OPERATING MANUAL

FOR ALL MODELS OF

MASTERFLEX® I/P®

EASY-LOAD® PUMP HEADS



A-1299-1149
Edition 04

MASTERFLEX®
(US & Canada only) Toll Free 1-800-MASTERFLEX • 1-800-637-3739
(Outside US & Canada) 1-847-381-7050
www.masterflex.com • techinfo@masterflex.com

SAFETY PRECAUTIONS

WARNINGS: **Turn drive off before removing or installing tubing. Fingers or loose clothing could be caught in the rollers.**

Stop the drive when changing the tubing or its position in the rotor mechanism (the rotor is partially exposed when the LOADING LEVER is in the open position).

CAUTION: **DO NOT OVERTIGHTEN SCREWS OR WING NUTS.**

⚠ WARNING: PRODUCT USE LIMITATION

This product is not designed for, nor intended for use in patient connected applications; including, but not limited to, medical and dental use, and accordingly, has not been submitted for FDA approval.

NOTE: *Use only MASTERFLEX precision tubing with MASTERFLEX pumps to ensure optimum performance. Use of other tubing may void applicable warranties.*

EXPLANATION OF SYMBOLS

CAUTION: Risk of danger. *Consult the Operator's Manual for nature of hazard and corrective actions.*

CAUTION: Risk of crushing. *Keep fingers away from rotor while pump is in operation. Stop pump before loading or unloading tubing.*

PUMP FOR LIQUIDS
ORIGINAL INSTRUCTIONS

C-FLEX, NORPRENE, PHARMED, TYGON — *Reg TM Saint-Gobain Performance Plastics Corp.*
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WARRANTY

Use only MASTERFLEX precision tubing with MASTERFLEX pumps to ensure optimum performance. Use of other tubing may void applicable warranties.

The Manufacturer warrants this product to be free from significant deviations from published specifications. If repair or adjustment is necessary within the warranty period, the problem will be corrected at no charge if it is not due to misuse or abuse on your part, as determined by the Manufacturer. Repair costs outside the warranty period, or those resulting from product misuse or abuse, may be invoiced to you.

The warranty period for this product is two (2) years from the date of purchase.

PRODUCT RETURN

To limit charges and delays, contact the seller or Manufacturer for authorization and shipping instructions before returning the product, either within or outside of the warranty period. When returning the product, please state the reason for the return. For your protection, pack the product carefully and insure it against possible damage or loss. Any damages resulting from improper packaging are your responsibility.

TECHNICAL ASSISTANCE

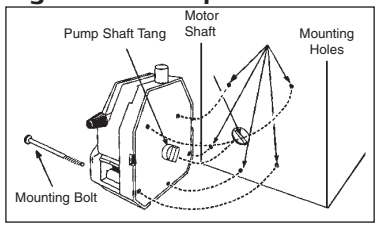
If you have any questions about the use of this product, contact the Manufacturer or authorized seller.

INTRODUCTION AND GENERAL DESCRIPTION

This EASY-LOAD Pump Head when combined with a MASTERFLEX® I/P® drive or compatible system is designed to provide a simple easy-to-use peristaltic pump system. The Pump Head accepts 3 different tubing sizes for a wide range of flow rates. The unique over-center cam design and automatic tubing retention allows quick tubing changes and greatly reduced maintenance time.

Each pump is supplied complete with a 20 in (50-cm) length of tubing, one mounting hardware package and this manual. A flat-bladed screwdriver is required to complete installation.

Figure #1. Setup

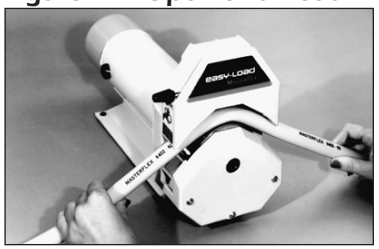


DRIVE COMPATIBILITY AND SETUP

The I/P EASY-LOAD Pump Head is available in two drive shaft lengths depending upon the drive chosen. The short shaft versions have a standard tang interface. Mount the Pump Head using the 5 screws provided. **(See Figure #1.)**

NOTE: Raise occlusion bed to expose mounting holes for top 2 short screws.

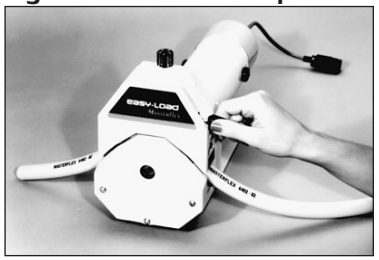
Figure #2. Open and Load



TUBE LOADING

1. Be sure the pump drive is turned off.
2. Move the lever to the left to open the pump.
3. Load the correct tubing. **(Figure #2.)**
4. Move the lever to the right to close. **(Fig. #3.)**

Figure #3. Close Pump



WARNING: Stop the drive when changing the tubing or its position in the rotor mechanism (the rotor is partially exposed when the LOADING LEVER is in the open position).

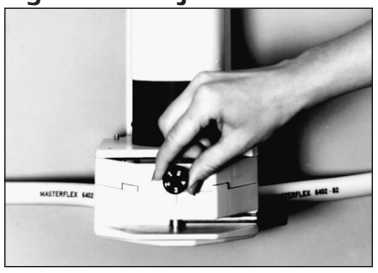
NOTE: For optimum tubing life, keep tubing straight when entering and exiting the pump.

