

## Masterflex® L/S® Pump Head Selection Guide

Description	Flow rates	Number of rollers	Multichannel or stackable	Special features
<b>L/S Standard Pump Heads</b>				
	0.001 to 2900 mL/min	3	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Highest precision, yet economical</li> <li>✓ Accurate, repeatable fluid transfer</li> <li>✓ Each head dedicated to one tubing size</li> </ul>
<b>L/S Easy-Load® II Pump Heads</b>				
	0.001 to 2900 mL/min	4	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Easy tubing changes</li> <li>✓ Automatic retention</li> <li>✓ Adjustable occlusion</li> </ul>
<b>L/S Easy-Load® 3 Pump Heads</b>				
	0.001 to 2900 mL/min	3	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Easy tubing changes</li> <li>✓ Automatic retention</li> <li>✓ Same side tubing entry/exit</li> <li>✓ Install and stack without tools or hardware</li> </ul>
<b>L/S Easy-Load® Pump Heads</b>				
	0.001 to 2300 mL/min	3	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Load or change multiple tubing sizes quickly and easily</li> <li>✓ Low maintenance</li> <li>✓ Models available for ATEX Zone 2 applications</li> </ul>
<b>L/S High-Performance Pump Heads</b>				
	0.006 to 3400 mL/min	3	No	<ul style="list-style-type: none"> <li>✓ Highest flow rate of any L/S pump head</li> <li>✓ Up to 150 psi (10.3 bar) with L/S HP (High-Pressure) pump tubing</li> <li>✓ Model available for ATEX Zone 2 applications</li> </ul>
<b>L/S PTFE-Tubing Pump Heads</b>				
	0.001 to 65 mL/min	6	No	<ul style="list-style-type: none"> <li>✓ Uses rigid PTFE-tubing</li> <li>✓ Pressures up to 100 psi (6.9 bar)</li> <li>✓ Transfer aggressive solvents</li> <li>✓ High purity</li> </ul>
<b>L/S Multichannel Pump Heads</b>				
	0.00005 to 2300 mL/min (per channel)	3 or 6	Yes, stack up to 32 channels	<ul style="list-style-type: none"> <li>✓ Synchronous flow from up to 32 channels without cartridges</li> <li>✓ Two-stop tubing sets are easy to load, with no adjustment needed</li> </ul>
<b>L/S Multichannel Cartridge Pump Heads</b>				
	0.00001 to 1700 mL/min (per channel)	3, 4, 6, or 8	Yes, 1 to 12 channels	<ul style="list-style-type: none"> <li>✓ Synchronous flow rates</li> <li>✓ Run up to 12 channels on a single pump head</li> <li>✓ Easy tubing changes</li> <li>✓ Holds tubing securely in place</li> </ul>
<b>L/S PTFE-Diaphragm Pump Heads</b>				
	10.0 to 800 mL/min	—	No	<ul style="list-style-type: none"> <li>✓ PTFE and borosilicate glass are the only wetted parts</li> <li>✓ Up to 100 psi (6.9 bar)</li> <li>✓ Accurate metering</li> <li>✓ Handles aggressive fluids</li> </ul>

## L/S® EASY-LOAD® 3 PUMP HEADS

### FEATURES/BENEFITS

- ▶ Deliver flow rates from 0.06 to 2900 mL/min
- ▶ Automatic tubing retention speeds tube loading and fluid changeover
- ▶ Same side tubing entry/exit for easy integration into space-limited applications
- ▶ Long occlusion surface prevents fluid backflow
- ▶ Included mounting plate adapts head to L/S drives
- ▶ Mount and operate head in any of four positions
- ▶ Locking tab secures head during operation in either direction of rotation
- ▶ Twist-lock mounting feature lets you mount and stack heads in seconds without tools or hardware
- ▶ Stackable for multiple-channel pumping and increased flow capacity
- ▶ Pump heads accept several tubing sizes

### SELECTION CRITERIA

1. Flow rate/tube size desired.
2. Materials of construction (rotor).
3. Compatibility with drives.

Silicone tubing (43 cm or 17") and mounting plate/adaptor supplied.

See specifications for more information.

**Order tubing and drives separately.**

### COMPATIBILITY WITH DRIVES

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

### NOTES

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

### PUMP HOUSING SPECIFICATIONS

#### Polypropylene (PP)

- ▶ General-purpose applications
- ▶ Good protection from corrosive liquids/vapors
- ▶ Select from CRS/Buna N or 400-series SS/PTFE shielded ball bearing

### 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 construction (highest life expectancy)
- ▶ Continuous duty up to 600 rpm
- ▶ Precision and high-performance precision tubing versions

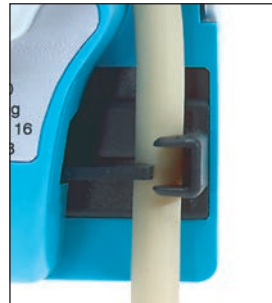
### MULTICHANNEL CAPABILITIES

- ▶ Mount up to four Easy-Load 3 pump heads on a single drive without tools or hardware



Easy-Load 3 pump head 77800-60

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



Tubing retainers automatically stretch and grip tubing when head is closed.

### ORDERING INFORMATION

Pump tubing size	PP housing	
	CRS rotor	SS rotor
<b>For Precision tubing</b>		
L/S 13		
L/S 14		
L/S 16	<a href="#">HL-77800-50</a>	<a href="#">HL-77800-60</a>
L/S 25		
L/S 17		
L/S 18		
<b>For High-performance precision tubing</b>		
L/S 15		
L/S 24	<a href="#">HL-77800-52</a>	<a href="#">HL-77800-62</a>
L/S 35		
L/S 36		

PP = polypropylene CRS = cold-rolled steel  
SS = stainless steel

### 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)	2.0 bar (30 psi)		1.7 bar (25 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.