

# Fluid Handling Sourcebook

Unique Solutions from Lab to Process



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Masterflex® L/S®  
Digital Pump System



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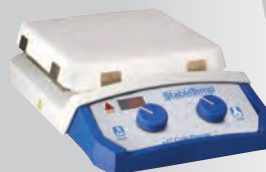


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# Selecting a **Masterflex**<sup>®</sup> Pump: As Easy As

## **A**pplication Requirements

- What is my required flow rate?
- What chemical am I pumping?
- Do conditions such as viscosity or back pressure play an important role in my decision?

## **B**ase a Pump Series on Your Flow Rate

- Use the table below to find the pump series that best fits your flow rate needs

## **C**omplete Your System

- L/S and I/P pump series are divided into three components—pump head, tubing, and drive
- Select the three components from the same series or choose a complete preconfigured system

Masterflex pump series	Features	Flow range	Speed		Remote control capability	Multichannel capabilities	Page(s)
			Fixed	Variable			
<b>C/L</b> <sup>®</sup>	Compact, low-flow pump that easily fits on benchtop or mounts within a panel	0.002 to 43 mL/min		✓	Yes	Yes	3
<b>L/S</b> <sup>®</sup>	High-accuracy drives for precise flow control and dispensing	0.0006 to 3400 mL/min	✓	✓	Yes	Yes	4–22
<b>I/P</b> <sup>®</sup>	Powerful systems that provide better protection from possible hazards such as dust and water	0.012 to 19 LPM	✓	✓	Yes	Yes	23–30
<b>B/T</b> <sup>®</sup>	Highest flow rates—ideal for large batch fluid transfer with excellent hazard protection	0.3 to 42 LPM	✓	✓	Yes	Yes	31–32

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Pump Selection | Troubleshooting | And More...

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Our expert Application Specialists can help you find the right pump for your application.

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## C/L® Variable-Speed Compact Pumps

Perfect for compact spaces!

### A C/L Single-Channel Pumps

- **New head design**—a single motion opens the cover and releases the occlusion bed for quicker and easier tubing changes
- Flow range: 0.002 to 43 mL/min depending on tubing size
- Reversible, one-channel pumping
- Stop/start remote control via contact closure
- Polyphenylene sulfide, acetal, and copolyester pump head with stainless steel rollers

**What's included:** 5 ft (1.5 m) of 0.89-mm ID Tygon® E-LFL tubing.

### B C/L Dual-Channel Pumps

- Flow range: 0.002 to 12.3 mL/min per channel depending on drive and tubing size
- Two-channel, reversible pumping
- Stop/start remote control capabilities via contact closure
- Polyphenylene sulfide and stainless steel pump head with acetal co-polymer rollers

**What's included:** 5 ft (1.5 m) of 0.89-mm ID Tygon E-LFL tubing.



**A**

C/L single-channel pump 77122-04 shown with Puri-Flex™ tubing 96418-34



**B**

C/L dual-channel pump 77120-32 shown with PharMed® BPT tubing 95809-42

### C/L Compact Pumps

- Flow range: 0.002 to 43 mL/min
- ¼-DIN housing is perfect for panel mounting
- Reversible pumping
- Stop/start remote control capabilities

### Flow Rates in mL/min

rpm	Microbore pump tubing size (ID)							
	0.19 mm	0.25 mm	0.51 mm	0.89 mm	1.14 mm	1.42 mm	2.06 mm	2.79 mm
1 to 6	0.002 to 0.013	0.0028 to 0.017	0.012 to 0.07	0.036 to 0.20	0.057 to 0.34	0.08 to 0.49	0.15 to 0.88	0.22 to 1.3
1.7 to 10	0.002 to 0.013	0.004 to 0.022	0.015 to 0.087	0.041 to 0.25	0.064 to 0.39	0.09 to 0.57	0.18 to 1.05	0.28 to 1.65
10 to 60	0.02 to 0.13	0.03 to 0.18	0.12 to 0.70	0.36 to 2.1	0.55 to 3.3	0.8 to 4.9	1.5 to 8.9	2.1 to 12.3
13 to 80	0.017 to 0.10	0.03 to 0.18	0.12 to 0.70	0.33 to 2.0	0.52 to 3.1	0.75 to 4.5	1.4 to 8.5	1.8 to 11.0
50 to 300	0.06 to 0.38	0.11 to 0.67	0.43 to 2.6	1.2 to 7.4	1.9 to 11.5	2.8 to 17.0	5.3 to 32	7.2 to 43

Power supplies are:



Catalog number	rpm	Speed control (repeatability)	Number of channels	Number of rollers	Reversible motor	IP rating	Dimensions—¼ DIN (L x W x H)	Power		Price
								VAC, Hz	Amps	
<b>A C/L single-channel compact pumps</b>										
GM-77122-04	1.7 to 10	±5%	1	4	Yes	IP22	7" x 3¾" x 3½" (17.8 x 9.5 x 8.9 cm)	90 to 260, 50/60	110 mA at 115 VAC	
GM-77122-06								12 VDC†	—	
GM-77122-14	13 to 80	±5%	1	4	Yes	IP22	7" x 3¾" x 3½" (17.8 x 9.5 x 8.9 cm)	90 to 260, 50/60	175 mA at 115 VAC	
GM-77122-16								12 VDC†	—	
GM-77122-24	50 to 300	±5%	1	4	Yes	IP22	7" x 3¾" x 3½" (17.8 x 9.5 x 8.9 cm)	90 to 260, 50/60	400 mA at 115 VAC	
GM-77122-26								12 VDC†	—	
<b>B C/L dual-channel compact pumps</b>										
GM-77120-32	1 to 6	±5%	2	6	Yes	IP22	7½" x 3¾" x 3½" (19 x 9.5 x 8.9 cm)	90 to 260, 50/60	110 mA at 115 VAC	
GM-77120-52								12 VDC†	—	
GM-77120-42	10 to 60	±5%	2	6	Yes	IP22	7½" x 3¾" x 3½" (19 x 9.5 x 8.9 cm)	90 to 260, 50/60	175 mA at 115 VAC	
GM-77120-62								12 VDC†	—	

†Power supply not included with 12 VDC models.

**GM-77120-03** Brackets for panel mounting. Set of 2

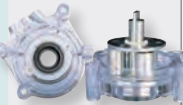








**GM-77200-07** Replacement power supply, 100 to 240 VAC, for pump 77122-24

**GM-77120-11** Replacement power supply, 100 to 240 VAC, for pumps 77122-04, -14; 77120-32 and -42

### Microbore Pump Tubing Ordering Information

Tube ID (mm)	Tygon® E-Lab	Silicone (platinum-cured)	Silicone (peroxide-cured)	PharMed® BPT	Tygon E-LFL (long flex life)	Viton®	Puri-Flex™	C-Flex®	Solvent/hydrocarbon
0.19	<b>NEW</b> GM-06460-10	—	—	—	—	—	GM-96418-10	GM-95718-10	GM-95712-10
0.25	GM-06460-12	—	—	GM-95809-12	—	—	GM-96418-12	GM-95718-12	GM-95712-12
0.51	GM-06460-18	GM-95590-18	—	GM-95809-18	GM-06449-18	—	GM-96418-18	GM-95718-18	GM-95712-18
0.89	GM-06460-26	GM-95590-26	GM-07625-26	GM-95809-26	GM-06449-26	GM-97632-26	GM-96418-26	GM-95718-26	GM-95712-26
1.14	GM-06460-30	GM-95590-30	GM-07625-30	GM-95809-30	GM-06449-30	GM-97632-30	GM-96418-30	GM-95718-30	GM-95712-30
1.42	GM-06460-34	GM-95590-34	GM-07625-34	GM-95809-34	GM-06449-34	GM-97632-34	GM-96418-34	GM-95718-34	GM-95712-34
2.06	GM-06460-42	GM-95590-42	GM-07625-42	GM-95809-42	GM-06449-42	GM-97632-42	GM-96418-42	GM-95718-42	GM-95712-42
2.79	GM-06460-48	GM-95590-48	GM-07625-48	GM-95809-48	GM-06449-48	GM-97632-48	GM-96418-48	GM-95718-48	GM-95712-48
Quantity/pack	100 ft (30.4 m)	50 ft (15.2 m)	50 ft (15.2 m)	100 ft (30.4 m)	100 ft (30.4 m)	50 ft (15.2 m)	50 ft (15.2 m)	50 ft (15.2 m)	50 ft (15.2 m)
Price/pk									

## L/S® Pump Heads Selection Guide

Description	Flow rates (mL/min)	Multichannel or stackable	Special features	Page number
<b>Standard</b>				
	0.001 to 2900 mL/min	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>	4
<b>Easy-Load® II</b>				
	0.001 to 2900 mL/min	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>	5
<b>Easy-Load® 3</b>				
	0.001 to 2900 mL/min	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>	6
<b>Easy-Load®</b>				
	0.001 to 2300 mL/min	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>	6
<b>High-Performance</b>				
	0.006 to 3400 mL/min	No	<ul style="list-style-type: none"> <li>✓ Highest flow rate of any L/S pump head</li> <li>✓ Up to 100 psi with L/S HP (High-Pressure) pump tubing</li> <li>✓ ATEX Zone 2 applications model available</li> </ul>	7
<b>Multichannel</b>				
	0.00005 to 2300 mL/min (per channel)	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>	8
<b>Multichannel Cartridge</b>				
	0.00001 to 1700 mL/min (per channel)	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>	9
<b>PTFE-Tubing</b>				
	0.001 to 65 mL/min	No	<ul style="list-style-type: none"> <li>✓ Uses rigid PTFE-tubing</li> <li>✓ Pressures up to 150 psi</li> <li>✓ Transfer aggressive solvents</li> <li>✓ High purity</li> </ul>	ColeParmer.com
<b>PTFE-Diaphragm</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>	ColeParmer.com

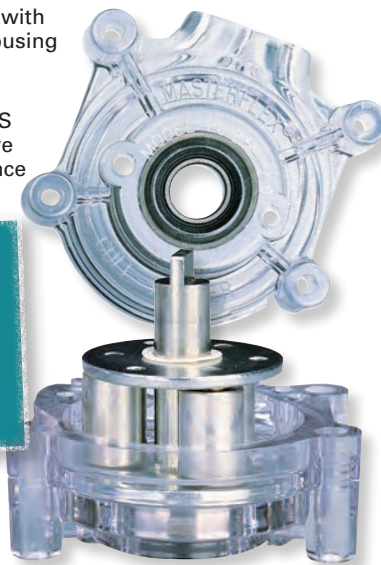
## L/S® Standard Pump Heads

### Ideal for accurate and repeatable fluid transfer applications

- Available with PC housing with CRS or SS rotor, or PPS housing with SS rotor
- PC housing allows you to see pump in operation; PPS housing and SS rotors have excellent chemical resistance
- Fixed occlusion

### Standard Pump Heads

- Best overall pump head performance
- Designed and optimized for one tubing size
- Stack up to four heads



#### A Standard Pump Heads for Precision Tubing

- Flow rates: 0.001 to 2300 mL/min
- Perfect for common fluid transfer applications
- Select a pump head for one of the following precision tubing sizes: L/S 13, L/S 14, L/S 16, L/S 17, L/S 18

**B** Standard pump head 07015-20

#### B Standard Pump Heads for High-Performance Precision Tubing

- Flow rates: 0.033 to 2900 mL/min
- Accepts our high-performance precision tubing—choose these pump heads for better pressure generation, suction lift, viscous fluid transfer, and longer tubing life
- Select a pump head for one of the following high-performance tubing sizes: L/S 15, L/S 24, L/S 35, L/S 36

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Pump tubing size	mL per rev	Flow rates in mL/min		Catalog number <sup>†‡</sup>		
		0.02 to 100 rpm	6 to 600 rpm	PC housing		PPS housing
				CRS rotor	SS rotor	SS rotor
<b>A Standard pump heads for precision pump tubing</b>						
L/S 13	0.06	0.001 to 6	0.36 to 36	<a href="#">GM-07013-20</a>	<a href="#">GM-07013-21</a>	<a href="#">GM-07013-52</a>
L/S 14	0.21	0.004 to 21	1.3 to 130	<a href="#">GM-07014-20</a>	<a href="#">GM-07014-21</a>	<a href="#">GM-07014-52</a>
L/S 16	0.8	0.016 to 80	4.8 to 480	<a href="#">GM-07016-20</a>	<a href="#">GM-07016-21</a>	<a href="#">GM-07016-52</a>
L/S 17	2.8	0.059 to 280	17 to 1700	<a href="#">GM-07017-20</a>	<a href="#">GM-07017-21</a>	<a href="#">GM-07017-52</a>
L/S 18	3.8	0.077 to 380	23 to 2300	<a href="#">GM-07018-20</a>	<a href="#">GM-07018-21</a>	<a href="#">GM-07018-52</a>
Price						
<b>B Standard pump heads for high-performance precision pump tubing</b>						
L/S 15	1.7	0.033 to 170	10 to 1000	<a href="#">GM-07015-20</a>	<a href="#">GM-07015-21</a>	<a href="#">GM-07015-52</a>
L/S 24	2.8	0.057 to 280	17 to 1700	<a href="#">GM-07024-20</a>	<a href="#">GM-07024-21</a>	<a href="#">GM-07024-52</a>
L/S 35	3.8	0.077 to 380	23 to 2300	<a href="#">GM-07035-20</a>	<a href="#">GM-07035-21</a>	—
Price						
L/S 36	4.8	0.096 to 480	29 to 2900	<a href="#">GM-07036-30</a>	<a href="#">GM-07036-31</a>	—
Price						

#### A Standard pump heads for precision pump tubing

L/S 13	0.06	0.001 to 6	0.36 to 36	<a href="#">GM-07013-20</a>	<a href="#">GM-07013-21</a>	<a href="#">GM-07013-52</a>
L/S 14	0.21	0.004 to 21	1.3 to 130	<a href="#">GM-07014-20</a>	<a href="#">GM-07014-21</a>	<a href="#">GM-07014-52</a>
L/S 16	0.8	0.016 to 80	4.8 to 480	<a href="#">GM-07016-20</a>	<a href="#">GM-07016-21</a>	<a href="#">GM-07016-52</a>
L/S 17	2.8	0.059 to 280	17 to 1700	<a href="#">GM-07017-20</a>	<a href="#">GM-07017-21</a>	<a href="#">GM-07017-52</a>
L/S 18	3.8	0.077 to 380	23 to 2300	<a href="#">GM-07018-20</a>	<a href="#">GM-07018-21</a>	<a href="#">GM-07018-52</a>

#### B Standard pump heads for high-performance precision pump tubing

L/S 15	1.7	0.033 to 170	10 to 1000	<a href="#">GM-07015-20</a>	<a href="#">GM-07015-21</a>	<a href="#">GM-07015-52</a>
L/S 24	2.8	0.057 to 280	17 to 1700	<a href="#">GM-07024-20</a>	<a href="#">GM-07024-21</a>	<a href="#">GM-07024-52</a>
L/S 35	3.8	0.077 to 380	23 to 2300	<a href="#">GM-07035-20</a>	<a href="#">GM-07035-21</a>	—
Price						
L/S 36	4.8	0.096 to 480	29 to 2900	<a href="#">GM-07036-30</a>	<a href="#">GM-07036-31</a>	—
Price						

<sup>†</sup>PC = polycarbonate PPS = polyphenylene sulfide  
CRS = cold-rolled steel SS = stainless steel

<sup>‡</sup>Maximum system pressure = L/S 13, L/S 14, L/S 15, L/S 16, L/S 24: 40 psi (2.7 bar); L/S 17, L/S 36: 20 psi (1.4 bar); L/S 18: 15 psi (1.0 bar); L/S 35: 35 psi (2.4 bar)

### Mounting Hardware

Stack up to four L/S Standard pump heads on one drive (see drive specifications for recommended number of heads). Hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
<b>Hardware for Standard Heads L/S 13 to 35</b>		
One	<a href="#">GM-07013-04</a>	
Two	<a href="#">GM-07013-05</a>	
Three	<a href="#">GM-07013-08</a>	
Four	<a href="#">GM-07013-09</a>	
<b>Hardware for Standard Heads L/S 36</b>		
One	<a href="#">GM-07036-01</a>	
Two	<a href="#">GM-07036-02</a>	

## L/S® Easy-Load® II Pump Heads

### Automatic tubing retention system holds pump tubing securely in place

- Four-roller rotor improves pressure performance and mechanical stability, and reduces flow pulsation
- PPS housing with SS or CRS rotor available—choose economical CRS rotors, or SS rotors for greater durability and chemical resistance
- Models with adjustable occlusion available—tighten occlusion for higher pressure, loosen for longer tubing life

**What's included:** single-channel mounting hardware and a 15" (38-cm) length of silicone pump tubing. Pump head comes ready to mount to drive. Hardware for mounting two or more heads is available below.

### Easy-Load II Pump Heads

- Load tubing easily
- Accepts several tubing sizes for a wide flow range
- Stack up to four heads



**B** Easy-Load II fixed occlusion pump head 77200-62



**C** Two-channel Easy-Load II pump head 77202-50 (side view)

### A Easy-Load II Pump Heads for Precision Pump Tubing

- Pump a wide range of flow rates from a single pump head
- Accept tubing sizes—L/S 13, L/S 14, L/S 16, L/S 17, L/S 18, L/S 25

### B Easy-Load II Pump Heads for High-Performance Precision Pump Tubing

- High-performance precision pump tubing has a thicker wall enabling better pressure generation, suction lift, and ability to pump viscous fluids
- Accept tubing sizes—L/S 15, L/S 24, L/S 35, L/S 36

### C Two-Channel Easy-Load II Pump Heads for Precision Pump Tubing

- Pump two channels simultaneously from one head eliminating the need for stacking pump heads†
- Accept tubing sizes—L/S 13, L/S 14, L/S 16, L/S 25

†Using the same size pump tubing in each channel.

ISO9001:2008  
CERTIFIED SUPPLIER

2 year  
warranty

Pump tubing size	mL per rev	Flow rates in mL/min		Maximum system pressure <sup>‡</sup> psi (bar)	Catalog number <sup>††</sup>		
		1 to 100 rpm	6 to 600 rpm		Fixed occlusion		Adjustable occlusion SS rotor
					CRS rotor	SS rotor	
<b>A Easy-Load II pump heads for precision pump tubing</b>							
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	GM-77200-50	GM-77200-60	GM-77201-60
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)			
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)			
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)			
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)			
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)			
<b>B Easy-Load II pump heads for high-performance precision pump tubing</b>							
L/S 15	1.7	1.7 to 170	10 to 1000	40 (2.7)	GM-77200-52	GM-77200-62	GM-77201-62
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)			
L/S 35	3.8	3.8 to 380	23 to 2300	35 (2.4)			
L/S 36	4.8	4.8 to 480	29 to 2900	20 (1.4)			
<b>Price</b>							
<b>C Two-channel Easy-Load II pump heads for precision pump tubing</b>							
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	GM-77202-50	GM-77202-60	—
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)			
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)			
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)			
<b>Price</b>							—

<sup>‡</sup>Actual performance varies depending on pump tubing formulation—values shown are for firm pump tubing.

<sup>††</sup>CRS = cold-rolled steel SS = stainless steel

### Mounting Hardware for Easy-Load II Heads

Mount up to four L/S Easy-Load II pump heads on a single drive; see individual drive specifications for maximum number of heads to be mounted. Mounting hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
One	GM-77200-01	
Two	GM-77200-02	
Three	GM-77200-03	
Four	GM-77200-04	

Customer Approved  
“Great pump head.”





## L/S® Easy-Load® 3 Pump Heads

### Mount and stack heads without tools or hardware

- Twist-lock mounting feature lets you mount and stack heads in seconds
- CRS rotor is more economical while SS offers greater durability and chemical resistance
- Included mounting plate adapts Easy-Load 3 pump heads to L/S drives
- Mount up to four pump heads without tools or hardware

**What's included:** mounting plate/adaptor kit for L/S pump drives and a 17" (43-cm) length of silicone pump tubing.

### Easy-Load 3 Pump Heads

- Same side tubing entry/exit for space-limited applications
- Twist-lock mounting—mount and stack heads in seconds
- Stack up to four heads



**A**  
Easy-Load 3  
pump head 77800-50

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

Pump tubing size	mL per rev	Flow rates in mL/min		Maximum system pressure <sup>†</sup> psi (bar)	Catalog number <sup>‡</sup>	
		1 to 100 rpm	6 to 600 rpm		CRS rotor	SS rotor
<b>A Easy-Load 3 pump heads for precision pump tubing</b>						
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	GM-77800-50	GM-77800-60
L/S 14	0.22	0.22 to 22	1.3 to 130	40 (2.7)		
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)		
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)		
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)		
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)		
<b>B Easy-Load 3 pump heads for high-performance precision pump tubing</b>						
L/S 15	1.7	1.7 to 170	10 to 1000	30 (2.0)	GM-77800-52	GM-77800-62
L/S 24	2.8	2.8 to 280	17 to 1700	30 (2.0)		
L/S 35	3.8	3.8 to 380	23 to 2300	25 (1.7)		
L/S 36	4.8	4.8 to 480	29 to 2900	20 (1.4)		
<b>Price</b>						

<sup>†</sup>Actual performance varies depending on pump tubing formulation—values shown are for firm pump tubing.

<sup>‡</sup>CRS = cold-rolled steel SS = stainless steel

**GM-77800-00 Replacement mounting kit**, for mounting Easy-Load 3 pump head to Masterflex L/S pump drives. Includes mounting plate and four screws

## L/S® Easy-Load® Pump Heads

### Ideal for fast tubing changes and reduced maintenance

- Easily change the tubing without removing head from the drive
- PPS housing offers improved chemical resistance; SS rotor offers increased durability and chemical resistance
- ATEX Zone 2 approved models rated to EEx II 3 G c II C T6
- Mount up to four heads on a single drive

**What's included:** single-channel mounting hardware and a 15" (38-cm) length of silicone tubing.

**A**  
Easy-Load  
pump head 07518-00  
for precision pump  
tubing.



### Easy-Load Pump Heads

- Fixed occlusion averaged for several tubing sizes
- Stack up to four heads
- ATEX Zone 2 rated models available

### Mounting Hardware for Easy-Load Heads

Stack up to four L/S Easy-Load pump heads on one drive. Order mounting hardware based on number of mounted pump heads. Hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
One	GM-07013-04	
Two	GM-07013-05	
Three	GM-07013-08	
Four	GM-07013-09	

ISO9001:2008  
CERTIFIED SUPPLIER **ATEX**  
Zone 2  
07518-40, -42 **2** year  
warranty

Pump tubing size	mL per rev	Flow rates in mL/min		Maximum system pressure psi (bar)	Catalog number <sup>†</sup>			
		1 to 100 rpm	6 to 600 rpm		PSF housing		PPS housing	ATEX-approved PSF housing
					CRS rotor	SS rotor	SS rotor	SS rotor
<b>A Easy-Load pump heads for precision pump tubing</b>								
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	GM-07518-00	GM-07518-10	GM-07518-60	GM-07518-40
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)				
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)				
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)				
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)				
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)				
<b>B Easy-Load pump heads for high-performance precision pump tubing</b>								
L/S 15	1.7	1.7 to 170	10 to 1000	40 (2.7)	GM-07518-02	GM-07518-12	GM-07518-62	GM-07518-42
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)				
<b>Price</b>								

<sup>†</sup>PSF = polysulfone PPS = polyphenylene sulfide CRS = cold-rolled steel SS = stainless steel

## L/S® High-Performance Pump Heads

### Highest flow rate and pressure generation of any L/S pump head

- Offers better suction lift, viscous fluid transfer, and long tubing life—at pressures up to 150 psi (10.2 bar)
- Mount pump head upright or on its side—design allows tubing to enter/exit the same side of the pump head
- Rollers, bearings, rotor plates, and rotor shaft are made of stainless steel (SS); occlusion bed is made from polyphenylene sulfide (PPS) for excellent chemical resistance
- Compatible with all L/S drives listed in this catalog that accept two or more pump heads
- Accepts high-performance precision pump tubing sizes: L/S 15, L/S 24, L/S 35, L/S 36, and our high-pressure pump tubing: L/S 14HP, L/S 15HP, L/S 16HP and L/S 24HP
- Tubing enters/exits the same side of high-performance pump head 77250-62 for easy connection to tubing inlet and outlet
- ATEX Zone 2 approved model 77250-82; rated to EEx II 3 G c II C T6

**What's included:** mounting hardware and a 15" (38-cm) length of L/S 35 pump tubing.



### High-Performance Pump Heads

- Load high-performance precision tubing easily
- Pressures up to 150 psi with L/S HP tubing
- Not stackable
- ATEX Zone 2 rated models available

**A**  
High-Performance  
pump head 77250-62

ISO9001:2008  
CERTIFIED SUPPLIER



ATEX  
Zone 2  
77250-82

2 year  
warranty

Pump tubing size	mL per rev	Flow rates in mL/min		Maximum system pressure psi (bar)	Catalog number	
		0.02 to 100 rpm	6 to 600 rpm		High-Performance pump head	ATEX-approved High-Performance pump head
L/S 14HP†	0.3	0.006 to 30	Not recommended	150 (10.2)	GM-77250-62	GM-77250-82
L/S 16HP†	0.9	0.018 to 90	Not recommended	125 (8.5)		
L/S 15HP†	1.7	0.033 to 170	Not recommended	100 (6.8)		
L/S 24HP†	2.4	0.048 to 240	Not recommended	80 (5.5)		
L/S 15	1.8	0.036 to 180	11 to 1100	40 (2.7)		
L/S 24	3.0	0.060 to 300	18 to 1800	40 (2.7)		
L/S 35	4.3	0.086 to 430	26 to 2600	35 (2.4)		
L/S 36	5.8	0.116 to 580	34 to 3400	20 (1.4)		
<b>Price</b>						

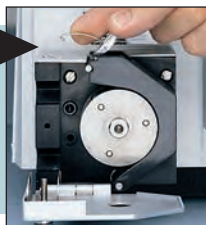
†L/S 14HP, L/S 15HP, L/S 16HP and L/S 24HP pump tubing is for use only with the L/S High-Performance pump head mounted on any L/S 1 to 100 rpm drive capable of running two or more pump heads. **Note:** High-Performance pump heads are not stackable.

### L/S High-Pressure Pump Tubing Ordering Information


Pump tubing formulation	L/S Precision pump tubing		L/S High-performance precision pump tubing	
	L/S 14	L/S 16	L/S 15	L/S 24
PharMed® BPT 	<a href="#">GM-95664-14</a> /25 ft (7.6 m)	<a href="#">GM-95664-16</a> /25 ft (7.6 m)	<a href="#">GM-95664-15</a> /25 ft (7.6 m)	<a href="#">GM-95664-24</a> /25 ft (7.6 m)
Norprene® 	—	<a href="#">GM-06504-16</a> /25 ft (7.6 m)	<a href="#">GM-06504-15</a> /25 ft (7.6 m)	—

### Loading the High-Performance Pump Head


Rotate tubing retainer knob counterclockwise to release retainer, then lift latch to open.



Insert tubing into occlusion bed so that the tubing ends extend out of the tubing entrance as shown.



Snap the latch closed. Pull the tubing snug around the rotor, close the cover, and rotate the tubing retainer knob clockwise to secure tubing.



**Mounted upright**

## L/S® Multichannel Pump Heads

### Get low-pulsation synchronous flow from multiple channels without the need for cartridges

- Load the tubing, latch the occlusion bed, and run the pump—two-stop tubing gives you optimal tension with no adjustment
  - Stackable two-, four-, or eight-channel heads for up to 24 channels
  - Six roller heads deliver low-pulsation flow; three-roller heads offer higher flow rates
  - Machined stainless steel (SS) and anodized aluminum with SS rotor, bearings, and rollers for reliable, continuous-duty operation
  - Flow range: 0.045 to 2300 mL/min per channel depending on drive rpm and tubing size
  - Heads for L/S precision pump tubing accept two-stop tubing set sizes L/S 13, L/S 14, and L/S 16; heads for L/S high-performance precision pump tubing accept two-stop tubing set sizes L/S 15, L/S 24, and L/S 35
  - Compatible with L/S drives that accept two or more pump heads; 1/10 hp min
- What's included:** mounting hardware and hex key tool.



### Multichannel Pump Heads

- Stackable for up to 24 synchronous flow channels
- Models for microbore or L/S two-stop tubing sets
- Durable stainless steel and anodized aluminum construction

**A**  
Multichannel pump head 07535-08 for L/S precision pump tubing

### Flow Rates per Channel in mL/min with L/S Two-Stop Precision Pump Tubing Sets below

Drive rpm	Precision pump tubing			High-performance precision pump tubing		
	L/S 13	L/S 14	L/S 16	L/S 15	L/S 24	L/S 35
1 to 100	0.045 to 4.5	0.16 to 16	0.47 to 47	1.6 to 160	2.8 to 280	3.8 to 380
6 to 600	0.27 to 27	0.96 to 96	2.8 to 280	10 to 1000	17 to 1700	23 to 2300

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**2** year warranty

Catalog number	Number of channels	Number of rollers	Max channels with stacked heads <sup>1</sup>		Price
			100 rpm drive	600 rpm drive	
<b>A</b> L/S Multichannel pump heads for precision pump tubing, sizes L/S 13, L/S 14, L/S 16					
<a href="#">GM-07535-04</a>	4	6	24	12	
<a href="#">GM-07535-08</a>	8				
<b>B</b> L/S Multichannel pump heads for high-performance precision pump tubing, sizes L/S 15, L/S 24, L/S 35					
<a href="#">GM-07536-02</a>	2	3	12	6	
<a href="#">GM-07536-04</a>	4				

<sup>1</sup>Maximum channel capacity depends on drive torque capability and tubing formulation used.

### L/S Two-Stop Precision Tubing Sets Ordering Information for 07535- and 07536-series pump heads

Pump tubing formulation	L/S Precision pump tubing			L/S High-performance precision pump tubing		
	L/S 13	L/S 14	L/S 16	L/S 15	L/S 24	L/S 35
Tygon® E-LFL 	<a href="#">GM-06447-13</a> /pk of 8	<a href="#">GM-06447-14</a> /pk of 8	<a href="#">GM-06447-16</a> /pk of 8	<a href="#">GM-06447-15</a> /pk of 4	<a href="#">GM-06447-24</a> /pk of 4	<a href="#">GM-06447-35</a> /pk of 4
Silicone (platinum-cured) 	<a href="#">GM-06421-13</a> /pk of 8	<a href="#">GM-06421-14</a> /pk of 8	<a href="#">GM-06421-16</a> /pk of 8	<a href="#">GM-06421-15</a> /pk of 4	<a href="#">GM-06421-24</a> /pk of 4	<a href="#">GM-06421-35</a> /pk of 4
BioPharm Plus Silicone (platinum-cured) 	<a href="#">GM-96116-13</a> /pk of 8	<a href="#">GM-96116-14</a> /pk of 8	<a href="#">GM-96116-16</a> /pk of 8	<a href="#">GM-96116-15</a> /pk of 4	<a href="#">GM-96116-24</a> /pk of 4	<a href="#">GM-96116-35</a> /pk of 4
PharMed® BPT 	<a href="#">GM-96114-13</a> /pk of 8	<a href="#">GM-96114-14</a> /pk of 8	<a href="#">GM-96114-16</a> /pk of 8	<a href="#">GM-96114-15</a> /pk of 4	<a href="#">GM-96114-24</a> /pk of 4	<a href="#">GM-96114-35</a> /pk of 4
Chem-Durance® Bio 	<a href="#">GM-96117-13</a> /pk of 8	<a href="#">GM-96117-14</a> /pk of 8	<a href="#">GM-96117-16</a> /pk of 8	<a href="#">GM-96117-15</a> /pk of 4	<a href="#">GM-96117-24</a> /pk of 4	<a href="#">GM-96117-35</a> /pk of 4
Viton® 	<a href="#">GM-96428-13</a> /pk of 8	<a href="#">GM-96428-14</a> /pk of 8	<a href="#">GM-96428-16</a> /pk of 8	<a href="#">GM-96428-15</a> /pk of 4	<a href="#">GM-96428-24</a> /pk of 4	<a href="#">GM-96428-35</a> /pk of 4



## L/S® Multichannel Cartridge Pump Heads

### Provide synchronous flow rates

- Cartridges snap in and out for fast tubing changes—no need to remove pump head from the drive
- Load pump heads with 1 to 8 cartridges
- Mix large and small cartridges—one large cartridge occupies the same space as two small ones
- Cartridge heads are available with three or four rollers; the greater the number of rollers, the lower the pulsation in the flow
- Require drives with a minimum of 1/10 hp and a maximum of 600 rpm

### **A** 8-Channel, 3-Roller Pump Head 07519-05

- Flow rates: 0.050 to 1700 mL/min
- Number of cartridges: 1 to 8 small, 1 to 4 large
- Drive requirements: 1/10 hp min, 600 rpm max

### **B** 8-Channel, 4-Roller Pump Head 07519-06

- Flow rates: 0.047 to 1400 mL/min
- Number of cartridges: 1 to 8 small, 1 to 4 large
- Drive requirements: 1/10 hp min, 600 rpm max

### Multichannel Cartridge Pump Heads

- Load tubing in a snap
- Cartridges accept several tubing sizes for a wide flow range
- Load up to 8 small or 4 large cartridges in one head



**A**  
L/S three-roller cartridge pump head 07519-05 shown with small cartridge 07519-80

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

### Flow Rates per Channel (mL/min) with L/S® Precision Pump Tubing—order L/S® pump tubing on pages 10–13

Key letter	Pump head model no.	Number of rollers	Pump head gear ratio	Drive rpm	L/S® precision pump tubing (flow rate per channel)				
					L/S 13	L/S 14	L/S 16	L/S 25	L/S 17*
<b>A</b>	07519-05	3	1:1	6 to 600	0.30 to 30	1.3 to 130	4.6 to 460	10 to 1000	17 to 1700
				1 to 100	0.050 to 5	0.21 to 21	0.76 to 76	1.7 to 170	2.8 to 280
<b>B</b>	07519-06	4	1:1	6 to 600	0.28 to 28	1.2 to 120	3.8 to 380	8.3 to 830	14 to 1400
				1 to 100	0.047 to 4.7	0.20 to 20	0.63 to 63	1.4 to 140	2.3 to 230

\*Only silicone and C-FLEX® tubing formulations are recommended for L/S 17.

