







## L/S® PRECISION PUMP TUBING

- Ensure optimal performance from your Masterflex pump
- Custom extruded to fit Masterflex pumps
- Engineered for long life in peristaltic pump applications
- Lot-to-lot consistency provides superior accuracy and repeatability

Masterflex L/S pump tubing is manufactured to extremely close tolerances that match our L/S pump heads, ensuring accurate, repeatable flow and long tubing life. Our pump tubing is factory-tested and optically inspected to provide the best performance from your peristaltic pump. With 21 different materials available, there is an L/S pump tubing formulation suitable for nearly any fluid handling application.

Our High-performance Precision pump tubing features a thicker wall compared to our Precision pump tubing, making it the best choice for applications involving pressure, suction lift, viscous fluids, or long tubing life. See pages 70–71 to order.










### SPECIFICATIONS

Pump tubing cross sections	L/S Precision pump tubing					
						
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Inside diameter (nominal)	0.8 mm (0.03")	1.6 mm (0.06")	3.1 mm (0.12")	4.8 mm (0.19")	6.4 mm (0.25")	7.9 mm (0.31")
Hose barb size	1.6 mm (1/16")	1.6 mm (1/16")	3.2 mm (1/8")	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")
Flow range (approximate) <sup>†</sup> with 1 to 600 rpm drive	0.06 to 36 mL/min	0.21 to 130 mL/min	0.8 to 480 mL/min	1.7 to 1000 mL/min	2.8 to 1700 mL/min	3.8 to 2300 mL/min
Maximum pressure <sup>‡</sup>	2.7 bar (40 psig)			2.4 bar (35 psig)	1.4 bar (20 psig)	1.0 bar (15 psig)
Maximum vacuum <sup>‡</sup>	660 mm Hg (26" Hg)			510 mm Hg (20" Hg)		
Suction lift <sup>‡</sup>	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)		

<sup>†</sup>Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F). values shown are for firm tubing. Value for GORE® pump tubing is 4.1 bar (60 psi) continuous.

<sup>‡</sup>Actual performance varies depending on tubing formulation—

### ORDERING INFORMATION

Pump tubing formulation	L/S Pump Head Compatibility					L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
	Standard	Easy-Load®	Easy-Load II	Easy-Load 3	Multichannel Cartridge						
 Silicone (platinum-cured)	✓	✓	✓	✓	✓	HL-96410-13 7.6 m (25 ft)/pk	HL-96410-14 7.6 m (25 ft)/pk	HL-96410-16 7.6 m (25 ft)/pk	HL-96410-25 7.6 m (25 ft)/pk	HL-96410-17 7.6 m (25 ft)/pk	HL-96410-18 7.6 m (25 ft)/pk
 Silicone (peroxide-cured)	✓	✓	✓	✓	✓	HL-96400-13 7.6 m (25 ft)/pk	HL-96400-14 7.6 m (25 ft)/pk	HL-96400-16 7.6 m (25 ft)/pk	HL-96400-25 7.6 m (25 ft)/pk	HL-96400-17 7.6 m (25 ft)/pk	HL-96400-18 7.6 m (25 ft)/pk
 BioPharm silicone (platinum-cured)	✓	✓	✓	✓	✓	HL-96420-13 7.6 m (25 ft)/pk	HL-96420-14 7.6 m (25 ft)/pk	HL-96420-16 7.6 m (25 ft)/pk	HL-96420-25 7.6 m (25 ft)/pk	HL-96420-17 7.6 m (25 ft)/pk	HL-96420-18 7.6 m (25 ft)/pk
 BioPharm Plus silicone (platinum-cured)	✓	✓	✓	✓	✓	HL-96440-13 7.6 m (25 ft)/pk	HL-96440-14 7.6 m (25 ft)/pk	HL-96440-16 7.6 m (25 ft)/pk	HL-96440-25 7.6 m (25 ft)/pk	HL-96440-17 7.6 m (25 ft)/pk	HL-96440-18 7.6 m (25 ft)/pk
 Puri-Flex™	✓	✓	✓	✓	✓	HL-96419-13 7.6 m (25 ft)/pk	HL-96419-14 7.6 m (25 ft)/pk	HL-96419-16 7.6 m (25 ft)/pk	HL-96419-25 7.6 m (25 ft)/pk	HL-96419-17 7.6 m (25 ft)/pk	HL-96419-18 7.6 m (25 ft)/pk
 C-Flex®	✓	✓	✓	✓	✓	HL-06424-13 7.6 m (25 ft)/pk	HL-06424-14 7.6 m (25 ft)/pk	HL-06424-16 7.6 m (25 ft)/pk	HL-06424-25 7.6 m (25 ft)/pk	HL-06424-17 7.6 m (25 ft)/pk	HL-06424-18 7.6 m (25 ft)/pk
 C-Flex® ULTRA	✓	✓	✓	✓	✓	—	HL-06434-14 7.6 m (25 ft)/pk	HL-06434-16 7.6 m (25 ft)/pk	HL-06434-25 7.6 m (25 ft)/pk	HL-06434-17 7.6 m (25 ft)/pk	HL-06434-18 7.6 m (25 ft)/pk
 PharMed® BPT	✓	✓	✓	✓	✓	HL-06508-13 7.6 m (25 ft)/pk	HL-06508-14 7.6 m (25 ft)/pk	HL-06508-16 7.6 m (25 ft)/pk	HL-06508-25 7.6 m (25 ft)/pk	HL-06508-17 7.6 m (25 ft)/pk	HL-06508-18 7.6 m (25 ft)/pk
 PharmaPure®		✓	✓			HL-06435-13 7.6 m (25 ft)/pk	HL-06435-14 7.6 m (25 ft)/pk	HL-06435-16 7.6 m (25 ft)/pk	HL-06435-25 7.6 m (25 ft)/pk	HL-06435-17 7.6 m (25 ft)/pk	HL-06435-18 7.6 m (25 ft)/pk



