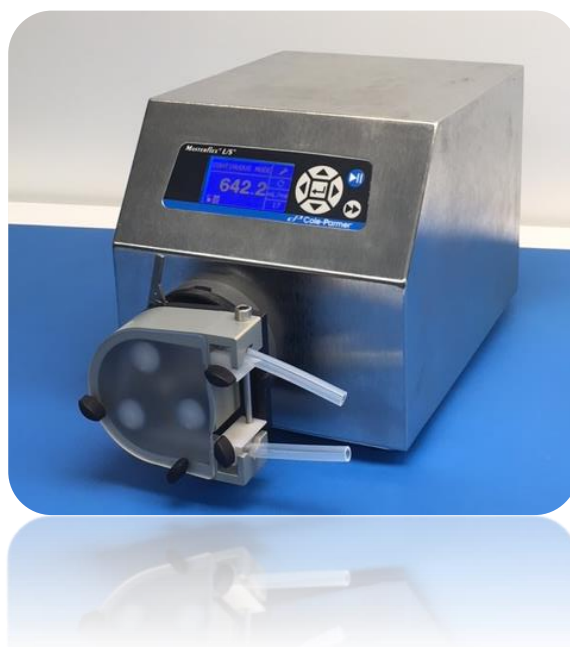


OPERATING MANUAL

MASTERFLEX[®] L/S

ISMATEC CYTOFLOW PUMP HEADS[®]



Edition 03
A-1299-1477 Ed. 01

MASTERFLEX[®]

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PUMP FOR LIQUIDS ORIGINAL INSTRUCTIONS

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

SPECIFICATIONS

Pump speed: 300 (rpm)
Maximum speed: 600 (rpm) Intermittent use

Pump Head Materials: Stainless steel (SS), anodized aluminum, nylon

Roller/bearing materials: Stainless steel (SS)/Shielded

Rotor Materials: Anodized Aluminum, Nylon

Operating temperature 32°F to 104°F (0°C to 40°C)

‡

Storage temperature: -49°F to 149°F (-45°C to 65°C)

Dimensions (W × H × D): 4 ½ in × 4 ½ in × 3 ½ in, Lever 1" Above Pump
(115 mm × 115 mm × 89 mm) 0 to 90% (non-condensing)

Weight: 2.5 lb (11.35 kg)

* As tested 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.

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Pump Head no.	Pump Material	Occlusion	Max Pressure	Shaft Length	L/S® Tubing
ISM785B	ALUMINUM/SS	Fixed	22 PSI (1.5 bar)	Standard	L/S® 14, 16, 25, 17, 18
ISM791B	ALUMINUM/SS	Fixed	36 PSI (2.5 bar)	Standard	L/S® 14, 16, 25, 17, 18
ISM793B	ALUMINUM/SS	Fixed	22 PSI (1.5 bar)	Standard	L/S® 15, 24, 35, 36
ISM797B	ALUMINUM/SS	Fixed	36 PSI (2.5 bar)	Standard	L/S® 15, 24, 35, 36

Typical Flow Data:

Tube Size	Flow rate @ 1 RPM	Flow rate @ 300 RPM	Flow rate @ 600 RPM
14	0.4	131	250
16	1.6	519	987
15/25	3.6	1173	2080
17/24	5.4	1863	3394
18/35	8.0	2850	4829
36	10.7	3664	6153

Tubing Accommodated 1.6mm wall							
	Tygon E-lab	Silicone Peroxide	Silicone pT	Norprene	Viton	Gore PCS	Gore PFL
1.6	6407-72	96400-14	96410-14	6410-01	96412-14	96211-14	96212-14
3.2	6407-76	6411-67	95802-05	6410-02		96211-16	96212-16
4.8	6407-78	6411-03	95802-09	6410-04	96412-25	96211-25	96212-25
6.4	6407-80	6411-71	95802-12	6410-05	96412-17	96211-17	96212-17
8	6407-83	6411-75	95802-15	6410-08	6434-05	96211-18	96212-18
9.5	6407-86	6411-12	95802-18	6410-10	6434-06		
11.1	6407-87			6410-13			

Tubing Accommodated 2.4mm wall							
	Tygon E-lab	Silicone Peroxide	Silicone pT	Norprene	Viton	Gore PCS	Gore PFL
4.8	6509-15	96400-15	96410-15	6402-15	96412-15	96211-15	96212-15
6.4	6509-24	96400-24	96410-24	6402-24	96412-24	96211-24	96212-24
8	6509-35	96400-35	96410-35	6402-35	96412-35	96211-35	96212-35
9.5	6509-36	96400-36	96410-36	6402-36	96412-36	96211-36	96212-36