### Flow Rates per Channel in mL/min with Two-Stop Microbore Pump Tube Sets—order below; order microbore extension tubing on page 3

Key letter	Pump head model no.	Number of rollers	Pump head gear ratio	Drive rpm	Two-stop microbore tube sets (flow rate per channel)			
					0.89 mm ID	1.42 mm ID	2.06 mm ID	2.79 mm ID
<b>A</b>	07519-05	3	1:1	6 to 600	0.44 to 44	1.0 to 100	2.2 to 220	3.8 to 380
				1 to 100	0.074 to 7.4	0.17 to 17	0.37 to 37	0.63 to 63
<b>B</b>	07519-06	4	1:1	6 to 600	0.44 to 44	1.0 to 100	2.2 to 220	3.8 to 380
				1 to 100	0.074 to 7.4	0.17 to 18	0.37 to 37	0.63 to 63

Pump heads						Cartridges			
Key letter	Catalog number	Number of rollers	Pump head gear ratio	Max no. of cartridges†		Price	Small	Large	Price
				Small	Large				
<b>A</b>	<a href="#">GM-07519-05</a>	3	1:1	8	4		<a href="#">GM-07519-80</a> (fits microbore two-stop tube sets >0.44 mm ID & L/S 13, L/S 14)	<a href="#">GM-07519-70</a> (fits L/S 14, L/S 16, L/S 25, L/S 17 <sup>1</sup> )	
<b>B</b>	<a href="#">GM-07519-06</a>	4	1:1	8	4				

†Only silicone and C-Flex® tubing formulations are recommended for L/S® 17.

‡For pump heads that accept both sizes, small and large cartridges can be mixed; 2 small = 1 large.

### Masterflex® Microbore Two-Stop Pump Tube Sets for 07519-80 small cartridge

Tubing ID (mm)	Platinum-cured silicone	Santoprene®	Tygon® E-LFL	Viton®
	0.89	<a href="#">GM-06421-26</a>	<a href="#">GM-06431-26</a>	<a href="#">GM-06447-26</a>
1.42	<a href="#">GM-06421-34</a>	<a href="#">GM-06431-34</a>	<a href="#">GM-06447-34</a>	<a href="#">GM-96428-34</a>
2.06	<a href="#">GM-06421-42</a>	<a href="#">GM-06431-42</a>	<a href="#">GM-06447-42</a>	<a href="#">GM-96428-42</a>
2.79	<a href="#">GM-06421-48</a>	<a href="#">GM-06431-48</a>	<a href="#">GM-06447-48</a>	<a href="#">GM-96428-48</a>
Price	/pk of 6	/pk of 12	/pk of 12	/pk of 12

### Technical Assistance?

Contact our expert Application Specialists to assist you. Call 800-323-4340 or go online to e-mail or chat live.













## 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

Pump tubing formulation	Description	Compatible pump head	Tubing size						
			L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	
			Inner diameter	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")			
	<ul style="list-style-type: none"> <li>■ Smooth surface—low protein binding levels</li> <li>■ Fungus-resistant, phthalate- and latex-free</li> <li>■ Accommodates a wide temperature range</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load®</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<a href="#">GM-96410-13</a>	<a href="#">GM-96410-14</a>	<a href="#">GM-96410-16</a>	<a href="#">GM-96410-25</a>	<a href="#">GM-96410-17</a>	<a href="#">GM-96410-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Greater physical compression capability</li> <li>■ Economical, longer tubing life</li> <li>■ Potential outgassing of peroxide products</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<a href="#">GM-96400-13</a>	<a href="#">GM-96400-14</a>	<a href="#">GM-96400-16</a>	<a href="#">GM-96400-25</a>	<a href="#">GM-96400-17</a>	<a href="#">GM-96400-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Ultra-smooth inner surface minimizes particle entrapment</li> <li>■ Very low extractable, with documented biocompatibility for sensitive applications</li> <li>■ Ideal for lab, biotech, and pharmaceutical applications</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<a href="#">GM-96420-13</a>	<a href="#">GM-96420-14</a>	<a href="#">GM-96420-16</a>	<a href="#">GM-96420-25</a>	<a href="#">GM-96420-17</a>	<a href="#">GM-96420-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ All the benefits of BioPharm silicone, plus:</li> <li>■ Longest tubing life of any silicone pump tubing</li> <li>■ Lower spallation than regular silicone</li> <li>■ Enhanced pressure capability</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<a href="#">GM-96440-13</a>	<a href="#">GM-96440-14</a>	<a href="#">GM-96440-16</a>	<a href="#">GM-96440-25</a>	<a href="#">GM-96440-17</a>	<a href="#">GM-96440-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Heat sealable, weldable, and economical</li> <li>■ Long pump life when compared to silicone or many other TPE tubings</li> <li>■ Very low protein binding</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<a href="#">GM-96419-13</a>	<a href="#">GM-96419-14</a>	<a href="#">GM-96419-16</a>	<a href="#">GM-96419-25</a>	<a href="#">GM-96419-17</a>	<a href="#">GM-96419-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Combines biocompatibility of silicone with chemical resistance similar to Tygon</li> <li>■ Heat sealable, weldable, economical</li> <li>■ Better resistance to pH fluctuations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<a href="#">GM-06424-13</a>	<a href="#">GM-06424-14</a>	<a href="#">GM-06424-16</a>	<a href="#">GM-06424-25</a>	<a href="#">GM-06424-17</a>	<a href="#">GM-06424-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Combines biocompatibility of silicone with chemical resistance similar to Tygon</li> <li>■ Longest life of any C-Flex formulation</li> <li>■ Lowest spallation and reduced residue</li> <li>■ Engineered specifically for peristaltic pumps</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	—	<a href="#">GM-06434-14</a>	<a href="#">GM-06434-16</a>	<a href="#">GM-06434-25</a>	<a href="#">GM-06434-17</a>	<a href="#">GM-06434-18</a>	
			—	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Over 10,000 hours of tubing life</li> <li>■ Resists ozone and UV radiation</li> <li>■ Ideal for tissue and cell culture work</li> <li>■ Heat sealable and bondable</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ Multichannel cartridge</li> </ul>	<a href="#">GM-06508-13</a>	<a href="#">GM-06508-14</a>	<a href="#">GM-06508-16</a>	<a href="#">GM-06508-25</a>	<a href="#">GM-06508-17</a>	<a href="#">GM-06508-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Biocompatibility similar to PharMed BPT</li> <li>■ Long life under continuous pressure up to 40 psi (2.7 bar)</li> <li>■ Very low spallation and low extractables</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	<a href="#">GM-06435-13</a>	<a href="#">GM-06435-14</a>	<a href="#">GM-06435-16</a>	<a href="#">GM-06435-25</a>	<a href="#">GM-06435-17</a>	<a href="#">GM-06435-18</a>	
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	
	<ul style="list-style-type: none"> <li>■ Excellent chemical resistance</li> <li>■ Plasticizer-free inner liner</li> <li>■ Excellent biocompatibility</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	<a href="#">GM-06442-13</a>	<a href="#">GM-06442-14</a>	<a href="#">GM-06442-16</a>	<a href="#">GM-06442-25</a>	<a href="#">GM-06442-17</a>	<a href="#">GM-06442-18</a>	
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	

Tubing size	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Inner diameter	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")


Pump tubing formulation	Description	Compatible pump head						
<b>Tygon® E-LFL</b> 	<ul style="list-style-type: none"> <li>Longest life of all Tygon formulations</li> <li>USP Class VI, EU Pharmacopoeia 3.2.9, FDA 21 CFR175.300, and EU Food compliant (10/2011)</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>Multichannel cartridge</li> </ul>	<a href="#">GM-06440-13</a>	<a href="#">GM-06440-14</a>	<a href="#">GM-06440-16</a>	<a href="#">GM-06440-25</a>	<a href="#">GM-06440-17</a>	<a href="#">GM-06440-18</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Tygon E-Food (B-44-4X)</b> 	<ul style="list-style-type: none"> <li>Complies with FDA, NSF, 3A, and EU Food regulations (10/2011)</li> <li>Smooth inner surface unaffected by common commercial sanitizers</li> <li>Nontoxic</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>Multichannel cartridge</li> </ul>	<a href="#">GM-06418-13</a>	<a href="#">GM-06418-14</a>	<a href="#">GM-06418-16</a>	<a href="#">GM-06418-25</a>	<a href="#">GM-06418-17</a>	<a href="#">GM-06418-18</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon E-Lab (E-3603)</b> 	<ul style="list-style-type: none"> <li>Ideal for general transfer applications</li> <li>Clear for easy monitoring</li> <li>Nontoxic, nonaging, nonoxidizing</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>Multichannel cartridge</li> </ul>	<a href="#">GM-06509-13</a>	<a href="#">GM-06509-14</a>	<a href="#">GM-06509-16</a>	<a href="#">GM-06509-25</a>	<a href="#">GM-06509-17</a>	<a href="#">GM-06509-18</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon Fuel &amp; Lubricant (F-4040-A)</b> 	<ul style="list-style-type: none"> <li>Ideal for transferring hydrocarbons, gasoline, kerosene, and heating oil</li> <li>Very low gas permeability</li> <li>Minimum extractability</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>Multichannel cartridge</li> </ul>	<a href="#">GM-06401-13</a>	<a href="#">GM-06401-14</a>	<a href="#">GM-06401-16</a>	<a href="#">GM-06401-25</a>	<a href="#">GM-06401-17</a>	<a href="#">GM-06401-18</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon Chemical (2001)</b> 	<ul style="list-style-type: none"> <li>Best chemical resistance of Tygon formulations</li> <li>Compatible with some organics</li> <li>Plasticizer-free</li> </ul>	<ul style="list-style-type: none"> <li>Easy-Load</li> <li>Easy-Load II</li> </ul>	<a href="#">GM-06475-13</a>	<a href="#">GM-06475-14</a>	<a href="#">GM-06475-16</a>	<a href="#">GM-06475-25</a>	<a href="#">GM-06475-17</a>	<a href="#">GM-06475-18</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Norprene® (A-60 G)</b> 	<ul style="list-style-type: none"> <li>Up to 10,000 hours of tubing life</li> <li>Best choice for pressure/vacuum applications</li> <li>Resists heat, ozone, acids, and alkalis</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>Multichannel cartridge</li> </ul>	<a href="#">GM-06404-13</a>	<a href="#">GM-06404-14</a>	<a href="#">GM-06404-16</a>	<a href="#">GM-06404-25</a>	<a href="#">GM-06404-17</a>	<a href="#">GM-06404-18</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Norprene Food (A 60 F)</b> 	<ul style="list-style-type: none"> <li>Ideal for high-temperature food applications</li> <li>Resists heat, ozone, acids, and alkalis</li> <li>Complies with FDA and NSF food regulations</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>Multichannel cartridge</li> </ul>	<a href="#">GM-06402-13</a>	<a href="#">GM-06402-14</a>	<a href="#">GM-06402-16</a>	<a href="#">GM-06402-25</a>	<a href="#">GM-06402-17</a>	<a href="#">GM-06402-18</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>GORE® Style 100SC</b> 	<ul style="list-style-type: none"> <li>Long life at continuous pressure</li> <li>Excellent flow stability</li> <li>Spallation-free</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> </ul>	—	<a href="#">GM-96190-14</a>	<a href="#">GM-96190-16</a>	<a href="#">GM-96190-25</a>	<a href="#">GM-96190-17</a>	<a href="#">GM-96190-18</a>
			—	30.5 cm (12")/pk	30.5 cm (12")/pk	30.5 cm (12")/pk	30.5 cm (12")/pk	30.5 cm (12")/pk
<b>GORE Style 500</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Compatible with many inorganic and organic chemicals</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> </ul>	—	<a href="#">GM-96191-14</a>	<a href="#">GM-96191-16</a>	<a href="#">GM-96191-25</a>	<a href="#">GM-96191-17</a>	<a href="#">GM-96191-18</a>
			—	30.5 cm (12")/pk	30.5 cm (12")/pk	30.5 cm (12")/pk	30.5 cm (12")/pk	30.5 cm (12")/pk
<b>GORE Style 400</b> 	<ul style="list-style-type: none"> <li>Minimal break-in period</li> <li>Ideal for industrial applications</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> </ul>	—	—	<a href="#">GM-06439-16</a>	—	<a href="#">GM-06439-17</a>	—
			—	—	30.5 cm (12")/pk	—	30.5 cm (12")/pk	—
<b>Viton®</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Resists corrosives, solvents, and oils at elevated temperatures</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>Multichannel cartridge</li> </ul>	<a href="#">GM-96412-13</a>	<a href="#">GM-96412-14</a>	<a href="#">GM-96412-16</a>	<a href="#">GM-96412-25</a>	<a href="#">GM-96412-17</a>	<a href="#">GM-96412-18</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk



## L/S® High-Performance Precision Pump Tubing





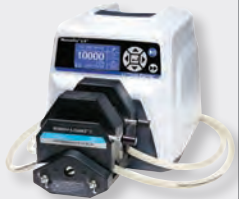


### Thicker wall compared to our Precision pump tubing

- Best choice for applications involving pressure, suction lift, viscous fluids, or long tubing life

		Tubing size	L/S 15	L/S 24	L/S 35	L/S 36
		Inner diameter	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")
Pump tubing formulation	Description	Compatible pump head				
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ Smooth surface—low protein binding levels</li> <li>■ Fungus-resistant, phthalate- and latex-free</li> <li>■ Accommodates a wide temperature range</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-96410-15</a>	<a href="#">GM-96410-24</a>	<a href="#">GM-96410-35</a>	<a href="#">GM-96410-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Silicone</b> (peroxide-cured) 	<ul style="list-style-type: none"> <li>■ Greater physical compression capability</li> <li>■ Economical, longer tubing life</li> <li>■ Potential outgassing of peroxide products</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-96400-15</a>	<a href="#">GM-96400-24</a>	<a href="#">GM-96400-35</a>	<a href="#">GM-96400-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>BioPharm Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ Ultra-smooth inner surface minimizes particle entrapment</li> <li>■ Very low extractable, with documented biocompatibility for sensitive applications</li> <li>■ Ideal for lab, biotech, and pharmaceutical applications</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-96420-15</a>	<a href="#">GM-96420-24</a>	<a href="#">GM-96420-35</a>	<a href="#">GM-96420-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>BioPharm Plus Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ All the benefits of BioPharm silicone, plus:</li> <li>■ Longest tubing life of any silicone pump tubing</li> <li>■ Lower spallation than regular silicone</li> <li>■ Enhanced pressure capability</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-96440-15</a>	<a href="#">GM-96440-24</a>	<a href="#">GM-96440-35</a>	<a href="#">GM-96440-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>■ Heat sealable, weldable, and economical</li> <li>■ Long pump life when compared to silicone or many other TPE tubings</li> <li>■ Very low protein binding</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-96419-15</a>	<a href="#">GM-96419-24</a>	<a href="#">GM-96419-35</a>	<a href="#">GM-96419-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>■ Heat sealable, weldable, economical</li> <li>■ Longest life of any C-Flex formulation</li> <li>■ Better resistance to pH fluctuations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-06424-15</a>	<a href="#">GM-06424-24</a>	<a href="#">GM-06424-35</a>	<a href="#">GM-06424-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>C-Flex® ULTRA</b>  	<ul style="list-style-type: none"> <li>■ Combines biocompatibility of silicone with chemical resistance similar to Tygon</li> <li>■ Longest life of any C-Flex formulation</li> <li>■ Lowest spallation and reduced residue</li> <li>■ Engineered specifically for peristaltic pumps</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-06434-15</a>	<a href="#">GM-06434-24</a>	<a href="#">GM-06434-35</a>	<a href="#">GM-06434-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>■ Over 10,000 hours of tubing life</li> <li>■ Resists ozone and UV radiation</li> <li>■ Ideal for tissue and cell culture work</li> <li>■ Heat sealable and bondable</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> <li>✓ Easy-Load 3</li> <li>✓ High-Performance</li> </ul>	<a href="#">GM-06508-15</a>	<a href="#">GM-06508-24</a>	<a href="#">GM-06508-35</a>	<a href="#">GM-06508-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>PharmaPure®</b> 	<ul style="list-style-type: none"> <li>■ Biocompatibility similar to PharMed BPT</li> <li>■ Long life under continuous pressure up to 40 psi (2.7 bar)</li> <li>■ Very low spallation and low extractables</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	<a href="#">GM-06435-15</a>	<a href="#">GM-06435-24</a>	—	—
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	—	—
<b>Chem-Durance® Bio</b> 	<ul style="list-style-type: none"> <li>■ Excellent chemical resistance</li> <li>■ Plasticizer-free inner liner</li> <li>■ Excellent biocompatibility</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> <li>✓ Easy-Load II</li> </ul>	<a href="#">GM-06442-15</a>	<a href="#">GM-06442-24</a>	<a href="#">GM-06442-35</a>	<a href="#">GM-06442-36</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk

		Tube size	L/S 15	L/S 24	L/S 35	L/S 36
		Inner diameter	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")
Pump tubing formulation	Description	Compatible pump head				
<b>Tygon® E-LFL</b> <b>NEW</b> 	<ul style="list-style-type: none"> <li>Longest life of all Tygon formulations</li> <li>USP Class VI, EU Pharmacopoeia 3.2.9, FDA 21 CFR175.300, and EU Food compliant (10/2011)</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">GM-06440-15</a>	<a href="#">GM-06440-24</a>	<a href="#">GM-06440-35</a>	<a href="#">GM-06440-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Tygon E-Food</b> <b>(B-44-4X)</b> <b>NEW</b> 	<ul style="list-style-type: none"> <li>Complies with FDA, NSF, 3A, and EU Food regulations (10/2011)</li> <li>Smooth inner surface unaffected by common commercial sanitizers</li> <li>Nontoxic</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">GM-06418-15</a>	<a href="#">GM-06418-24</a>	<a href="#">GM-06418-35</a>	<a href="#">GM-06418-36</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon E-Lab</b> <b>(E-3603)</b> <b>NEW</b> 	<ul style="list-style-type: none"> <li>Ideal for general transfer applications</li> <li>Clear for easy monitoring</li> <li>Nontoxic, nonaging, nonoxidizing</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">GM-06509-15</a>	<a href="#">GM-06509-24</a>	<a href="#">GM-06509-35</a>	<a href="#">GM-06509-36</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon Fuel &amp; Lubricant</b> <b>(F-4040-A)</b> 	<ul style="list-style-type: none"> <li>Ideal for transferring hydrocarbons, gasoline, kerosene, and heating oil</li> <li>Very low gas permeability</li> <li>Minimum extractability</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">GM-06401-15</a>	<a href="#">GM-06401-24</a>	<a href="#">GM-06401-35</a>	<a href="#">GM-06401-36</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon Chemical</b> <b>(2001)</b> 	<ul style="list-style-type: none"> <li>Best chemical resistance of Tygon formulations</li> <li>Compatible with some organics</li> <li>Plasticizer-free</li> </ul>	<ul style="list-style-type: none"> <li>Easy-Load</li> <li>Easy-Load II</li> </ul>	<a href="#">GM-06475-15</a>	<a href="#">GM-06475-24</a>	—	—
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	—	—
<b>Norprene®</b> <b>(A-60 G)</b> 	<ul style="list-style-type: none"> <li>Up to 10,000 hours of tubing life</li> <li>Best choice for pressure/vacuum applications</li> <li>Resists heat, ozone, acids, and alkalis</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">GM-06404-15</a>	<a href="#">GM-06404-24</a>	<a href="#">GM-06404-35</a>	<a href="#">GM-06404-36</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Norprene Food</b> <b>(A 60 F)</b> 	<ul style="list-style-type: none"> <li>Ideal for high-temperature food applications</li> <li>Resists heat, ozone, acids, and alkalis</li> <li>Meets FDA and NSF food regulations</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">GM-06402-15</a>	<a href="#">GM-06402-24</a>	<a href="#">GM-06402-35</a>	<a href="#">GM-06402-36</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>GORE® Style 100SC</b> <b>NEW</b> 	<ul style="list-style-type: none"> <li>Long life at continuous pressure</li> <li>Excellent flow stability</li> <li>Spallation-free</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>High-Performance</li> </ul>	<a href="#">GM-96190-15</a>	<a href="#">GM-96190-24</a>	<a href="#">GM-96190-35</a>	—
			35.6 cm (14")/pk	35.6 cm (14")/pk	35.6 cm (14")/pk	—
<b>GORE Style 500</b> <b>NEW</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Compatible with many inorganic and organic chemicals</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>High-Performance</li> </ul>	<a href="#">GM-96191-15</a>	<a href="#">GM-96191-24</a>	<a href="#">GM-96191-35</a>	—
			35.6 cm (14")/pk	35.6 cm (14")/pk	35.6 cm (14")/pk	—
<b>GORE Style 400</b> 	<ul style="list-style-type: none"> <li>Minimal break-in period</li> <li>Ideal for industrial applications</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>High-Performance</li> </ul>	<a href="#">GM-06439-15</a>	<a href="#">GM-06439-24</a>	<a href="#">GM-06439-35</a>	<a href="#">GM-06439-36</a>
			35.6 cm (14")/pk	34.2 cm (13.5")/pk	35.6 cm (14")/pk	35.6 cm (14")/pk
<b>Viton®</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Resists corrosives, solvents, and oils at elevated temperatures</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">GM-96412-15</a>	<a href="#">GM-96412-24</a>	<a href="#">GM-96412-35</a>	<a href="#">GM-96412-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk

## L/S® Drives Selection Guide

Description	Flow rates (mL/min)	Special features	Page number
<b>Fixed-Speed</b>			
	Lowest: 0.06 Highest: 290	<ul style="list-style-type: none"> <li>✓ Consistent repeatable flow rates</li> <li>✓ Economical and compact</li> <li>✓ UL, cUL, and CE listed models</li> </ul>	14
<b>Variable-Speed Economy Console</b>			
	Lowest: 0.42 Highest: 2900	<ul style="list-style-type: none"> <li>✓ Economical variable flow</li> <li>✓ Simple speed control</li> <li>✓ UL, cUL, and CE listed models</li> <li>✓ Accept stacked pump heads for multiple channels</li> </ul>	15
<b>Precision Modular</b>			
	Lowest: 0.06 Highest: 3400	<ul style="list-style-type: none"> <li>✓ Separate motor and controller up to 15 ft (4.6 m)</li> <li>✓ Models available with IP66-rated wall-mount controllers</li> <li>✓ Pump heads can be stacked</li> </ul>	16
<b>Precision Variable-Speed Console</b>			
	Lowest: 0.06 Highest: 3400	<ul style="list-style-type: none"> <li>✓ Economical variable flow</li> <li>✓ Simple speed control</li> <li>✓ ETL and CE listed</li> <li>✓ Accept stacked pump heads for multiple channels</li> <li>✓ Drives are stackable</li> </ul>	17
<b>Variable-Speed Digital and Computer Compatible</b>			
	Lowest: 0.001 Highest: 3400	<ul style="list-style-type: none"> <li>✓ Four-line graphical LCD with menu-driven programming</li> <li>✓ Maintenance-free brushless motor</li> <li>✓ PWM speed control with 6000:1 turndown</li> <li>✓ Tachometer feedback for ±0.1% speed control</li> <li>✓ Calibration capability</li> </ul>	18-19
<b>Digital Process</b>			
	Lowest: 0.006 Highest: 3400	<ul style="list-style-type: none"> <li>✓ Four-line graphical LCD with menu-driven programming</li> <li>✓ Sealed housing; IP66 and NEMA 4X rated for washdown</li> <li>✓ Maintenance-free brushless motor; PWM speed control</li> <li>✓ Dispensing features include delay interval and cumulative volume</li> <li>✓ Remote control capability</li> </ul>	20
<b>Digital Modular Dispensers</b>			
	Lowest: 0.001 Highest: 3400	<ul style="list-style-type: none"> <li>✓ Maintenance-free brushless motor</li> <li>✓ Precise repetitive dispensing with antidrip</li> <li>✓ Precise PWM speed control</li> <li>✓ Quiet operation</li> <li>✓ Tachometer feedback for ±0.1% speed control</li> <li>✓ Available with washdown wall-mount controller</li> <li>✓ Calibration capability</li> </ul>	21

## L/S® Fixed-Speed Drives

### Economical drives deliver consistent, repeatable flow rates

- Drives are stackable and ideal for field or lab use
- Lighted power switch on front of drive lets you know that pump is running
- Drives accept five different pump head types: Standard, Easy-Load®, Easy-Load® II, Easy-Load® 3, and Cartridge



Drive 07540-01 shown with Easy-Load II pump head 77200-62

**What's included:**  
6-ft (1.8-m) line cord.  
115 VAC models:  
US standard plug;  
230 VAC models:  
European plug.

### Fixed-Speed Drives

- Flow rates: 0.06 to 290 mL/min
- General, intermittent-duty fluid transfer applications

### Flow Rates in mL/min<sup>††</sup>

rpm	Precision pump tubing					
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
	Standard <sup>†</sup> , Easy-Load, Easy-Load II, Easy-Load 3					
	Cartridge <sup>‡</sup>					
1	0.06	0.21	0.8	1.7	2.8	3.8
2	0.12	0.42	1.6	3.4	5.6	7.6
6	0.36	1.3	4.8	10	17	23
12	0.72	2.5	9.6	20	34	46
20	1.2	4.2	16	34	56	76
30	1.8	6.3	24	50	84	110
60	3.6	13	48	100	170	230

rpm	High-performance precision pump tubing			
	L/S 15	L/S 24	L/S 35	L/S 36
	Standard, Easy-Load II, Easy-Load 3			
	Easy-Load			
1	1.7	2.8	3.8	4.8
2	3.4	5.6	7.6	9.6
6	10	17	23	29
12	20	34	46	58
20	34	56	76	96
30	50	84	110	140
60	100	170	230	290

<sup>†</sup>The Standard pump head is not available for L/S® 25. <sup>‡</sup>Cartridge heads are available for microbore tubing. <sup>††</sup>Motor rpm and flow rates for the 230 VAC, 50 Hz economy drives are approximately % of the values shown.

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rpm	Speed control	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Catalog number	Price
<b>115 VAC/60 Hz models</b>							
1	None <sup>††</sup>	2	Sub-fractional (<1/25 hp) <sup>†††</sup>	IP22	6" x 5 1/4" x 4 5/8" (15.2 x 13.4 x 11.9 cm)	<a href="#">GM-07540-01</a>	
2						<a href="#">GM-07540-02</a>	
6						<a href="#">GM-07540-06</a>	
12	None <sup>††</sup>	2	Sub-fractional (<1/25 hp) <sup>†††</sup>	IP22	6" x 5 1/4" x 4 5/8" (15.2 x 13.4 x 11.9 cm)	<a href="#">GM-07540-12</a>	
20						<a href="#">GM-07540-20</a>	
30						<a href="#">GM-07540-30</a>	
60						<a href="#">GM-07540-60</a>	
<b>230 VAC/50 Hz models</b>							
1	None <sup>††</sup>	2	Sub-fractional (<1/25 hp) <sup>†††</sup>	IP22	6" x 5 1/4" x 4 5/8" (15.2 x 13.4 x 11.9 cm)	<a href="#">GM-07542-01</a>	
2						<a href="#">GM-07542-02</a>	
5						<a href="#">GM-07542-06</a>	
10	None <sup>††</sup>	2	Sub-fractional (<1/25 hp) <sup>†††</sup>	IP22	6" x 5 1/4" x 4 5/8" (15.2 x 13.4 x 11.9 cm)	<a href="#">GM-07542-12</a>	
17						<a href="#">GM-07542-20</a>	
25						<a href="#">GM-07542-30</a>	
50						<a href="#">GM-07542-60</a>	

<sup>††</sup>Drive speed may vary ±15%, subject to fluctuations in line voltage and frequency.  
<sup>†††</sup>Maximum power required is 70 W or less.



## L/S® Variable-Speed Economy Console Drives

An economical and versatile variable-speed drive with a wide flow range

- Pump head flow rate: 0.42 to 2900 mL/min; cartridge head flow rate: 0.0035 to 1700 mL/min
- Separate single-turn speed control and on/off switch with green power indicator. Maintain speed setting while turning on/off.
- The 1/20-hp unidirectional motor has soft start and back EMF for ±5% speed control. Smooth operation and long service life.
- 115 VAC models: UL and cUL listed; 230 VAC models: CE compliant
- Accept nine different pump head types

**What's included:** 6-ft (1.8-m) line cord—115 VAC: US standard plug; 230 VAC: IEC 320/CEE22 socket. Please specify country of destination when ordering.

### Variable-Speed Economy Console Drives

- Flow rates: 0.0035 to 2900 mL/min
- Variable speed from 7 to 600 rpm
- Low-flow metering or general fluid transfer applications



07554-80

### TECHNICAL info!

Drives accept nine different pump head types: Standard, Easy-Load®, Easy-Load II, Easy-Load 3, Multichannel, High-Performance, Cartridge, PTFE-tubing, and PTFE-diaphragm. Drives 07554-90 and -95 are not recommended for use with the PTFE-tubing and PTFE-diaphragm pump heads.

**Flow Rates in mL/min** (flow rates in parentheses can only be obtained with the High-Performance pump head)

rpm	Precision pump tubing						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
	Standard <sup>†</sup> , Easy-Load®, Easy-Load® II, Easy-Load® 3						Multichannel <sup>‡</sup> , Standard, Easy-Load II, Easy-Load 3, High-Performance			
	Cartridge, Multichannel			Cartridge			Easy-Load			
20 to 600	1.2 to 36	4.2 to 130	16 to 480	34 to 1000	56 to 1700	76 to 2300	34 to 1000	56 to 1700	76 to 2300	96 to 2900
7 to 200	0.42 to 12	1.4 to 43	5.6 to 160	12 to 330	20 to 570	27 to 770	12 to 330 (13 to 370)	20 to 570 (21 to 600)	27 to 770 (30 to 870)	34 to 970 (41 to 1130)

<sup>†</sup>The Standard pump head is not available for L/S 25.

<sup>‡</sup>Multichannel head is not available for L/S 36. Multichannel and Cartridge heads are available for microbore tubing.

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cUL US

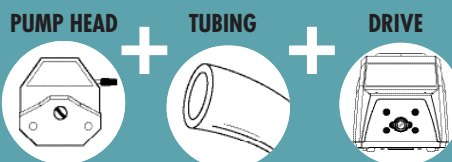
CE

2 year warranty

Catalog number	rpm	Speed control	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
GM-07554-90	20 to 600	±5%	1	1/20 hp (37 W)	IP22	9" x 7" x 5 1/4" (22.9 x 18.1 x 13.3 cm)	90 to 130	1.5	
GM-07554-95							180 to 260	0.8	
GM-07554-80	7 to 200	±5%	2	1/20 hp (37 W)	IP22	9" x 7" x 5 1/4" (22.9 x 18.1 x 13.3 cm)	90 to 130	1.5	
GM-07554-85							180 to 260	0.8	

**GM-17050-01** NIST-traceable calibration with data for peristaltic pump drive

Choose a Complete System  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77910-30</a>	16 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Console drive 07554-90 20 to 600 rpm	115 VAC, 50/60 Hz	
	<a href="#">GM-77910-35</a>				Console drive 07554-95 20 to 600 rpm	230 VAC, 50/60 Hz	
	<a href="#">GM-77910-20</a>	56 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Console drive 07554-90 20 to 600 rpm	115 VAC, 50/60 Hz	
	<a href="#">GM-77910-25</a>				Console drive 07554-95 20 to 600 rpm	230 VAC, 50/60 Hz	

## L/S® Precision Variable-Speed Modular Drives

Place motor and controller where convenient—ideal for limited spaces, hoods, or isolation chambers

- Flow rate 0.6 to 3400 mL/min
- Three-digit LED display shows motor rpm—confirm speed setting at a glance
- Remote control capabilities: speed, direction, and start/stop
- ±0.25% speed control for precise flow regulation—ideal for metering applications.