SEE PAGES 20 TO 24

For detailed formulation descriptions and specifications.

## ORDERING INFORMATION

Pump tubing formulation	L/S Pump Head Compatibility					L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
	Standard	Easy-Load®	Easy-Load II	Easy-Load 3	Multichannel Cartridge						
<b>Chem-Durance® Bio</b>		✓	✓			<b>HL-06442-13</b> 15.2 m (50 ft)/pk	<b>HL-06442-14</b> 15.2 m (50 ft)/pk	<b>HL-06442-16</b> 15.2 m (50 ft)/pk	<b>HL-06442-25</b> 15.2 m (50 ft)/pk	<b>HL-06442-17</b> 15.2 m (50 ft)/pk	<b>HL-06442-18</b> 15.2 m (50 ft)/pk
<b>Tygon® E-LFL</b> <b>NEW</b>	✓	✓	✓	✓	✓	<b>HL-06440-13</b> 7.6 m (25 ft)/pk	<b>HL-06440-14</b> 7.6 m (25 ft)/pk	<b>HL-06440-16</b> 7.6 m (25 ft)/pk	<b>HL-06440-25</b> 7.6 m (25 ft)/pk	<b>HL-06440-17</b> 7.6 m (25 ft)/pk	<b>HL-06440-18</b> 7.6 m (25 ft)/pk
<b>Tygon® E-Food (B-44-4X)</b> <b>NEW</b>	✓	✓	✓	✓	✓	<b>HL-06418-13</b> 15.2 m (50 ft)/pk	<b>HL-06418-14</b> 15.2 m (50 ft)/pk	<b>HL-06418-16</b> 15.2 m (50 ft)/pk	<b>HL-06418-25</b> 15.2 m (50 ft)/pk	<b>HL-06418-17</b> 15.2 m (50 ft)/pk	<b>HL-06418-18</b> 15.2 m (50 ft)/pk
<b>Tygon® E-Lab (E-3603)</b> <b>NEW</b>	✓	✓	✓	✓	✓	<b>HL-06509-13</b> 15.2 m (50 ft)/pk	<b>HL-06509-14</b> 15.2 m (50 ft)/pk	<b>HL-06509-16</b> 15.2 m (50 ft)/pk	<b>HL-06509-25</b> 15.2 m (50 ft)/pk	<b>HL-06509-17</b> 15.2 m (50 ft)/pk	<b>HL-06509-18</b> 15.2 m (50 ft)/pk
<b>Tygon® Fuel &amp; Lubricant (F-4040-A)</b>	✓	✓	✓	✓	✓	<b>HL-06401-13</b> 15.2 m (50 ft)/pk	<b>HL-06401-14</b> 15.2 m (50 ft)/pk	<b>HL-06401-16</b> 15.2 m (50 ft)/pk	<b>HL-06401-25</b> 15.2 m (50 ft)/pk	<b>HL-06401-17</b> 15.2 m (50 ft)/pk	<b>HL-06401-18</b> 15.2 m (50 ft)/pk
