



MASTERFLEX® L/S 77252-62

OPERATING MANUAL:

MASTERflex® L/S® HIGH-PERFORMANCE PUMP HEAD

Model Nos.

77252-60

77252-62

77252-70

77252-72

77252-80 ATEX

77252-82 ATEX

© 2016 Cole-Parmer Instrument Company LLC. All rights reserved.

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

TECHNYL STAR—Reg TM Solvay Engineering Plastics, Inc.

Trademarks bearing the ® symbol in this publication are registered in the U.S. and in other countries.

PUMP FOR LIQUIDS ORIGINAL INSTRUCTIONS

SAFETY PRECAUTIONS



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

ATEX Rating: The models are rated as Group II, Category 3 (Zone 2) equipment using constructional safety (c) protection, with a T6 (<85° C) temperature classification for use in Gas Group IIC (acetylene) environments:

E  II 3 G c IIC T6

North American Rating: Class I, Division 2, Groups A, B, C, & D, T6

Explanation of Symbols



Risk of Danger. Consult 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.

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.

This product (except models 77252-80 & 77252-82) is not designed for, nor intended for use in hazardous duty areas as defined by ATEX or the NEC (National Electrical Code); including, but not limited to use with flammable liquids. Consult the factory for products suitable for these types of applications.

Table of Contents

	Page
Section 1 INTRODUCTION	1-1
General Description	1-1
Section 2 SETUP AND OPERATION	2-1
Pump Drive Compatibility	2-1
Mounting Pump Head to Drive	2-1
Selecting Tubing	2-2
Loading Tubing	2-2
Operation	2-3
Section 3 MAINTENANCE	3-1
Replacement Parts	3-1
Cleaning Pump Head	3-2
Section 4 SPECIFICATIONS	4-1
Section 5 WARRANTY, PRODUCT RETURN, and TECHNICAL ASSISTANCE ..	5-1
Warranty	5-1
Product Return	5-2
Technical Assistance	5-2

Figures

	Page
Mounting Holes2-1
MASTERFLEX L/S High-Performance Pump Head2-2
Loading Tubing2-3
Exploded View of Pump3-1

Section 1 Introduction

General Description

The MASTERFLEX® L/S® High-Performance Pump Head delivers in excess of 3 L/min flow at normal MASTERFLEX operating speeds and pressures. It is designed for optimal pumping in the clockwise direction. There are two mounting positions. Tubing entry and exit are either on the left side or right side of the pump when mounted on a MASTERFLEX L/S Drive. The pump will operate with any MASTERFLEX L/S drive with 180 oz-in (13 kg-cm) or more output torque.

Section 2 Setup and Operation

Pump Drive Compatibility

The High-Performance Pump Head has a standard shaft interface to accommodate MASTERFLEX L/S Pump Drives. Pump drive must provide 180 in-oz (13 kg·cm) torque.

NOTE: These drives are usually designated as capable of driving two or more Pump Heads.

Mounting Pump Head to Drive

1. Check that pump drive is turned OFF. Install mounting plate using four (4) #8-32 PFHS (furnished). (Labeled "A" in Figure 2-1.)
(Open Head Sensor 77252-60 and 77252-62 pumps must mount with slot towards right side of drive.)
2. Align pump shaft tang with slot in motor shaft.
3. Slide Pump Head alignment holes over pins, check that pump is fully seated.
4. Secure pump to pump drive with the four (4) #10-32 PPHS mounting screws (furnished). (Labeled "B" in Figure 2-1.)