### A Modular Drives with Benchtop Controller

- Splash-resistant ABS plastic controller housing is IP33 rated; drive housing is epoxy finished steel, IP33 rated
- Remote control capabilities via a DB9 female connector on back of drive



**A**  
Modular drive 07557-00

**NEW**

### B Washdown Modular Drives with Wall-Mount Controller

- Wall-mount controller housing is powder-coated aluminum, IP66 / NEMA 4X rated for washdown; powder-coated steel drive housing is IP66 / NEMA 4X rated for washdown
- Remote control capabilities via weather-resistant connection on controller



**B**  
Model 07557-60 includes wall-mount controller

### Precision Modular Drives

- Flow rates: 0.06 to 3400 mL/min
- Easy up-front control of speed, direction, and start/stop
- Reversible motor—purge tubing before or after pumping; pump fluid in either direction

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ETL US

CE

2 year warranty

Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
<b>A Precision modular drives with benchtop controller</b>									
GM-07557-00	6 to 600	±0.25% (1 rpm at 600 rpm; 0.1 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33	Controller: 10½" x 8¼" x 5" Drive: 10¾" x 4¾" x 4½"	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	
GM-07557-10	1 to 100		4						
<b>B Precision washdown modular drives with washdown wall-mount controller</b>									
GM-07557-60	6 to 600	±0.25% (1 rpm at 600 rpm; 0.1 rpm at 100 rpm)	2	1/10 hp (75 W)	IP66	Controller: 9" x 11¾" x 4½" Drive: 15½" x 7" x 6"	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	
GM-07557-70	1 to 100		4						

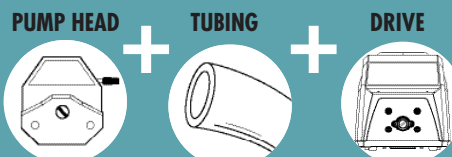
**GM-07557-51** Extension cable, 9 ft (2.7 m); extend distance between motor and controller

**GM-07595-47** Cable assembly, for benchtop modular drives; DB9 male connector and 25 ft (7.9 m) cable with stripped wire terminal ends. Use for remote control

**GM-77300-32** Cable assembly, for washdown modular drives; 18-pin round connector and 25 ft (7.9 m) cable with stripped wire terminal ends. Use for remote control

**GM-17050-01** NIST-traceable calibration with data for peristaltic pump drive

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77913-60</a>	4.8 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Modular drive 07557-00 6 to 600 rpm	90 to 260, 50/60	
	<a href="#">GM-77913-70</a>	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Modular drive 07557-00 6 to 600 rpm	90 to 260, 50/60	
	<a href="#">GM-77913-80</a>	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Modular drive 07557-60 6 to 600 rpm	90 to 260, 50/60	

## L/S® Precision Variable-Speed Console Drives

### Precise speed control and digital display of rpm—ideal for metering applications

- Flow rate 0.6 to 3400 mL/min
- Three-digit LED display shows motor rpm
- Reversible motor—purge tubing before or after pumping; pump fluid in either direction
- Stack 2 or 4 pump heads for increased flow rates and for multichannel applications
- Membrane keypad for easy up-front control of speed, direction, and start/stop
- Stackable, splash-resistant ABS plastic housing; IP33 rated
- Remote control capabilities: speed, direction, and start/stop
- Accept nine different pump head types: Standard, Easy-Load®, Easy-Load® II, Easy-Load® 3, Multichannel, High-Performance, Cartridge, PTFE-Tubing, and PTFE-Diaphragm

### Precision Variable-Speed Console Drives

- Flow rates: 0.06 to 3400 mL/min
- Variable speed from 1 to 600 rpm
- Reversible motor accepts up to four pump heads



Drive 07528-10 shown with two stacked L/S Easy-Load II pump heads 77200-60

**What's included:** 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.

### Flow Rates in mL/min (flow rates in parentheses can only be obtained with the High-Performance pump head—at ColeParmer.com)

rpm	Precision pump tubing						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
	Standard†, Easy-Load, Easy-Load II, Easy-Load 3						Multichannel‡, Standard†, Easy-Load II, Easy-Load 3, High-Performance			
6 to 600	0.36 to 36	1.3 to 130	4.8 to 480	10 to 1000	17 to 1700	23 to 2300	10 to 1000 (11 to 1100)	17 to 1700 (18 to 1800)	23 to 2300 (26 to 2600)	29 to 2900 (34 to 3400)
1 to 100	0.06 to 6	0.21 to 21	0.8 to 80	1.7 to 170	2.8 to 280	3.8 to 380	1.7 to 170 (1.8 to 180)	2.8 to 280 (3.0 to 300)	3.8 to 380 (4.3 to 430)	4.8 to 480 (5.8 to 580)

†The Standard pump head is not available for L/S 25.‡Multichannel head is not available for L/S 36. Multichannel and Cartridge heads are available for microbore tubing.



Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H) (25.4 x 21.6 x 21.6 cm)	Power (50/60 Hz)		Price
							VAC	Amps	
<a href="#">GM-07528-10</a>	6 to 600	±0.25% (1 rpm at 600 rpm; 0.1 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33		90 to 260	1.8 at 115 VAC, 1.2 at 230 VAC	
<a href="#">GM-07528-20</a>	3 to 300		2						
<a href="#">GM-07528-30</a>	1 to 100		4						

[GM-07595-45](#) Connector, DB9 male. Use for 4 to 20 mA remote control

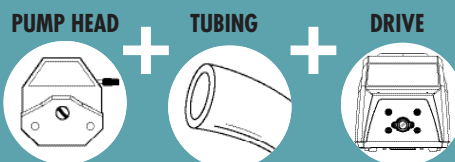
[GM-07595-47](#) Cable assembly, DB9 male connector and 25 ft (7.9 m) cable with stripped wire terminal ends. Use for remote control

[GM-77595-35](#) Foot switch, DB9 male

[GM-07528-80](#) Handheld remote controller; for remote control of start/stop, route tubing through handle for dispensing into containers

[GM-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77916-10</a>	4.8 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Precision console drive 07528-10 6 to 600 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77916-20</a>	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			



## L/S® Variable-Speed Digital Drives

Maintenance-free high-accuracy motor and a graphical interface make setup and operation easy

- Flow rate: 0.001 to 3400 mL/min with L/S tubing
- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense
- Brushless, maintenance-free motor offers  $\pm 0.1\%$  speed control accuracy with a 6000 to 1 turndown ratio
- Menu-driven interface lets you select one of seven languages for programming and operation
- Dispense by: mL—volume in mL of each dispense, 0.001 to 9999 mL; Copy—1 to 9999 dispense cycles; or SEC—time interval between each dispense cycle (1 to 9999 secs)
- Remote control capabilities via DB25 female connector on drive:
  - Speed control input 0 to 20 mA, 4 to 20 mA, or 0 to 10 V
  - Pumping direction requires open collector or contact closure
  - Start/stop/purge requires open collector or contact closure
  - Tachometer output 0 to 20 mA, 4 to 20 mA, 0 to 10 V, open collector
- Programmed calibration ensures dispense and display accuracy
- Accepts all L/S pump heads

**What's included:** 6-ft line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.



Drive 07522-20 shown with L/S multichannel pump head 07535-04

### Variable-Speed Digital Drives

- Flow rates: 0.001 to 3400 mL/min
- Variable speed from 0.02 to 600 rpm
- Programmable, reversible motor accepts up to four pump heads

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CE 2 year warranty

Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H) (25.4 x 21.6 x 21.6 cm)	Power (50/60 Hz)		Price
							VAC	Amps	
<a href="#">GM-07522-20</a>	0.1 to 600	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33		90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	
<a href="#">GM-07522-30</a>	0.02 to 100		4						

[GM-07523-92](#) Foot switch, momentary start/stop; 6-ft (1.8-m) cable

[GM-07523-94](#) DB25 male connector. Use to create your own cable

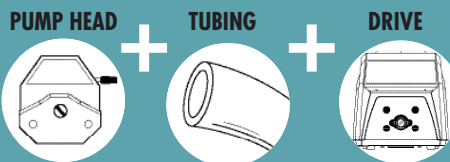
[GM-07523-95](#) Cable assembly, DB25 male connector and 25 ft (7.9 m) cable with stripped wire ends for remote control

[GM-07523-97](#) Handheld remote controller; route tubing through handle for dispensing into containers

[GM-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive

Choose a Complete System

One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77921-65</a>	0.08 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Digital drive 07522-20 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77921-75</a>	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			

## L/S® Computer-Compatible Digital Drives

### Automate your process by interfacing drives with a computer

- Flow rate: 0.001 to 3400 mL/min with L/S tubing
- Graphical LCD shows four operating modes: continuous run, time dispense, copy dispense, and volume dispense. View pump performance continually
- Dispense by: mL—volume in mL of each dispense, 0.001 to 9999 mL; Copy—1 to 9999 dispense cycles; or SEC—time interval between each dispense cycle: 1 to 9999 secs
- Interface drive to your PC via DB9 serial or USB connector
- Remote control capabilities via DB25 female connector on drive
- Menu driven interface—select one of seven languages for programming and operation

Drives offer analog remote control options and simple programming—ideal for automated process applications. Precise PWM speed control ( $\pm 0.1\%$ ) maximizes accuracy and efficiency while the brushless motor gives you quiet, maintenance-free reliability.

**What's included:** 6-ft (1.8-m) line cord with IEC 320/EE22 socket. Shipped with country-specific plug/cord set; please specify ultimate destination when ordering.

### Computer-Compatible Digital Drives

- Flow rates: 0.001 to 3400 mL/min
- Variable speed from 0.02 to 600 rpm
- Programmable, reversible motor accepts up to four pump heads
- Remote functionality



Drive 07551-20 shown with L/S High-Performance pump head 77250-62

ISO9001:2008  
CERTIFIED SUPPLIER



2 year warranty

Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
<a href="#">GM-07551-20</a>	0.1 to 600	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33	10" x 8 1/2" x 8 1/2" (25.4 x 21.6 x 21.6 cm)	90 to 260 VAC	2.2 at 115 VAC, 1.1 at 230 VAC	
<a href="#">GM-07551-30</a>	0.02 to 100		4						

[GM-07523-92](#) Foot switch, momentary start/stop; 6-ft (1.8-m) cable

[GM-07523-94](#) DB25 male connector. Use to create your own cable

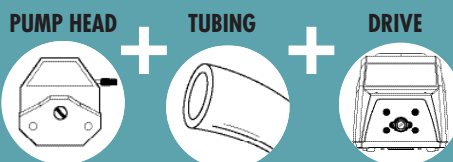
[GM-07523-95](#) Cable assembly, DB25 male connector and 25-ft (7.9 cm) cable with stripped wire ends for remote control

[GM-07523-98](#) Tilt bail, use to securely elevate front of drive

[GM-07523-97](#) Handheld remote controller, DB9; for on/off control; route tubing through handle for filling and dispensing applications

[GM-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77924-55</a>	0.08 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Computer-compatible drive 07551-20 0.1 to 600 rpm	115/230 VAC, 50/60 Hz	
	<a href="#">GM-77924-65</a>	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			

## L/S® Digital Console Process Drives

### Transfer, dispense, and meter in lab, process and washdown environments

- IP66 and NEMA 4X rated. Sealed housing and sealed keypad are protected from dust, water, and chemicals in the washdown environment—simply hose down to clean.
- Available with either a 316 stainless steel or a powder-coat steel housing
- Flow rate: 0.006 to 3400 mL/min with L/S tubing
- Graphical LCD shows six different parameters: motor rpm, flow rate, dispense volume, cumulative volume, dispense interval time, and copy number.
- Brushless, maintenance-free motor with  $\pm 0.1\%$  speed control accuracy and a 6000 to 1 turndown ratio
- Dispense by: volume—in milliliters (0.001 to 99,999), liters, and gallons; copy—1 to 99,999 dispense cycles. Set time interval (SEC) between dispense cycles from 1 to 99,999 seconds.
- Remote control capabilities via 31-pin circular waterproof connection

**What's included:** 6-ft (1.8-m) line cord—features IEC 320/CEE 22 connector coupler; watertight cord connection. Please specify destination country when ordering; drive is shipped with country-specific plug/cord set.

### Digital Console Process Drives

- Flow rates: 0.006 to 3400 mL/min
- Variable speed from 0.1 to 600 rpm
- IP66 and NEMA 4X rated
- Programmable, reversible motor accepts up to two pump heads and offers remote functionality



Drive 07575-30 shown with L/S High-Performance pump head 77250-62



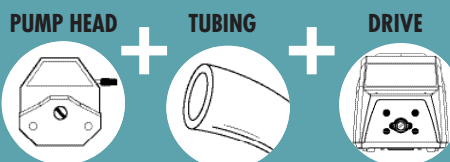
Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
<b>Digital process drive with 316 stainless steel housing</b>									
<a href="#">GM-07575-30</a>	0.1 to 600	$\pm 0.1\%$	2	1/10 hp (75 W)	IP66	12" x 9" x 9 5/16" (30.5 x 22.9 x 23.6 cm)	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	
<b>Digital process drive with powder-coat steel housing</b>									
<a href="#">GM-07575-40</a>	0.1 to 600	$\pm 0.1\%$	2	1/10 hp (75 W)	IP66	12" x 9" x 9 5/16" (30.5 x 22.9 x 23.6 cm)	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	

[GM-07575-84](#) Washdown foot switch, momentary start/stop; 6-ft (1.8-m) cable

[GM-07575-80](#) Cable assembly, 31-pin round connector and 25-ft (7.9-m) cable with stripped wire ends for remote control

[GM-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77975-25</a>	0.28 to 1700 mL/min	Easy-Load® II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital console process drive 07575-30 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77975-35</a>	0.28 to 1800 mL/min	High-Performance 77250-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital console process drive 07575-30 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77975-45</a>	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital console process drive 07575-40 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	



## L/S® Digital Modular Dispensing Drives

### Three dispensing modes and precision low-maintenance motor

- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense
- Dispense by mL—volume in mL of each dispense, 0.001 to 9999 mL; Copy—1 to 9,999 dispense cycles; or SEC—time interval between each dispense cycle (1 to 9,999 secs)
- Antidrip function ensures dispense accuracy
- Brushless, maintenance-free motor offers  $\pm 0.1\%$  speed control accuracy and a 6000 to 1 turndown ratio
- Remote control capabilities: speed, direction, start/stop/purge, and tach output

**What's included:** 6-ft (1.8-m) cable to connect drive and controller and 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. Shipped with country-specific plug/cord set; please specify destination when ordering.

#### A Modular Drive with Benchtop Controller

- Stackable, splash-resistant ABS plastic controller housing is IP33 rated; drive housing is epoxy finished steel, IP33 rated
- Remote control capabilities via a DB25 female connector on back of controller

#### B Washdown Modular Drive with Wall-Mount Controller

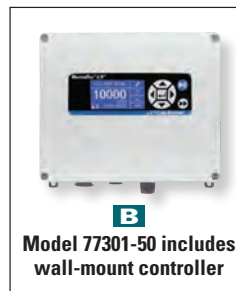
- Wall-mount controller housing is powder-coated aluminum, IP66 / NEMA4X rated for washdown; powder-coated steel drive housing is IP66 / NEMA4X rated for washdown
- Remote control capabilities via weather-resistant connection on controller



**A**  
Modular digital dispensing drive  
77301-40

### Digital Modular Dispensing Drives

- Flow rates: 0.006 to 3400 mL/min
- Variable speed from 0.1 to 600 rpm
- Programmable, reversible motor accepts up to two pump heads and offers remote functionality



**B**  
Model 77301-50 includes wall-mount controller

ISO9001:2008  
CERTIFIED SUPPLIER



2 year warranty

Catalog number	rpm	Speed control	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
<b>A Digital modular drive with benchtop controller</b>									
<a href="#">GM-77301-40</a>	0.1 to 600	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33	Controller: 10 1/2" x 8 1/4" x 5" (26.7 x 21 x 12.7 cm) Drive: 10 1/2" x 3 13/16" x 4 5/8" (26.7 x 9.7 x 11.7 cm)	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	
<b>B Digital washdown modular drive with washdown, wall-mount controller</b>									
<a href="#">GM-77301-50</a>	0.1 to 600	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	2	1/10 hp (75 W)	IP66	Controller: 9" x 11 1/4" x 4 1/2" (23 x 30 x 11.4 cm) Drive: 15 9/16" x 7" x 6" (39.5 x 17.8 x 15.2 cm)	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	

[GM-07523-95](#) Cable assembly, for benchtop modular drive 77301-40; DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends for remote control

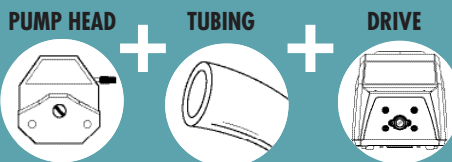
[GM-77301-82](#) Extension cable, 9 ft (2.7 m) extends distance between motor and controller

[GM-07575-80](#) Remote control cable for washdown modular drive 77301-50; wire to controller/PLC; 25-ft (8.3-m) length

[GM-17050-01](#) NIST-traceable calibration for peristaltic pump drive

Choose a Complete System

One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77923-80</a>	0.28 to 1700 mL/min	Easy-Load® II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital modular drive 77301-40 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77923-90</a>	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital modular drive 77301-50 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	

## Cole-Parmer® Modular Touch-Screen Dispensing Pumps

### Intuitive touch-screen interface for easy programming and control

- Flow range: 0.001 to 1500 mL/min with Masterflex® L/S® pump tubing
- Program options include constant flow rate, stepped flow, ramped flow, and pulsed flow
- Pump or dispense by volume or time
- Advanced options include program linkage, step repeat, go-to step statements, and program alarms
- Store and transfer programs to a PC or from pump to pump
- Controller is preprogrammed with flow ranges for all accepted tubing sizes



07582-00

Quickly set up single- or multiple-step programs depending on the requirements of your application. The controller will store up to 50 programs with up to 20 steps each; programs are easily recalled for later use. When pumps are daisy-chained, programs can be transferred from pump to pump to ensure process or experimental consistency.

The included Masterflex Easy-Load® II pump head with automatic tubing retention makes tubing changes quick and easy. Controller is preprogrammed with maximum and minimum flow rates for all accepted tubing sizes. Tubing calibration function ensures flow accuracy and allows user to select calibration volume based on volume being dispensed.

Additional features include screen lockout to prevent inadvertent program changes, forward and reverse prime to rapidly fill or purge tubing, and user selectable restart function in the event of power outage. Controller and drive are housed in durable painted steel.

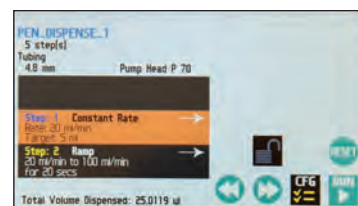
**What's included:** Easy-Load II pump head, power adapter with 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.



Run screen displays all operational parameters so you can confirm operation and program settings at a glance.



Set up single- or multi-step programs using the intuitive touch-screen.



Current step is highlighted during program operation.

### MORE info!

Use Masterflex® pump tubing to ensure accuracy and optimal performance. Order separately on pages 10–13.

### Specifications

**Accuracy:** ±1%

**Input/output:** RS-485, USB Type B, DB15, mini phono jack

**Motor:** 1.8° stepper

**Motor input power:** 30 V, 1.67 A

**Dimensions (W x H x D)**

Drive: 4<sup>3</sup>/<sub>8</sub>" x 6" x 10" (11.1 x 15.2 x 25.4 cm)

Controller: 9" x 3" x 7<sup>3</sup>/<sub>4</sub>" (22.9 x 7.6 x 19.7 cm)



Catalog number	Flow range (mL/min)	Pump head(s) included	Tubing sizes accepted	Drive speed rating (rpm)	IP rating	Power	Price
<a href="#">GM-07582-00</a>	0.001 to 1500	One L/S Easy-Load II 77200-60	L/S 13, L/S 14, L/S 16, L/S 25, L/S 17, L/S 18	0.02 to 375	IP33	100 to 240 VAC	
<a href="#">GM-07582-10</a>	0.001 to 1250 per channel	Two L/S Easy-Load II 77200-60	L/S 13, L/S 14, L/S 16, L/S 25, L/S 17, L/S 18				
<a href="#">GM-07582-20</a>	0.001 to 500 per channel	One L/S Easy-Load II dual-channel 77202-60	L/S 13, L/S 14, L/S 16, L/S 25				

[GM-74906-92](#) Foot switch for remote start/stop control

## I/P® Easy-Load® Pump Heads

### Fast tubing changes minimize downtime

- Flow rate: 0.6 to 13 LPM (0.16 to 3.5 GPM) depending on drive rpm and tubing size
- Accept I/P 26, I/P 73, I/P 82 pump tubing (order on page 24)
- Tubing guide ensures correct positioning of tubing to maximize performance and pump tubing life
- Adjustable occlusion optimizes pressure capabilities and tubing life
- PSF housing with CRS or SS rotor, or PPS housing with SS rotor available. PPS has better chemical resistance than PSF. CRS rotors have sealed bearings; SS rotors have PTFE-sealed bearings.
- Tang boot provides quieter operation and less maintenance
- Five-screw mounting—ensures pump head is mounted securely to drive

**What's included:** single-channel mounting hardware and tang boot.



77601-00

### Easy-Load Pump Heads

- Load tubing without removing pump head from drive
- Automatic tubing retention
- Stack up to two pump heads
- ATEX Zone 2 rated model available

Pump tubing size	mL per rev	Flow rates (LPM) at indicated rpm			Maximum system psi (bar)	Catalog number†			
		100	540	20 to 650		PSF housing, CRS rotor	PSF housing, SS rotor	PPS housing, SS rotor	ATEX-approved; PSF housing, SS rotor
I/P 26	6.15	0.6	3.2	0.12 to 4	40 (2.7)	<a href="#">GM-77601-00</a>	<a href="#">GM-77601-10</a>	<a href="#">GM-77601-60</a>	<a href="#">GM-77601-80</a>
I/P 73	12.3	1.2	6.8	0.2 to 8					
I/P 82	20.0	2.0	11.0	0.4 to 13					
<b>Price</b>									

†PSF = polysulfone PPS = polyphenylene sulfide CRS = cold-rolled steel SS = stainless steel

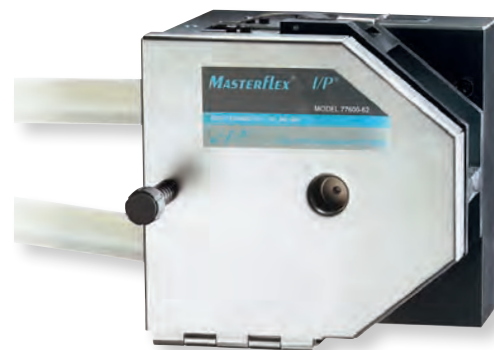
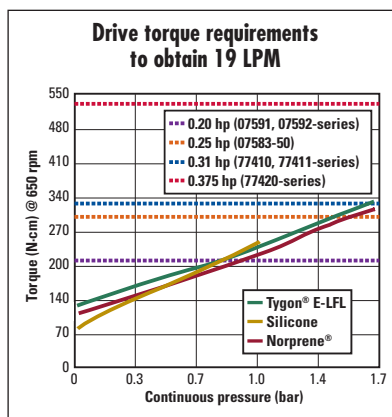
[GM-77601-96](#) Dual-channel mounting hardware for two pump heads, stainless steel

## I/P® High-Performance Pump Head

### Highest flow rates and pressure ratings of any I/P pump head

- Flow rate: 0.26 to 19 LPM (0.06 to 5.0 GPM)
- Ideal for viscous fluid transfer
- Accepts all three high-performance precision tubing options—I/P 70, I/P 88, I/P 89 (see page 26 for Masterflex I/P tubing)
- Rollers, bearings, rotor plates, and rotor shaft are made from stainless steel (SS); occlusion bed is made from thermoset polyester
- Compatible with I/P drives that accept two or more pump heads
- Pump head is not stackable

**What's included:** single-channel mounting hardware and tang boot.



77600-62

### High-Performance Pump Head

- Easy to load tubing
- Adjustable tubing retention
- "C"-shaped design—tubing enters/exits the same side
- ATEX Zone 2 rated model available

Pump tubing size	mL per rev	Flow rates (LPM) at 20 to 650 rpm	Maximum system psi (bar)	Catalog number†	
				Polyester and SS housing, SS rotor	ATEX-approved; polyester and SS housing, SS rotor
I/P 70	12.3	0.26 to 8	40 (2.7)	<a href="#">GM-77600-62</a>	<a href="#">GM-77600-82</a>
I/P 88	26.2	0.4 to 17	35 (2.4)		
I/P 89	29.2	0.52 to 19	20 (1.4)		
<b>Price</b>					

†SS = stainless steel

### MORE online!

For I/P Standard fixed-occlusion pump heads, go to . . .

[ColeParmer.com/Masterflex](http://ColeParmer.com/Masterflex)


















## I/P® Precision Pump Tubing

### Engineered for long life in peristaltic pumps

- Ensure optimal Masterflex® pump performance
- Custom extruded to fit Masterflex pumps
- Lot-to-lot consistency provides superior accuracy and repeatability


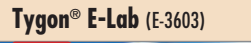
		Tubing size	I/P 26	I/P 73	I/P 82
		Inner diameter	6.4 mm (0.25")	9.5 mm (0.37")	12.7 mm (0.5")
		Hose barb size	6.4 mm (¼")	9.5 mm (¾")	12.7 mm (½")
Pump tubing formulation	Description	Compatible pump head			
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ Smooth surface—low protein binding levels</li> <li>■ Fungus-resistant; phthalate- and latex-free</li> <li>■ Accommodates a wide temperature range</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load®</li> </ul>	<a href="#">GM-96410-26</a>	<a href="#">GM-96410-73</a>	<a href="#">GM-96410-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Silicone</b> (peroxide-cured) 	<ul style="list-style-type: none"> <li>■ Greater physical compression capability</li> <li>■ Economical, longer tubing life</li> <li>■ Potential outgassing of peroxide products</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-96400-26</a>	<a href="#">GM-96400-73</a>	<a href="#">GM-96400-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>BioPharm Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ Ultra-smooth inner surface minimizes particle entrapment</li> <li>■ Very low extractables, with documented biocompatibility for sensitive applications</li> <li>■ Ideal for lab, biotech, and pharmaceutical applications</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-96420-26</a>	<a href="#">GM-96420-73</a>	<a href="#">GM-96420-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>BioPharm Plus Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ All the benefits of BioPharm silicone, plus:</li> <li>■ Longest tubing life of any silicone pump tubing</li> <li>■ Lower spallation than regular silicone</li> <li>■ Enhanced pressure capability</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-96440-26</a>	<a href="#">GM-96440-73</a>	<a href="#">GM-96440-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>■ Heat sealable, weldable, and economical</li> <li>■ Long pump life when compared to silicone or many other TPE tubings</li> <li>■ Very low protein binding</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-96419-26</a>	<a href="#">GM-96419-73</a>	<a href="#">GM-96419-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>■ Combines biocompatibility of silicone with chemical resistance similar to Tygon</li> <li>■ Heat sealable, weldable, economical</li> <li>■ Better resistance to pH fluctuations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06424-26</a>	<a href="#">GM-06424-73</a>	<a href="#">GM-06424-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>C-Flex® ULTRA</b> 	<ul style="list-style-type: none"> <li>■ Combines biocompatibility of silicone with chemical resistance similar to Tygon</li> <li>■ Longest life of any C-Flex formulation</li> <li>■ Lowest spallation and reduced residue</li> <li>■ Engineered specifically for peristaltic pumps</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06434-26</a>	<a href="#">GM-06434-73</a>	<a href="#">GM-06434-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>■ Over 10,000 hours of tubing life</li> <li>■ Resists ozone and UV radiation</li> <li>■ Ideal for tissue and cell culture work</li> <li>■ Heat sealable and bondable</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06508-26</a>	<a href="#">GM-06508-73</a>	<a href="#">GM-06508-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>PharmaPure®</b> 	<ul style="list-style-type: none"> <li>■ Biocompatibility similar to PharMed BPT</li> <li>■ Long life under continuous pressure up to 40 psi (2.7 bar)</li> <li>■ Very low spallation and low extractables</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06435-26</a>	<a href="#">GM-06435-73</a>	<a href="#">GM-06435-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Chem-Durance® Bio</b> 	<ul style="list-style-type: none"> <li>■ Excellent chemical resistance</li> <li>■ Plasticizer-free inner liner</li> <li>■ Excellent biocompatibility</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06442-26</a>	<a href="#">GM-06442-73</a>	<a href="#">GM-06442-82</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk

		Tube size	I/P 26	I/P 73	I/P 82
		Inner diameter	6.4 mm (0.25")	9.5 mm (0.37")	12.7 mm (0.5")
		Hose barb size	6.4 mm (¼")	9.5 mm (⅜")	12.7 mm (½")
Pump tubing formulation	Description	Compatible pump head			
<b>Tygon® E-LFL</b> 	<ul style="list-style-type: none"> <li>Longest life of all Tygon formulations</li> <li>USP Class VI, EU Pharmacopoeia 3.2.9, FDA 21 CFR175.300, and EU Food compliant (10/2011)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load®</li> </ul>	<a href="#">GM-06440-26</a>	<a href="#">GM-06440-73</a>	<a href="#">GM-06440-82</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Tygon E-Food (B-44-4X)</b> 	<ul style="list-style-type: none"> <li>Complies with FDA, NSF, 3A, and EU Food regulations (10/2011)</li> <li>Smooth inner surface unaffected by common commercial sanitizers</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06418-26</a>	<a href="#">GM-06418-73</a>	<a href="#">GM-06418-82</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon E-Lab (E-3603)</b> 	<ul style="list-style-type: none"> <li>Ideal for general transfer applications</li> <li>Clear for easy monitoring</li> <li>Nontoxic, nonaging, nonoxidizing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06509-26</a>	<a href="#">GM-06509-73</a>	<a href="#">GM-06509-82</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon Fuel &amp; Lubricant (F-4040-A)</b> 	<ul style="list-style-type: none"> <li>Ideal for transferring hydrocarbons, gasoline, kerosene, and heating oil</li> <li>Very low gas permeability</li> <li>Minimum extractability</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> </ul>	—	<a href="#">GM-06401-73</a>	<a href="#">GM-06401-82</a>
			—	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Tygon Chemical (2001)</b> 	<ul style="list-style-type: none"> <li>Best chemical resistance of Tygon formulations</li> <li>Compatible with some organics</li> <li>Plasticizer-free</li> </ul>	<ul style="list-style-type: none"> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06475-26</a>	<a href="#">GM-06475-73</a>	<a href="#">GM-06475-82</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Norprene® (A-60 G)</b> 	<ul style="list-style-type: none"> <li>Up to 10,000 hours of tubing life</li> <li>Best choice for pressure/vacuum applications</li> <li>Resists heat, ozone, acids, and alkalis</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06404-26</a>	<a href="#">GM-06404-73</a>	<a href="#">GM-06404-82</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>Norprene Food (A 60 F)</b> 	<ul style="list-style-type: none"> <li>Ideal for high-temperature food applications</li> <li>Resists heat, ozone, acids, and alkalis</li> <li>Complies with FDA and NSF food regulations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-06402-26</a>	<a href="#">GM-06402-73</a>	<a href="#">GM-06402-82</a>
			15.2 m (50 ft)/pk	15.2 m (50 ft)/pk	15.2 m (50 ft)/pk
<b>GORE® Style 100SC</b> 	<ul style="list-style-type: none"> <li>Long life at continuous pressure</li> <li>Excellent flow stability</li> <li>Spallation-free</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-96190-26</a>	<a href="#">GM-96190-73</a>	<a href="#">GM-96190-82</a>
			61 cm (24")/pk	61 cm (24")/pk	61 cm (24")/pk
<b>GORE Style 500</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Compatible with many inorganic and organic chemicals</li> <li>Long life at pressures up to 60 psi (14 bar)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-96191-26</a>	<a href="#">GM-96191-73</a>	<a href="#">GM-96191-82</a>
			61 cm (24")/pk	61 cm (24")/pk	61 cm (24")/pk
<b>GORE Style 400</b>	<ul style="list-style-type: none"> <li>Minimal break-in period</li> <li>Ideal for industrial applications</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	—	<a href="#">GM-06439-73</a>	—
			—	61 cm (24")/pk	—
<b>Viton®</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Resists corrosives, solvents, and oils at elevated temperatures</li> </ul>	<ul style="list-style-type: none"> <li>✓ Standard</li> <li>✓ Easy-Load</li> </ul>	<a href="#">GM-96412-26</a>	<a href="#">GM-96412-73</a>	—
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	—

## I/P® High-Performance Precision Pump Tubing

### Thicker wall compared to our Precision pump tubing

- Best choice for applications involving pressure, suction lift, viscous fluids, or long tubing life

		Tubing size	I/P 70	I/P 88	I/P 89
		Inner diameter	9.5 mm (0.37")	12.7 mm (0.5")	15.88 mm (0.62")
		Hose barb size	9.5 mm (3/8")	12.7 mm (1/2")	15.88 mm (5/8")
Pump tubing formulation	Description	Compatible pump head			
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ Smooth surface—low protein binding levels</li> <li>■ Fungus-resistant, phthalate- and latex-free</li> <li>■ Accommodates a wide temperature range</li> </ul>	✓ High-Performance	—	<a href="#">GM-96510-88</a>	<a href="#">GM-96510-89</a>
<b>BioPharm Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>■ Smooth surface for minimal particle entrapment</li> <li>■ Very low extractable, with documented biocompatibility for sensitive applications</li> </ul>	✓ High-Performance	<a href="#">GM-96421-70</a>	<a href="#">GM-96421-88</a>	<a href="#">GM-96421-89</a>
<b>BioPharm Plus Silicone</b> (platinum-cured) 	All the benefits of BioPharm silicone, plus: <ul style="list-style-type: none"> <li>■ Longest tubing life of any silicone pump tubing</li> <li>■ Lower spallation than regular silicone</li> </ul>	✓ High-Performance	<a href="#">GM-96441-70</a>	<a href="#">GM-96441-88</a>	<a href="#">GM-96441-89</a>
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>■ Heat sealable, weldable, and economical</li> <li>■ Long pump life when compared to silicone or many other TPE tubings</li> </ul>	✓ High-Performance	<a href="#">GM-96419-70</a>	<a href="#">GM-96419-88</a>	<a href="#">GM-96419-89</a>
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>■ Heat sealable, weldable, economical</li> <li>■ Longest life of any C-Flex formulation</li> <li>■ Better resistance to pH fluctuations</li> </ul>	✓ High-Performance	<a href="#">GM-06424-70</a>	<a href="#">GM-06424-88</a>	<a href="#">GM-06424-89</a>
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>■ Over 10,000 hours of tubing life</li> <li>■ Resists ozone and UV radiation</li> <li>■ Ideal for tissue and cell culture work</li> </ul>	✓ High-Performance	<a href="#">GM-06508-70</a>	<a href="#">GM-06508-88</a>	—
<b>Chem-Durance® Bio</b> 	<ul style="list-style-type: none"> <li>■ Excellent chemical resistance</li> <li>■ Plasticizer-free inner liner</li> <li>■ Excellent biocompatibility</li> </ul>	✓ High-Performance	<a href="#">GM-06442-70</a>	<a href="#">GM-06442-88</a>	<a href="#">GM-06442-89</a>
<b>Tygon® E-LFL</b> 	<ul style="list-style-type: none"> <li>■ Longest life of all Tygon formulations</li> <li>■ USP Class VI, EU Pharmacopoeia 3.2.9, FDA 21</li> </ul>	✓ High-Performance	<a href="#">GM-06440-70</a>	<a href="#">GM-06440-88</a>	<a href="#">GM-06440-89</a>
<b>Tygon® E-Food (B-44-4X)</b> 	<ul style="list-style-type: none"> <li>■ Meets FDA, NSF, 3A, and EU food regulations</li> <li>■ Smooth inner surface unaffected by common commercial sanitizers</li> </ul>	✓ High-Performance	<a href="#">GM-06418-70</a>	<a href="#">GM-06418-88</a>	<a href="#">GM-06418-89</a>
<b>Tygon® E-Lab (E-3603)</b> 	<ul style="list-style-type: none"> <li>■ Ideal for general transfer applications</li> <li>■ Clear for easy monitoring</li> <li>■ Nontoxic, nonaging, nonoxidizing</li> </ul>	✓ High-Performance	<a href="#">GM-06509-70</a>	<a href="#">GM-06509-88</a>	<a href="#">GM-06509-89</a>
<b>Norprene® (A-60 G)</b> 	<ul style="list-style-type: none"> <li>■ Up to 10,000 hours of tubing life</li> <li>■ Best choice for pressure/vacuum applications</li> <li>■ Resists heat, ozone, acids, and alkalis</li> </ul>	✓ High-Performance	<a href="#">GM-06404-70</a>	<a href="#">GM-06404-88</a>	<a href="#">GM-06404-89</a>
<b>Norprene Food (A-60 F)</b> 	<ul style="list-style-type: none"> <li>■ Ideal for high-temperature food applications</li> <li>■ Resists heat, ozone, acids, and alkalis</li> <li>■ Meets FDA and NSF food regulations</li> </ul>	✓ High-Performance	—	<a href="#">GM-06402-88</a>	<a href="#">GM-06402-89</a>
<b>GORE® Style 100SC</b> 	<ul style="list-style-type: none"> <li>■ Long life at continuous pressure</li> <li>■ Excellent flow stability</li> <li>■ Spallation-free</li> </ul>	✓ High-Performance	—	<a href="#">GM-96190-88</a>	<a href="#">GM-96190-89</a>
<b>GORE Style 500</b> 	<ul style="list-style-type: none"> <li>■ Minimal break-in period</li> <li>■ Ideal for industrial applications</li> </ul>	✓ High-Performance	—	<a href="#">GM-96191-88</a>	<a href="#">GM-96191-89</a>
<b>GORE Style 400</b> 	<ul style="list-style-type: none"> <li>■ Excellent chemical resistance</li> <li>■ Resists corrosives, solvents, and oils elevated temperatures</li> </ul>	✓ High-Performance	—	<a href="#">GM-06439-88</a>	—



## I/P® Brushless Process Drives

### Powerful, low-maintenance drives are versatile and cost effective

- Non-chip epoxy-coated, IP55-rated steel enclosure protects against moisture, chemicals, and dust
- Compact drives are light enough to carry with one hand, but powerful enough to drive two pump heads
- Drive model 77411-00 features remote inputs (4 to 20 mA, 0 to 10 V, start/stop, reverse) and remote outputs ("pump ready" signal and 4 to 20 mA outputs)
- Adjust the drive speed quickly using the speed control knob—speed is displayed on an easy-to-read LED display

**What's included:** 6-ft (1.8-m) line cord with IEC320/CEE 22 connector coupler. Please specify final destination country to receive the correct plug/cord set.