<b>Tygon® Chemical (2001)</b>		✓	✓			<b>HL-06475-13</b> 15.2 m (50 ft)/pk	<b>HL-06475-14</b> 15.2 m (50 ft)/pk	<b>HL-06475-16</b> 15.2 m (50 ft)/pk	<b>HL-06475-25</b> 15.2 m (50 ft)/pk	<b>HL-06475-17</b> 15.2 m (50 ft)/pk	<b>HL-06475-18</b> 15.2 m (50 ft)/pk
<b>Norprene® (A 60 G)</b>	✓	✓	✓	✓	✓	<b>HL-06404-13</b> 15.2 m (50 ft)/pk	<b>HL-06404-14</b> 15.2 m (50 ft)/pk	<b>HL-06404-16</b> 15.2 m (50 ft)/pk	<b>HL-06404-25</b> 15.2 m (50 ft)/pk	<b>HL-06404-17</b> 15.2 m (50 ft)/pk	<b>HL-06404-18</b> 15.2 m (50 ft)/pk
<b>Norprene® Food (A 60 F)</b>	✓	✓	✓	✓	✓	<b>HL-06402-13</b> 15.2 m (50 ft)/pk	<b>HL-06402-14</b> 15.2 m (50 ft)/pk	<b>HL-06402-16</b> 15.2 m (50 ft)/pk	<b>HL-06402-25</b> 15.2 m (50 ft)/pk	<b>HL-06402-17</b> 15.2 m (50 ft)/pk	<b>HL-06402-18</b> 15.2 m (50 ft)/pk
<b>GORE® Style 100SC</b>	✓	✓	✓			—	<b>HL-96190-14</b> 30.5 cm (12")/pk	<b>HL-96190-16</b> 30.5 cm (12")/pk	<b>HL-96190-25</b> 30.5 cm (12")/pk	<b>HL-96190-17</b> 30.5 cm (12")/pk	<b>HL-96190-18</b> 30.5 cm (12")/pk
<b>GORE® Style 500</b>	✓	✓	✓			—	<b>HL-96191-14</b> 30.5 cm (12")/pk	<b>HL-96191-16</b> 30.5 cm (12")/pk	<b>HL-96191-25</b> 30.5 cm (12")/pk	<b>HL-96191-17</b> 30.5 cm (12")/pk	<b>HL-96191-18</b> 30.5 cm (12")/pk
<b>GORE® Style 400</b>	✓	✓	✓			—	—	<b>HL-06439-16</b> 30.5 cm (12")/pk	—	<b>HL-06439-17</b> 30.5 cm (12")/pk	—
<b>Viton®</b>	✓	✓	✓	✓	✓	<b>HL-96412-13</b> 7.6 m (25 ft)/pk	<b>HL-96412-14</b> 7.6 m (25 ft)/pk	<b>HL-96412-16</b> 7.6 m (25 ft)/pk	<b>HL-96412-25</b> 7.6 m (25 ft)/pk	<b>HL-96412-17</b> 7.6 m (25 ft)/pk	<b>HL-96412-18</b> 7.6 m (25 ft)/pk



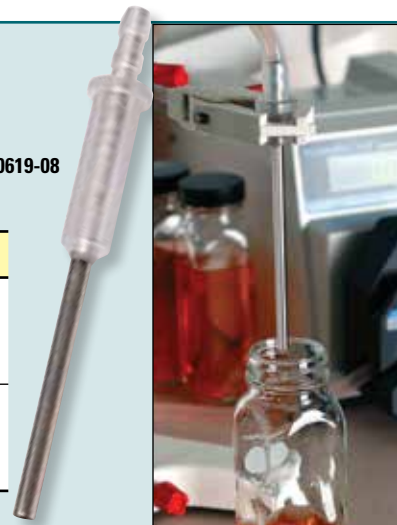
## FILLER/DISPENSING NOZZLES

- ▶ Maximize the speed, precision, and accuracy of dispensing and filling applications
- ▶ Minimize splashing and dripping when dispensing into narrow- or wide-mouth containers
- ▶ Dimensional tolerances of ±0.05% for assured repeatability

