

## LS® EASY-LOAD® II PUMP HEADS

### FEATURES/BENEFITS

- ▶ Deliver flow rates from 0.001 to 2900 mL/min
- ▶ Four-roller design improves pressure performance, stability, and reduces pulsation
- ▶ Improved occlusion bed geometry reduces tubing wear, lengthens tubing life
- ▶ Over-center cam for quick tubing changes
- ▶ Adjustable and fixed occlusion available
- ▶ Adapts easily to OEM applications
- ▶ Stackable for multichannel pumping
- ▶ Automatic tubing retention eliminates manual adjustments
- ▶ Pump head accepts several tubing sizes

### SELECTION CRITERIA

1. Flow rate/tube size desired.
  2. Materials of construction (rotor).
  3. Compatibility with drives.
  4. Adjustable or fixed occlusion.
- ▶ 38 cm (15") of silicone tubing and single-channel mounting hardware supplied.

See specifications for more information.

**Order tubing and drives separately.**

### COMPATIBILITY WITH DRIVES

- ▶ Mount on most drives accepting Masterflex L/S pump heads

### PUMP HOUSING SPECIFICATIONS

#### Polyphenylene Sulfide (PPS)

- ▶ Best protection from corrosive liquids/vapors
- ▶ Nylon tubing retainers
- ▶ Select from CRS/Buna N or 400-series SS/PTFE shielded ball-bearing

#### FIXED/ADJUSTABLE OCCLUSION

##### Fixed Occlusion

- ▶ High flow rates at an economical price
- ▶ Factory calibrated for nominal occlusion

##### Adjustable Occlusion

- ▶ Increase occlusion to maximize pressure performance and obtain better suction lift
- ▶ Reduce occlusion to extend tubing life

### ROLLER/ROTOR SPECIFICATIONS

#### Plated Cold-Rolled Steel (CRS)

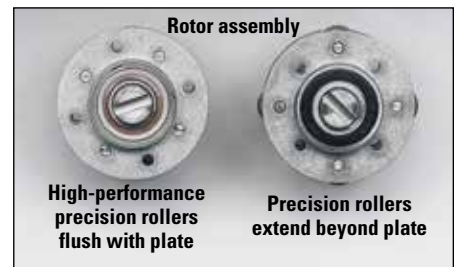
- ▶ General-purpose applications
- ▶ Humidity: 0 to 90%
- ▶ Ball-bearing construction
- ▶ Continuous duty up to 600 rpm
- ▶ Precision and High-performance precision tubing versions

#### 300-Series Stainless Steel (SS)

- ▶ Corrosive fluids
- ▶ Humidity: 0% to 90%
- ▶ PTFE shielded ball-bearing (highest life expectancy)
- ▶ Continuous duty up to 600 rpm
- ▶ Precision and High-performance precision tubing versions

### MULTICHANNEL CAPABILITIES

- ▶ Mount up to four Easy-Load II pump heads on a single drive
- ▶ Order hardware depending on number of pump heads to be mounted



ISO9001:2008 CERTIFIED SUPPLIER **2** year warranty

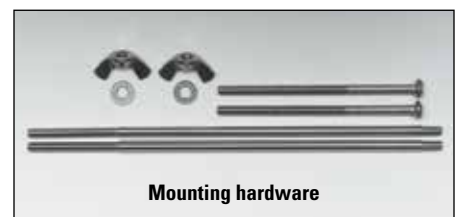
### ORDERING INFORMATION

Pump tubing size	Fixed occlusion		Adjustable occlusion
	CRS rotor	SS rotor	SS rotor
<b>For Precision tubing</b>			
L/S 13			
L/S 14			
L/S 16	HL-77200-50	HL-77200-60	HL-77201-60
L/S 25			
L/S 17			
L/S 18			
<b>For High-performance precision tubing</b>			
L/S 15			
L/S 24	HL-77200-52	HL-77200-62	HL-77201-62
L/S 35			
L/S 36			

CRS = cold-rolled steel SS = stainless steel

### MOUNTING HARDWARE

Heads to be mounted	Catalog number/set
	Stainless steel
One	HL-77200-01
Two	HL-77200-02
Three	HL-77200-03
Four	HL-77200-04



### L/S PUMP TUBING FLOW RATE INFORMATION

Order Masterflex L/S pump tubing separately on pages 68–73.