77410-10

### Brushless Process Drives

- Flow rates: 0.2 to 19 LPM
- Accuracy of  $\pm 0.25\%$  speed control
- LED display
- Reversible motor and remote control capabilities
- Accept up to 2 pump heads



Catalog number	Motor speed (rpm)	Speed control (repeatability)	Pump heads accepted	Motor size	IP rating	Power (50/60 Hz)		Price
						VAC	Amps	
<b>Variable-speed brushless process drive; 14"L x 10"W x 9"H</b>								
<a href="#">GM-77410-10</a>	33 to 650	$\pm 0.25\%$ (2% of max rpm)	2	1/2 hp (0.25 kW)	IP55	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	
<b>Variable-speed brushless process drive with remote input/output; 14"L x 10"W x 9"H</b>								
<a href="#">GM-77411-00</a>	33 to 650	$\pm 0.25\%$ (2% of max rpm)	2	1/2 hp (0.25 kW)	IP55	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	

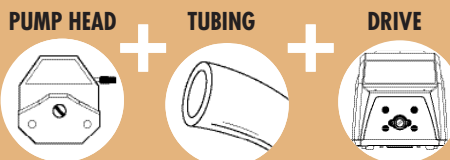
[GM-07595-43](#) Washdown foot switch for model 77411-00

[GM-77300-32](#) Remote cable kit. Required for model 77411-00 to operate the remote inputs and outputs

## I/P® Drives Selection Guide

Description	Special features	Page number
<b>Brushless Process</b>		
	<ul style="list-style-type: none"> <li>✓ Compact and powerful</li> <li>✓ Maintenance-free brushless motor</li> <li>✓ IP55 rated</li> </ul>	27
<b>Precision Variable-Speed Modular</b>		
	<ul style="list-style-type: none"> <li>✓ Separate motor and controller for convenient setup</li> <li>✓ Model available with wall-mount controller and IP66 protection</li> </ul>	28
<b>Variable-Speed Modular Digital Dispensing</b>		
	<ul style="list-style-type: none"> <li>✓ Digital dispensing with calibration</li> <li>✓ Separate motor and controller for convenient setup</li> <li>✓ Model available with wall-mount controller and IP66 protection</li> </ul>	29
<b>Digital Brushless Process</b>		
	<ul style="list-style-type: none"> <li>✓ Digital dispensing with calibration</li> <li>✓ Sealed housing; IP66 and NEMA 4X rated for washdown</li> <li>✓ Maintenance-free brushless motor</li> </ul>	30

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77963-10</a>	0.4 to 8 LPM	Easy-Load® 77601-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Brushless process drive 77410-10 33 to 650 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77963-20</a>	0.7 to 17 LPM	High-Performance 77600-62	Tygon® E-LFL I/P 88 tubing 06440-88 3 ft (1 m)			

## I/P® Precision Variable-Speed Modular Drives

Modular drives let you place motor and controller where convenient

- Membrane keypad for easy control of speed, direction, and start/stop
- Ideal for metering and critical transfer applications

**NEW**



**A**  
07591-20

### A Modular Drive with Benchtop Controller

- Splash-resistant ABS plastic controller housing is IP33 rated; drive housing is epoxy finished steel, IP33 rated
- 6-ft (1.8-m) cable connects drive and controller; optional extension cable is available
- Remote control capabilities via a DB9 female connector on back of drive

### B Washdown Modular Drive with Wall-Mount Controller

- Wall-mount controller housing is powder-coated aluminum, IP66 / NEMA 4X rated for washdown; powder-coated steel drive housing is IP66 / NEMA 4X rated for washdown
- 6-ft (1.8-m) cable connects drive and controller; optional extension cable is available
- Remote control via weather-resistant connection on controller

### Precision Variable-Speed Modular Drives

- Flow rates: 0.036 to 19 LPM
- Accuracy of  $\pm 0.25\%$  speed control
- LED display
- Reversible motor
- Remote control capabilities
- Accept up to 2 pump heads



**B**  
Model 07591-30 includes wall-mount controller.

**What's included:** 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.

ISO9001:2008  
CERTIFIED SUPPLIER



2 year warranty

Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
<b>A Precision modular drive</b> with benchtop controller									
<a href="#">GM-07591-20</a>	6 to 650	$\pm 0.25\%$ (1 rpm at 650 rpm)	2†	1/2 hp (149 W)	IP33	Controller: 10 3/8" x 8 3/8" x 5 1/2" Drive: 13 7/8" x 5 1/2" x 6 1/8"	90 to 260	4.4 at 115 VAC, 2.2 at 230 VAC	
<b>B Precision washdown modular drive</b> with wall-mount controller									
<a href="#">GM-07591-30</a>	6 to 650	$\pm 0.25\%$ (1 rpm at 650 rpm)	2†	1/2 hp (149 W)	IP66	Controller: 10 1/2" x 11" x 4 3/4" Drive: 14 1/4" x 7" x 6 1/2"	90 to 260	4.4 at 115 VAC, 2.2 at 230 VAC	

†Drive accepts two pump heads when loaded with silicone or C-FLEX® tubing.

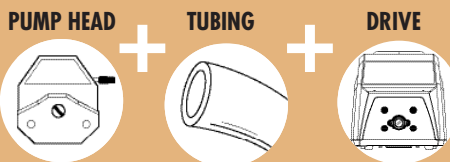
[GM-07557-51](#) Extension cable, 9 ft (2.7 m); extend distance between motor and controller

[GM-07595-47](#) Cable assembly for benchtop drive 07591-20; DB9 male connector and 25-ft (7.9-m) cable with stripped wire terminal ends. Use for remote control

[GM-77300-32](#) Cable assembly for washdown drive 07591-30; 18-pin round connector and 25-ft (7.9-m) cable with stripped wire terminal ends. Use for remote control

[GM-17050-01](#) NIST-traceable calibration for peristaltic pump drive

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77962-20</a>	0.06 to 8 LPM	Easy-Load® 77601-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Modular drive 07591-20 6 to 650 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77962-30</a>	0.06 to 8 LPM	Easy-Load 77601-10	C-Flex ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Modular drive 07591-30 6 to 650 rpm	90 to 260 VAC, 50/60 Hz	

## I/P® Variable-Speed Modular Digital Dispensing Drives

### Precision digital drives offer three dispensing modes and low-maintenance motors

- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, and volume dispense
- Programmable dispense interval lets you set the delay between dispense cycles for convenient, automated dispensing by time or by volume
- Brushless motor gives you quiet, maintenance-free reliability

#### **A** Modular Drive with Benchtop Controller

- Splash-resistant ABS plastic controller housing is IP33 rated; drive housing is epoxy finished steel, IP33 rated
- 6-ft (1.8-m) cable connects drive and controller; optional extension cable is available
- Remote control capabilities via a DB25 female connector on back of drive

#### **B** Washdown Modular Drive with Wall-Mount Controller

- Wall-mount controller housing is powder-coated aluminum, IP66 / NEMA 4X rated for washdown; powder-coated steel drive housing is IP66 / NEMA 4X rated for washdown
- 6-ft (1.8-m) cable connects drive and controller; optional extension cable is available
- Remote control capabilities via weather-resistant 31-pin round connection on controller

**What's included:** 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.



**A**  
07594-00

### Variable-Speed Modular Digital Dispensing Drives

- Flow rates: 0.0006 to 19 LPM
- Accuracy of  $\pm 0.1\%$  speed control
- Four-line graphical display
- Antidrip, reversible motor
- Remote control capabilities
- Accept up to 2 pump heads



**B**  
Model 07594-10 includes wall-mount controller

ISO9001:2008  
CERTIFIED SUPPLIER



2 year warranty

Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
<b>A</b> Digital modular dispensing drive with benchtop controller									
<a href="#">GM-07594-00</a>	0.1 to 650	$\pm 0.1\%$ (0.1 rpm at 650 rpm)	2	$\frac{3}{8}$ hp (280 W)	IP33	Controller: 10 $\frac{1}{2}$ " x 8 $\frac{1}{4}$ " x 5" Drive: 15 $\frac{3}{16}$ " x 7" x 6"	90 to 260	4.5 at 115 VAC, 2.5 at 230 VAC	
<b>B</b> Digital washdown modular dispensing drive with wall-mount controller									
<a href="#">GM-07594-10</a>	0.1 to 650	$\pm 0.1\%$ (0.1 rpm at 650 rpm)	2	$\frac{3}{8}$ hp (280 W)	IP66	Controller: 9" x 11 $\frac{3}{4}$ " x 4 $\frac{1}{2}$ " Drive: 15 $\frac{3}{16}$ " x 7" x 6"	90 to 260	4.5 at 115 VAC, 2.5 at 230 VAC	

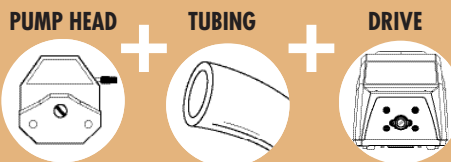
[GM-77301-82](#) Extension cable, 9 ft (2.7 m); extend distance between motor and controller

[GM-07523-95](#) Cable assembly for benchtop drive 07594-00; DB25 male connector and 25-ft (7.9-m) cable with stripped wire terminal ends for remote control

[GM-07575-80](#) Cable assembly for washdown drive 07594-10; 31-pin round connector and 25-ft (7.9-m) cable with stripped wire terminal ends for remote control

[GM-17050-01](#) NIST-traceable calibration for peristaltic pump drive

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included?			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77970-40</a>	0.001 to 8 LPM	Easy-Load® 77601-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital dispensing drive 07594-00 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77970-50</a>	0.001 to 8 LPM	Easy-Load 77601-10	C-Flex ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital dispensing drive 07594-10 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	



## I/P® Digital Console Process Drives

Precision digital drives offer three dispensing modes and precision low-maintenance motors

- Graphical LCD shows four operating modes continuous run, timed dispense, copy dispense, volume dispense
- Dispense by mL—volume in mL of each dispense, 0.001 to 9999 mL; Copy—1 to 9,999 dispense cycles; or SEC—time interval between each dispense cycle (1 to 9,999 secs)
- **Model 77420-10** features a 316 stainless steel housing with an anodized aluminum base. Ideal for pharmaceutical, dairy, biotech, and food and beverage applications.
- **Model 77420-20** features a powder-coated steel housing with anodized aluminum base. Use this drive in process, manufacturing, and water-treatment applications where stainless steel is not a critical requirement.

**What's included:** 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.

**NEW**

### Digital Console Process Drives

- Flow rates: 0.0006 to 19 LPM
- Accuracy of  $\pm 0.1\%$  speed control
- Four-line graphical display
- Antidrip, reversible motor
- IP66-rated for easy washdown
- Accept up to 2 pump heads



77420-10 shown with I/P High-Performance pump head 77600-62

ISO9001:2008  
CERTIFIED SUPPLIER



2 year warranty

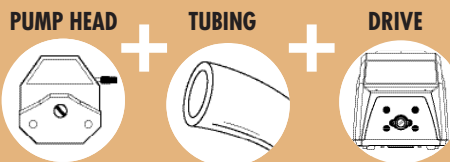
Catalog number	rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Price
							VAC	Amps	
<b>A</b> Digital process drive with 316 stainless steel housing									
<a href="#">GM-77420-10</a>	0.1 to 650	$\pm 0.1\%$	2	$\frac{3}{8}$ hp (280 W)	IP66	16 $\frac{1}{16}$ " x 11 $\frac{1}{8}$ " x 12 $\frac{1}{8}$ "	90 to 260	4.5 at 115 VAC, 2.5 at 230 VAC	
<b>B</b> Digital process drive with powder-coat steel housing									
<a href="#">GM-77420-20</a>	0.1 to 650	$\pm 0.1\%$	2	$\frac{3}{8}$ hp (280 W)	IP66	16 $\frac{1}{16}$ " x 11 $\frac{1}{8}$ " x 12 $\frac{1}{8}$ "	90 to 260	4.5 at 115 VAC, 2.5 at 230 VAC	

[GM-07575-84](#) Washdown foot switch, momentary start/stop; 6-ft (1.8-m) cable

[GM-07575-80](#) Cable assembly, 31-pin round connector and 25-ft (7.9-m) cable with stripped wire ends for remote control

[GM-17050-01](#) NIST-traceable calibration for peristaltic pump drive

**Choose a Complete System**  
One catalog number includes all 3 components!



System	Catalog number	Flow range	What's included			Power	Price
			Pump head	Tubing	Drive		
	<a href="#">GM-77964-20</a>	0.001 to 8.0 LPM	Easy-Load® 77601-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive 77420-10 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	
	<a href="#">GM-77964-30</a>	0.001 to 8.0 LPM	Easy-Load 77601-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive 77420-20 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	

## B/T® Fixed- and Variable-Speed Pumps

Achieve the highest flow rates of any Masterflex pump—up to 42 LPM (11.1 GPM)

### A Fixed-Speed Pumps

- Economical and easy to operate
- Reversible motor: purge before or after pumping, pump fluid in either direction
- IP55-rated motor—wash off dirt and debris

### B Air-Powered Pump

- Use in locations where electricity is unsafe or impractical
- Includes pressure regulator—control your compressor air to match pump requirements
- 24 cfm (0.68 m<sup>3</sup>), 100 psi (6.9 bar) minimum air required, supply your own compressor to power pump
- IP56-rated motor protects against dust and strong water jets
- Rated for ATEX Zone 2 EEx II 3 G c IIC T6; NEC Class 1, Division 2, Groups A, B, C, D, T6

### C Variable-Speed Modular Pump

- Place washdown controller wherever it's convenient
- Controller with 16-ft (4.9-m) cord mounts on pump or wall
- IP56-rated motor protects against dust and strong water jets
- Reversible motor: purge before or after pumping, pump fluid in either direction

### D Variable-Speed Modular Digital Pump

- High-volume, high-accuracy dispensing
- Dispense by volume or time, or pump continuously
- Separate motor and controller by up to 6 feet (1.8 m) for convenient operation
- IP56-rated controller and motor protect against dust and water

**What's included:** a Rapid-Load® pump head, 3 ft (1 m) of Tygon® E-LFL B/T 91 tubing 06440-91, and a 6-ft (1.8-m) power cord (115 VAC: US standard plug; 230 VAC: European plug) for "A, C, D."



**A**  
77111-60



**D**  
77111-40

### B/T Peristaltic Pumps

- Flow rates up to 42 LPM
- Interlock switch shuts off power when pump head is opened
- Washdown pumps handle the toughest process and production applications, then clean up with ease
- Gentle peristaltic action is ideal for pumping shear-sensitive or viscous fluids (up to 10,000 cps)
- Rotor and occlusion bed design allow easier tube loading and prevent "tubing roll" during operation

### Flow Rates in LPM (GPM)

Key letter	rpm	PerfectPosition™ pump tubing	
		B/T 87	B/T 91
<b>A</b>	321	18.9 (5.0)	42 (11.1)
	271	16.0 (4.2)	35 (9.4)
<b>B</b>	35 to 321	1.9 to 17.7 (0.5 to 4.7)	4.0 to 37 (1.06 to 9.8)
<b>C &amp; D</b>	12 to 321	0.71 to 18.9 (0.19 to 5.0)	1.4 to 42 (0.4 to 11.1)



77111-30, -37

77111-37, -47, -67, -80

Zone 2  
77111-80 only

77111-30, -37

Except  
77111-30, -37

Key letter	Catalog number	Motor type	Motor size	rpm	IP rating	Mounting type	Dimensions (L x W x H)	Power		Price
								VAC (Hz)	Amps	
<b>A</b>	GM-77111-30	Fixed-speed	1 hp (0.75 kW)	321	IP55	Direct-drive	27" x 15.8" x 15.1" (68.6 x 40 x 38.4 cm)	115 (60)	12.6	
	GM-77111-37			271				220 (50)	6.3	
<b>B</b>	GM-77111-80	Variable-speed, air powered	¾ hp (0.56 kW)	35 to 321	IP56	Direct-drive	27" x 15.8" x 15.1" (68.6 x 40 x 38.4 cm)	Requires 24 cfm (0.68 m <sup>3</sup> ) 100 psi (6.9 bar) minimum		
<b>C</b>	GM-77111-60	Variable-speed (±5%)	½ hp (0.37 kW)	12 to 321	Controller: IP56	Direct-drive	27" x 15.8" x 17.4" (68.6 x 40 x 44.2 cm)	115 (50/60)	6.5	
	GM-77111-67							230 (50/60)	3.3	
<b>D</b>	GM-77111-40	Variable-speed (±0.3%)	½ hp (0.37 kW)	12 to 321	Drive: IP56	Direct-drive	Controller: 9" x 11" x 4½" (22.9 x 27.9 x 11.4 cm) Drive: 27" x 15¼" x 15" (68.6 x 40.0 x 38.4 cm)	90 to 130 (50/60)	6.5	
	GM-77111-47							190 to 260 (50/60)	3.3	







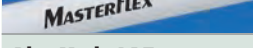
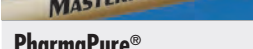







**GM-77300-32 Remote cable**, required for remote control operation of models 77111-40 and -47; 25 ft (7.6 m)

**GM-77111-90 Bracket** for digital controller on models 77111-40 and -47

## B/T® PerfectPosition™ Pump Tubing

### Retention marks indicate exact placement for easier loading

- Optimized for use in B/T pumps to provide the longevity that you expect

		Tubing size	B/T 87	B/T 91
		Inner diameter	12.7 mm (0.5")	19.0 mm (0.75")
		Hose barb size	12.7 mm (½")	19.0 mm (¾")
Pump tubing formulation	Description			
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>Smooth surface; low protein binding levels</li> <li>Fungus-resistant; phthalate- and latex-free</li> <li>Accommodates a wide temperature range</li> </ul>		<a href="#">GM-96510-87</a>	<a href="#">GM-96510-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>Silicone</b> (peroxide-cured) 	<ul style="list-style-type: none"> <li>Smooth surface for minimal particle entrapment</li> <li>Very low extractables, with documented biocompatibility for sensitive applications</li> </ul>		<a href="#">GM-96400-87</a>	<a href="#">GM-96400-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>BioPharm Plus Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>Very low extractable, with documented biocompatibility for sensitive applications</li> <li>Longest tubing life of any silicone pump tubing</li> <li>Lower spallation than regular silicone</li> </ul>		<a href="#">GM-96445-87</a>	<a href="#">GM-96445-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>Heat sealable, weldable, and economical</li> <li>Long pump life when compared to silicone or many other TPE tubings</li> </ul>		<a href="#">GM-96419-87</a>	<a href="#">GM-96419-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>Heat sealable, weldable, economical</li> <li>Longest life of any C-Flex formulation</li> <li>Better resistance to pH fluctuations</li> </ul>		<a href="#">GM-06424-87</a>	<a href="#">GM-06424-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>Over 10,000 hours of tubing life</li> <li>Resists ozone and UV radiation</li> <li>Ideal for tissue and cell culture work</li> </ul>		<a href="#">GM-06507-87</a>	<a href="#">GM-06507-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>PharmaPure®</b> 	<ul style="list-style-type: none"> <li>Nontoxic and nonhemolytic—great for tissue and cell work</li> <li>Low extractables and gas permeability</li> </ul>		<a href="#">GM-06437-87</a>	<a href="#">GM-06437-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>Chem-Durance® Bio</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Plasticizer-free inner liner</li> <li>Excellent biocompatibility</li> </ul>		<a href="#">GM-06443-87</a>	<a href="#">GM-06443-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>Tygon® E-LFL</b> 	<ul style="list-style-type: none"> <li>Longest life of all Tygon formulations</li> <li>USP Class VI, EU Pharmacopoeia 3.2.9, FDA 21</li> </ul>		<a href="#">GM-06440-87</a>	<a href="#">GM-06440-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>Tygon® E-Food (B-44-4X)</b> 	<ul style="list-style-type: none"> <li>Complies with FDA, NSF, 3A, and EU food regulations</li> <li>Smooth inner surface unaffected by common commercial sanitizers</li> </ul>		<a href="#">GM-06418-87</a>	<a href="#">GM-06418-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>Norprene® Food (A-60-F)</b> 	<ul style="list-style-type: none"> <li>Ideal for high-temperature food applications</li> <li>Resists heat, ozone, acids, and alkalis</li> <li>Complies with FDA and NSF food regulations</li> </ul>		<a href="#">GM-06399-87</a>	<a href="#">GM-06399-91</a>
			3 m (10 ft)/pk	3 m (10 ft)/pk
<b>GORE® Style 100SC</b> 	<ul style="list-style-type: none"> <li>Long life at continuous pressure</li> <li>Excellent flow stability</li> <li>Spallation-free</li> </ul>		<a href="#">GM-96190-87</a>	<a href="#">GM-96190-91</a>
			69 cm (27")/pk	69 cm (27")/pk
<b>GORE Style 400</b> 	<ul style="list-style-type: none"> <li>Excellent chemical resistance</li> <li>Resists corrosives, solvents, and oils elevated temperatures</li> </ul>		—	<a href="#">GM-06439-91</a>
				69 cm (27")/pk



## Cole-Parmer Pulse Dampener

Virtually eliminates pulsation in output flow



Five pairs of fittings and PTFE-pipe thread tape are included. Accepted tubing: all L/S® sizes, I/P® 26, nominal from 1/16" to 3/8" ID (1.6 to 9.5 mm ID). Fittings included (tubing ID x NPT(M) thread): 1/16" x 1/8", 1/8" x 1/8", 3/16" x 1/8", 1/4" x 1/8", and 3/8" x 1/8". Dampener connections: 1/8" NPT(F). Dead volume: 190 mL. Max pressure: 60 psi (4.3 bar). Polyethylene body.

Catalog number	Description	Price
<a href="#">GM-07596-20</a>	Pulse dampener	

## Cole-Parmer Handheld Remote Controllers

Use to control basic Masterflex® drive operations

Route tubing through the handle for filling and dispensing applications. Handles accept Masterflex tubing sizes L/S® 13, L/S 14, L/S 16, L/S 25, L/S 17, L/S 18, L/S 15, and L/S 24 (up to 7/16" nominal OD).



Catalog number	Description	Price
<a href="#">GM-07528-80</a>	DB9 male connector; for 07528-series Masterflex L/S drives; control start/stop and direction	
<a href="#">GM-07523-97</a>	DB25 male connector; for 07523-series and 07551-series Masterflex L/S drives; control start/stop, direction, and prime	
<a href="#">GM-77301-90</a>	DB15 male connector; for 77301-20 Masterflex L/S drive; control start/stop, direction, and prime	
<a href="#">GM-07595-62</a>	Stripped wire ends; control start/stop, direction, and prime	

## Tubing Weights

Keep tubing in place in receiving vessel during dispense cycles

Flow-through PTFE weights fit Masterflex L/S® tubing sizes noted.



Catalog number	Description	Price
<a href="#">GM-78226-81</a>	Weight for L/S 16, 15, and 25	
<a href="#">GM-78226-82</a>	Weight for L/S 17, 18, 24, 35, 36	
<a href="#">GM-77310-03</a>	Set of two; one each of 78226-81 and 78226-82	



## Verlook 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

30619-08



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

## Pure-Fit® TC Tubing Clamps

Install easily over existing tubing lines or assemblies

- Smooth contours eliminate risk of puncture or rupture
- Fully sterilizable
- Meet USP Class IV criteria



The Pure-Fit TC clamp has a press-down locking mechanism that provides complete fluid stoppage. Its side-release mechanism ensures against unwanted opening. The open design can be installed over existing fittings or finished tubing assemblies, eliminating costly downtime. Available sizes handle two tubing ranges.

Available in polypropylene (PP) or PVDF. Sterilize PP by gamma irradiation only; PVDF may be sterilized by gamma irradiation or autoclaving. Sold in pack of 10.

Catalog number	Fits Masterflex® tubing sizes	Material	Price/pk
<a href="#">GM-06822-01</a>	L/S® 13, 14, 15, 16, 17, 25	Polypropylene	
<a href="#">GM-06822-03</a>		PVDF	
<a href="#">GM-06822-11</a>	L/S 18, 24, 35, 36; I/P® 26, 70, 73, 82	Polypropylene	
<a href="#">GM-06822-13</a>		PVDF	

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Masterflex® L/S® Pump page 18

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Flowmeter page 72

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## ISMATEC® Low-Flow High-Accuracy Pumps

### Planetary drive for lower pulsation and longer tubing life

These multichannel pumps feature planetary gears that drive eight stainless steel rollers in unison for smooth rotation and accurate liquid flow. The four-digit LED display shows rpm or percent of maximum rpm when pump is running ("A" model) and flow rate or rpm on "B" model. Use the MAX button to instantly increase speed for priming or flushing without disturbing your programmed settings.

Combine tubing sizes and formulations to suit your application. Click'n'go™ cartridges feature automatic occlusion for simplified use and reproducible results. Install cartridges in one direction for low pulsation; in opposite direction for higher counter pressure. **Order two-stop tubing on page 38.**

#### A Standard Variable-Speed Pumps

Enter pump speeds via the 6-button keypad for precise pumping—ideal for continuous pumping.

Analog inputs allow you to remotely control speed; TTL contact closure provides start/stop, rotation direction, and autostart control. Monitor speed via analog output.

Remote control capabilities: 0 to 5, 0 to 10 VDC, 0 to 20, 4 to 20 mA for speed control, start/stop, reverse direction, and autostart via contact closure (DB15 female). Dispenser may be attached for DB15 female port.

#### B Programmable Variable-Speed Dispensing Pumps

Ideal for continuous pumping or for dispensing in any of five modes:

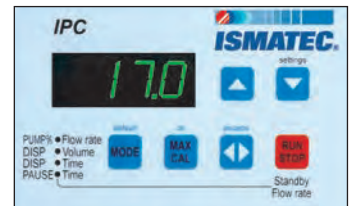
- Flow rate: 0.0007 to 35.43 mL/min
- By time: 0.1 seconds to 999.9 hours
- Batches: set delay between dispensed volumes
- Drip-free: program back-steps to prevent drips
- Volume in mL and µL

Pumps feature analog input and output controls, as well as an RS-232 interface for control by a computer.

Remote control capabilities: RS-232 to control all operating functions (DB9 male); 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA for start/stop and autostart via contact closure (DB15 male); footswitch (three-pin DIN port). Monitor speed via analog output.



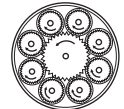
**A** Low-speed digital pump 78023-02



**B** Digital dispensing pump 78001-30

### TECHNICAL info!

Within a planetary drive, all rollers are driven directly and individually by a toothed sun wheel. This mechanism eliminates axial push-and-pull forces on the tubing—resulting in lower pulsation, better reproducibility, and longer tubing life.



### Specifications

**Accuracy:** better than ±1%      **Pressure:** up to 22 psi (1.5 bar)      **Duty cycle:** continuous



Flow range per channel	Channels	Speed	Rollers	Tubing	Dimensions (W x H x D)	Power (selectable)	A Standard variable-speed pumps		B Programmable variable-speed dispensing pumps	
							Cat. no.	Price	Cat. no.	Price
<b>Low-speed planetary gear-driven pumps</b>										
0.0004 to 11 mL/min	4	0.11 to 11.25 rpm	8	Two-stop (Page 38)	6 7/8" x 5 1/8" x 7 1/16"	17.5 x 13 x 18 cm	115/230 VAC, 50/60 Hz	<a href="#">GM-78023-02</a>		<a href="#">GM-78001-00</a>
	8				6 7/8" x 5 1/8" x 8 1/16"	17.5 x 13 x 22 cm		<a href="#">GM-78001-10</a>		
	12				6 7/8" x 5 1/8" x 10 1/4"	17.5 x 13 x 26 cm		<a href="#">GM-78001-20</a>		
	16				6 7/8" x 5 1/8" x 11 1/8"	17.5 x 13 x 30 cm		<a href="#">GM-78001-30</a>		
	24				6 7/8" x 5 1/8" x 15"	17.5 x 13 x 38 cm		<a href="#">GM-78001-40</a>		
<b>Standard-speed planetary gear-driven pumps</b>										
0.002 to 44 mL/min	4	0.4 to 45 rpm	8	Two-stop (Page 38)	6 7/8" x 5 1/8" x 7 1/16"	17.5 x 13 x 18 cm	115/230 VAC, 50/60 Hz	<a href="#">GM-78023-00</a>		<a href="#">GM-78001-02</a>
	8				6 7/8" x 5 1/8" x 8 1/16"	17.5 x 13 x 22 cm		<a href="#">GM-78001-12</a>		
	12				6 7/8" x 5 1/8" x 10 1/4"	17.5 x 13 x 26 cm		<a href="#">GM-78001-22</a>		
	16				6 7/8" x 5 1/8" x 11 1/8"	17.5 x 13 x 30 cm		<a href="#">GM-78001-32</a>		
	24				6 7/8" x 5 1/8" x 15"	17.5 x 13 x 38 cm		<a href="#">GM-78001-42</a>		

### Replacement Cartridges

Order extra cartridges and adapters when fast tubing changes are crucial.

[GM-78001-95](#) Replacement Click'n'go™ cartridge

[GM-78001-90](#) Replacement adjustable occlusion cartridge

[GM-07618-71](#) Replacement adapters hold two-stop color-coded tubing in cartridge. Two adapters required per cartridge. Pack of 12



## ISMATEC® Compact Multichannel Pumps

### Space-saving pumps provide consistent results

These space-saving pumps provide up to four pumping channels while using very little benchtop space. Self-lubricating, Ertalyte® rollers provide consistent flow with reduced tubing wear. Use Click'n'go™ minicartridges for consistent results. Reverse flow direction with the flip of a switch. Select two- or four-channel pumps; twelve roller pumps provide smooth, even flow.

**What's included:** minicartridges for each channel and a 6-ft (1.8-m) cord with plug. Order extra minicartridges below. **Order three-stop tubing on page 39.**

#### A Variable-Speed Pumps

Speed is adjustable in 1% steps (0 to 99%). Control speed remotely with an analog input signal (0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, or 4 to 20 mA).

Start/stop pump or change direction via contact closure (DB15 female); monitor speed through frequency output.

#### B Programmable Variable-Speed Digital Dispensing Pumps

Continuously pump or dispense in any of four modes:

- Flow rate: 0.003 to 59 mL/min
- By time: 0.1 seconds to 999.9 hours
- Batches: set delay between dispensed volumes
- Drip-free: program back-steps to prevent drips

Pumps feature analog input and output controls, as well as an RS-232 interface for control by a computer.

Remote control capabilities: RS-232 to control all operating functions (DB9 male); 0 to 5, 0 to 10 VDC, 0 to 20, 4 to 20 mA for speed control, start/stop, reverse direction, and autostart via contact closure (DB15 male); footswitch and hand dispenser (three-pin DIN port).

**A**  
Variable-speed pump 78016-30



All pumps on this page. See page 39.