These nozzles combine the ease of plastic components with the accuracy and reliability of stainless steel filler needles. Tight dimensional tolerances help to ensure precision in your dispensing applications. Nozzles feature a 316L stainless steel tube and a polycarbonate base with hose barb adapter. Materials comply with FDA, USDA and USP Class VI requirements. All filler nozzles are sterilizable by ethylene oxide, autoclaving, or gamma irradiation.

Catalog number	Tubing ID	Fits Masterflex® tubing sizes
<b>HL-30619-06</b>	1/32"	L/S® 13
<b>HL-30619-01</b>	1/16"	L/S 14
<b>HL-30619-07</b>	1/8"	L/S 16
<b>HL-30619-02</b>	3/16"	L/S 15, 25
<b>HL-30619-08</b>	1/4"	L/S 17, 24; I/P® 26
<b>HL-30619-03</b>	5/16"	L/S 35
<b>HL-30619-09</b>	3/8"	L/S 18, 36; I/P 70, 73; B/T® 86
<b>HL-30619-04</b>	1/2"	I/P 82, 88; B/T 87
<b>HL-30619-10</b>	5/8"	I/P 89
<b>HL-30619-05</b>	3/4"	B/T 91

30619-08







## L/S® HIGH-PERFORMANCE PRECISION PUMP TUBING

- Ensure optimal performance from your Masterflex pump
- Custom extruded to fit Masterflex pumps
- Engineered for long life in peristaltic pump applications
- Lot-to-lot consistency provides superior accuracy and repeatability

Masterflex L/S pump tubing is manufactured to extremely close tolerances that match our L/S pump heads, ensuring accurate, repeatable flow and long tubing life. Our pump tubing is factory-tested and optically inspected to provide the best performance from your peristaltic pump. With 21 different materials available, there is an L/S pump tubing formulation suitable for nearly any fluid handling application.

Our High-performance Precision pump tubing features a thicker wall compared to our Precision pump tubing, making it the best choice for applications involving pressure, suction lift, viscous fluids, or long tubing life.


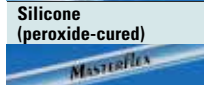







### SPECIFICATIONS

Pump tubing cross sections	L/S High-performance Precision pump tubing			
				
	L/S 15	L/S 24	L/S 35	L/S 36
Inside diameter (nominal)	4.8 mm (0.19")	6.4 mm (0.25")	7.9 mm (0.31")	9.7 mm (0.38")
Hose barb size	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")	9.5 mm (3/8")
Flow range (approximate) <sup>†</sup> with 1 to 600 rpm drive Value in ( ) obtained with High-Performance pump head	1.7 to 1000 mL/min (1.8 to 1100 mL/min)	2.8 to 1700 mL/min (3.0 to 1800 mL/min)	3.8 to 2300 mL/min (4.3 to 2600 mL/min)	4.8 to 2900 mL/min (5.8 to 3400 mL/min)
Maximum pressure <sup>‡</sup>	2.7 bar (40 psig)		2.4 bar (35 psig)	1.4 bar (20 psig)
Maximum vacuum <sup>‡</sup>	660 mm Hg (26" Hg)			610 mm Hg (24" Hg)
Suction lift <sup>‡</sup>	8.8 m H <sub>2</sub> O (29 ft H <sub>2</sub> O)			8.3 m H <sub>2</sub> O (27 ft H <sub>2</sub> O)

<sup>†</sup>Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).

<sup>‡</sup>Actual performance varies depending on tubing formulation—values shown are for firm tubing. Value for GORE® pump tubing is 4.1 bar (60 psi) continuous.

