be reduced.

**CONSTRUCTION:** High impact plastic and long lasting alloy metals housed in a steel enclosure.

**MAX. HEAD PRESSURE:** 40 PSI. Normal pressure 18 PSI varies depending on tubing used.

**MAX. SUCTION LIFT:** 29 feet (8.8m) with H<sub>2</sub>O.

**RATING:** 100% continuous operation at maximum of 40°C ambient.

**FLOW RATE:** Variable speed drive system - reversible.

**FUSE:** Located in the inlet receptacle. Uses 5 X 20mm - 1.0 amp. (See page 4 for replacement procedure.)

**DC MOTOR BRUSHES:** Replaceable (See page 4 for replacement procedure.)

**WEIGHT:** 13 lb

Included with MityFlex are four short lengths of Norprene™ tubing to fit into the roller mechanism — 1/16", 1/8", 3/16", 1/4" — and black rollers for use with 3/16" to 1/4" tubing. The optional **MITY-KIT** includes replacement tubing and a set of red rollers for use with 1/16" and 1/8" tubing.

### FLOW RANGE:

Tubing ID	Flow (mL/min)
1/16" (0.062")	1.7 - 48.0
1/8" (0.125")	7.0 - 190.0
3/16" (0.187")	16.0 - 456.0
1/4" (0.250")	28.0 - 800.0

Flow range based on pumping water at 25°C and 0 PSI using 60 durometer thermoplastic elastomer tubing.

*Norprene is a trademark of Saint-Gobain Performance Plastics Corp.*

## Installation

**POWER REQUIREMENTS:** Voltage and frequency of power supply must be the same as shown on unit.

**WIRING CONNECTIONS:** All wiring and electrical connections must comply with local and national electrical codes.

**MOUNTING:** Place on any flat surface. Ensure that space is provided at the back of the case for air circulation through ventilation holes. Do not allow tubing to be crimped.

**MOUNTING LOCATION:** Pump should be placed in a dry location with adequate cooling provided. The ambient temperature should not exceed 40°C. **This unit should not be used outdoors or in hazardous locations.**

## Roller/Tubing Selection

Use the following color coded rollers with the appropriate tubing I.D. Your unit is assembled with black rollers. Red rollers are included in the optional **MITY-KIT**. See separate instructions for roller replacement enclosed in your tube kit.

Roller	Tubing ID	mL/Revolution
Black	1/4" (0.250)	3.5
Black	3/16" (0.187)	2.1
Red	1/8" (0.125) *	0.8
Red	1/16" *	0.21

\* Red rollers for use with 1/8" and 1/16" tubing are included in the optional MITY-KIT.

## Variable Speed

Variable speed control may be set at any level before turning unit on.

Unit is designed for continuous operation at any speed.

**CAUTION:** Avoid prolonged operation in the stalled position to ensure longer motor life.

## Warranty

WPI (World Precision Instruments, Inc.) warrants to the original purchaser that this equipment, including its components and parts, shall be free from defects in material and workmanship for a period of one year\* from the date of receipt. WPI's obligation under this warranty shall be limited to repair or replacement, at WPI's option, of the equipment or defective components or parts upon receipt thereof f.o.b. WPI, Sarasota, Florida U.S.A. Return of a repaired instrument shall be f.o.b. Sarasota.

The above warranty is contingent upon normal usage and does not cover products which have been modified without WPI's approval or which have been subjected to unusual physical or electrical stress or on which the original identification marks have been removed or altered. The above warranty will not apply if adjustment, repair or parts replacement is required because of accident, neglect, misuse, failure of electric power, air conditioning, humidity control, or causes other than normal and ordinary usage.

To the extent that any of its equipment is furnished by a manufacturer other than WPI, the foregoing warranty shall be applicable only to the extent of the warranty furnished by such other manufacturer. This warranty will not apply to appearance terms, such as knobs, handles, dials or the like.

WPI makes no warranty of any kind, express or implied or statutory, including without limitation any warranties of merchantability and/or fitness for a particular purpose. WPI shall not be liable for any damages, whether direct, indirect, special or consequential arising from a failure of this product to operate in the manner desired by the user. WPI shall not be liable for any damage to data or property that may be caused directly or indirectly by use of this product.

## Claims and Returns

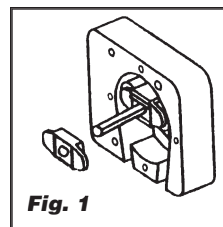
- Inspect all shipments upon receipt. Missing cartons or obvious damage to cartons should be noted on the delivery receipt before signing. Concealed loss or damage should be reported at once to the carrier and an inspection requested. All claims for shortage or damage must be made within 10 days after receipt of shipment. Claims for lost shipments must be made within 30 days of invoice or other notification of shipment.

Please save damaged or pilfered cartons until claim settles. In some instances, photographic documentation may be required. Some items are time sensitive; WPI assumes no extended warranty or any liability for use beyond the date specified on the container.