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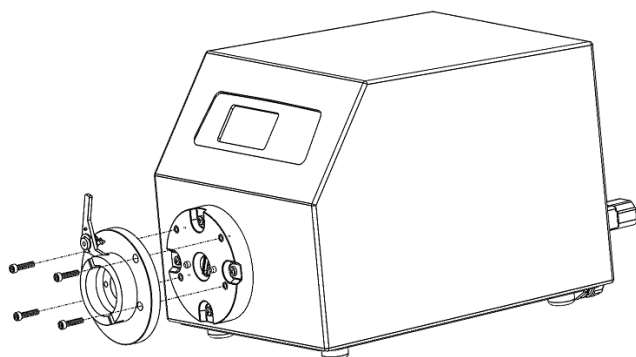
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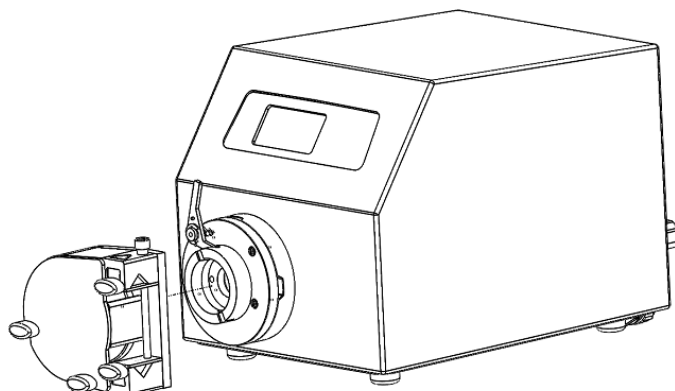
INTRODUCTION AND GENERAL DESCRIPTION

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

Each pump is supplied complete with a 15 in (38-cm) length of tubing, one mounting hardware package and this manual. No tools are required to complete installation.



Mount the adaptor plate using the four (4) supplied 5/64" socket head screws.



Pump head to be installed, as show. See details below.

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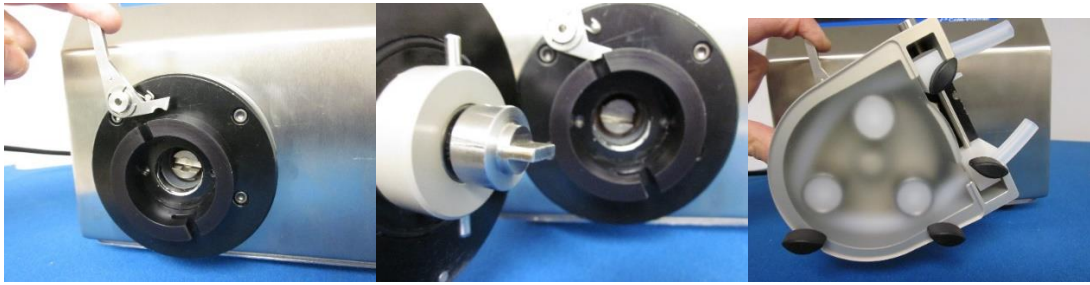
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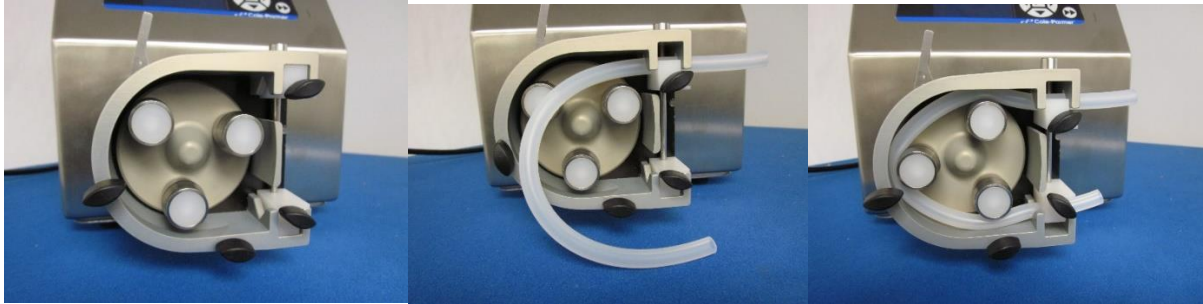
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PUMP INSTALLATION INSTRUCTIONS



Lever moves back to engage and release the pump head. Apply small amount of lubricant around O-Ring seal. Align tang on shaft of pump with receiving end on drive unit shaft. Two pins fit into slots on the drive adaptor. Once inserted properly, rotate the pump head and the pins will slide into place engaging the locking lever.