### ORDERING INFORMATION

Pump tubing formulation	L/S Pump Head Compatibility					L/S 15	L/S 24	L/S 35	L/S 36
	Standard	Easy-Load®	Easy-Load II	Easy-Load 3	High-Performance				
 Silicone (platinum-cured)	✓	✓	✓	✓	✓	HL-96410-15 7.6 m (25 ft)/pk	HL-96410-24 7.6 m (25 ft)/pk	HL-96410-35 7.6 m (25 ft)/pk	HL-96410-36 7.6 m (25 ft)/pk
 Silicone (peroxide-cured)	✓	✓	✓	✓	✓	HL-96400-15 7.6 m (25 ft)/pk	HL-96400-24 7.6 m (25 ft)/pk	HL-96400-35 7.6 m (25 ft)/pk	HL-96400-36 7.6 m (25 ft)/pk
 BioPharm silicone (platinum-cured)	✓	✓	✓	✓	✓	HL-96420-15 7.6 m (25 ft)/pk	HL-96420-24 7.6 m (25 ft)/pk	HL-96420-35 7.6 m (25 ft)/pk	HL-96420-36 7.6 m (25 ft)/pk
 BioPharm Plus silicone (platinum-cured)	✓	✓	✓	✓	✓	HL-96440-15 7.6 m (25 ft)/pk	HL-96440-24 7.6 m (25 ft)/pk	HL-96440-35 7.6 m (25 ft)/pk	HL-96440-36 7.6 m (25 ft)/pk
 Puri-Flex™	✓	✓	✓	✓	✓	HL-96419-15 7.6 m (25 ft)/pk	HL-96419-24 7.6 m (25 ft)/pk	HL-96419-35 7.6 m (25 ft)/pk	HL-96419-36 7.6 m (25 ft)/pk
 C-Flex®	✓	✓	✓	✓	✓	HL-06424-15 7.6 m (25 ft)/pk	HL-06424-24 7.6 m (25 ft)/pk	HL-06424-35 7.6 m (25 ft)/pk	HL-06424-36 7.6 m (25 ft)/pk
 C-Flex® ULTRA	✓	✓	✓	✓	✓	HL-06434-15 7.6 m (25 ft)/pk	HL-06434-24 7.6 m (25 ft)/pk	HL-06434-35 7.6 m (25 ft)/pk	HL-06434-36 7.6 m (25 ft)/pk
 PharMed® BPT	✓	✓	✓	✓	✓	HL-06508-15 7.6 m (25 ft)/pk	HL-06508-24 7.6 m (25 ft)/pk	HL-06508-35 7.6 m (25 ft)/pk	HL-06508-36 7.6 m (25 ft)/pk
 PharmaPure®		✓	✓			HL-06435-15 7.6 m (25 ft)/pk	HL-06435-24 7.6 m (25 ft)/pk	—	—