**B**  
Digital pump 78017-00 is fully programmable.

**Programmable**

ISO 9001:2008  
CERTIFIED SUPPLIER

CE 2 year warranty

### Specifications

**Pressure:** up to 22 psi (1.5 bar)      **Duty cycle:** continuous

Flow range per channel	Channels	Speed	Rollers	Tubing	Dimensions (W x H x D)	Power (selectable)	A Standard variable-speed pumps		B Programmable variable-speed digital pumps	
							Catalog number	Price	Catalog number	Price
0.005 to 59 mL/min 0.004 to 50 mL/min 0.004 to 34 mL/min	2	1.6 to 160 rpm	6 8 12	Three-stop (Page 39)	7" x 4" x 5.3" (17.8 x 10.2 x 13.5 cm)	115/230 VAC, 50/60 Hz	<a href="#">GM-78016-00</a> <a href="#">GM-78016-10</a> <a href="#">GM-78017-25</a>		<a href="#">GM-78016-40</a> <a href="#">GM-78017-00</a> <a href="#">GM-78016-45</a>	
0.003 to 37 mL/min 0.003 to 31 mL/min 0.003 to 21 mL/min	4	1.0 to 100 rpm	6 8 12	Three-stop (Page 39)	7.5" x 4" x 5.3" (17.8 x 10.2 x 13.5 cm)	115/230 VAC, 50/60 Hz	<a href="#">GM-78017-30</a> <a href="#">GM-78016-30</a> <a href="#">GM-78017-35</a>		<a href="#">GM-78017-10</a> <a href="#">GM-78017-20</a>	

### Minicartridges

Choose optional minicartridges with adjustable occlusion to manually vary pressure on each channel.

[GM-07624-64](#) Optional adjustable occlusion minicartridge

[GM-78016-98](#) Replacement Click'n'go™ minicartridge

## ISMATEC® Reglo Independent Channel Control Peristaltic Pumps

Independently control flow and direction of each channel via keypad or your PC

- Flexibility of bidirectional flow in each channel
- USB interface for quick connections
- Easy-to-use tubing cassettes allow fast changeovers

These three- and four-channel peristaltic pumps let you individually control the flow and direction of each channel from the intuitive keypad or via your computer—expanding your benchtop pumping capabilities with a single compact unit! Pump delivers continuous pumping or precision dispensing up to 35 mL/min with the capability of bidirectional flow in each channel. Plus, independent channel calibration minimizes tube-to-tube differences, resulting in high calibration accuracy.

**NEW**



### Specifications

**Accuracy:** ±1%      **Pressure:** up to 14.5 psi (1.0 bar)      **Duty cycle:** continuous



78001-70

Catalog number	Flow range per channel	Channels	Speed	Rollers	Tubing	Dimensions (W x H x D)	Power	Price
<a href="#">GM-78001-70</a>	0.001 to	3	1 to	8	Three-stop (see page 39)	4 7/8" x 6 1/4" x 7 1/2"	100 to 240 VAC, 50/60 Hz	
<a href="#">GM-78001-80</a>	35 mL/min	4	100 rpm					

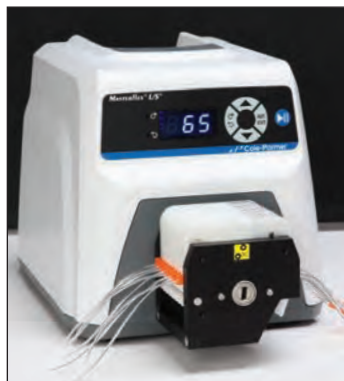
## ISMATEC® Minicartridge Pump Heads for Masterflex® L/S® Drives

Combine the accuracy of Ismatec with the versatility of Masterflex tubing pump systems

- Order optional minicartridges with adjustable occlusion to vary pressure each channel
- Easily remove or insert minicartridges without disturbing other channels

Choose the six-roller head for greater flow rates or the eight-roller head for virtually pulseless flow. Both heads accept up to eight Click'n'go™ minicartridges (included)—see the table (below right) to determine the maximum recommended number of cartridges to use with your drive. Click'n'go minicartridges feature spring occlusion for optimum tension at all times with no adjustments.

**Note:** See pages 14–22 for a complete selection of Masterflex® L/S® drives including RS-232 compatible, air-driven, DC-powered, and other models. (We recommend a 6 to 600 rpm L/S® drive for maximum flow rates with less pulsation; 1 to 100 rpm drive for better performance at low flow rates and for extended tubing life.)



See page 39



Catalog number	Flow rate (mL/min.)†	Channels	Rollers	Price
<a href="#">GM-07623-00</a>	0.003 to 32.5	8	6	
<a href="#">GM-07623-10</a>	0.002 to 28.5	8	8	

†Flow rate with three-stop tubing at 1 to 100 rpm

### Minicartridges

[GM-07624-64](#) Optional adjustable occlusion minicartridge

[GM-78016-98](#) Replacement Click'n'go minicartridge



Use your Ismatec cartridge pump head with Masterflex® L/S® 07553-series precision standard drives (order on pages 14–22).

### Recommended Number of Cartridges

Masterflex drive type	Masterflex drive models	Max no. of cartridges
Variable-speed	07554-80, -85, -90, and -95	Up to 200 rpm, 8; up to 400 rpm, 5; up to 600 rpm, 3
	All other L/S models	Up to 200 rpm, 8; up to 400 rpm, 7; up to 600 rpm, 6

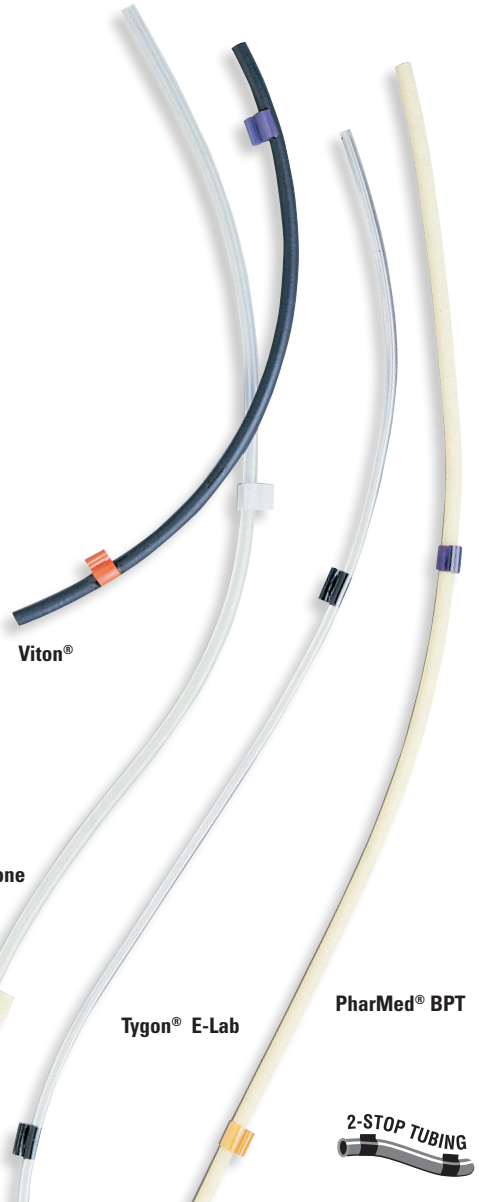
# Your Application Solved! Can't find the right product? Our specialists can!

## Two-Stop Color-Coded Autoanalysis Tubing for ISMATEC® Pumps

To complete your Ismatec® pumping system, order two-stop color-coded and extension tubing below. Tubing comes in various formulations for almost any pumping application. The stops on the two-stop tubing are color-coded according to tubing ID. Use this tubing with any of the Ismatec standard cartridge pumps and pump heads. Cartridges withstand pressures up to 45 psi (2.9 bar).

### Tubing Material Information

Two-stop, color-coded tubing				Extension tubing			
1 Catalog number prefix	Type	Suffixes for the available sizes	Tubes/pk (length)	Price/pk	Catalog number prefix	Length/pk	Price/pk
GM-96449-XX	Tygon® E-LFL	10, 12, 18, 26, 30, 34, 42, 48	12 (16")		GM-06449-XX	100 ft	
GM-96457-XX	Tygon® E-Food	10, 12, 18, 26, 30, 34, 42, 48	12 (16")		GM-06457-XX	100 ft	
GM-96460-XX	Tygon® E-Lab	10, 12, 18, 26, 30, 34, 42, 48	12 (16")		GM-06460-XX	100 ft	
GM-07616-XX	Silicone (peroxide cured)	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")		GM-07625-XX	50 ft	
GM-95602-XX	Silicone (platinum cured)	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")		GM-95612-XX	50 ft	
GM-97628-XX	Viton®	26, 30, 34, 38, 42, 46, 48	12 (12")		GM-97632-XX	50 ft	
GM-95713-XX	PharMed® BPT	12, 18, 26, 32, 36, 40, 42, 44, 48	12 (16")		GM-95809-XX	100 ft	
GM-95692-XX	Autoclavable PharMed® BPT	12, 32, 48	6 (16")				
GM-95606-XX	PVC Solvent/Hydrocarbon	10, 12, 14, 18, 26, 30, 32, 34, 36, 40, 42, 48	12 (16")		GM-95712-XX	50 ft	
GM-96427-XX	MHLL Tubing	24, 30, 36, 42, 48	6 (16")		None (PharMed BPT recommended for extension tubing; see 95809-XX above)		



### How to Order Stopped Tubing (on pages 38–39):

Select the type of tubing and the flow range you require from the tables below.

- 1 Select tubing material and pick out prefix.
- 2 Look at color-coded table and pick out suffix according to desired flow rate.
- 3 Combine prefix and suffix.
- 4 If required, order extension tubing to match the material and ID of your two-stop tubing. Connect two-stop to extension tubing with hose barbs, fittings, or by splicing.

#### Example:

To order extension tubing for a Viton® tubing GM-97628-18, order GM-97632-18 extension tubing.

### Two-Stop Tubing Size and Flow Rate Information

2 Catalog number suffix	ID (mm)	Color-coded stops	Flow rates for low-flow pumps (page 35)		Flow rates for quick-couple drives and 2-stop tubing pump heads (online at www.coleparmer.com/pumps)	
			Pump models	Pump models	Pump heads	Pump heads
			78023-00, -10, -20, -30, -40; 78001-02, -12, -22, -32, -42	78023-02, -12, -22, -32, -42; 78001-00, -10, -20, -30, -40	78002-34 or 78002-36 with drive 78002-00	78002-34 or 78002-36 with drive 78002-10
-10	0.19	Orange/red	0.003 to 0.26	0.0007 to 0.066	0.004 to 0.94	0.01 to 0.94
-12	0.25	Orange/blue	0.005 to 0.41	0.001 to 0.1	0.008 to 1.8	0.019 to 1.8
-14	0.38	Orange/green	0.009 to 0.86	0.003 to 0.22	0.019 to 4.5	0.046 to 4.5
-16	0.44	Green/yellow	0.011 to 1.1	0.003 to 0.28	0.025 to 6.1	0.06 to 6.1
-18	0.51	Orange/yellow	0.015 to 1.5	0.004 to 0.38	0.034 to 8.2	0.082 to 8.2
-22	0.64	Orange/white	0.023 to 2.3	0.006 to 0.58	0.053 to 13	0.127 to 13
-24	0.76	Black/black	0.032 to 3.2	0.009 to 0.81	0.074 to 18	0.178 to 18
-26	0.89	Orange/orange	0.044 to 4.4	0.011 to 1.1	0.1 to 24	0.24 to 24
-28	1.02	White/white	0.057 to 5.7	0.014 to 1.4	0.13 to 31	0.312 to 31
-30	1.14	Red/red	0.07 to 7	0.017 to 1.7	0.16 to 38	0.384 to 38
-32	1.30	Gray/gray	0.089 to 8.9	0.022 to 2.2	0.2 to 47	0.48 to 47
-34	1.42	Yellow/yellow	0.11 to 11	0.026 to 2.6	0.23 to 55	0.552 to 55
-36	1.52	Yellow/blue	0.12 to 12	0.03 to 3	0.26 to 62	0.624 to 62
-38	1.65	Blue/blue	0.14 to 14	0.035 to 3.5	0.3 to 71	0.72 to 71
-40	1.85	Green/green	0.17 to 17	0.043 to 4.3	0.36 to 86	0.864 to 86
-42	2.06	Purple/purple	0.21 to 21	0.052 to 5.2	0.43 to 100	1.032 to 100
-44	2.29	Purple/black	0.25 to 25	0.062 to 6.2	0.51 to 120	1.224 to 120
-46	2.54	Purple/orange	0.3 to 30	0.075 to 7.5	0.62 to 150	1.488 to 150
-48	2.79	Purple/white	0.35 to 35	0.088 to 8.8	0.74 to 180	1.776 to 180



## Three-Stop Color-Coded Autoanalysis Tubing for ISMATEC® Pumps



Complete your Ismatec® pumping system with three-stop color-coded tubing and extension tubing (at right). Tubing comes in various formulations for almost any pumping application. Three pre-attached tubing stops give you two sections—when one section of tubing fatigues, a fresh section is ready to use.

The stops on the three-stop tubing are color-coded according to tubing ID. Use three-stop tubing with any of the Ismatec® minicartridge pumps and pump heads. Minicartridges withstand pressures up to 22 psi (1.5 bar).



### Tubing Material Information

Three-stop, color-coded tubing					Extension tubing		
Catalog number prefix	Type	Suffixes for the available sizes	Tubes/pk (length)	Price/pk	Catalog number prefix	Length/pk	Price/pk
GM-96450-XX	Tygon® E-LFL	10, 12, 18, 26, 30, 34, 42, 48	12 (16")		GM-06449-XX	100 ft	
GM-96458-XX	Tygon® E-Food	10, 12, 18, 26, 30, 34, 42, 48	12 (16")		GM-06457-XX	100 ft	
GM-96461-XX	Tygon® E-Lab	10, 12, 18, 26, 30, 34, 42, 48	12 (16")		GM-06460-XX	100 ft	
GM-07624-XX	Silicone (peroxide cured)	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")		GM-07625-XX	50 ft	
GM-95603-XX	Silicone (platinum cured)	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")		GM-95612-XX	50 ft	
GM-97629-XX	Viton®	26-30, 34, 38, 42, 46, 48	12 (12")		GM-97632-XX	50 ft	
GM-95714-XX	Pharmed® BPT	12, 18, 26, 32, 36, 40, 44, 48	12 (16")		GM-95809-XX	100 ft	
GM-95693-XX	Autoclavable Pharmed® BPT	12, 32, 48	6 (16")				
GM-95605-XX	PVC Solvent/Hydrocarbon	10, 12, 14, 18, 26, 30, 32, 34, 36, 40, 42, 48	12 (16")		GM-95712-XX	50 ft	
GM-96425-XX	MHLL Tubing	24, 30, 36, 42, 48	6 (16")		None (PharMed BPT recommended for extension tubing; see 95809-XX above)		

### Three-Stop Tubing Size and Flow Rate Information

Catalog number suffix	ID (mm)	Color-coded stops	Flow rates† for fixed-speed rack mount pumps (visit www.coleparmer.com/pumps)							Flow rates† for Ecoline pumps	
			Pump models							78022-40	78022-60
			78012-50, -55, -90, -95	78012-80, -85	78012-00, -05, -30, -35	78012-20, -25	78012-60, -65	78012-40, -45			
-10	0.19	Org/red	0.056	0.17	0.047	0.14	0.11	0.093	0.01 to 0.98	0.0075 to 0.75	
-12	0.25	Org/blue	0.1	0.29	0.081	0.24	0.19	0.16	0.017 to 1.7	0.013 to 1.3	
-14	0.38	Org/grn	0.22	0.65	0.19	0.56	0.43	0.37	0.038 to 3.8	0.031 to 3.1	
-16	0.44	Grn/ylw	0.29	0.86	0.25	0.75	0.58	0.5	0.05 to 5	0.041 to 4.1	
-18	0.51	Org/ylw	0.38	1.2	0.34	1	0.77	0.67	0.067 to 6.7	0.055 to 5.5	
-22	0.64	Org/wht	0.6	1.8	0.52	1.6	1.2	1	0.1 to 10	0.085 to 8.5	
-24	0.76	Blk/blk	0.84	2.5	0.73	2.2	1.7	1.5	0.15 to 15	0.12 to 12	
-26	0.89	Org/Org	1.1	3.4	1	2.9	2.3	2	0.2 to 20	0.15 to 15	
-28	1.02	Wht/wht	1.5	4.4	1.3	3.8	2.9	2.5	0.26 to 26	0.2 to 20	
-30	1.14	Red/red	1.8	5.4	1.6	4.7	3.6	3.1	0.32 to 32	0.24 to 24	
-32	1.30	Gray/gray	2.3	6.9	2	5.9	4.6	3.9	0.4 to 40	0.29 to 29	
-34	1.42	Ylw/ylw	2.7	8	2.3	6.8	5.4	4.6	0.47 to 47	0.33 to 33	
-36	1.52	Ylw/blue	3	9.1	2.6	7.7	6	5.1	0.53 to 53	0.36 to 36	
-38	1.65	Blue/blue	3.5	10	2.9	8.8	6.9	5.8	0.61 to 61	0.41 to 41	
-40	1.85	Grn/grn	4.2	13	3.5	10	8.4	7	0.73 to 73	0.47 to 47	
-42	2.06	Purp/purp	5	15	4.1	12	10	8.2	0.87 to 87	0.53 to 53	
-44	2.29	Purp/blk	5.8	17	4.8	14	12	9.5	1 to 100	0.6 to 60	
-46	2.54	Purp/org	6.6	20	5.5	16	13	11	1.2 to 120	0.68 to 68	
-48	2.79	Purp/wht	7.4	22	6.2	19	15	12	1.3 to 130	0.75 to 75	

†Flow ranges (mL/min) are nominal. Actual flow depends on factors such as occlusion, fluid viscosity, temperature, and pressure.

Catalog number suffix	ID (mm)	Color-coded stops	Flow rates† for compact multichannel pumps (page 36)					Flow rates† for quick-couple drives and 3-Stop tubing pump heads (online at www.coleparmer.com/pumps)				
			Pump models					Pump head 78002-50		Pump head 78002-90		
			78016-00, -40	78016-10, 78017-00	78017-25, 78016-45	78017-30	78016-30, 78017-10	78017-35, 78017-20	with drive 78002-10	with drive 78002-00	with drive 78002-10	with drive 78002-00
-10	0.19	Org/red	0.005 to 0.45	0.004 to 0.37	0.004 to 0.34	0.003 to 0.28	0.003 to 0.23	0.003 to 0.21	0.007 to 0.67	0.003 to 0.67	0.007 to 0.51	0.003 to 0.51
-12	0.25	Org/blue	0.008 to 0.76	0.007 to 0.65	0.007 to 0.61	0.005 to 0.48	0.005 to 0.41	0.004 to 0.38	0.012 to 1.1	0.005 to 1.1	0.07 to 0.91	0.004 to 0.91
-14	0.38	Org/grn	0.017 to 1.7	0.015 to 1.5	0.014 to 1.4	0.011 to 1.1	0.01 to 0.94	0.009 to 0.88	0.026 to 2.6	0.011 to 2.6	0.022 to 2.1	0.009 to 2.1
-16	0.44	Grn/ylw	0.023 to 2.3	0.02 to 2	0.019 to 1.9	0.014 to 1.4	0.013 to 1.3	0.012 to 1.2	0.034 to 3.5	0.014 to 3.5	0.029 to 2.8	0.012 to 2.8
-18	0.51	Org/ylw	0.031 to 3.1	0.027 to 2.7	0.025 to 2.5	0.019 to 1.9	0.017 to 1.7	0.016 to 1.6	0.046 to 4.6	0.019 to 4.6	0.038 to 3.8	0.016 to 3.8
-22	0.64	Org/wht	0.048 to 4.8	0.042 to 4.2	0.039 to 3.9	0.03 to 3	0.026 to 2.6	0.024 to 2.4	0.072 to 7.2	0.03 to 7.2	0.058 to 5.8	0.024 to 5.8
-24	0.76	Blk/blk	0.067 to 6.7	0.058 to 5.8	0.053 to 5.3	0.042 to 4.2	0.036 to 3.6	0.033 to 3.3	0.101 to 10	0.042 to 10	0.079 to 8	0.033 to 8
-26	0.89	Org/Org	0.09 to 9	0.079 to 7.9	0.071 to 7.1	0.057 to 5.7	0.049 to 4.9	0.044 to 4.4	0.137 to 14	0.057 to 14	0.106 to 11	0.044 to 11
-28	1.02	Wht/wht	0.12 to 12	0.1 to 10	0.09 to 9	0.073 to 7.3	0.063 to 6.3	0.056 to 5.6	0.175 to 18	0.073 to 18	0.134 to 13	0.056 to 13
-30	1.14	Red/red	0.14 to 14	0.12 to 12	0.11 to 11	0.09 to 9	0.078 to 7.8	0.067 to 6.7	0.216 to 22	0.09 to 22	0.161 to 16	0.067 to 16
-32	1.30	Gray/gray	0.18 to 18	0.16 to 16	0.13 to 13	0.11 to 11	0.1 to 10	0.083 to 8.3	0.264 to 27	0.11 to 27	0.199 to 20	0.083 to 20
-34	1.42	Ylw/ylw	0.21 to 21	0.18 to 18	0.15 to 15	0.13 to 13	0.11 to 11	0.094 to 9.4	0.312 to 32	0.13 to 32	0.226 to 23	0.094 to 23
-36	1.52	Ylw/blue	0.24 to 24	0.2 to 20	0.17 to 17	0.15 to 15	0.13 to 13	0.1 to 10	0.36 to 36	0.15 to 36	0.24 to 25	0.1 to 25
-38	1.65	Blue/blue	0.28 to 28	0.23 to 23	0.19 to 19	0.17 to 17	0.15 to 15	0.12 to 12	0.408 to 42	0.17 to 42	0.288 to 28	0.12 to 28
-40	1.85	Grn/grn	0.34 to 34	0.28 to 28	0.21 to 21	0.21 to 21	0.17 to 17	0.13 to 13	0.504 to 50	0.21 to 50	0.312 to 32	0.13 to 32
-42	2.06	Purp/purp	0.4 to 40	0.33 to 33	0.24 to 24	0.25 to 25	0.2 to 20	0.15 to 15	0.6 to 59	0.25 to 59	0.36 to 37	0.15 to 37
-44	2.29	Purp/blk	0.46 to 46	0.38 to 38	0.27 to 27	0.29 to 29	0.24 to 24	0.17 to 17	0.696 to 69	0.29 to 69	0.408 to 41	0.17 to 41
-46	2.54	Purp/org	0.53 to 53	0.44 to 44	0.31 to 31	0.33 to 33	0.27 to 27	0.19 to 19	0.792 to 79	0.33 to 79	0.456 to 46	0.19 to 46
-48	2.79	Purp/wht	0.59 to 59	0.5 to 50	0.34 to 34	0.37 to 37	0.31 to 31	0.21 to 21	0.888 to 89	0.37 to 89	0.504 to 52	0.21 to 52

†Flow ranges (mL/min) are nominal. Actual flow depends on factors such as occlusion, fluid viscosity, temperature, and pressure.



## Magnetic Drive Pumps with Enclosed Motors

### Twin bearing system handles thrust loads for extended service life

- Quiet, energy efficient, and compact
- Internal cooling circuit reduces bearing temperature
- Enclosed motor for use in harsh environments

**A Moderate-Flow Polypropylene Pumps** are an ideal option for process, recirculation, or transfer applications where continuous flow and excellent chemical resistance are needed.

**B Fluoroplastic Pumps** with carbon fiber-reinforced ETFE are designed for highly corrosive or high-purity applications.



**A**  
Polypropylene moderate-flow pump  
72010-20



**B**  
Fluoroplastic pump  
72011-00

### A Moderate-Flow Polypropylene Pumps

#### Specifications

##### Wetted parts

Front/rear casings and impeller/magnet capsule:

glass fiber-reinforced polypropylene

Spindle and thrust ring: alumina ceramic 99.5%

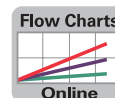
Casing O-ring: Viton®

Bearing: PTFE

Duty cycle: continuous



115 V only 220 V only



Catalog number	Max flow		Max head		Max pressure		Max temp		Connections		Motor		Power		Dimensions (L x W x H)		Price
	GPM	LPM	ft	m	psi	bar	°F	°C	Hose barb	NPT (M)	hp	rpm	VAC	Amps	in.	cm	
GM-72010-00 GM-72010-05	2.3	8.7	4.5	1.4	2.8	0.2	176	80	1/2"	—	1/250	3400	115 220	0.25 0.13	4 1/8 x 3 x 3 3/4	10.5 x 7.6 x 9.5	
GM-72010-10 GM-72010-15	3.1	11.7	6.8	2.1	4.3	0.3	176	80	1/2"	—	1/125	3400	115 220	0.40 0.20	4 1/8 x 3 x 3 3/4	10.5 x 7.6 x 9.5	
GM-72010-20 GM-72010-25	5	18.9	11.1	3.4	7.2	0.5	176	80	1/2"	—	1/75	3400	115 220	0.29 0.15	7 1/8 x 3 3/4 x 4 1/2	18.1 x 9.5 x 11.4	
GM-72010-30 GM-72010-35	8.2	31.0	14.1	4.3	10.0	0.7	176	80	5/8"	—	1/38	3400	115 220	0.53 0.27	8 1/4 x 4 1/4 x 4	21.0 x 10.8 x 10.2	
GM-72010-40 GM-72010-45	10	37.9	17.7	5.4	11.6	0.8	176	80	—	3/4"	1/16	3400	115 220	1.10 0.55	10 1/8 x 4 3/4 x 4 1/8	25.7 x 12.1 x 10.5	
GM-72010-50 GM-72010-55	13.7	51.9	21.3	6.5	14.2	1.0	176	80	—	3/4"	1/12	3400	115 220	1.30 0.65	10 3/8 x 4 3/4 x 5 1/8	27.0 x 12.1 x 13.0	
GM-72010-60 GM-72010-65	18.4	69.7	26.9	8.2	17.1	1.2	176	80	—	1"	1/9	3400	115 220	1.60 0.80	10 7/8 x 4 3/4 x 6 1/8	27.6 x 12.1 x 15.5	
GM-72010-70 GM-72010-75	25.6	96.6	31.8	9.7	21.3	1.5	176	80	—	1"	1/4	3400	115 220	2.80 1.40	10 1/4 x 5 3/4 x 6 1/8	26.0 x 14.6 x 15.5	
GM-72010-80 GM-72010-85	35.6	134.8	39	11.9	25.6	1.8	176	80	—	1"	1/3	3400	115 220	3.40 1.70	12 3/4 x 6 1/4 x 7	32.4 x 15.9 x 17.8	

### B Fluoroplastic Pumps

#### Specifications

##### Wetted parts

Front/rear casings and impeller/magnet capsule:

carbon fiber-reinforced ETFE

Spindle and thrust ring: silicone carbide

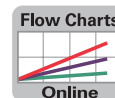
Casing O-ring: Viton®

Bearing: silicone carbide

Duty cycle: continuous



230 V only



Catalog number	Max flow		Max head		Max pressure		Max temp		Connections		Motor		Power		Dimensions (L x W x H)		Price
	GPM	LPM	ft	m	psi	bar	°F	°C	NPT(M)	hp	rpm	VAC	Amps	in.	cm		
GM-72011-00 GM-72011-05	3.2	12.1	26	7.9	17	1.2	176	80	1/2"	1/16	3300	115 230	0.25 0.13	9 1/8 x 4 3/4 x 5 1/8	23.2 x 12.1 x 13.0		
GM-72011-10 GM-72011-15	16	60.6	26	7.9	21.3	1.5	176	80	1"	1/9	3300	115 230	1.9 0.95	10 3/4 x 4 3/4 x 6 1/8	27.3 x 12.1 x 15.5		
GM-72011-20 GM-72011-25	36	136.3	38	11.6	31.2	2.2	176	80	1"	1/3	3300	115 230	3.4 1.7	12 5/8 x 6 1/4 x 6 7/8	32.1 x 15.9 x 17.5		

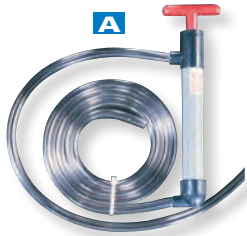
# You're Out? We're Not!

Thousands of **highlighted** items



## Plastic Hand-Operated Drum Pumps

Ideal for most acid/base or ionic salt applications



06437-00



06433-60



06437-10



70607-20



70607-00



06425-05



06433-20



06433-30



06433-40

### A Siphon/Lift Pail Pump

- Suitable for pumping petroleum products or water
- Cut inlet tube to fit your container
- Maximum suction lift is 10 ft (3.0-m)

### B Threaded Hand Pump

- Pump detergents, water, dilute alkalis, and waxes from drums or pails— $\frac{3}{4}$ " NPT(M) intake threads permit semi-permanent attachment
- Optional adapters securely attach pump to a variety of containers—order below

#### Adapters for B

Catalog number	Description	Price
<b>GM-06433-62</b>	Fits Rieke Sr. covers	
<b>GM-06433-64</b>	Fits Rieke Jr. covers	
<b>GM-06433-66</b>	Fits 70-mm openings	
<b>GM-06433-68</b>	Fits 2" IPS bung openings	

### C Siphon/Lift Drum Pump

- Equipped with a 2" IPS bung adapter for pumping detergents, water, dilute alkalis, or waxes from drums
- Cut inlet tube to fit your container

### D FDA-Compliant Pumps

- Materials comply with FDA CFR 21 regulations for indirect food contact
- Available with outlet hose (70607-20) or spout (70607-22)

### E Water and Chemical Siphons

- Portable and self-priming
- Water siphon (70607-00) includes 60" (152 cm) outlet hose—cut to fit your application
- Chemical siphons (70607-10, -12) are suitable for acid and alkali transfer

### F HDPE Hand Pump

- Pump acids, alcohols, and alkalis from carboys, drums, or tanks
- Self-cleaning ball valve ensures free flow and long pump life
- Order optional LDPE adapter to securely mount pump on drums (order below)

#### Adapter for F

Catalog number	Description	Price
<b>GM-06425-09</b>	Fits 2" IPS bung openings	

### G Heavy-Duty Acid-Transfer Pumps

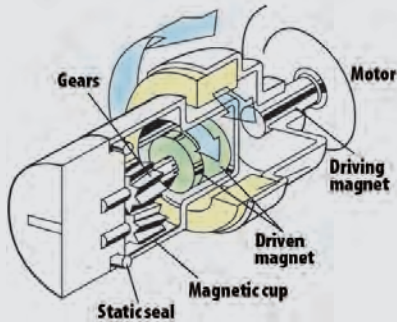
- UL-listed for sulfuric acid transfer at 50% concentration
- Withstand temperatures up to 120°F (49°C)
- Self-priming, will not siphon

Key	Catalog number	Strokes/gal. (L)	Wetted materials	Container adapter	Inlet tube		Outlet hose		Dimensions		Price
					L in. (cm)	OD in. (cm)	L in. (cm)	OD in. (cm)	L in. (cm)	Dia in. (cm)	
<b>A</b>	<b>GM-06437-00</b>	32 (9)	PVC barrel and hose, urethane-buna valves and seals	—	72" (182.9)	$\frac{1}{2}$ " (1.3)	36" (91.4)	$\frac{1}{2}$ " (1.3)	9" (22.9)	$1\frac{1}{4}$ " (3.2)	
<b>B</b>	<b>GM-06433-60</b>	26 (7)	PVC body and hose, Hypalon® valves and seals, LDPE tube	$\frac{3}{4}$ " NPT(M) <sup>†</sup>	18" (45.7)	$\frac{9}{16}$ " (1.4)	9" (22.9)	$\frac{9}{16}$ " (1.4)	12" (30.5)	$1\frac{1}{4}$ " (3.2)	
<b>C</b>	<b>GM-06437-10</b>	16 (5)	PVC body and hose, Hypalon valves and seals, LDPE tube	2" IPS	18" (45.7)	$\frac{9}{16}$ " (1.4)	48" (121.9)	$\frac{9}{16}$ " (1.4)	18" (45.7)	$1\frac{1}{4}$ " (3.2)	
	<b>GM-70607-20</b>		PVC barrel and hose, Viton® valves and seals, LDPE tube				9" (22.9)	$\frac{9}{16}$ " (1.4)	12" (30.5)	$1\frac{1}{4}$ " (3.2)	
<b>D</b>	<b>GM-70607-22</b>	26 (7)	PVC barrel, Viton valves and seals, LDPE tube and spout	$\frac{3}{4}$ " NPT(M)	12" (30.5)	$\frac{9}{16}$ " (1.4)	6" (15.2) spout	$\frac{9}{16}$ " (1.4)	12" (30.5)	$1\frac{1}{4}$ " (3.2)	
	<b>GM-70607-00</b>	32 (9)	PVC barrel, shaft, and hose	—	—	—	60" (152.4)	$\frac{9}{16}$ " (1.4)	9" (22.9)	$1\frac{1}{4}$ " (3.2)	
<b>E</b>	<b>GM-70607-10</b>	26 (7)	PVC barrel and hose, LDPE tube	2" IPS	18" (45.7)	$\frac{9}{16}$ " (1.4)	48" (121.9)	$\frac{9}{16}$ " (1.4)	12" (30.5)	$1\frac{1}{4}$ " (3.2)	
	<b>GM-70607-12</b>	12 (4)	PVC barrel and hose, PVC tube	—	—	—	48" (121.9)	$\frac{9}{16}$ " (1.4)	36" (91.4)	$1\frac{1}{4}$ " (3.2)	
<b>F</b>	<b>GM-06425-05</b>	6 (2)	All HDPE parts	None	34" (86.4)	$1\frac{1}{2}$ " (3.8)	14" (35.6)	$1\frac{1}{2}$ " (3.8)	38" (96.5)	$1\frac{3}{8}$ " (4.6)	
	<b>GM-06433-00</b>			Glass carboy							
	<b>GM-06433-10</b>			—							
	<b>GM-06433-20</b>			2" IPS			36" (91.4)	$1\frac{1}{4}$ " (3.2)	38" (96.5)	$1\frac{1}{2}$ " (3.8)	
<b>G</b>	<b>GM-06433-30</b>	6 (2)	Solvent-welded PVC body and shaft, Viton valves and seals	Buttress Dell drum (M)	—	—					
	<b>GM-06433-40</b>			83-mm buttress (F)							

<sup>†</sup>Optional adapter available—order separately above.