When installing the tubing, the adjustable retainers are loosened and tightened using the thumb screws. First loosen the top retainer and place the tubing into the pump over the roller. Next, work the tubing over the other rollers until it is fully inserted. You may have to rotate the rotor plate with the rollers to get the tubing installed under the rollers. Once the tubing is installed, loosen the bottom retainer and insert the tubing. With both retainers slightly loosened, adjust the tubing length to the desired position. Usually equal lengths on both the input and output of the pumps.



Place the front protection cover onto the pump head and tighten using the two thumb screws on the bottom left of the pump. The Pro Series L/S Pump Head is compatible with most MASTERFLEX L/S drives with a standard tang interface.

TUBE LOADING

1. Be sure the pump drive is turned off.
2. Align the pump head tang on the shaft with the receiving section on the drive.
3. Rotate the rotor to assist proper alignment.
4. The two pins on the back of the pump should fit into the slots on the adaptor plate.
5. You may need to pull the locking lever back to allow for full engagement of the pins.
6. Twist the pump head to the right.

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7. The lever should lock the pump head into the correct position.

Disassembling Pump Head

1. Pull Lever back and rotate Pump Head allowing the pins to move out of slots on adaptor plate.
2. Remove Pump Head from drive.

REPLACEMENT PARTS AND ACCESSORIES

A. Pro-Series Pump Body/Adaptor Plate assembly.

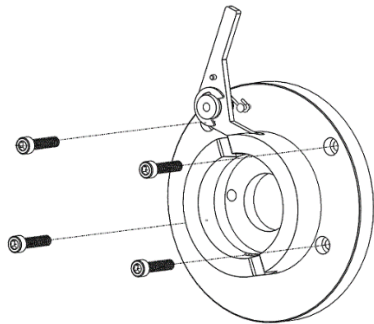
Masterflex Order No.	Pump Head no.	Pump Head order no.	Adaptor Plate/With Coupling Assembly order no.
77253-00 (2-roll TN)	ISM785B	114673-CR	114495-CR
77253-10 (3-roll TN)	ISM791B	114674-CR	114495-CR
77253-02 (2-roll TK)	ISM793B	114675-CR	114495-CR
77253-12 (3-roll TK)	ISM797B	114676-CR	114495-CR

B. Rotor/bearing support assembly.

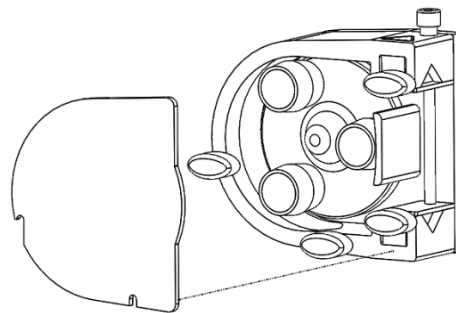
Masterflex Order No.	Pump Head no.	Rotor replacement order no.
77253-00 (2-roll TN)	ISM785B	IS3650-CR
77253-10 (3-roll TN)	ISM791B	IS3660-CR
77253-02 (2-roll TK)	ISM793B	IS3746-CR
77253-12 (3-roll TK)	ISM797B	IS3747-CR

C. Mounting hardware for PRO-SERIES L/S Pump Heads.

Set contains 4 each (#8-32 socket screws hardware).



Adaptor Plate with lever assembly



Pump Head with protection Cover

 **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).

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NOTE: For optimum tubing life, keep tubing straight where it enters and exits the pump. Release the tubing retainer from its locked position by twisting the thumb screws on the far side of the Pump Head..

NOTE: The tubing retainers are adjustable to assist in maintaining proper tubing retention when pump is in use.

NOTE: The tubing used with the Pro Series L/S Pump Head can be changed without dismantling the outside Pump Head from the drive.

MAINTENANCE

No lubrication is required for running the Pro Series L/S Pump Head.

A small portion of the supplied lubricant should be used around the O-Ring on the back of the Pump Head prior to engaging the pump head into the Adaptor Plate.

See REPLACEMENT PARTS AND ACCESSORIES for parts ordering information. Contact dealer for further repair information.

CLEANING

Use a mild detergent solution to clean the Pump Head.

Do not immerse, nor use excessive fluid.

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). 

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.

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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 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.

Manufactured by:
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