## ORDERING INFORMATION

Pump tubing formulation	L/S Pump Head Compatibility					L/S 15	L/S 24	L/S 35	L/S 36
	Standard	Easy-Load®	Easy-Load II	Easy-Load 3	High-Performance				
<b>Chem-Durance® Bio</b> 		✓	✓			<b>HL-06442-15</b> 15.2 m (50 ft)/pk	<b>HL-06442-24</b> 15.2 m (50 ft)/pk	<b>HL-06442-35</b> 15.2 m (50 ft)/pk	<b>HL-06442-36</b> 15.2 m (50 ft)/pk
<b>Tygon® E-LFL</b> <b>NEW</b> 	✓	✓	✓	✓	✓	<b>HL-06440-15</b> 7.6 m (25 ft)/pk	<b>HL-06440-24</b> 7.6 m (25 ft)/pk	<b>HL-06440-35</b> 7.6 m (25 ft)/pk	<b>HL-06440-36</b> 7.6 m (25 ft)/pk
<b>Tygon® E-Food (B-44-4X)</b> <b>NEW</b> 		✓	✓	✓	✓	<b>HL-06418-15</b> 15.2 m (50 ft)/pk	<b>HL-06418-24</b> 15.2 m (50 ft)/pk	<b>HL-06418-35</b> 15.2 m (50 ft)/pk	<b>HL-06418-36</b> 15.2 m (50 ft)/pk
<b>Tygon® E-Lab (E-3603)</b> <b>NEW</b> 	✓	✓	✓	✓	✓	<b>HL-06509-15</b> 15.2 m (50 ft)/pk	<b>HL-06509-24</b> 15.2 m (50 ft)/pk	<b>HL-06509-35</b> 15.2 m (50 ft)/pk	<b>HL-06509-36</b> 15.2 m (50 ft)/pk
<b>Tygon® Fuel &amp; Lubricant (F-4040-A)</b> 	✓	✓	✓	✓	✓	<b>HL-06401-15</b> 15.2 m (50 ft)/pk	<b>HL-06401-24</b> 15.2 m (50 ft)/pk	<b>HL-06401-35</b> 15.2 m (50 ft)/pk	<b>HL-06401-36</b> 15.2 m (50 ft)/pk
<b>Tygon® Chemical (2001)</b> 		✓	✓			<b>HL-06475-15</b> 15.2 m (50 ft)/pk	<b>HL-06475-24</b> 15.2 m (50 ft)/pk	—	—
<b>Norprene® (A 60 G)</b> 	✓	✓	✓	✓	✓	<b>HL-06404-15</b> 15.2 m (50 ft)/pk	<b>HL-06404-24</b> 15.2 m (50 ft)/pk	<b>HL-06404-35</b> 15.2 m (50 ft)/pk	<b>HL-06404-36</b> 15.2 m (50 ft)/pk
<b>Norprene® Food (A 60 F)</b> 	✓	✓	✓	✓	✓	<b>HL-06402-15</b> 15.2 m (50 ft)/pk	<b>HL-06402-24</b> 15.2 m (50 ft)/pk	<b>HL-06402-35</b> 15.2 m (50 ft)/pk	<b>HL-06402-36</b> 15.2 m (50 ft)/pk
<b>GORE® Style 100SC</b> 	✓	✓	✓		✓	<b>HL-96190-15</b> 35.6 cm (14")/pk	<b>HL-96190-24</b> 35.6 cm (14")/pk	<b>HL-96190-35</b> 35.6 cm (14")/pk	—
<b>GORE® Style 500</b> 	✓	✓	✓		✓	<b>HL-96191-15</b> 35.6 cm (14")/pk	<b>HL-96191-24</b> 35.6 cm (14")/pk	<b>HL-96191-35</b> 35.6 cm (14")/pk	—
<b>GORE® Style 400</b> 	✓	✓	✓		✓	<b>HL-06439-15</b> 35.6 cm (14")/pk	<b>HL-06439-24</b> 34.2 cm (13.5")/pk	<b>HL-06439-35</b> 35.6 cm (14")/pk	<b>HL-06439-36</b> 35.6 cm (14")/pk
<b>Viton®</b> 	✓	✓	✓	✓	✓	<b>HL-96412-15</b> 7.6 m (25 ft)/pk	<b>HL-96412-24</b> 7.6 m (25 ft)/pk	<b>HL-96412-35</b> 7.6 m (25 ft)/pk	<b>HL-96412-36</b> 7.6 m (25 ft)/pk



## BASKET-TIP FILLER NOZZLES

- ▶ Reduce foaming and splashing
- ▶ Lower costs for cleaning, sterilization, and validation

These nozzles offer the benefits of the standard filler/dispensing nozzles by combining the ease of single-use plastic components with the accuracy and reliability of stainless steel filler needles. Plus, nozzles feature a basket tube tip that has two outlets angled at 10° to split the flow into two streams, forcing the fluid to gently cascade down the sides of your container. This basket tip is especially useful for liquids that have issues with foaming or splashing and/or maintaining a fluid column.

Tight dimensional tolerances help to ensure precision in your dispensing applications. Nozzles feature a 316L stainless steel tube and a base with hose barb adapter. Materials comply with FDA, USDA and USP Class VI requirements. All filler nozzles are sterilizable by ethylene oxide, autoclaving, or gamma irradiation.

Catalog number	Tubing ID	Fits Masterflex® tubing sizes
HL-30619-11	1/16"	L/S® 14
HL-30619-17	1/8"	L/S 16
HL-30619-12	3/16"	L/S 15, 25
HL-30619-18	1/4"	L/S 17, 24, I/P® 26
HL-30619-13	5/16"	L/S 35
HL-30619-19	3/8"	L/S 18, 36, I/P 70, 73
HL-30619-15	3/4"	B/T® 91

**NEW**