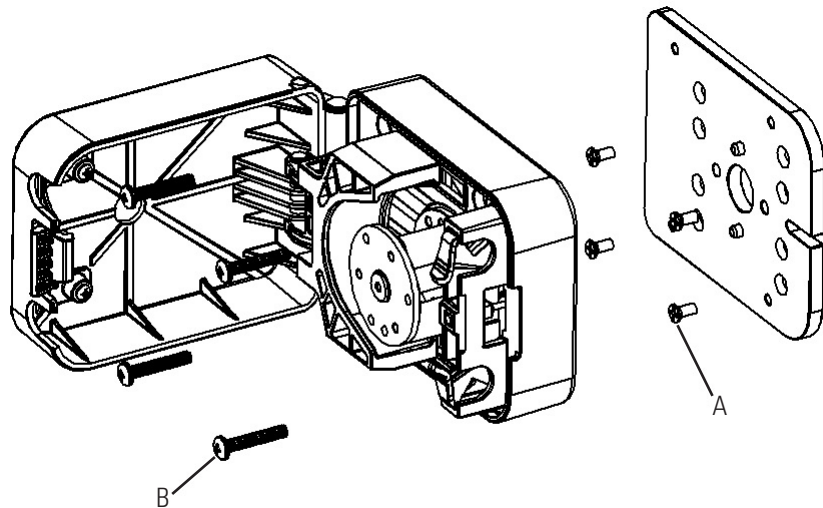


Figure 2-1. Mounting Holes

Selecting Tubing

Pumps accept only MASTERFLEX L/S® Precision tubing sizes L/S 16, L/S 25, L/S 17 and L/S 18 or L/S High-Performance tubing sizes L/S 14HP, L/S 15, L/S 15HP, L/S 16HP, L/S 24, L/S 24HP, L/S 35 and L/S 36. Use only MASTERFLEX tubing that is surface-printed with the tubing designation.

Loading Tubing



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

1. Lift Door Latch to open, Figure 2-2, Occlusion bed will retract as the door is opened.

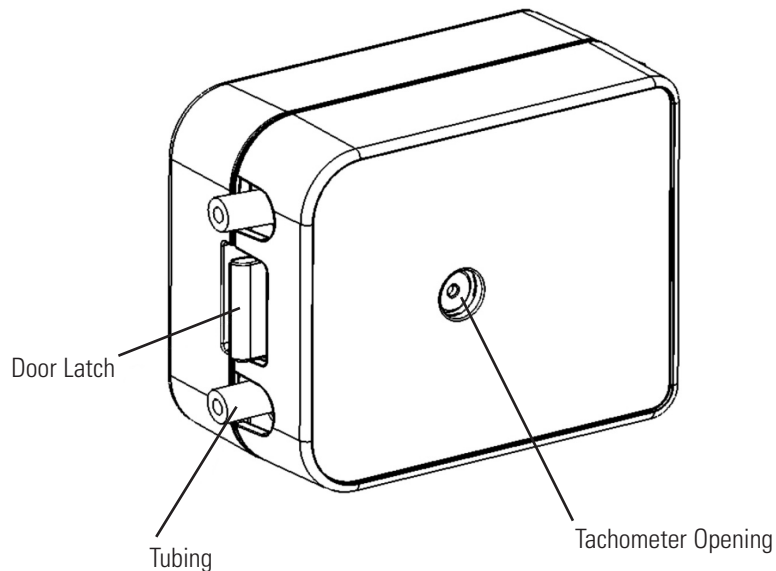


Figure 2-2. MASTERFLEX L/S High-Performance Pump Head

Loading Tubing (continued)

2. Depress tubing retainer (Figure 2-3) and insert tubing. Tubing will be held in place by retainer spring.
3. Insert the MASTERFLEX tubing inside tubing guide and around rotor, depress tubing retainer and insert tubing. Pull tubing snug against roller with the ends of the tubing extending out of the tubing entrance and tubing exit as shown in Figure 2-3 and release tubing retainer. Tubing should be centered on roller.
4. Ensure tubing is correctly loaded and close door until the latch is snapped closed. Lightly pull one end of tubing to remove any slack. Proceed to pump operation.