Tubing cross sections	L/S Precision pump tubing						L/S High-performance Precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
Flow rate—mL/rev	0.06	0.21	0.8	1.7	2.8	3.8	1.7	2.8	3.8	4.8
mL/min @ 600 rpm	36	130	480	1000	1700	2300	1000	1700	2300	2900
Max pressure†	2.7 bar (40 psi)			2.4 bar (35 psi)	1.4 bar (20 psi)	1.0 bar (15 psi)	2.7 bar (40 psi)		2.4 bar (35 psi)	1.4 bar (20 psi)
Max vacuum†	660 mm Hg (26" Hg)			510 mm Hg (20" Hg)			660 mm Hg (26" Hg)			
Suction lift	8.8 m H <sub>2</sub> O (29 ft H <sub>2</sub> O)			6.7 m H <sub>2</sub> O (22 ft H <sub>2</sub> O)			8.8 m H <sub>2</sub> O (29 ft H <sub>2</sub> O)			

†Actual performance varies depending upon tubing materials—see pages 20–24 and 172–192 for more information.



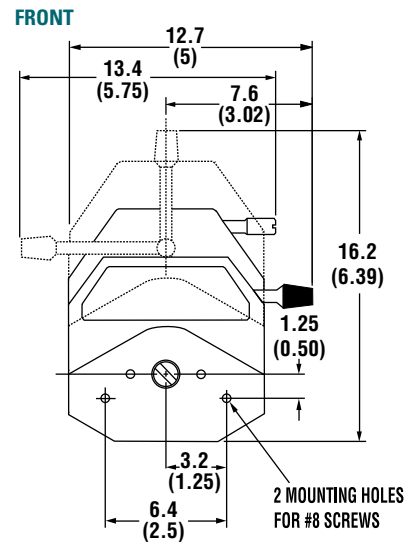
## SPECIFICATIONS for L/S Easy-Load II Pump Heads

Catalog number	HL-77200-50 HL-77200-52	HL-77200-60 HL-77200-62	HL-77201-60 HL-77201-62
<b>Performance Specifications</b>			
Flow capacity	0.001 to 2900 mL/min (9.48 to 45.82 GPH) <sup>†</sup>		
Max rpm	600		
Number of rollers	4		
<b>Torque Specifications* [a single head pumping water at 0 psi, 21°C (70°F)]</b>			
Norprene®, PharMed® BPT	Starting torque	12.9 kg-cm (180 oz-in)	
	Running torque	3.6 kg-cm (50 oz-in)	
Tygon®, Viton®	Starting torque	21.2 kg-cm (295 oz-in)	
	Running torque	4.3 kg-cm (60 oz-in)	
C-FLEX®, Silicone	Starting torque	5.8 kg-cm (80 oz-in)	
	Running torque	2.2 kg-cm (30 oz-in)	
<b>Physical Specifications</b>			
Housing material	Polyphenylene sulfide		
Rotor material	Cold-rolled steel	Stainless steel	
Operating temperature	0 to 40°C (32 to 104°F)		
Shipping weight	0.9 kg (1.9 lb)		

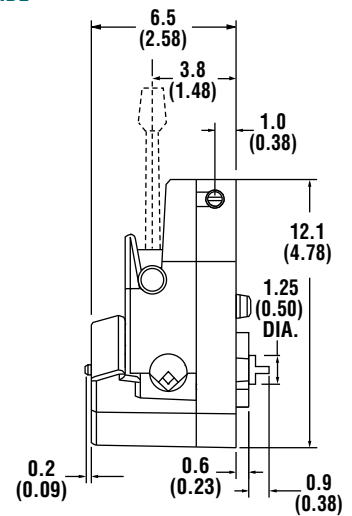
<sup>†</sup>Depending on pump head and tubing selected.

\*Maximum torque depends on tubing size. For complete torque data, see pages 172–192.

## Dimensional Drawings cm (in.) 77200-series, 77201-series, and 77202-series



## SIDE



## L/S EASY-LOAD II TWO-CHANNEL PUMP HEADS

Identical to our Easy-Load II pump heads—except with two flow channels. Pump two channels simultaneously from one head (you must use the same size tubing in each channel), eliminating the need to stack heads. Each pump head accepts L/S 13, L/S 14, L/S 16, and L/S 25 tubing sizes in any formulation. Mount up to four two-channel pump heads on a single drive.

## ORDERING INFORMATION

Pump tubing size	mL per rev	Flow rates in mL/min at noted rpm (per channel)		Fixed occlusion	
		1 to 100	6 to 600	CRS rotor	SS rotor
L/S 13	0.06	0.06 to 6	0.36 to 36	HL-77202-50	HL-77202-60
L/S 14	0.21	0.21 to 21	1.3 to 130		
L/S 16	0.8	0.8 to 80	4.8 to 480		
L/S 25	1.7	1.7 to 170	10 to 1000		

CRS = cold-rolled steel SS = stainless steel



## HOW TO LOAD YOUR PUMP HEAD



1. Rotate lever to left to open pump head. Load the correct size tubing.



2. Move lever to the right to close pump head.



3. Tubing is retained by automatic tubing retention on all models.



3. Adjustable occlusion available on 77201-60 and -62 models.

## NOTES

Use only Masterflex pump tubing with Masterflex pumps to ensure optimal performance. Use of other tubing may void applicable warranties.

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