OCCLUSION ADJUSTMENT

Adjust occlusion setting on top of Pump Head. **(Figure #4.)**

- **"3"** for nominal performance;
- **"4"** or **"5"** for increased pressure/vacuum with reduced tubing life;
- **"1"** or **"2"** for longer life with less pressure and vacuum.

Figure #4. Adjust Occlusion



NOTE: For optimum performance turn knob to **"1"** after loading. Start drive and adjust knob until pump primes and fluid begins to flow.

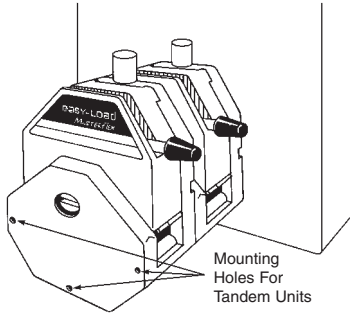
NOTE: Occlusion usually does not need to be readjusted when changing tubing.

NOTE: After operation for some time, the retainer teeth may scratch or mark the surface of the tubing. This is normal and will not cause leaks or otherwise reduce tubing life.

MULTI-CHANNEL MOUNTING

I/P EASY-LOAD Pump Heads can be mounted in tandem depending upon the torque capabilities of the drive. A standard short shaft Pump Head is required for the add-on head along with special mounting hardware. **(See Figure #5.)**
See REPLACEMENT PARTS AND ACCESSORIES for mounting hardware.

Figure #5.



CAUTION: DO NOT OVERTIGHTEN SCREWS OR WING NUTS.

NOTE: The tubing on the inside EASY-LOAD Pump Head can be changed without removing the outside Pump Head.

MAINTENANCE AND CLEANING

No lubrication is required for the I/P EASY-LOAD Pump Head. Use a mild detergent solution to clean the Pump Head. Inspect the tang boot after 1,000 hours of operation and replace if necessary.

REPLACEMENT PARTS AND ACCESSORIES

A. Main body assembly (occlusion bed with rear bearings).

Pump Head number	**PPS order number**	Pump Head number	**PPS order number**
77602-00, -02	**77602-07**	—	**—**
77602-10, -12	**77602-17**	77601-60,-62	**77601-67**

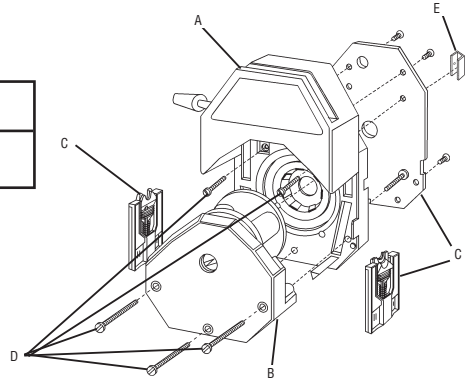
B. Rotor/bearing support assembly.

Pump Head number	**Short shaft order No.**	Pump Head number	**Long shaft order No.**
77602-00	**77602-08**	77602-02	**77602-28**
77602-10	**77602-18**	77602-12	**77602-38**
77601-60	**77601-68**	77601-62	**77601-88**

C. Tubing retainer kit 77601-06
Includes two retainer assemblies, back plate and screws.

D. Mounting hardware for I/P EASY-LOAD pump heads.

Number of heads to be mounted	**Stainless steel order number**
1	**77601-95**
2	**77601-96**



E. Tang Boot. Order number 77600-02
(pkg. of 2) or **77600-03** (pkg. of 10)

SPECIFICATIONS

Pump Head number	Housing Material	Shaft Length	Tubing
77602-00	PPS/CRS	Short	I/P ® 26, 73, 82
77602-10	PPS/SS	Short	I/P ® 26, 73, 82
77602-02	PPS/CRS	Long	I/P ® 26, 73, 82
77602-12	PPS/SS	Long	I/P ® 26, 73, 82
77601-60	PPS/SS	Short	I/P ® 26, 73, 82
77601-62	PPS/SS	Long	I/P ® 26, 73, 82

	I/P ® 26, I/P ® 73	**I/P ® 82**
Maximum discharge pressure—psi (bar):	40 (2.7)*	20 (1.4)*
Maximum vacuum:	660 mm (26) in Hg*	610 mm (24) in Hg*
Maximum suction lift:	8.8 m (29 ft) H_2O*	8.2 m (27 ft) H_2O*
Number of rollers:	3	
Occlusion:	Adjustable (with Knob on top of Pump Head)	
Maximum pump speed (rpm):	650	
Nominal torque load-Starting:	up to 13 kg-cm (180 oz-in)	
Nominal torque load-Running:	up to 9 kg-cm (120 oz-in)	
Housing material:	Polyphenylene sulfide (PPS), Polyester, Aluminum, Nylon	
Roller/rotor materials:	Cold-rolled steel (CRS) or Stainless steel (SS)	
Operating temperature‡:	0 to 40°C (32 to 104°F)	
Noise level:	<70 dBA @ 1 meter	
Compliance (for CE mark):	EN809 (EU Machinery Directive)	

* Testing with NORPRENE®, PHARMED® BPT and TYGON® tubing. Values will be less with silicone and C-FLEX®.

‡ Use in this temperature range for continuous duty operation with no decrease in performance or product life. Pump heads will work outside this range with some possible reductions in performance or product life.