## MICROPUMP Gear Pump Technology

Micropump® gear pumps provide pulseless flow at moderate to high pressures, plus they offer the added advantage of leak- and contamination-free pumping.

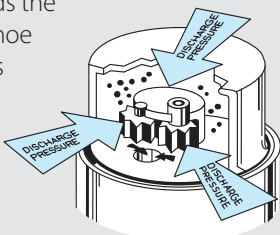


Unlike conventional gear pumps that use mechanical shaft seals, magnetically coupled Micropump pumps have no seals, eliminating the heat-generating frictional wear that can result in leaks and contamination. All low-flow, standard, and high-flow pump heads are compatible with a variety of drives and are available in cavity-style and pressure loaded models.

**Cavity-Style Pump Heads** depend on the surrounding fluid pressure in the magnetic cup to maintain a tight seal between the gear teeth. Choose these pump heads for applications requiring suction lift, frequent cycling, or a pressurized inlet.



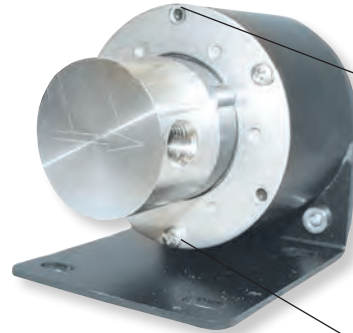
**Pressure-Loaded Pump Heads** have a suction shoe positioned around the inlet. Higher pressure in the magnetic cup relative to the inlet side holds the gears and suction shoe tightly together. This design increases volumetric accuracy by ensuring complete fluid transfer with no backflow or leakage between gear tips. Since the pump efficiency increases as discharge pressure increases, pressure-loaded pump heads are ideal for applications requiring high initial differential pressures and precise flow rates.



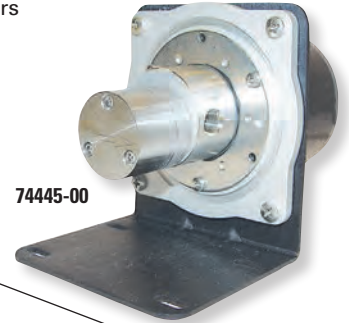
## MICROPUMP I-Drive™ Pump Systems

Complete pumps include head, motor, and integrated drive

- Variable-speed electronic controller delivers smooth, pulseless flow
- Static seals eliminate leaking
- Small envelope—ideal for OEM use
- IP55 rated



74215-00



74445-00



Cut-away view showing integrated drive on 74215-series and 74445-series pumps.

Electromagnetically driven, precision-gear pumps provide smooth, accurate, pulseless flow. Torque improvements and compact size are achieved with NdFeB magnets. Control speed by using a 0 to 5 VDC input signal, a 4 to 20 mA current loop, or manual control. Drives feature thermal and overload protection.

Choose a system with a suction shoe pump head to self compensate for wear, temperature, and pressure, and to maintain high volumetric efficiency. Cavity-style pump heads deliver higher lift capability and moderate pressure capability; an internal bypass is an integral safety feature of the cavity-style pump heads.

**What's included:** 2-ft (0.6-m) power cord and screwdriver.

**Suction shoe service kits include:** gears, suction shoe, shafts, scales, and springs.

**Cavity-style service kits include:** gears, bushings, and seals.

### Specifications



**Port size:** 1/8" NPT(F)

**Viscosity:** 0.2 to 1500 cp

**Suction lift:** 24" of H<sub>2</sub>O (at 3450 rpm)

**Duty cycle:** continuous

**Power**

Suction shoe pumps: 20 to 30 VDC, 40 W (1.8 A max)

Cavity-style pumps: 20 to 30 VDC, 70 W (3 A max)

**Reversible**

Suction shoe pump heads: no

Cavity-style pump heads: yes

**Wetted parts:** 316 SS

body, PPS gears, PTFE gears

**Max temperature:** 176°F (80°C)

**Internal bypass**

Suction shoe pump heads: no

Cavity-style pump heads: yes

**Dimensions (W x H x D)**

Suction shoe pumps: 2.7" x 3.5" x 9" (6.8 x 8.8 x 7.3 cm)

Cavity-style pumps: 3.5" x 4.5" x 3.9" (8.8 x 11.4 x 9.9 cm)

Catalog number	Flow rates (mL/min)			Max psi (bar)		Max speed (rpm)	Price	Service kits	
	mL/rev	500 rpm	5000 rpm	Diff	System			Cat. no.	Price
<b>Systems with suction shoe pump heads</b>									
<a href="#">GM-74215-00</a>	0.092	46	460	75 (5.2)	300 (20.7)	6000		<a href="#">GM-74215-90</a>	
<a href="#">GM-74215-04</a>									
<a href="#">GM-74215-08</a>									
<b>Systems with cavity-style pump heads</b>									
<a href="#">GM-74445-00</a>	0.32	160	1600	80 (5.5)	300 (20.7)	5500			
<a href="#">GM-74445-04</a>									
<a href="#">GM-74445-08</a>									
<a href="#">GM-74445-10</a>	0.64	320	3200	80 (5.5)	300 (20.7)	5500		<a href="#">GM-74445-92</a>	
<a href="#">GM-74445-14</a>									
<a href="#">GM-74445-18</a>									
<a href="#">GM-74445-20</a>	0.91	455	4550	80 (5.5)	300 (20.7)	5500			
<a href="#">GM-74445-24</a>									
<a href="#">GM-74445-28</a>									



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## MICROPUMP® A-Mount Gear Pump Heads

### Smooth pulseless flow provides precise, leak-free delivery of fluids

Magnetically driven, precision-gear pump heads provide smooth, accurate, pulseless fluid delivery. The magnetic drive and static seals keep fluids securely inside and potential contaminants out. Chemical resistant materials handle a wide range of materials (due to wetted parts). Pump heads are compact and easy to service. Modular design offers flexibility—configure to your specific needs.



**A**  
73011-00

### Find MORE!

For drives compatible with A-mount pump heads, see page 44 or go to...

[ColeParmer.com/gearpump](http://ColeParmer.com/gearpump)

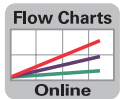
### A Cavity-Style Pump Heads

Cavity-style pump heads are designed to handle higher inlet pressures.

**Service kits include:** gears, bushings, and seals.

### Specifications

**Port size:** 1/8" NPT-(F)      **Suction lift:** 24" of H<sub>2</sub>O (at 1750 rpm)      **Reversible:** yes, on models without internal bypass  
**Max viscosity:** 0.2 to 1500 cp      **Duty cycle:** continuous



Catalog number	Flow rates (mL/min) <sup>†</sup>			Max pressure psi (bar)		Wetted parts			Temperature range	Internal bypass	Max speed (rpm)	Price	Service kits			
	mL/rev	at 50 rpm	at 5000 rpm	Diff	System	Body	Gears	Seals					Cat. no.	Price		
<a href="#">GM-73011-00</a>	0.32	16	1600	80 (5.5)	300 (20.7)	316 SS	PEEK	PTFE	-45 to 170°F (-73 to 77°C)	No	10,000		—	—		
<a href="#">GM-73011-02</a>				80 (5.5)			PEEK						-45 to 170°F (-73 to 77°C)	Yes	—	—
<a href="#">GM-07002-17</a>				50 (3.4)			PTFE						-45 to 130°F (-43 to 54°C)	Yes	<a href="#">GM-07144-38</a>	—
<a href="#">GM-07002-23</a>	0.64	32	3200	50 (3.4)	300 (20.7)	316 SS	PTFE	PTFE	-45 to 130°F (-43 to 54°C)	Yes	10,000		—	—		
<a href="#">GM-07001-80</a>				75 (5.2)			PPS						-45 to 170°F (-43 to 77°C)	—	<a href="#">GM-07001-89</a>	—
<a href="#">GM-73011-08</a>	0.64	32	3200	80 (5.5)	300 (20.7)	316 SS	PEEK	PTFE	-45 to 170°F (-73 to 77°C)	No	10,000		<a href="#">GM-73011-84</a>	—		
<a href="#">GM-73011-10</a>				80 (5.5)			PEEK						-45 to 170°F (-73 to 77°C)	Yes	<a href="#">GM-73011-84</a>	—
<a href="#">GM-73011-16</a>	0.91	45.5	4550	80 (5.5)	300 (20.7)	316 SS	PEEK	PTFE	-45 to 170°F (-43 to 77°C)	No	10,000		—	—		
<a href="#">GM-73011-18</a>				80 (5.5)			PEEK						-45 to 170°F (-43 to 77°C)	Yes	—	—
<a href="#">GM-07001-40</a>				50 (3.4)			PTFE						-45 to 130°F (-43 to 54°C)	Yes	<a href="#">GM-07001-41</a>	—

NOTE: Viscosity for all models is dependent on the parameters (flow rate, pressures, etc.) of the specific application.  
<sup>†</sup>Flow rates based on water at room temperature and no back pressure.

### B Suction Shoe Pump Heads

Suction shoe design provides higher delivery pressures and superior priming performance.

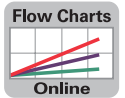
**Service kits include:** gears, suction shoe, shaft seals, and springs.



**B**  
73004-00

### Specifications

**Port size:** 1/8" NPT(F)      **Suction lift:** 12" of H<sub>2</sub>O (at 3450 rpm)      **Reversible:** no  
**Max viscosity:** 0.2 to 1500 cp      **Duty cycle:** continuous



Catalog number	Flow rates (mL/min) <sup>†</sup>			Max pressure psi (bar)		Wetted parts			Temperature range	Internal bypass	Max speed (rpm)	Price	Service kits	
	mL/rev	at 50 rpm	at 5000 rpm	Diff	System	Body	Gears	Seals					Cat. no.	Price
<a href="#">GM-07002-25</a>	0.017	0.85	85	20 (1.4)	300 (20.7)	316 SS	Graphite	PTFE	-50 to 250°F (-46 to 120°C)	No	8000		<a href="#">GM-07144-42</a>	—
<a href="#">GM-07002-26</a>				40 (2.8)									—	—
<a href="#">GM-07002-27</a>				40 (2.8)									—	—
<a href="#">GM-73003-14</a>	0.092	4.60	460	75 (5.2)	300 (20.7)	316 SS	PEEK	PTFE	-50 to 250°F (-46 to 120°C)	No	8000		—	—
<a href="#">GM-07002-14</a>				PPS			<a href="#">GM-07144-34</a>						—	
<a href="#">GM-73004-00</a>	0.261	13.05	1305	125 (8.6)	300 (20.7)	316 SS	PEEK	Viton®	-50 to 250°F (-46 to 120°C)	Yes	10,000		—	—
<a href="#">GM-73004-02</a>	0.58	29.00	2900	125 (8.6)	300 (20.7)	316 SS	PEEK	Viton	-50 to 250°F (-46 to 120°C)	Yes	10,000		—	—
<a href="#">GM-07003-02</a>				75 (5.2)			PPS						<a href="#">GM-07003-12</a>	—
<a href="#">GM-73004-04</a>	1.17	58.50	5850	60 (4.1)	300 (20.7)	316 SS	PEEK	Viton	-50 to 250°F (-46 to 120°C)	Yes	10,000		<a href="#">GM-73004-84</a>	—
<a href="#">GM-07003-04</a>				60 (4.1)			PPS						<a href="#">GM-07003-14</a>	—

NOTE: Viscosity for all models is dependent on the parameters (flow rate, pressures, etc.) of the specific application.  
<sup>†</sup>Flow rates based on water at room temperature and no back pressure.



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## Cole-Parmer® Gear Pump Systems

Complete, convenient systems—include drive and pump head!

### Benchtop Analog Drives

Analog drives provide continuous-duty operation with Micropump® A-mount pump heads. Gradual, one-second acceleration offers smooth control of speed and flow rate.

The permanent-magnet, direct-current (PMDC) drive is built to last—excellent for long-term applications.

**What's included:** The 115 VAC models include a 6-ft (1.8-m) modular line cord with US standard plug; the 220 VAC models include a 6-ft (1.8-m) modular line cord with IEC 320/CEE 22 connector—specify country to obtain correct line cord.

### Benchtop Digital Drives

Calibrate, copy, and dispense features produce precise, pulseless batching and dispensing. Displacement and flow values for all Micropump A-mount pump heads are stored in memory—simply enter the pump head size (gear code) to retrieve the displacement per revolution. IP23-rated enclosure protects the internal components.

Controller has a DB15F connection to the optional foot switch for hands-free on/off control (order foot switch separately below).

**What's included:** the 115 VAC models have a 6-ft (1.8-m) modular line cord with US standard plug; the 220 VAC models have a 6-ft (1.8-m) modular line cord with IEC 320/CEE 22 connector—specify country to obtain correct line cord.

**Service kits 07144-42, 74012-02, -42, and -52 include:** gears, suction shoe, shaft seals, and springs.

**Service kits 74012-12, -22, and -32 include:** gears, bushings, and seals.



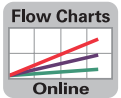
Benchtop digital system 74014-30



Benchtop analog system 74013-40

### Your Application Solved!

Contact our expert Application Specialists to assist you. Call **800-323-4340** or go online to **e-mail** or **chat live**.



### Specifications

**Port size:** 1/8" NPT(F)

**Viscosity:** 0.2 to 1500 cp

**Suction lift:** 24" of H<sub>2</sub>O (at 1750 rpm)

**Duty cycle:** continuous

#### Remote control

74013-00 to -65: none  
74014-00 to -65: (input) on/off by contact closure 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA, and remote output

**Max system temperature:** 104°F (40°C)

#### Speed

Analog drives: 50 to 5000 rpm  
Digital drives: 60 to 3600 rpm

ISO9001:2008 CERTIFIED SUPPLIER



CE 2 year warranty

#### Dimensions (L x W x H)

Analog drives:  
8 1/2" x 6 3/8" x 5 9/12"  
(21.6 x 16.2 x 13.8 cm)  
Digital drives:  
7 3/4" x 11 1/2" x 7 1/4"  
(19.7 x 29.2 x 18.4 cm)

Flow rates (mL/min) <sup>†</sup>			Max psi (bar)		Wetted parts			Temperature range	Power (VAC)	Benchtop analog drives		Benchtop digital drives		Service kits	
mL/rev	at 50 rpm	at 3600 rpm	Diff	System	Body	Gears	Seals			Catalog number	Price	Catalog number	Price	Catalog number	Price
0.017	0.85	85	20 (1.4)	300 (20.7)	316 SS	Graphite	PTFE	-50 to 350°F (-46 to 177°C)	115	<a href="#">GM-74013-70</a>		<a href="#">GM-74014-70</a>		<a href="#">GM-07144-42</a>	
									220	<a href="#">GM-74013-75</a>		<a href="#">GM-74014-75</a>			
0.092	4.60	331.2	75 (5.2)	300 (20.7)	316 SS	PPS	PTFE	-50 to 350°F (-46 to 177°C)	115	<a href="#">GM-74013-00</a>		<a href="#">GM-74014-00</a>			
									220	<a href="#">GM-74013-05</a>		<a href="#">GM-74014-05</a>			
0.092	4.60	331.2	75 (5.2)	300 (20.7)	PPS/316 SS	PPS	PPS	-50 to 250°F (-46 to 121°C)	115	<a href="#">GM-74013-60*</a>		<a href="#">GM-74014-60*</a>			
									220	<a href="#">GM-74013-65*</a>		<a href="#">GM-74014-65*</a>			
0.261	13.05	939.6	125 (8.6)	300 (20.7)	316 SS	PEEK	Viton	-50 to 250°F (-46 to 121°C)	115	<a href="#">GM-74013-50</a>		<a href="#">GM-74014-50</a>		<a href="#">GM-74012-52</a>	
									220	<a href="#">GM-74013-55</a>		<a href="#">GM-74014-55</a>			
0.316	15.8	1137.6	75 (5.2)	300 (20.7)	316 SS	PPS	PTFE	-50 to 250°F (-46 to 121°C)	115	<a href="#">GM-74013-10</a>		<a href="#">GM-74014-10</a>		<a href="#">GM-74012-12</a>	
									220	<a href="#">GM-74013-15</a>		<a href="#">GM-74014-15</a>			
0.64	32.0	2304	75 (5.2)	300 (20.7)	316 SS	PPS	PTFE	-50 to 250°F (-46 to 121°C)	115	<a href="#">GM-74013-20</a>		<a href="#">GM-74014-20</a>		<a href="#">GM-74012-22</a>	
									220	<a href="#">GM-74013-25</a>		<a href="#">GM-74014-25</a>			
0.91	45.5	3276	75 (5.2)	300 (20.7)	316 SS	PPS	PTFE	-50 to 250°F (-46 to 121°C)	115	<a href="#">GM-74013-30</a>		<a href="#">GM-74014-30</a>			
									220	<a href="#">GM-74013-35</a>		<a href="#">GM-74014-35</a>			
1.17	58.5	4212	60 (4.1)	300 (20.7)	316 SS	PPS	Viton®	-50 to 350°F (-46 to 177°C)	115	<a href="#">GM-74013-40</a>		<a href="#">GM-74014-40</a>			
									220	<a href="#">GM-74013-45</a>		<a href="#">GM-74014-45</a>			

<sup>†</sup>Flow rates in mL/min are based on water at room temperature and no back pressure.  
\*Has 1/4"-28 UNF Ports

**GM-07595-42** Foot switch, momentary start/stop, 6-ft (1.8-m) cable.

**GM-06385-10** Male pipe adapter (straight); PP, 1/4" OD x 1/8" NPT(M). Pack of 10

**GM-30621-31** Male pipe adapter; HDPE, 1/8" NPT (M) x 1/4" ID. Pack of 10

**GM-40610-16** Male pipe adapter; natural PP, 1/8" NPT x 1/4" ID. Pack of 10

Your Application Solved! Can't find the right product? Our specialists can!

## Cole-Parmer® Touch-Screen Syringe Pumps

Control flow rates from 5 µL/min to 220 mL/min via the user-friendly touch-screen display

- Full touch-screen enables you to quickly create configurations and recall them later
- Pump can be placed on its side to provide a smaller footprint with the touch-screen display automatically rotating
- Accuracy of ±0.355% and reproducibility of ±0.05%
- Daisy chain up to 99 pumps together with the built-in RS-485 connectivity
- LED indicator on the front panel provides visual confirmation that the pump is operating
- Accepts any type of syringe—glass, plastic, or stainless steel from 0.5 µL to 140 mL
- Full metal chassis provides noise isolation and antivibration features for increased reliability

**Model 74905-50** is an infuse-only syringe pump. It accommodates up to two syringes. Flow rates are defined by the user and operation is based on a selectable target volume or time values to control the total infusion volume.

**Model 74905-52** is an infuse/withdraw syringe pump. The pump accommodates up to two syringes. The unit will operate in the following modes: infuse only, withdraw only, infuse then withdraw, withdraw then infuse, and continuous. One program can be stored.

**Model 74905-54** is a programmable version of the 74905-52 pump. It is programmed to accept up to 800 user-defined steps—up to 40 programs with 20 steps each can be stored in memory.



74905-50

**Model 74905-56** is a push/pull syringe pump. The pump accommodates up to two syringes for infusion and two syringes for withdrawal. This pump is designed to support infusion and withdrawal simultaneously at the user-defined flow rates. The unit operates in the following modes: infuse only, withdraw only, infuse then withdraw, withdraw then infuse, and continuous.

**Model 74905-58** is a programmable version of the 74905-56 pump. It is programmed to accept up to 800 user-defined steps—up to 40 programs with 20 steps each can be stored into memory.

**What's included:** 6-ft (1.8 m) US power cord.



### Specifications

**Accuracy:** ±0.355%

**Reproducibility:** ±0.05%

**Syringe sizes accepted:** 0.5 µL to 140 mL

**Syringe travel rate:** from 0.36 µm/min to 190.8 mm/min

**Linear force:** 75 lb (34 kg)

**Output:** RS-232, RS-485, USB, 15 pin D-sub connector

**Dimensions:** 3½" x 10" x 11" (8.9 x 25.4 x 27.9 cm)

Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
<a href="#">GM-74905-50</a>	Infusion	5 µL/min to 220.97 mL/min	100 to 240, 50/60	
<a href="#">GM-74905-52</a>	Infusion/withdrawal			
<a href="#">GM-74905-54</a>	Infusion/withdrawal programmable			
<a href="#">GM-74905-56</a>	Push/pull			
<a href="#">GM-74905-58</a>	Push/pull programmable			

### Interchangeable Racks for touch-screen syringe pumps above



**GM-74905-60** Small syringe multi-rack, holds six 30- to 60-mL plastic syringes or ten 0.5-µL to 20-mL syringes



**GM-74905-61** Large syringe multi-rack, holds four 60- to 140-mL syringes



**GM-74905-62** Microliter syringe multi-rack, holds four 0.5-µL to 10-mL syringes

### Software Upgrades

**GM-74905-87 Software**, upgrade your infusion only pump to an infusion/withdrawal pump

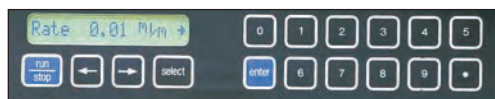
**GM-74905-89 Software**, upgrade from infuse/withdrawal pump to an infusion/withdrawal programmable pump

## Cole-Parmer Syringe Pumps

Ideal for low-flow, low-pressure applications where precision is needed

- Backlit alphanumeric LCD guides you through setup and operating procedures
- Nonvolatile memory retains settings even after your pump is turned off
- Accurate to  $\pm 0.5\%$

**What's included:** a 6-ft (1.8-m) cord with grounded plug (US standard plug on 115 VAC models, European plug on 230 VAC models). Syringes are available at [www.coleparmer.com/syringes](http://www.coleparmer.com/syringes).



Easily program 74901-series pumps through keypad; LCD provides readout for setup and operation.

**A Single-Syringe Infusion Pump** features microprocessor motor control and precision gearing. Microprocessor automatically selects display units based on syringe used. Obtain precise flow rates down to 0.2  $\mu\text{L/hr}$ . A wide dynamic range (6000:1) provides excellent flexibility. All commands can be programmed via the front-panel keypad. Settings can be changed while the pump is running.

### Specifications

**Accuracy:**  $\pm 1\%$  **Syringe travel rate:**  $9.5 \times 10^{-6}$  mm/min  
**Reproducibility:**  $\pm 0.1\%$  **Linear force:** 20 lb (9.1 kg)  
**Syringe sizes accepted:** 10  $\mu\text{L}$  to 60 mL

Cat. no.	Flow rate	Dimensions (W x H x D)	Power (VAC, Hz)	Price
<b>A Single-syringe pump</b>				
GM-74900-00	0.2 $\mu\text{L/hr}$	9" x 4" x 6"	115, 50/60	
GM-74900-05†	to 500 mL/hr	(23 x 10.2 x 15.2 cm)	230, 50/60	

†CE marked.

**B Multi-Syringe Pumps** achieve flow rates down to 0.001  $\mu\text{L/hr}$ . A wide dynamic range (100,000:1) allows flow rates to vary from a slow trickle to a steady stream.

Program infusion/withdrawal pumps to sequence operations: either withdrawal followed by infusion or infusion followed by withdrawal. Simple keypad allows you to easily setup and sequence operation of the pump.

Pumps can be controlled from a computer with RS-232 interface†. Pumps feature two TTL inputs and two TTL outputs. The TTL inputs allow for a foot switch or a process timer to control pump operation. Use TTL outputs for 5 V signal and run indicator.

### Specifications

**Accuracy:**  $\pm 1\%$  **Syringe travel rate:**  $9.5 \times 10^{-6}$  mm/min  
**Reproducibility:**  $\pm 0.1\%$  **Linear force:** 40 lb (18.1 kg)  
**Syringe sizes accepted:** 10  $\mu\text{L}$  to 140 mL **Output:** RS-232

Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
<b>B Dual-syringe pumps</b> measure 11"W x 5"H x 9 1/4"D (28 x 12.7 x 23.5 cm).				
GM-74900-10	Infusion	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74900-15†			230, 50/60	
GM-74900-20	Infusion/withdrawal	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74900-25†			230, 50/60	
<b>B Ten-syringe pumps</b> measure 11"W x 6"H x 12"D (28 x 15.2 x 30.5 cm).				
GM-74900-30	Infusion	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74900-35†			230, 50/60	
GM-74900-40	Infusion/withdrawal	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74900-45†			230, 50/60	

†CE marked †Order RS-232 cables separately online or call our Application Specialists.

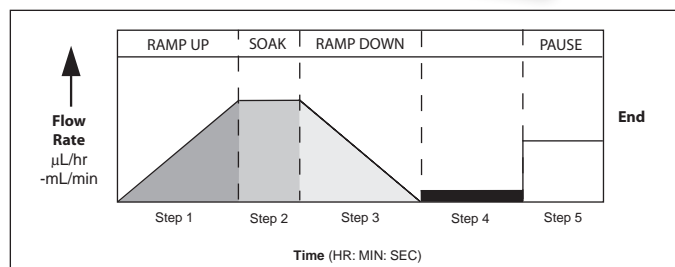


**A**  
74900-00

Pump continuously and automatically delivers exact quantities of liquid.



**C**  
74901-10



**C Multi-Step Multi-Syringe Pumps** also have a wide dynamic range (100,000:1) which allows flow rates to vary from a slow trickle to a steady stream. A built-in program allows you to enter up to eight commands—you can even repeat commands up to ten times. Pumps allow you to program flow rate hold, pause, and change of direction; each program can be run up to 12 hours. Pumps can also sequence operations: either withdrawal followed by infusion or infusion followed by withdrawal. Select from dual-syringe or ten-syringe models—ideal for pumping exact proportions. (See chart above for sample program.)

An RS-232 interface† allows you to operate your pump from a computer—great for daisy-chaining pumps! Pumps also feature two TTL inputs and two TTL outputs. The TTL inputs allow for a footswitch or a process timer to control pump operation. Use TTL outputs for 5 V signal and run indicator.

### Specifications

**Accuracy:**  $\pm 1\%$  **Baud rate:** four settings up to 9600  
**Reproducibility:**  $\pm 0.1\%$  **Syringe travel rate:**  $9.5 \times 10^{-6}$  mm/min  
**Syringe sizes accepted:** 10  $\mu\text{L}$  to 140 mL **Linear force:** 40 lb (18.1 kg)  
**Output:** RS-232

Catalog number	Description	Flow rate per syringe	Power (VAC, Hz)	Price
<b>C Multi-step dual-syringe pumps</b> measure 11"W x 5"H x 9 1/4"D (28 x 12.7 x 23.5 cm).				
GM-74900-60	Infusion	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74900-65†			230, 50/60	
GM-74901-00	Infusion/withdrawal	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74901-05†			230, 50/60	
<b>C Multi-step ten-syringe pumps</b> measure 11"W x 5"H x 12"D (28 x 12.7 x 30.5 cm).				
GM-74900-80	Infusion	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74900-85†			230, 50/60	
GM-74901-10	Infusion/withdrawal	0.001 $\mu\text{L/hr}$ to 147 mL/min	115, 50/60	
GM-74901-15†			230, 50/60	

†CE marked. †Order RS-232 cables separately online or call our Application Specialists.



## Cole-Parmer High-Pressure Peristaltic Pumps

**Pump at flow rates up to 158.5 GPH and pressures up to 125 psi—  
output volume is not affected by changes in back pressure**

- Self priming even against maximum line pressure
- NEMA 4X and IP66 rated for washdown
- Multiple I/O control and alarm modes
- Maintenance-free, brushless DC motor with a 2500:1 turndown ratio

Choose a pump to achieve flow rates up to 158.5 GPH (600 LPH) and pressures up to 125 psi (8.6 bar) depending on your particular application. The pump performance allows for 30 feet (9 meters) of suction lift using water. Keeping chemical compatibility as simple as possible, the tubing is the only material in contact with the fluid. These pumps can achieve maximum pressure via a clockwise or counterclockwise rotation, giving great flexibility to your installation situation.

Operator-friendly digital touch pad with menu-driven software make these pumps very easy to operate. The VGA graphic multicolor, backlit LCD displays remote/local control status, motor speed, output rate, input signal values, and service and alarm status. Multilingual display can present the information in English, Spanish, French, or German. A Tube Failure Detection (TFD) system senses tube failure by detecting the presence of the pumped chemical in the head. Built-in error correction prevents false triggering.

Pumps come standard with Norprene® tube sets. Norprene tubing meets FDA criteria for food and offers excellent chemical resistance.

**What's included:** Norprene tube set, 10 ft (3 m) of PVC suction tubing, 10 ft (3 m) of PE discharge tubing, injection fitting, foot strainer, mounting brackets and power cord (115 VAC models have US standard plug; 220 VAC CE-marked models have EU plug).



74203-06



### MORE online!

Pumps with Norprene Chemical tubing (for superior chemical resistance) and Tygothane® tubing (for use with oils, greases, and fuels) are available online, go to... [ColeParmer.com](http://ColeParmer.com)

### Specifications



**Wetted parts:** Norprene tube set, PVDF fittings, clear PVC suction tubing, LLDPE discharge tubing  
**Accuracy:** ±0.5% full scale  
**Repeatability:** ±0.5%  
**Suction lift:** 30 ft water, 0 psig (4.5 m water, 0 bar)  
**Max fluid viscosity:** 12,000 cp  
**Duty cycle:** continuous

**Input signals:** 4 to 20 mA, 0 to 10 VDC, pulse inputs for remote external speed control, and 0 to 30 VDC for contact closure remote start/stop  
**Output signals:** Scalable 4 to 20 mA or pulse; one 250 VAC/6 amp relay; three 115 VAC/1 amp contact closures assignable to monitor up to 17 different pump functions including TFD, FVS, remote/local control setting, motor on, fault, current operating mode, and others

**Enclosure:** NEMA 4X (IP66), polyester powder-coated aluminum  
**Connections**  
 Standard-capacity models: 3/8" compression  
 Large-capacity models: 1/2" barb  
**Dimensions (W x H x D)**  
 Standard-capacity models: 8 1/8" x 10 3/4" x 15 1/4" (20.6 x 27.3 x 38.9 cm)  
 Large-capacity models: 12 1/8" x 14 1/4" x 18 1/2" (30.8 x 36.1 x 47.3 cm)

### Standard-Capacity Pumps

Flow range			Max rpm	Max pressure		Maximum temperature	115 VAC, 60 Hz		220 VAC, 50 Hz		Norprene tube sets	
GPH	LPH	mL/min		psi	bar		Catalog number	Price	Catalog number	Price	Catalog number	Price
<b>Norprene tube models for CIP, SIP</b>												
0.001 to 2.10	0.003 to 7.8	0.05 to 132	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-01</a>		<a href="#">GM-74203-21</a>		<a href="#">GM-74204-01</a>	
0.007 to 17.4	0.026 to 66.0	0.4 to 1097	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-02</a>		<a href="#">GM-74203-22</a>		<a href="#">GM-74204-02</a>	
0.010 to 25.3	0.038 to 96.0	0.6 to 1596	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-03</a>		<a href="#">GM-74203-23</a>		<a href="#">GM-74204-03</a>	
0.013 to 33.3	0.050 to 126	0.8 to 2100	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-04</a>		<a href="#">GM-74203-24</a>		<a href="#">GM-74204-04</a>	
<b>Norprene tube model for extra-long life at low pressures</b>												
0.013 to 33.3	0.050 to 126	0.8 to 2100	125	30	2.1	185°F (85°C)	<a href="#">GM-74203-06</a>		<a href="#">GM-74203-26</a>		<a href="#">GM-74204-06</a>	

### Large-Capacity Pumps

Flow range			Max rpm	Max pressure		Maximum temperature	115 VAC, 60 Hz		220 VAC, 50 Hz		Norprene tube sets	
GPH	LPH	mL/min		psi	bar		Catalog number	Price	Catalog number	Price	Catalog number	Price
<b>Norprene tube models for CIP, SIP</b>												
0.01 to 28.5	0.04 to 108	0.7 to 1800	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-41</a>		<a href="#">GM-74203-61</a>		<a href="#">GM-74204-41</a>	
0.2 to 44.4	0.07 to 168	1.1 to 2800	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-42</a>		<a href="#">GM-74203-62</a>		<a href="#">GM-74204-42</a>	
0.02 to 50.7	0.08 to 192	1.3 to 3200	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-43</a>		<a href="#">GM-74203-63</a>		<a href="#">GM-74204-43</a>	
0.02 to 54.0	0.9 to 204	1.4 to 3400	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-44</a>		<a href="#">GM-74203-64</a>		<a href="#">GM-74204-44</a>	
0.04 to 100.0	0.15 to 378	2.5 to 6300	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-46</a>		<a href="#">GM-74203-66</a>		<a href="#">GM-74204-46</a>	
0.06 to 158.5	0.24 to 600	4.0 to 10000	125	125	8.6	185°F (85°C)	<a href="#">GM-74203-47</a>		<a href="#">GM-74203-67</a>		<a href="#">GM-74204-47</a>	
<b>Norprene tube models for extra-long life at low pressures</b>												
0.02 to 50.7	0.07 to 192	1.3 to 3200	125	30	2.1	185°F (85°C)	<a href="#">GM-74203-48</a>		<a href="#">GM-74203-68</a>		<a href="#">GM-74204-48</a>	
0.04 to 111	0.17 to 420	2.8 to 7000	125	30	2.1	185°F (85°C)	<a href="#">GM-74203-49</a>		<a href="#">GM-74203-69</a>		<a href="#">GM-74204-49</a>	



# Your Application Solved! Can't find the right product? Our specialists can!

## All-Plastic Double-Diaphragm Pumps

### No metal wetted parts permit use with corrosive liquids

- Factory-set pressure limits protect pumps from damage—pumping stops when high limit is reached, resumes when pressure decreases to low setting
- Motors are rated for 50 and 60 Hz

#### Multiposition Pumps

Pump head rotates and mounts in 90° increments—position ports in one of four orientations to simplify installation. Order optional inlet filter below to filter particulates.