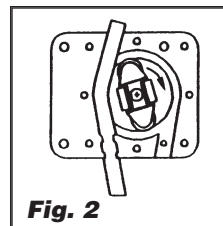
- WPI cannot be held responsible for items damaged in shipment en route to us. Please enclose merchandise in its original shipping container to avoid damage from handling. We recommend that you insure merchandise when shipping. The customer is responsible for paying shipping expenses including adequate insurance on all items returned.
- Do not return any goods to WPI without obtaining prior approval and instructions (RMA#) from our returns department. Goods returned unauthorized or by collect freight may be refused. The RMA# must be clearly displayed on the outside of the box, or the package will not be accepted. Please contact the RMA department for a request form.
- Goods returned for repair must be reasonably clean and free of hazardous materials.
- A handling fee is charged for goods returned for exchange or credit. This fee may add up to 25% of the sale price depending on the condition of the item. Goods ordered in error are also subject to the handling fee.
- Equipment which was built as a special order cannot be returned.
- Always refer to the RMA# when contacting WPI to obtain a status of your returned item.
- For any other issues regarding a claim or return, please contact the RMA department

**Warning: This equipment is not designed or intended for use on humans.**

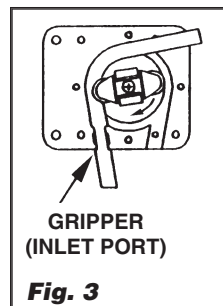
\* Electrodes, batteries and other consumable parts are warranted for 30 days only from the date on which the customer receives these items.



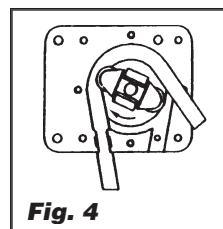
**Fig. 1**



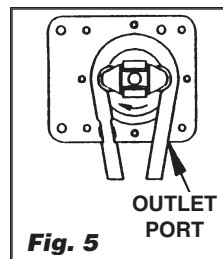
**Fig. 2**



**Fig. 3**



**Fig. 4**



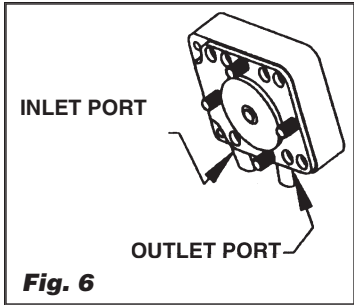
**Fig. 5**

## Tubing Installation

Inspect all tubing regularly and replace if any sign of deterioration occurs. Always wear safety glasses and protective clothing when working with chemicals.

1. Disconnect power to the pump.
2. Disconnect the suction and discharge tubing from the pump tubing.
3. Remove four thumb screws and pump cover.
4. Pull out old pump tubing and discard.
5. Clean roller race, removing any particles that could damage tubing.
6. Using extra bracket (Fig. 1), rotate roller bracket assembly until it is in position as in Fig. 2. (Be sure power is disconnected.)
7. Push new tubing into inlet port, anchoring the tubing in grippers (see Fig. 3). If using 9" piece of tube, 1 1/2" should be extended outside of inlet port.
8. Continue to rotate the roller bracket assembly using the extra bracket, while pushing the tubing into the roller race (Fig. 4).
9. Insert the tubing into the outer port (Fig. 5) and replace the cover and screws.

**Alternate Tubing Installation Procedure**



Without removing the pump cover, run the unit at high RPM. Pull the old tubing out from outlet port of pump. Install new tube by inserting into inlet port; continue feeding tube 1/4" in at a time allowing the roller assembly to push tubing through. When tubing is half way around the race, put your finger over the inlet hole of the tube and continue to feed tubing 1/4" at a time; this should make installation easier. Continue until desired tubing extension is obtained. Run unit for about one minute.

**Fuse Installation**

1. Disconnect power to pump.
2. Find the power socket on the back of the case.
3. Pull the power cord out.
4. Slide the drawer below the receptacle out toward you.
5. Remove old fuse and replace with new fuse.
6. Push drawer in until it locks in place.

**Motor Brush Replacement**

1. Disconnect power to pump.
2. Remove case cover by removing 8 screws
3. With a small flat head screw driver remove the brush caps on both sides of the DC motor.
4. Remove old brush and replace with new brush. (Slide in horizontally)
5. Push metal plate on the end of the brush inside and hold it while replacing brush cap.
6. Replace case cover.



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**DECLARATION OF CONFORMITY**

We: World Precision Instruments, Inc.  
 175 Sarasota Center Boulevard  
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 USA

as the distributor of the apparatus listed, declare under sole responsibility that the product(s):

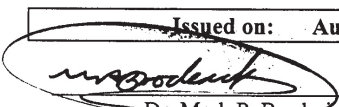
**Title: 913 Series MITYFLEX Variable Speed Peristaltic Pump**

to which this declaration relates is/are in conformity with the following standards or other normative documents:

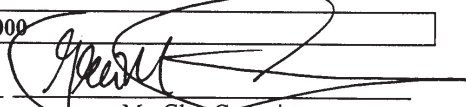
EN 50081:1991 Class A  
 EN 50082-1:1992

and therefore conform(s) with the protection requirements of Council Directive 89/336/EEC relating to electromagnetic compatibility.

**Issued on: August 28, 2000**

  
 Dr. Mark P. Broderick  
 President and COO

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