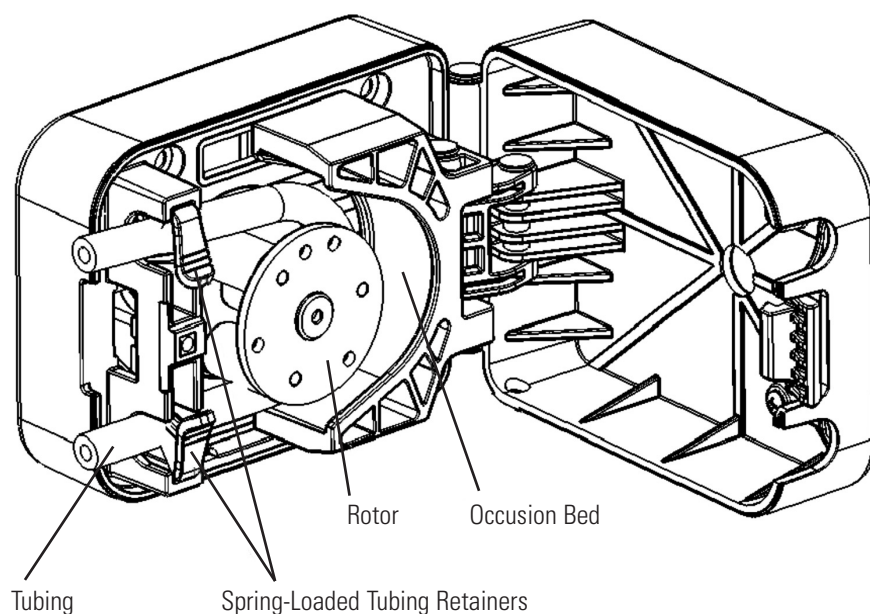


Figure 2-3. Loading Tubing

Operation

1. Connect pump tubing to desired fluid source and destination.
2. Start pump drive and set desired speed.

Section 3 Maintenance

Maintenance is limited to replacement of the parts listed in the replacement parts list and cleaning the Pump Head.

Replacement Parts

Ref	Description	Part No.
**	Replacement Hardware Kit	77252-01
**	Replacement Occlusion Kit	77252-65
A	Replacement Door Kit	77252-68
**	Replacement Rotor THN Kit (For 77252-x0)	77252-66
B	Replacement Rotor THK Kit (For 77252-x2)	77252-67
C	Replacement Open Head Sensor Kit	77252-90
D	Replacement THN Retainer & Spring Kit (For 77252-x0)	77252-63
**	Replacement THK Retainer & Spring Kit (For 77252-x2)	77252-64
**	Optional Leak Detector Kit	77252-92

** (Not Shown)

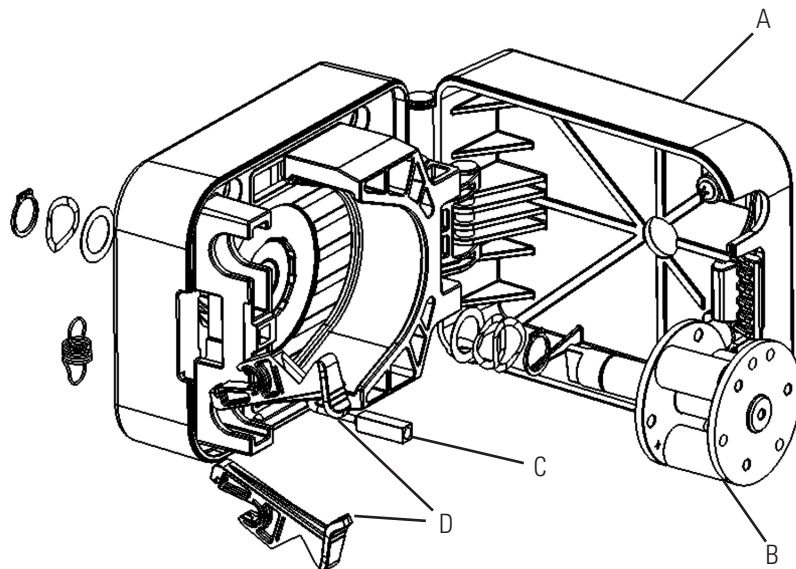


Figure 3-1. Exploded View of Pump

Cleaning Pump Head

Use mild detergent with water to clean the pump and rotor assembly. Do not immerse nor use excessive fluid. Do Not Clean with Peroxide based cleaners.

Section 4 Specifications

Typical Flow, Pressure and Vacuum Data for L/S Precision (thin wall) tubing:

Tubing	Flow rate (cw)			Max. Discharge Pressure*	Vacuum* @ 100 rpm in (mm) Hg	Suction Lift* @ 100 rpm ft (m) H ₂ O
	@ 100 rpm mL/min	@ 300 rpm mL/min	@ 600 rpm mL/min			
16	90	—	614	40	27.5 (698.5)	31 (9.5)
25	187	638	1278	40	27 (685.8)	30.5 (9.2)
17	307	1042	1883	20	27.5 (698.5)	31 (9.5)
18	377	1349	2812	40	27.5 (698.5)	31 (9.5)

Typical Flow, Pressure and Vacuum Data for L/S High-Performance Precision (thick wall) tubing:

Tubing	Flow rate (cw)			Max. Discharge Pressure*	Vacuum* @ 600 rpm in (mm) Hg	Suction Lift* @ 600 rpm ft (m) H ₂ O
	@ 1 rpm mL/min	@ 100 rpm mL/min	@ 600 rpm mL/min			
14HP**	0.3	30	—	150 (10.3)	—	—
16HP**	0.9	90	—	125 (8.5)	—	—
15HP**	1.7	170	—	100 (6.8)	—	—
24HP**	2.4	240	—	80 (5.5)	—	—
15	1.8	—	1100	40 (2.7)	26 (660)	29 (8.8)
24	3.0	—	1800	40 (2.7)	26 (660)	29 (8.8)
35	4.3	—	2600	35 (2.4)	26 (660)	29 (8.8)
36	5.8	—	3400	20 (1.4)	24 (610)	27 (8.3)

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

** 14HP, 15HP, 16HP and 24HP tubing are for use only with the MASTERFLEX L/S® High-Performance Pump Head designed for L/S High-Performance Precision (thick wall) tubing and any MASTERFLEX L/S 1 to 100 rpm drive capable of running two or more Pump Heads.

Specifications (continued)

Output

Number of rollers:	3
Occlusion:	Fixed
Maximum pump speed (rpm):	600
Nominal torque load—Running:	up to 180 oz-in (13 kg•cm)

Construction

Dimensions (W × H × D):	
Operating:	5.75 in × 4.0 in × 2.75 in (146 mm × 101 mm × 69 mm)
Open:	6.5 in × 4.0 in × 6.5 in (165 mm × 101 mm × 165 mm)
Weight:	2.1 lb (0.96 kg)
Housing materials:	Stainless steel (SS), TECHNYL STAR S 216 V30 Glass filled Nylon
Roller/bearing materials:	Stainless Steel (SS)/ Sealed Stainless Steel
Rotor materials:	Stainless Steel (SS)

Environment

Operating Temperature [‡] :	32°F to 104°F (0°C to 40°C)
Storage Temperature:	-40°F to 149°F (-40°C to 65°C)
Humidity:	5% to 95% (non-condensing)
Noise level:	<70 dBA @ 1 meter

Compliance:

(for CE mark)	EN809 (EU Machinery Directive)
(ATEX)	ISO 80079-36 ISO/IEC 80079-37

[‡] 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.

Section 5 Warranty, Product Return and Technical Assistance

Warranty

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

This product is warranted against defects in material or workmanship, and at the option of the manufacturer or distributor, any defective product will be repaired or replaced at no charge, or the purchase price will be refunded to the purchaser, provided that: (a) the warranty claim is made in writing within the period of time specified on the warranty card, (b) proof of purchase by bill of sale or receipted invoice is submitted concurrently with the claim and shows that the product is within the applicable warranty period, and (c) the purchaser complies with procedures for returns set forth in the general terms and conditions contained in the manufacturer's or distributor's most recent catalog.

This warranty shall not apply to: (a) defects or damage resulting from: (i) misuse of the product, (ii) use of the product in other than its normal and customary manner, (iii) accident or neglect, (iv) improper testing, operation, maintenance, service, repair, installation, or storage, (v) unauthorized alteration or modification, or (b) post-expiration dated materials.

THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER, AND THE MANUFACTURER AND DISTRIBUTOR DISCLAIM ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO EMPLOYEE, AGENT, OR REPRESENTATIVE OF THE MANUFACTURER OR DISTRIBUTOR IS AUTHORIZED TO BIND THE MANUFACTURER OR DISTRIBUTOR TO ANY OTHER WARRANTY. IN NO EVENT SHALL THE MANUFACTURER OR DISTRIBUTOR BE LIABLE FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES.

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

Section 5

Warranty, Product Return and
Technical Assistance

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.

 **Cole-Parmer®**

(US & Canada only) Toll Free 1-800-MASTERFLEX • 1-800-637-3739

(Outside US & Canada) 1-847-549-7600 • 1-847-381-7050

www.masterflex.com • www.coleparmer.com

E-mail: techinfo@coleparmer.com

*EN809 manufactured by:

Cole-Parmer Instrument Company LLC

28W092 Commercial Avenue

Barrington, IL 60010