**What's included:** 115 VAC models have a 6-ft (1.8-m) power cord with three-prong plug.



75000-00

#### Continuous-Duty Pump

Multichambered pump offers efficient transfer of mild acids, bases, and light oils. Thermal overload protected, permanent-magnet motor.

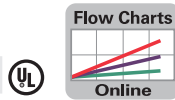
**What's included:** 6-ft (1.8-m) power cord with three-prong plug.



75102-00

#### Specifications

**Suction lift:** 6 ft (1.8 m)  
**Viscosity:** light  
**Particulates:** 50 µm max  
**Valve material:**  
 Models 75000-00, -05: Santoprene®  
 Models 75000-10, -15, -20: EPDM  
**Duty cycle:** intermittent  
**Run dry:** yes



#### Specifications

**Suction lift:** 10 ft (3 m) dry  
**Viscosity:** 250 cp max  
**Particulates:** 1 mm max  
**Valve material:** nitrile  
**Duty cycle:** continuous  
**Run dry:** yes



Catalog number	Max flow GPM (LPM)	psi (bar) limits†		Port size	Max temp	Wetted materials		Motor (50/60 Hz)			Dimensions (L x W x H)	Price
		Max	Min			Body	Diaphragm	Type‡	Power	Amps		
<b>Multiposition pumps</b>												
<a href="#">GM-75000-00</a>	1.85 (7.5)	60 (4.1)	40 (2.8)	3/8" NPT(F)	160°F (71°C)	PP	Santoprene®	TENV	115 VAC	0.55	7 1/4" x 4" x 3 3/4" (18.4 x 10.2 x 9.5 cm)	
<a href="#">GM-75000-05</a>									230 VAC	0.25		
<a href="#">GM-75000-10</a>	1.87 (7.1)	95 (6.6)	70 (4.8)	1/4" NPT(F)	200°F (93°C)	Nylon	EPDM	TEFC	115 VAC	1.20	8 7/8" x 4" x 3 1/2" (22.5 x 10.2 x 8.9 cm)	
<a href="#">GM-75000-15</a>									230 VAC	0.75		
<b>Continuous-duty pump</b>												
<a href="#">GM-75102-00</a>	3.5 (13.2)	40 (2.8)	20 (1.4)	1/2" hose barb	175°F (79°C)	PP	Santoprene	TEFC	115 VAC	1.8	11 5/16" x 5 1/16" x 5 5/8" (28.7 x 13.8 x 14.3 cm)	

†Factory pressure switch settings. ‡TENV = totally enclosed, nonventilated TEFC = totally enclosed, fan cooled

[GM-75000-51 Inlet filter/strainer](#), 1/2" hose barb connections; 20 to 30 mesh. FDA-approved polypropylene body/polyester bowl for multiposition pumps

[GM-75102-52 Replacement diaphragm](#) for continuous-duty pump

[GM-75102-53 Replacement valve kit](#) for continuous-duty pump

## Bypass Diaphragm Pump

### Ideal for spray nozzles and transfer applications where smooth, consistent flow is required

Pump accommodates any size spray orifice. Maintain a near-constant pressure across pumping range for any size nozzle used. A flexible diaphragm design allows pump to run dry without damage.

**What's included:** 115 VAC model includes a 6-ft (1.8-m) power cord; 12 VDC model has leads.



75420-00

#### Specifications

**Self-priming:** 8 ft (2.4 m)      **Particulates:** no      **Duty cycle:** continuous      **Run dry:** yes

Catalog number	Max flow GPM (LPM)	Max psi (bar)	Port size	Max temp	Wetted parts			Power	Amps	Dimensions (L x W x H)	Price
					Body	Diaphragm	Valves				
<a href="#">GM-75420-00</a>	1.4 (5.3)	45 (3.1)	3/8" NPT(F)	140°F (60°C)	Polypropylene	Santoprene®	Viton®	115 VAC, 60 Hz	0.51	6 1/2" x 3 3/8" x 4" (16.5 x 8.6 x 10.2 cm)	
12 VDC								5.5	7 3/8" x 3 3/8" x 4 1/8" (18.8 x 8.6 x 10.5 cm)		

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## Air Cadet® Vacuum/Pressure Pumps

Unique cavity configuration minimizes dead space and air entrapment

- All-plastic, convoluted diaphragm design handles many vacuum/pressure applications and reduces stress, wear, and heat buildup
- Upgraded diaphragm design for improved performance
- Available with standard 115 or 230 VAC motor, or a portable 12 VDC motor. Standard AC motors are service-free, brushless type with sealed ball bearings and thermal overload protection



### A-B Single-Head and Dual-Head Pumps

Single-head pumps are economically priced and handle many tough vacuum/pressure applications.

Dual-head pumps give you increased capacity over the single-head models. Use the two pump heads independently or connect them in series with 3/8" ID Tygon® vacuum tubing for up to 23" Hg vacuum.

**What's included:** PTFE thread tape, polyethylene 3/8" NPT(M) x 3/8" hose barb adapters, and a 6-ft (1.8-m), three-wire cord; 115 VAC models have a plug. Power switch on all models except 07531-65. **Note:** Do not use metal fittings with any Air Cadet pump.

### C Vacuum/Pressure Stations

Stations feature a built-in bronze and brass vacuum/pressure gauge and stainless steel (SS) regulator. Use the auxiliary port to evacuate or pressurize two systems simultaneously. Each station includes a 9" (22.8 cm) piece of vinyl tubing to connect pump to the regulator.

**What's included:** PTFE thread tape, two polyethylene 3/8" NPT(M) x 3/8" hose barb adapters, one PE 1/4" NPT(M) x 3/8" hose barb adapter (for auxiliary port), and a 6-ft (1.8-m), three-wire cord. The 115 VAC model has a plug. **Note:** Do not use metal fittings with any Air Cadet pump.

### D OEM Vacuum/Pressure Pumps

These pumps have excellent vacuum/pressure capabilities with continuous operation up to 20" Hg or 18 psi. Long-life convoluted diaphragm minimizes stress and heat buildup. The head is made of non-contaminating plastics, Noryl® body, nitrile diaphragm, and PTFE valves. Pump will provide approximately 4000 service hours.

**What's included:** pump with pigtailed. **Note:** Do not use metal fittings with any Air Cadet pump.

## Specifications

### Wetted parts

Models 07531-40, -45, -60, and -65: Noryl® pump head, FKM diaphragm, PTFE valves, and polyethylene (PE) adapters

Models 07531-80 and -85: FKM diaphragm, SS regulator, bronze/brass gauge, and PE adapters

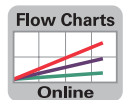
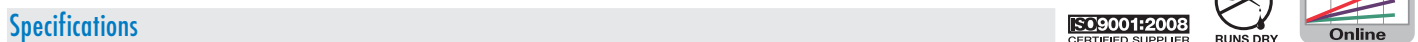
Model 07530-85: Noryl pump head, FKM diaphragm, PTFE valves

Model 07531-25: Noryl pump head, FKM diaphragm, PTFE valves, and PE adapters

**Duty cycle:** 6-hr cycle for diaphragms; motors are continuous duty (except 07531-25)

Catalog number	Free-air capacity cfm (LPM)	Max vacuum "Hg (Torr)	Max pressure psi (bar)	Max temp	Motor type		Noise rating	Port size	Power	Amps	Dimensions (L x W x H)		Price
					Type	hp					in.	cm	
<b>A Single-head pumps</b>													
GM-07532-40	0.54 (15.5)	20 (508)	18 (1.24)	95°F (35°C)	TEFC	1/45	72 dB(A)	3/8" hose barb	115 VAC, 60 Hz	1.2	8 x 4 x 5 1/2	20.3 x 10.2 x 14	
GM-07532-45	0.45 (13)								230 VAC, 50 Hz	0.8			
<b>B Dual-head pumps</b>													
GM-07532-60	1.1 (31) <sup>‡</sup>	20 (508)	18 (1.24)	95°F (35°C)	TEFC	1/25	76 dB(A)	3/8" hose barb	115 VAC, 60 Hz	1.7	11 3/4 x 4 x 5 1/2	29.8 x 10.2 x 14	
GM-07532-65 <sup>††</sup>	0.91 (26) <sup>‡</sup>								230 VAC, 50 Hz	0.6	7 1/2 x 8 x 8 3/4	19.1 x 20.3 x 22.2	
<b>C Vacuum/pressure stations</b>													
GM-07532-80	0.5 (14.1)	20 (508)	18 (1.24)	95°F (35°C)	TEFC	1/45	73 dB(A)	3/8" hose barb	115 VAC, 60 Hz	1.5	7 1/2 x 8 x 8 3/4	19.1 x 20.3 x 22.2	
GM-07532-85	0.4 (11.3)								230 VAC, 50 Hz	0.75			
<b>D OEM vacuum/pressure pumps</b>													
GM-07530-85	0.6 (17)	20 (508)	18 (1.24)	95°F (35°C)	TEFC	1/45	72 dB(A)	3/8" NPT(F)	115 VAC	1.2	7 1/4 x 4 x 5 1/2	18.4 x 10.2 x 14	
GM-07532-25		18 (457.2)	15 (1.03)						12 VDC	4.0	8 x 4 x 5 1/2	20.3 x 10.2 x 14	

<sup>‡</sup>Total free-air capacity. Single-channel capacity is half this value. <sup>††</sup>Power switch not available on 230 VAC models.



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Pumps

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Flow/Level

Pressure

Valves

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## Cole-Parmer Air Admiral® Vacuum/Pressure Pumps

### Compact size and integral handle make pump easily transportable

- Economical pump serves as pressure or vacuum source with an excellent price-to-performance ratio
- Low-friction piston runs cool and quiet for a long service life with consistent performance

This pump is designed for portability and versatility with a tough, lightweight plastic housing and integral carrying handle. The long-wearing motor delivers performance characteristics suitable for a wide range of applications. Pump features a convenient cord storage compartment in its base.

**What's included:** 6-ft (1.8-m) cord with plug (US standard on 115 VAC model; European plug on 230 VAC model).

**Note:** Do not pump liquids or immerse pump. Avoid organic, basic, and acidic vapors.



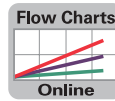
79202-00



### Specifications

**Wetted parts:** glass-filled polyester piston cup retainer and head, PPS cylinder sleeve, valves of Viton® fluoroelastomer, PTFE piston cup, silicone tubing, acetal fittings

**Dimensions:** 7<sup>5</sup>/<sub>8</sub>" L x 4<sup>1</sup>/<sub>2</sub>" W x 7<sup>1</sup>/<sub>2</sub>" H (19.4 x 11.4 x 19.1 cm)  
**Duty cycle:** continuous



Catalog number	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Max temp	Port sizes (vacuum/pressure)	Motor		Noise rating	Power (VAC, Hz)	Amps	Price
						Type	hp				
GM-79202-00	0.37 (10.5)	20" Hg	33 psi	104°F (40°C)	1/4" hose barb	Shaded pole	1/25	57 dB(A) at 3 ft (1 m)	115, 60	1.6	
GM-79202-05	0.31 (8.8)	(508 Torr)	(2.28 bar)						230, 50	0.8	

**GM-06413-20 Tygon® vacuum tubing,** 1/4" ID x 5/8" OD. Pack of 10 ft (3 m)

## High-Capacity Vacuum/Pressure Pumps

### Free-air capacities up to 2.2 cfm (62.3 L/min)

- Shaded-pole fan-cooled motor has thermal overload switch to protect your pump system
- Heads on pumps 07061-60 and -05 are connected in parallel for higher capacity; heads on 07061-11 and -13 are connected in series for greater vacuum
- Select pumps with or without gauges, regulators, and valves

**What's included:** 6-ft (1.8-m), three-wire cord (US standard plug on 115 VAC models). Models 07061-11 and -13 include a filter/muffler.



07061-40

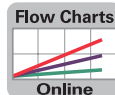
### Specifications

**Wetted parts:** aluminum, stainless steel, Nordel®, and Nomex®

**Motor:** permanent split capacitor

**Port size:** 1/4" NPT(F), 3/8" hose barb on gauges

**Duty cycle:** continuous  
**Noise rating:** 68 dB(A)



Catalog number	Pump head configuration	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Max temperature	hp	Power (VAC, Hz)	Amps	Dimensions (L x W x H)	Price
<b>Pump without gauges or regulators</b> (order regulators separately below; order gauges with 1/4" NPT(M) connections online)										
GM-07061-21	Single	1.1 (31.2)	25.5" Hg	60 psi	100°F (38°C)	1/8	115, 60	4.2	7 <sup>5</sup> / <sub>8</sub> " x 5 <sup>1</sup> / <sub>8</sub> " x 10 <sup>1</sup> / <sub>4</sub> " (19.4 x 13 x 26 cm)	
GM-07061-22		1.0 (28.3)	24.0" Hg	(4.14 bar)			220/240, 50			
<b>Pumps with gauges, regulators, and adjustable relief valve</b>										
GM-07061-40	Single	1.1 (31.2)	25.5" Hg	60 psi	100°F (38°C)	1/8	115, 60	4.2	7 <sup>5</sup> / <sub>8</sub> " x 5 <sup>1</sup> / <sub>8</sub> " x 10 <sup>1</sup> / <sub>4</sub> " (19.4 x 13 x 26 cm)	
GM-07061-42		1.0 (28.3)	24.0" Hg	(4.14 bar)			220/240, 50			
GM-07061-60	Dual/parallel	2.2 (62.3)	25.5" Hg	60 psi	100°F (38°C)	1/4	115, 60	3.6	11 <sup>13</sup> / <sub>16</sub> " x 5 <sup>1</sup> / <sub>2</sub> " x 10 <sup>1</sup> / <sub>4</sub> " (30 x 14 x 26 cm)	
GM-07061-05		1.8 (51.0)	24.0" Hg	(4.14 bar)			220, 50			
<b>Pump with vacuum gauge only</b>										
GM-07061-11	Dual/series	1.15 (32.5)	29.0" Hg	—	100°F (38°C)	1/4	115, 60	3.6	11 <sup>13</sup> / <sub>16</sub> " x 5 <sup>1</sup> / <sub>2</sub> " x 10 <sup>1</sup> / <sub>4</sub> " (30 x 14 x 26 cm)	
GM-07061-13		0.85 (24.0)	28.0" Hg				220, 50			

**GM-07061-32 Pressure regulator assembly** for pumps 07061-21 and -22

**GM-07061-01 Service kit** for all pumps

**GM-07061-06 Diaphragm** for all models, neoprene/nylon

**GM-07061-30 Vacuum regulator assembly** for pumps 07061-21 and -22

**GM-07061-03 Service kit** for dual-head pumps. Pumps 07061-60, -05, -11 and -13 also require kit 07061-01 above

**GM-07061-04 Replacement diaphragm** for all models, Nordel/Nomex



# Your Complete **Tubing** Resource



## Wide **SELECTION**

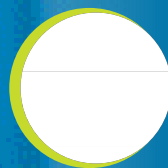
> 170 Formulations

## Expert **SERVICES**

### Chemical Compatibility Database

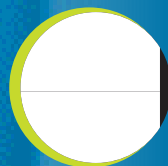
– Check material compatibility before you buy

[ColeParmer.com/Chemchart](http://ColeParmer.com/Chemchart)



### Custom Packaging

– Custom sizes, lengths, and packaging options



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## Cole-Parmer Silicone Tubing

### Peroxide Silicone



**Applications:** Pharmaceutical, biotechnology, food and beverage, aerospace, and general lab applications.

**Characteristics:** Peroxide-cured, excellent heat resistance, low compression set, odorless, nontoxic, translucent.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI requirements. Tubing is manufactured according to GMP.

**Temperature range:** -60 to 460°F (-51 to 238°C)

**Sterilize:** Autoclave or gamma irradiation.

### Platinum Silicone



**Applications:** Pharmaceutical, biotechnology, aerospace, food and beverage, and general lab applications.

**Characteristics:** Platinum-cured, excellent heat resistance, low compression set, odorless, nontoxic, translucent.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600); meets USP Class VI; exceeds 3A Sanitary Standards. Tubing is manufactured according to GMP.

**Temperature range:** -58 to 446°F (-50 to 230°C)

**Sterilize:** Autoclave or gamma irradiation.

Dimensions: in. (mm)			Max psi at 70°F (21°C)	Peroxide silicone		Platinum silicone	
ID	OD	Wall		Catalog number	Price/25-ft pk	Catalog number	Price/25-ft pk
1/50 (0.5)	1/12 (2.1)	1/32 (0.8)	30	<a href="#">GM-06411-59</a>		<a href="#">GM-95802-00</a>	
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	30	<a href="#">GM-06411-60</a>		<a href="#">GM-95802-01</a>	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	15	<a href="#">GM-06411-62</a>		<a href="#">GM-95802-02</a>	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	15	<a href="#">GM-06411-63</a>		<a href="#">GM-95802-03</a>	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	10	<a href="#">GM-06411-64</a>		<a href="#">GM-95802-04</a>	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	20	<a href="#">GM-06411-67</a>		<a href="#">GM-95802-05</a>	
1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	25	<a href="#">GM-06411-68</a>		<a href="#">GM-95802-06</a>	
5/32 (4.0)	5/32 (4.0)	1/32 (0.8)	10	<a href="#">GM-06411-65</a>		<a href="#">GM-95802-07</a>	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	9	<a href="#">GM-06411-66</a>		<a href="#">GM-95802-08</a>	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13	<a href="#">GM-06411-03</a>		<a href="#">GM-95802-09</a>	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	22	<a href="#">GM-06411-69</a>		<a href="#">GM-95802-10</a>	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	9	<a href="#">GM-06411-70</a>		<a href="#">GM-95802-11</a>	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10	<a href="#">GM-06411-71</a>		<a href="#">GM-95802-12</a>	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	17	<a href="#">GM-06411-72</a>		<a href="#">GM-95802-13</a>	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17	<a href="#">GM-06411-74</a>		<a href="#">GM-95802-14</a>	
3/16 (8.0)	7/16 (11.2)	1/16 (1.6)	10	<a href="#">GM-06411-75</a>		<a href="#">GM-95802-15</a>	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	16	<a href="#">GM-06411-76</a>		<a href="#">GM-95802-16</a>	
5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	20	<a href="#">GM-06411-77</a>		<a href="#">GM-95802-17</a>	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	10	<a href="#">GM-06411-12</a>		<a href="#">GM-95802-18</a>	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	12	<a href="#">GM-06411-78</a>		<a href="#">GM-95802-19</a>	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	15	<a href="#">GM-06411-79</a>		<a href="#">GM-95802-20</a>	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	9	<a href="#">GM-06411-80</a>		<a href="#">GM-95802-21</a>	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	10	<a href="#">GM-06411-19</a>		<a href="#">GM-95802-22</a>	
1/2 (12.8)	3/4 (19.2)	1/8 (3.2)	12	<a href="#">GM-06411-55</a>		<a href="#">GM-95802-23</a>	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	10	<a href="#">GM-06411-82</a>		<a href="#">GM-95802-24</a>	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	12	<a href="#">GM-06411-58</a>		<a href="#">GM-95802-25</a>	
3/4 (19.2)	1 (25.4)	1/8 (3.2)	9	<a href="#">GM-06411-83</a>		<a href="#">GM-95802-26</a>	

## Cole-Parmer Peroxide-Cured Reinforced Silicone Tubing



**Applications:** Demanding high-pressure pharmaceutical, biotechnology, aerospace, and food and beverage applications.

**Characteristics:** Excellent heat resistance, low compression set, odorless, nontoxic, low tackiness, translucent.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI. Tubing is manufactured according to GMP.

**Temperature range:** -60 to 400°F (-51 to 204°C)

**Sterilize:** Autoclave or gamma irradiation.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/pk
	ID	OD	Wall		
<a href="#">GM-95623-00</a>	1/16 (1.8)	5/16 (8.0)	1/8 (3.2)	175 (12.1)	/25-ft
<a href="#">GM-95623-01</a>	1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	175 (12.1)	/25-ft
<a href="#">GM-95623-03</a>	1/4 (6.4)	9/16 (14.4)	5/32 (4.0)	155 (10.7)	/25-ft
<a href="#">GM-95623-04</a>	5/16 (8.0)	19/32 (15.1)	3/64 (3.6)	145 (10.0)	/25-ft
<a href="#">GM-95623-05</a>	3/8 (9.6)	11/16 (17.6)	5/32 (4.0)	138 (9.5)	/25-ft
<a href="#">GM-95623-06</a>	1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	125 (8.6)	/25-ft
<a href="#">GM-95623-08</a>	3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	57 (3.9)	/25-ft
<a href="#">GM-95623-09</a>	7/8 (22.2)	1 1/4 (31.8)	3/16 (4.8)	119 (8.2)	/25-ft
<a href="#">GM-95623-10</a>	1 (25.4)	1 3/8 (35.0)	3/16 (4.8)	113 (7.8)	/10-ft

## Cole-Parmer Platinum-Cured Reinforced Silicone Tubing



**Formulation:** Tygon® 3370 I. B., silicone, platinum cured.

**Applications:** Demanding sanitary high-pressure pharmaceutical, biotechnology, food and beverage, and cosmetic applications.

**Characteristics:** Excellent heat resistance, low compression set, odorless, and nontoxic, translucent.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and USP Class V extractables; exceeds Class VI implant; exceeds 3A Sanitary Standards; produced to Bulk Pharmaceutical cGMPs (FDA 21 CFR 210, 211). Tubing is manufactured according to GMP.

**Temperature range:** -60 to 320°F (-51 to 160°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/pk
	ID	OD	Wall		
<a href="#">GM-95703-00</a>	3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	312 (21.5)	
<a href="#">GM-95703-01</a>	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	248 (17.1)	
<a href="#">GM-95703-02</a>	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	180 (12.4)	
<a href="#">GM-95703-03</a>	1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	168 (11.6)	
<a href="#">GM-95703-04</a>	5/8 (16.0)	15/16 (24.0)	5/32 (4.0)	144 (9.9)	
<a href="#">GM-95703-05</a>	3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	144 (9.9)	
<a href="#">GM-95703-07</a>	1 1/4 (31.8)	1 5/8 (41.4)	3/16 (4.8)	96 (6.6)	

### FREE CERTIFICATES OF COMPLIANCE

Cole-Parmer will provide a certificate of resin or elastomer compliance FREE at your request with each order of fittings or tubing. Certificates list your company's PO number, order reference number, catalog number, formulation, compound number, lot number (where applicable), and the regulations and agencies the tubing or fitting complies with, including FDA, USP, USDA, National Formulary, NSF International, GMP, and 3A. Look for the red "compliance star" icon throughout this catalog to identify when a certificate of compliance is available.

**compliance certificate**

# You're Out? We're Not!

Thousands of **highlighted** items



## Silastic® Laboratory Tubing



See page 52.

**Applications:** Pharmaceutical, biotech, filtration, and environmental analysis.

**Characteristics:** Platinum-cured silicone, nonpyrogenic, bacteria and fungus-resistant, extremely low extractables, and does not impart a taste or odor.

**Certifications:** Exceeds USP Class VI Plastics Test requirements, elastomer and tubing are manufactured under Bulk Pharmaceutical cGMPs in an FDA-registered, ISO-9002-certified facility.

**Temperature range:** -65 to 480°F (-54 to 249°C)

**Sterilize:** Autoclave or radiation.

Catalog number	Dimensions: in. (mm)			Price/50-ft pk
	ID	OD	Wall	
GM-96115-00	0.012 (0.3)	0.025 (0.6)	0.0065 (0.2)	
GM-96115-02	0.02 (0.5)	0.037 (0.9)	0.0085 (0.22)	
GM-96115-04	0.025 (0.6)	0.047 (1.2)	0.011 (0.3)	
GM-96115-06	0.03 (0.8)	0.065 (1.7)	0.0175 (0.4)	
GM-96115-08	0.04 (1)	0.085 (2.2)	0.0225 (0.6)	
GM-96115-10	0.058 (1.5)	0.077 (2.0)	0.0095 (0.2)	
GM-96115-12	0.062 (1.6)	0.095 (2.4)	0.0165 (0.4)	
GM-96115-14	0.062 (1.6)	0.125 (3.2)	0.0315 (0.8)	
GM-96115-16	0.078 (2)	0.125 (3.2)	0.0235 (0.6)	
GM-96115-18	0.104 (2.6)	0.192 (4.9)	0.044 (1.1)	
GM-96115-20	0.132 (3.4)	0.183 (4.6)	0.0255 (0.6)	
GM-96115-22	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	
GM-96115-24	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	
GM-96115-26	3/16 (4.8)	3/8 (9.5)	3/32 (2.4)	
GM-96115-28	1/4 (6.4)	3/8 (9.5)	1/16 (1.6)	
GM-96115-30	1/4 (6.4)	3/16 (11.1)	3/32 (2.4)	
GM-96115-32	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	
GM-96115-34	5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	
GM-96115-36	3/8 (9.5)	1/2 (12.8)	1/16 (1.6)	
GM-96115-38	3/8 (9.5)	9/16 (14.3)	3/32 (2.4)	
GM-96115-40	3/8 (9.5)	5/8 (15.9)	1/8 (3.2)	
GM-96115-42	1/2 (12.8)	11/16 (17.5)	3/32 (2.4)	
GM-96115-44	1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	
GM-96115-46	5/8 (15.9)	7/8 (22.2)	1/8 (3.2)	

## Dow Corning® Pharma-50 Tubing



See page 52.

**Applications:** Pharmaceutical, biotechnology, and ultrapure fluid processing.

**Characteristics:** 50 durometer, translucent platinum-cured silicone tubing with a very low extractable profile; it contains no phthalates, plasticizers, latex, or other organic additives. Pharma tubing remains flexible and resilient for long service life. Dow Corning maintains complete traceability from silica to silicone tubing.

**Certifications:** Elastomer exceeds test guidelines for USP Class VI Plastics and the tubing itself meets or exceeds FDA (21 CFR 177.2600), 3A Sanitary Standards and European Pharmacopoeia (EP) requirements. Produced under Bulk Pharmaceutical (BP) and current GMP principles.

**Temperature range:** -60 to 460°F (-51 to 232°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/50-ft pk
	ID	OD	Wall		
GM-96105-00	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	21 (1.4)	
GM-96105-02	3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	16 (1.1)	
GM-96105-03	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	12 (0.8)	
GM-96105-04	1/4 (6.4)	7/16 (11.1)	3/32 (2.4)	17 (1.2)	
GM-96105-05	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17 (1.2)	
GM-96105-06	5/16 (8.0)	1/2 (14.0)	1/8 (3.0)	16 (1.1)	
GM-96105-08	3/8 (9.6)	9/16 (14.3)	3/32 (2.4)	13 (0.9)	
GM-96105-09	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	14 (1.0)	
GM-96105-11	1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	10 (0.7)	
GM-96105-12	5/8 (16.0)	7/8 (22.2)	1/8 (3.2)	9 (0.6)	
GM-96105-13	3/4 (19.1)	1 (25.4)	1/8 (3.2)	9 (0.6)	

## Tygon® Microbore Autoanalysis Tubing

**Formulation:** Tygon S-54-HL

**Applications:** General laboratory and pharmaceutical use, especially with precision injection or dispensing applications. Also excellent with low-flow peristaltic pump applications.

**Characteristics:** Extremely flexible. Nontoxic; nonpyrogenic; biocompatible. Crystal clear.

**Certifications:** FDA-compliant. Resin meets USP Class VI requirements. Tubing is manufactured according to GMP.

**Temperature range:** -25 to 185°F (-31 to 85°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.



See page 52.

Catalog number	Dimensions: in. (mm)			Fits needle gauge	Price/100-ft
	ID	OD	Wall		
GM-06419-00	0.010 (0.25)	0.030 (0.76)	0.010 (0.25)	30	
GM-06419-01	0.020 (0.51)	0.060 (1.52)	0.020 (0.51)	25	
GM-06419-03	0.030 (0.76)	0.090 (2.29)	0.030 (0.76)	20 to 21	
GM-06419-04	0.040 (1.02)	0.070 (1.78)	0.015 (0.38)	18 to 19	
GM-06419-05	0.050 (1.27)	0.090 (2.29)	0.020 (0.51)	17 to 18	

## Tygon® BioPharm Silicone Tubing



See page 52.

**Formulation:** Tygon® 3350 silicone, platinum cured.

**Applications:** Pharmaceutical, cosmetic, industrial, and auto-analysis applications.

**Characteristics:** Ultra-smooth inner surface reduces particle entrapment and minimizes bacterial growth. Good for mild to medium concentration bases, salts, and alcohols; is odorless, tasteless, and nontoxic. Transparent.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI requirements, NSF criteria and EP 3.2.9 requirements. Tubing is manufactured according to GMP.

**Temperature range:** -112 to 392°F (-80 to 200°C)

**Sterilize:** Ethylene oxide, gamma irradiation, or autoclave for 30 min, 15 psi (1.0 bar).

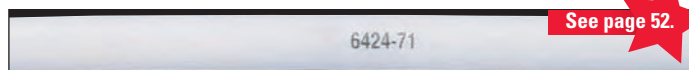
Catalog number	Dimensions: in. (mm)			Max psi at 73°F (bar at 23°C)	Price/50-ft pk
	ID	OD	Wall		
GM-95702-00	1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	16 (1.1)	
GM-95702-01	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	10 (0.7)	
GM-95702-02	1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	15 (1.0)	
GM-95702-03	3/32 (2.4)	5/32 (4.0)	3/32 (0.8)	7 (0.5)	
GM-95702-04	3/32 (2.4)	7/32 (5.6)	1/16 (1.6)	12 (0.8)	
GM-95702-05	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	7 (0.5)	
GM-95702-06	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	9 (0.6)	
GM-95702-08	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	5 (0.3)	
GM-95702-09	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	7 (0.5)	
GM-95702-10	3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	9 (0.6)	
GM-95702-13	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	5 (0.3)	
GM-95702-14	1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	7 (0.5)	
GM-95702-16	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	5 (0.3)	
GM-95702-17	5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	6 (0.4)	
GM-95702-18	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	4 (0.3)	
GM-95702-19	3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	5 (0.3)	
GM-95702-20	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	7 (0.5)	

## CUSTOM CUT TUBING

For details, call 800-323-4340



## C-FLEX® Tubing



**Applications:** Pharmaceutical, biotech, and general-purpose lab uses requiring high performance. Alternative to platinum-cured silicone tubing.

**Characteristics:** Exceptional tensile and tear strength, good biocompatibility, excellent chemical resistance, low gas permeability, and a smooth surface. Opaque white.

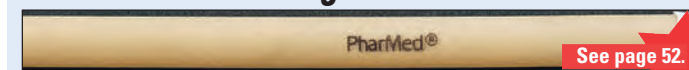
**Certifications:** Product is manufactured in accordance with quality regulations CFR Title 21, Part 820 Quality System Requirements (GMP).

**Temperature range:** -100 to 275°F (-73 to 135°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/25-ft pk
	ID	OD	Wall		
GM-06424-59	1/50 (0.5)	1/12 (2.1)	1/32 (0.8)	30 (2.1)	
GM-06424-60	1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	31 (2.1)	
GM-06424-62	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	15 (1.0)	
GM-06424-63	3/32 (2.4)	3/32 (4.0)	1/32 (0.8)	14 (1.0)	
GM-06424-64	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	10 (0.7)	
GM-06424-67	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	21 (1.4)	
GM-06424-65	3/32 (4.0)	7/32 (5.6)	1/32 (0.8)	10 (0.7)	
GM-06424-66	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	9 (0.6)	
GM-06424-03	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	
GM-06424-69	3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	22 (1.5)	
GM-06424-71	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	12 (0.8)	
GM-06424-72	1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	17 (1.2)	
GM-06424-74	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17 (1.2)	
GM-06424-75	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	10 (0.7)	
GM-06424-76	5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	16 (1.1)	
GM-06424-12	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	10 (0.7)	
GM-06424-79	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	14 (1.0)	
GM-06424-19	1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	10 (0.7)	
GM-06424-81	1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	10 (0.7)	

## PharMed® BPT Tubing



**Applications:** Cell and tissue culture work and pharmaceutical uses. Also good for light-sensitive samples.

**Characteristics:** Nontoxic; nonhemolytic; extremely low permeability; resists acids, alkalies, oxidizing agents, and animal and vegetable oils; heat-sealable, bondable, and formable. Opaque beige.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI and NSF (Standard 51) requirements. Meets EP requirements. Tubing is manufactured according to GMP.

**Temperature range:** -75 to 275°F (-59 to 135°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/25-ft pk
	ID	OD	Wall		
GM-96880-00	1/50 (0.5)	9/64 (3.7)	1/16 (1.6)	50 (3.4)	
GM-96880-02	1/32 (0.8)	5/32 (4.0)	1/16 (1.6)	40 (2.8)	
GM-96880-04	1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	34 (2.3)	
GM-96880-06	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	19 (1.3)	
GM-96880-08	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	
GM-96880-10	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10 (0.7)	
GM-96880-12	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	19 (1.3)	
GM-96880-14	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	8 (0.6)	
GM-96880-16	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	13 (0.9)	
GM-96880-18	1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	11 (0.8)	
GM-96880-20	5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	8 (0.6)	
GM-96880-22	3/4 (19.1)	1 (25.4)	1/8 (3.2)	7 (0.5)	

## Microbore PharMed BPT Tubing

Catalog number	Dimensions: in. (mm)			Fits needle gauge	Price/100-ft pk
	ID	OD	Wall		
GM-95809-12	0.010 (0.25)	0.082 (2.08)	0.036 (0.91)	30	
GM-95809-18	0.020 (0.51)	0.096 (2.44)	0.038 (0.97)	24	
GM-95809-26	0.035 (0.89)	0.111 (2.82)	0.038 (0.97)	20	
GM-95809-30	0.045 (1.14)	0.121 (3.07)	0.038 (0.97)	18	
GM-95809-32	0.051 (1.30)	0.127 (3.23)	0.038 (0.97)	18	
GM-95809-34	0.056 (1.42)	0.132 (3.35)	0.038 (0.97)	17	
GM-95809-36	0.060 (1.52)	0.136 (3.45)	0.038 (0.97)	16	
GM-95809-40	0.073 (1.85)	0.149 (3.78)	0.038 (0.97)	15	

## Tygon® Non-DEHP Lab Tubing

**NEW**



**Formulation:** Tygon E-3603

**Applications:** General lab, food & beverage, biopharm, analytical instruments.

**Characteristics:** Non-DEHP, phthalate free. Long-life, chemical resistant, nonoxidizing; able to bend to sharp radius curves and easily works with fittings. Transparent.

**Certifications:** FDA-compliant (21 CFR 175.300); meets USP Class VI and NSF 51 requirements.

**Temperature range:** -51 to 165°F (-46 to 74°C)

**Sterilize:** Autoclave or ethylene oxide.

**non-DEHP**

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/50-ft pk
	ID	OD	Wall		
GM-06407-70	1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	69 (4.8)	
GM-06407-71	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	36 (2.5)	
GM-06407-72	1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	69 (4.8)	
GM-06407-73	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	25 (1.7)	
GM-06407-74	3/32 (2.4)	7/32 (5.6)	1/16 (1.6)	47 (3.2)	
GM-06407-75	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	20 (1.4)	
GM-06407-76	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	36 (2.5)	
GM-06407-77	5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	17 (1.2)	
GM-06407-78	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	25 (1.7)	
GM-06407-79	3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	36 (2.5)	
GM-06407-80	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	20 (1.4)	
GM-06407-81	1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	28 (1.9)	
GM-06407-82	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	35 (2.5)	
GM-06407-83	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	17 (1.2)	
GM-06407-84	5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	23 (1.6)	
GM-06407-85	5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	30 (2.1)	
GM-06407-86	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	
GM-06407-87	3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	20 (1.4)	
GM-06407-88	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	25 (1.7)	
GM-06407-89	7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	13 (0.9)	
GM-06407-90	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	12 (1.8)	
GM-06407-91	1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	15 (1.0)	
GM-06407-92	1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	20 (1.4)	
GM-06407-93	1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	24 (1.7)	
GM-06407-94	5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	13 (0.9)	
GM-06407-95	5/8 (16.0)	7/16 (11.2)	1/8 (3.2)	17 (1.2)	
GM-06407-96	3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.0)	
GM-06407-97	3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	20 (1.4)	
GM-06407-98	1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	12 (0.8)	
GM-06407-99	1 (25.4)	1 1/2 (38.1)	1/4 (6.4)	20 (1.4)	

## Microbore/ Autoanalysis Tubing

Catalog number	Dimensions: in. (mm)			Fits needle gauge	Price/100-ft pk
	ID	OD	Wall		
GM-06460-10	0.008 (0.19)	0.080 (2.03)	0.036 (0.91)	33	
GM-06460-12	0.010 (0.25)	0.082 (2.08)	0.036 (0.91)	30	
GM-06460-16	0.017 (0.44)	0.093 (2.36)	0.036 (0.91)	26	
GM-06460-18	0.020 (0.51)	0.096 (2.44)	0.036 (0.91)	24	
GM-06460-22	0.025 (0.64)	0.101 (2.57)	0.036 (0.91)	23	
GM-06460-26	0.035 (0.89)	0.111 (2.82)	0.036 (0.91)	20	
GM-06460-28	0.040 (1.02)	0.116 (2.95)	0.036 (0.91)	19	
GM-06460-30	0.045 (1.14)	0.121 (3.07)	0.036 (0.91)	18	
GM-06460-34	0.056 (1.42)	0.132 (3.35)	0.036 (0.91)	17	
GM-06460-42	0.081 (2.06)	0.157 (3.99)	0.036 (0.91)	14	
GM-06460-48	0.110 (2.79)	0.186 (4.72)	0.036 (0.91)	12	

## Ratchet Tubing Clamps

Durable Celcon® plastic clamp is autoclavable; won't rust, corrode, or distort. Twelve-position ratchet control adjusts from full flow to complete closure. Accepts flexible tubing to 1/2" OD.



06833-00

**GM-06833-00** Tubing clamp.  
Pack of 25

# You're Out? We're Not!

Thousands of **highlighted** items



## Cole-Parmer Vinyl Tubing



See page 52.

**Applications:** General-purpose lab use.

**Characteristics:** Fair chemical and abrasion resistance, odorless, nontoxic and transparent.

**Certifications:** Tubing is manufactured according to GMP.

**Temperature range:** -45 to 180°F (-43 to 82°C)

**Sterilize:** Ethylene oxide.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/pk
	ID	OD	Wall		
GM-06405-01	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	40 (2.8)	/50-ft
GM-06405-02	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	59 (4.0)	/50-ft
GM-06405-03	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	51 (3.5)	/50-ft
GM-06405-04	3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	46 (3.2)	/100-ft
GM-06405-06	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	51 (3.5)	/50-ft
GM-06405-07	1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	55 (3.8)	/100-ft
GM-06405-08	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	64 (4.4)	/50-ft
GM-06405-09	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	46 (3.2)	/50-ft
GM-06405-10	5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	55 (3.8)	/100-ft
GM-06405-12	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	41 (2.8)	/50-ft
GM-06405-15	3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	46 (3.2)	/100-ft
GM-06405-16	3/8 (9.6)	3/4 (16.0)	1/8 (3.2)	55 (3.8)	/100-ft
GM-06405-18	1/2 (12.8)	3/8 (9.6)	1/16 (1.6)	28 (1.9)	/50-ft
GM-06405-19	1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	36 (2.5)	/100-ft
GM-06405-20	1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	41 (2.8)	/50-ft
GM-06405-25	5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	32 (2.2)	/100-ft
GM-06405-27	5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	36 (2.5)	/50-ft
GM-06405-31	3/4 (19.1)	1 (25.4)	1/8 (3.2)	32 (2.2)	/50-ft
GM-06405-36	1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	23 (1.6)	/50-ft
GM-06405-46	1 1/4 (31.8)	1 3/4 (44.5)	1/4 (6.4)	41 (2.8)	/50-ft

## Norprene® Tubing



See page 52.

**Applications:** For applications requiring excellent chemical, heat, ozone, and ultraviolet (UV) light resistance.

**Characteristics:** Nonconductive, heat-sealable, nonaging, nonoxidizing, with superior acid and alkali resistance. Opaque black.

**Certifications:** Tubing is manufactured according to GMP.

**Temperature range:** -75 to 275°F (-60 to 135°C)

**Sterilize:** Autoclave.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/50-ft pk
	ID	OD	Wall		
GM-06410-01	1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	34 (2.3)	
GM-06410-02	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	19 (1.3)	
GM-06410-03	1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	34 (2.3)	
GM-06410-04	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	
GM-06410-05	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10 (0.7)	
GM-06410-06	1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	15 (1.0)	
GM-06410-07	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	19 (1.3)	
GM-06410-08	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	8 (0.6)	
GM-06410-09	5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	12 (0.8)	
GM-06410-10	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	7 (0.5)	
GM-06410-11	3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	10 (0.7)	
GM-06410-12	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	13 (0.9)	
GM-06410-13	7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	6 (0.4)	
GM-06410-14	1/2 (12.8)	3/8 (9.6)	1/16 (1.6)	6 (0.4)	
GM-06410-15	1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	8 (0.6)	
GM-06410-16	5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	7 (0.5)	
GM-06410-17	5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	8 (0.6)	
GM-06410-18	3/4 (19.1)	1 (25.4)	1/8 (3.2)	7 (0.5)	
GM-06410-19	1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	6 (0.4)	

## DON'T CHANGE IT

Our chemical compatibility database provides important information on chemical resistance—check it out at [ColeParmer.com/ChemChart](http://ColeParmer.com/ChemChart)



## Cole-Parmer PTFE Tubing



See page 52.

**Applications:** Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. Good for high-purity work. PTFE tubing withstands extreme temperatures.

**Characteristics:** Chemically inert, nontoxic, and virtually nonporous. Excellent crack- and stress-resistance. Low coefficient of friction. Translucent.

**Certifications:** Resin is FDA-compliant (21 CFR 177.1550).

**Temperature range:** -400 to 500°F (-240 to 260°C)

**Sterilize:** Autoclave, ethylene oxide, or dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/25-ft pk
	ID	OD	Wall		
<b>Standard (English) PTFE tubing</b>					
GM-06407-41	1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	370 (25.5)	
GM-06605-27	1/16 (1.6)	1/8 (3.2)	3/32 (0.8)	370 (25.5)	
GM-06605-28	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	294 (20.3)	
GM-06605-29	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	240 (16.5)	
GM-06605-30	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	375 (25.9)	
GM-06605-31	5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	274 (18.9)	
GM-06605-32	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	175 (12.1)	
GM-06605-33	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	294 (20.3)	
GM-06605-34	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	137 (9.4)	
GM-06605-35	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	240 (16.5)	
GM-06605-36	1 9/64 (7.5)	3/8 (9.6)	1/25 (1.0)	143 (9.9)	
GM-06605-37	5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	113 (7.8)	
GM-06605-38	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	203 (14.0)	
GM-06605-39	3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	96 (6.6)	
GM-06605-40	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	175 (12.1)	
GM-06605-41	7/16 (11.2)	1/2 (12.8)	1/20 (1.4)	137 (9.4)	
GM-06605-42	7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	83 (5.7)	
GM-06605-43	7/16 (11.2)	9/16 (14.3)	1/16 (1.6)	154 (10.6)	
GM-06605-44	1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	73 (5.0)	
GM-06605-45	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	137 (9.4)	
GM-06605-46	9/16 (14.3)	3/8 (9.6)	1/32 (0.8)	66 (4.6)	
GM-06605-47	9/16 (14.3)	11/16 (17.5)	1/16 (1.6)	124 (8.5)	
GM-06605-48	5/8 (16.0)	11/16 (17.5)	1/32 (0.8)	59 (4.1)	
GM-06605-49	5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	113 (7.8)	
GM-06605-50	1 1/16 (17.5)	3/4 (19.2)	1/32 (0.8)	54 (3.7)	
GM-06605-51	3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	96 (6.6)	

## Cole-Parmer PTFE Microbore Tubing

Use this translucent tubing in extreme temperatures and in harsh chemical environments. It's chemically inert, has low permeability, and has the lowest friction coefficient of any tubing. Temperature range is -400 to 500°F (-240 to 260°C); melts at 620°F (327°C).

Tensile strength is 2500 to 4000 psi. PTFE tubing resin is UL-recognized and complies with FDA (21 CFR 177.1550) and USP Class VI requirements.



See page 52.

Catalog number	Dimensions			Fits needle gauge	Price/100 ft
	ID	OD	Wall		
<b>Ultramicrobore PTFE tubing (finer than a human hair)</b>					
GM-06417-70	0.002"	0.014"	0.006"	44	
GM-06417-72	0.004"	0.016"	0.006"	38	
GM-06417-74	0.006"	0.016"	0.005"	34	
GM-06417-76	0.008"	0.016"	0.004"	33	
<b>Microbore PTFE tubing</b>					
GM-06417-11	0.012"	0.030"	0.009"	30	
GM-06417-21	0.022"	0.042"	0.010"	24	
GM-06417-31	0.032"	0.056"	0.012"	21	
GM-06417-41	0.042"	0.066"	0.012"	18	
GM-06417-51	0.052"	0.076"	0.012"	16	

**GM-06417-60** Microbore tubing assortment pack. One 100-ft roll each of 06417-11, -21, -31, -41, and -51 (500-ft total)

## Cole-Parmer FEP Tubing



See page 52.

**Applications:** Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. Excellent for the transfer of extreme temperature or highly corrosive materials. Also good for high-purity work.

**Characteristics:** Chemically inert, nontoxic, heat resistant, with a low coefficient of friction. Doesn't deteriorate with age. Tough, but bends even at -454°F (-270°C). Translucent.

**Certifications:** Resin is FDA-compliant (21 CFR 177.1550). Tubing is manufactured in ISO 9001-2008 approved facility.

**Temperature range:** -454 to 400°F (-270 to 205°C)

**Sterilize:** With autoclave, ethylene oxide, or dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/25-ft pk
	ID	OD	Wall		
GM-06406-60	1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	500 (34.5)	
GM-06406-62	1/16 (1.6)	3/8 (3.2)	1/32 (0.8)	444 (30.6)	
GM-06406-63	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	353 (24.3)	
GM-06406-64	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	289 (19.9)	
GM-06450-05	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	450 (31.0)	
GM-06450-04	5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	329 (22.7)	
GM-06406-66	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	209 (14.4)	
GM-06450-06	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	353 (24.3)	
GM-06406-72	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	150 (10.3)	
GM-06450-07	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	288 (19.9)	
GM-06450-02	19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	172 (11.9)	
GM-06406-74	5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	140 (9.7)	
GM-06450-08	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	243 (16.8)	
GM-06406-12	3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	110 (7.6)	
GM-06450-09	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	210 (14.5)	
GM-06406-76	7/16 (11.1)	1/2 (12.8)	1/32 (0.8)	102 (7.0)	
GM-06450-14	7/16 (11.1)	9/16 (14.3)	1/16 (1.6)	185 (12.8)	
GM-06406-18	1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	88 (6.1)	
GM-06450-15	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	165 (11.4)	
GM-06406-78	9/16 (14.3)	5/8 (16.0)	1/32 (0.8)	77 (5.3)	
GM-06450-00	5/8 (16.0)	11/16 (17.5)	1/32 (0.8)	71 (4.9)	
GM-06450-17	5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	135 (9.3)	
GM-06450-01	11/16 (17.5)	3/4 (19.1)	1/32 (0.8)	65 (4.5)	
GM-06450-19	3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	115 (7.9)	

## Chemflour® PTFE Tubing



See page 52.

**Applications:** Chemical transfer and pharmaceutical processes.

**Characteristics:** Most flexible fluoropolymer. Excellent chemical compatibility. Translucent.

**Certifications:** FDA-compliant (21 CFR 177.1550).

**Temperature range:** -450 to 550°F (-268 to 288°C)

**Sterilize:** Autoclave, ethylene oxide, or dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/50-ft pk
	ID	OD	Wall		
GM-96000-02	1/16 (1.6)	1/8 (0.13)	1/32 (0.8)	156 (10.8)	
GM-96000-04	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	156 (10.8)	
GM-96000-06	5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	117 (8.1)	
GM-96000-08	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	78 (5.4)	
GM-96000-10	3/16 (4.7)	5/16 (7.9)	1/16 (1.6)	125 (8.6)	
GM-96000-12	1/4 (6.4)	5/16 (7.9)	1/32 (0.8)	63 (4.3)	
GM-96000-14	1/4 (6.4)	3/8 (9.5)	1/16 (1.6)	104 (7.2)	
GM-96000-16	5/16 (7.9)	3/8 (9.5)	1/32 (0.8)	52 (3.6)	
GM-96000-18	3/8 (9.5)	1/2 (12.7)	1/16 (1.6)	78 (5.4)	
GM-96000-20	7/16 (11.1)	1/2 (12.7)	1/32 (0.8)	39 (2.7)	
GM-96000-26	1/2 (12.7)	5/8 (15.9)	1/16 (1.6)	63 (4.3)	
GM-96000-28	9/16 (14.3)	5/8 (15.9)	1/32 (0.8)	31 (2.2)	
GM-96000-30	5/8 (15.9)	3/4 (19.0)	1/16 (1.6)	52 (3.6)	

## Cole-Parmer PFA Tubing



See page 52.

**Applications:** Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. For the transfer of high-temperature or highly corrosive materials. Also good for high-purity work.

**Characteristics:** Chemically inert, nontoxic, and virtually nonporous. Excellent crack- and stress-resistance. Low coefficient of friction. Translucent.

**Certifications:** Resin is FDA-compliant (21 CFR 177.1550). Tubing is manufactured in ISO 9001-2008 approved facility.

**Temperature range:** -320 to 500°F (-195 to 260°C)

**Sterilize:** Autoclave, ethylene oxide, or dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/25-ft pk
	ID	OD	Wall		
GM-06371-00	1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	600 (41.4)	
GM-06375-01	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	592 (40.8)	
GM-06371-01	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	471 (32.5)	
GM-06371-02	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	385 (26.5)	
GM-06371-21	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	600 (41.4)	
GM-06375-02	5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	421 (29.0)	
GM-06371-03	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	280 (19.3)	
GM-06371-22	3/16 (4.8)	3/16 (8.0)	1/16 (1.6)	471 (32.5)	
GM-06375-04	7/32 (5.6)	5/16 (8.0)	3/64 (1.2)	300 (20.7)	
GM-06371-04	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	220 (15.2)	
GM-06375-05	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	388 (26.8)	
GM-06371-23	19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	229 (15.8)	
GM-06371-05	3/16 (8.0)	3/8 (9.6)	1/32 (0.8)	180 (12.4)	
GM-06371-24	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	324 (22.3)	
GM-06371-06	3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	153 (10.5)	
GM-06375-07	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	283 (19.5)	
GM-06371-25	3/8 (10.2)	1/2 (12.8)	1/32 (0.8)	220 (9.5)	
GM-06371-07	7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	133 (9.2)	
GM-06371-08	1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	117 (8.1)	
GM-06371-26	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	220 (15.2)	
GM-06371-09	9/16 (14.3)	5/8 (16.0)	1/32 (0.8)	105 (7.2)	
GM-06371-27	9/16 (14.3)	11/16 (17.5)	1/16 (1.6)	198 (13.7)	
GM-06375-08	5/8 (16.0)	3/4 (19.0)	1/16 (1.6)	150 (10.3)	
GM-06371-28	11/16 (17.5)	3/4 (19.0)	1/32 (0.8)	87 (6.0)	
GM-06371-29	3/4 (19.0)	7/8 (22.2)	1/16 (1.6)	153 (10.5)	
GM-06371-30	1 1/4 (31.8)	1 1/2 (33.9)	1/25 (1.2)	80 (5.5)	

## Viton® Tubing



See page 52.

**Applications:** Acid and solvent transfer; high-temperature work.

**Characteristics:** Opaque black.

**Certifications:** Tubing is manufactured according to GMP.

**Temperature range:** 8 to 400°F (-13 to 204°C)

**Sterilize:** Not recommended.

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Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/25-ft pk
	ID	OD	Wall		
GM-06434-01	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	23 (1.6)	
GM-06434-02	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	21 (1.4)	
GM-06434-03	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	19 (1.3)	
GM-06434-04	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	17 (1.2)	
GM-06434-05	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	20 (1.4)	
GM-06434-06	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	18 (1.2)	
GM-06434-07	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	16 (1.1)	
GM-06434-08	5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	17 (1.8)	
GM-06434-09	3/4 (19.1)	1 (25.4)	1/8 (3.2)	15 (1.0)	



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## Bev-A-Line® IV Tubing



See page 52.

**Applications:** Safe for food, beverage, drug, lab, and general use—yet much more affordable than PTFE tubing. Safe for most alcohols; avoid use with strong solvents.

**Resin characteristics:** Polyethylene liner with ethyl vinyl acetate shell. No plasticizers. Nontoxic and nonhemolytic. Heat-bondable. Translucent.

**Certifications:** Resin is FDA-compliant (liner: 21 CFR 177.1520; shell 21 CFR 177.1350). Meets USP Class VI, USDA, and National Formulary requirements.

**Temperature range:** -30 to 160°F (-51 to 71°C)

**Sterilize:** Ethylene oxide or dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/50-ft pk
	ID	OD	Wall		
GM-06490-12	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	72 (5.0)	
GM-06490-15	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	61 (4.2)	
GM-06490-17	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	50 (3.4)	
GM-06490-19	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	33 (2.3)	
GM-06490-20	1/2 (12.8)	3/4 (19.2)	1/4 (6.4)	50 (3.4)	
GM-06490-39	3/4 (19.2)	1 (25.4)	1/8 (3.2)	39 (2.7)	
GM-06490-40	1 (25.4)	1 1/4 (31.8)	1/4 (6.4)	28 (1.9)	

## Bev-A-Line® V Tubing



See page 52.

**Applications:** Safe for food, beverage, drug, lab, and general use—can withstand higher temperatures than Bev-A-Line® IV tubing. Safe for most alcohols; avoid strong solvents.

**Characteristics:** Polyethylene liner cross-linked to ethyl vinyl acetate shell. No plasticizers. Nontoxic and nonhemolytic. Needs no connectors—heat-bondable. Translucent.

**Certifications:** Resin is FDA-compliant (liner: 21 CFR 177.1520; shell 21 CFR 177.1350). Meets USP Class VI, USDA, and National Formulary requirements.

**Temperature range:** -60 to 200°F (-51 to 93°C)

**Sterilize:** Autoclave, ethylene oxide, or dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/50-ft pk
	ID	OD	Wall		
GM-06491-10	1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	91 (6.3)	
GM-06491-12	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	79 (5.4)	
GM-06491-14	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	67 (4.6)	
GM-06491-15	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	67 (4.6)	
GM-06491-16	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	61 (4.2)	
GM-06491-17	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	44 (3.0)	
GM-06491-39	3/4 (19.2)	1 (25.4)	1/8 (3.2)	39 (2.7)	

## Bev-A-Line® XX Tubing



See page 52.

**Applications:** High-purity applications and air sampling, gaseous fuels. Ideal for particulate matter (will not adhere to liner) and applications requiring UV resistance.

**Characteristics:** Hytrel® polyester liner and UV-resistant PVC. Tubing is coextruded for improved flexibility. Shell is opaque black.

**Certifications:** Liner resin is NSF-approved for potable water.

**Temperature range:** -20 to 160°F (-29 to 71°C)

**Sterilize:** Autoclave or ethylene oxide.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Price/pk
	ID	OD	Wall		
GM-06491-50	11/64 (4.2)	1/4 (6.4)	3/64 (1.2)	130 (9.0)	/500-ft
GM-06491-54	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	100 (6.9)	/500-ft
GM-06491-56	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	75 (5.2)	/250-ft

## High-Density Polyethylene (HDPE) Tubing



**Applications:** General-purpose lab and industrial use.

**Characteristics:** Low moisture absorption, good chemical and corrosion-resistance, high tensile strength.

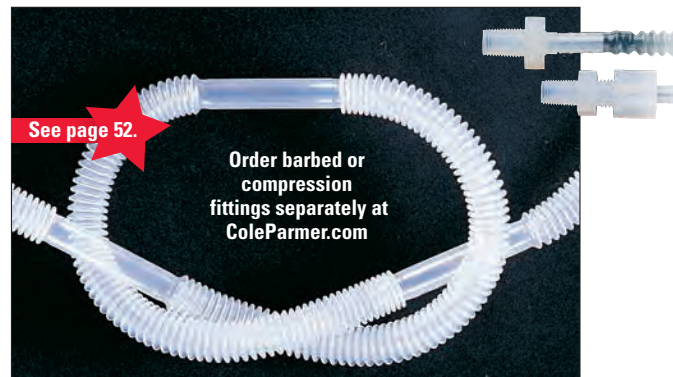
**Certifications:** None

**Temperature range:** -103 to 151°F (-75 to 66°C)

**Sterilize:** Autoclave.

Catalog number	Dimensions: in. (mm)			Working psi at 70°F (bar at 21°C)	Price/100-ft pk
	ID	OD	Wall		
GM-95501-00	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	456 (31.4)	
GM-95501-02	0.170 (4.3)	1/4 (6.4)	0.040 (1.0)	260 (17.9)	
GM-95501-04	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	340 (23.4)	
GM-95501-06	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	272 (18.8)	
GM-95501-08	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	228 (15.7)	
GM-95501-10	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	194 (13.4)	
GM-95501-12	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	151 (10.4)	
GM-95501-14	0.600 (15.2)	3/4 (19.2)	3/4 (1.9)	152 (10.5)	
GM-95501-16	3/8 (9.6)	3/4 (19.2)	1/16 (1.6)	123 (8.5)	
GM-95501-18	3/4 (19.2)	7/8 (22.4)	1/16 (1.6)	105 (7.2)	
GM-95501-20	3/4 (19.2)	1 (25.4)	1/8 (3.2)	195 (13.4)	
GM-95501-22	13/16 (20.6)	1 (25.4)	3/32 (2.4)	140 (9.7)	
GM-95501-24	7/8 (22.4)	1 (25.4)	1/16 (1.6)	90 (6.2)	
GM-95501-26	1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	152 (10.5)	
GM-95501-28	1 1/4 (31.8)	1 1/2 (38.1)	1/8 (3.2)	124 (8.5)	
GM-95501-30	1 1/2 (38.1)	1 3/4 (44.5)	1/8 (3.2)	105 (7.2)	
GM-95501-32	1 3/4 (44.5)	2 (50.8)	1/8 (3.2)	91 (6.3)	
GM-95501-34	2 (50.8)	2 1/4 (57.2)	1/8 (3.2)	80 (5.5)	

## Cole-Parmer Corrugated FEP Tubing



See page 52.

Order barbed or compression fittings separately at ColeParmer.com

High flexibility and excellent chemical resistance. Corrugations prevent kinking and help tubing retain its shape without limiting pressure or vacuum abilities. Simply cut this custom-extruded tubing to desired length. Sold in 5-ft lengths; each length has alternating sections of corrugated (10"L) and noncorrugated (2"L) tubing, with noncorrugated 1"L sections at both ends. Temperature range: -300 to 400°F (-184 to 205°C). Withstands 27" Hg vacuum.

Catalog number	Cuff ID	Cuff OD	Wall	Max psi at 70°F (bar at 21°C)	Price/5-ft length*
<b>Tubing compatible with barbed fittings</b>					
GM-06407-50	1/4"	9/32"	1/64"	250 (17.2)	
GM-06407-52	3/8"	13/32"	1/32"	200 (13.8)	
<b>Tubing compatible with compression fittings</b>					
GM-06407-60	1/32"	1/4"	1/64"	250 (17.2)	
GM-06407-62	21/64"	3/8"	1/32"	200 (13.8)	
GM-06407-64	29/64"	1/2"	1/32"	170 (11.7)	
GM-06407-66	11/16"	3/4"	1/32"	120 (8.3)	

\*Discounts: Save 10% on 10 to 49, 15% on 50 to 99, and 20% on 100 5-ft lengths or more.

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## Tubing Accessories

### A Handheld Tubing Cutter

Steel blade coated with PTFE resin produces clean, straight cuts through tubing up to 1 1/4" OD (cuts polyethylene tubing up to 1 1/2" OD). Order carrying pouch and replacement blade separately below.



**GM-06438-90** Handheld tubing cutter

**GM-06438-81** Tubing cutter pouch

**GM-06438-92** Replacement blade for handheld tubing cutter 06438-90

### B Benchtop Tubing Cutter

Steel blade makes right-angle cuts in plastic tubing 1/16" to 5/8" OD.



**GM-06438-10** Benchtop cutter

**GM-06438-11** Replacement blade

### C Plastic Clamp Ties

Perfect for flexible fuel line, water line, and vacuum line applications. Special curved clamp tie head ensures a tight seal. Ties measure 8"L x 0.18"W; maximum diameter of 1 3/4". Black resin resists UV degradation.

**GM-95615-00** Clamp ties, white. Pk of 100

**GM-95615-10** Clamp ties, black. Pk of 100



### D SS Hose Clamps

SS strap and screw housing with a carbon steel screw. Band-type worm drive.



Catalog number	Clamp diameter		Price/pk of 10*
	Min	Max	
<b>GM-06403-11</b>	7/32"	5/8"	
<b>GM-06403-12</b>	11/16"	1 1/4"	
<b>GM-06403-13</b>	13/16"	1 3/4"	
<b>GM-06403-14</b>	1 1/16"	2"	
<b>GM-06403-15</b>	1 5/16"	2 1/4"	
<b>GM-06403-16</b>	2"	2 3/4"	
<b>GM-06403-21</b>	2 3/4"	3 1/2"	
<b>GM-06403-22</b>	3 1/2"	4 3/8"	
<b>GM-06403-23</b>	4 3/8"	5 1/8"	
<b>GM-06403-24</b>	5 1/8"	5 7/8"	
<b>GM-06403-25</b>	5 1/2"	6 1/4"	

\*Discounts: Save 10% on 5-24 pks, 15% on 25-99 pks, and 20% on 100+ pks.

## Cole-Parmer

### Plastic Hose Clamps and Kits

Reusable white acetal copolymer or white or black nylon clamps will not rust or corrode. Recommended for continuous use from ambient temperature for the acetal copolymer to 200°F (93°C); ambient temperature for nylon clamps is 180°F (82°C). Clamps are nonconducting and stable in a wide variety of chemicals; black clamps resist UV degradation.

Once set, clamps stay put. To use, just position clamp on hose or tubing bundle and press the jaws together with a pair of pliers. Order clamps individually or in kits. Kits include 170 assorted clamps from 0.228" to 1.405" ID.

**GM-06832-99** White acetal copolymer hose-clamp kit

**GM-06420-99** White nylon hose-clamp kit

**GM-06430-49** Black nylon hose-clamp kit



Kit 06832-99

### White Acetal Hose Clamps

Catalog number	Inside diameter				Qty/pk	Price/pk**
	Decimal inches		Millimeters			
	Min	Max	Min	Max		
<b>GM-06832-01</b>	0.228	0.256	5.8	6.5	100	
<b>GM-95614-00</b>	0.269	0.291	6.8	7.4	100	
<b>GM-06832-03</b>	0.307	0.342	7.8	8.7	100	
<b>GM-06832-02</b>	0.351	0.394	8.9	10.0	100	
<b>GM-95614-01</b>	0.387	0.440	9.8	11.2	100	
<b>GM-06832-04</b>	0.404	0.452	10.3	11.5	100	
<b>GM-06832-06</b>	0.449	0.511	11.4	13.0	100	
<b>GM-06832-08</b>	0.513	0.586	13.0	14.9	100	
<b>GM-06832-10</b>	0.569	0.650	14.5	16.5	100	
<b>GM-06832-12</b>	0.616	0.707	15.7	18.0	100	
<b>GM-06832-14</b>	0.702	0.801	17.8	20.4	100	
<b>GM-06832-16</b>	0.759	0.848	19.3	21.5	100	
<b>GM-06832-18</b>	0.779	0.899	19.8	22.8	100	
<b>GM-06832-20</b>	0.859	0.989	21.8	25.1	100	
<b>GM-06832-22</b>	0.928	1.072	23.6	27.2	100	
<b>GM-06832-24</b>	0.985	1.135	25.0	28.8	100	
<b>GM-06832-28</b>	1.123	1.296	28.5	32.9	50	
<b>GM-06832-32</b>	1.218	1.405	30.9	35.7	50	
<b>GM-06832-34</b>	1.338	1.566	34.0	39.8	50	
<b>GM-06832-36</b>	1.472	1.724	37.4	43.8	50	
<b>GM-06832-38</b>	1.594	1.862	40.5	47.3	50	
<b>GM-06832-42</b>	1.730	2.010	43.9	51.1	50	
<b>GM-06832-50</b>	1.999	2.277	50.8	57.8	25	
<b>GM-06832-60</b>	2.259	2.582	57.4	65.6	25	
<b>GM-06832-70</b>	2.507	2.897	63.7	73.6	25	

\*\*Discounts: Save 10% on 4-19 pks, 15% on 20-79 pks, and 20% on 80+ pks.

### Nylon Hose Clamps

Inside diameter				Qty/pk	White		Black	
Decimal inches		Millimeters			Catalog number	Price/pk**	Catalog number	Price/pk**
Min	Max	Min	Max					
0.246	0.290	5.95	7.5	100	<b>GM-06420-50</b>		<b>GM-06430-07</b>	
0.283	0.312	7.1	7.9	100	<b>GM-06420-52</b>		<b>GM-06430-02</b>	
0.350	0.395	9.1	9.9	100	<b>GM-06420-56</b>		<b>GM-06430-06</b>	
0.360	0.410	9.3	10.5	100	<b>GM-06420-58</b>		<b>GM-06430-08</b>	
0.430	0.480	11.11	12.3	100	<b>GM-06420-60</b>		<b>GM-06430-10</b>	
0.500	0.545	12.7	13.8	100	<b>GM-06420-62</b>		<b>GM-06430-12</b>	
0.525	0.605	13.3	15.4	100	<b>GM-06420-64</b>		<b>GM-06430-14</b>	
0.580	0.660	15.0	16.9	100	<b>GM-06420-66</b>		<b>GM-06430-16</b>	
0.650	0.750	16.6	19.0	100	<b>GM-06420-68</b>		<b>GM-06430-18</b>	
0.750	0.875	19.05	22.2	100	<b>GM-06420-70</b>		<b>GM-06430-20</b>	
0.779	0.899	19.7	22.6	100	<b>GM-06420-72</b>		<b>GM-06430-22</b>	
0.859	0.989	21.8	25.0	100	<b>GM-06420-74</b>		<b>GM-06430-24</b>	
0.900	0.989	23.0	25.0	100	<b>GM-06420-76</b>		<b>GM-06430-26</b>	
0.990	1.135	25.0	28.5	100	<b>GM-06420-78</b>		<b>GM-06430-28</b>	
1.123	1.296	28.5	32.9	50	<b>GM-06420-80</b>		<b>GM-06430-30</b>	
1.250	1.425	31.7	35.9	50	<b>GM-06420-82</b>		<b>GM-06430-32</b>	
1.406	1.610	35.7	40.8	50	<b>GM-06420-84</b>		<b>GM-06430-34</b>	
1.593	1.812	40.4	46.0	50	<b>GM-06420-86</b>		<b>GM-06430-36</b>	
1.790	2.110	45.6	53.5	50	<b>GM-06420-88</b>		<b>GM-06430-38</b>	
1.870	2.125	47.0	52.0	50	<b>GM-06420-90</b>		<b>GM-06430-40</b>	
2.119	2.390	53.5	60.7	25	<b>GM-06420-92</b>		<b>GM-06430-42</b>	

\*\*Discounts: Save 10% on 4-19 pks, 15% on 20-79 pks, and 20% on 80+ pks.

# Stock up & Save!

Mix and match to save 10, 15 or 20%

## Cole-Parmer Premium Luer Fittings

### Premium luer fittings for critical applications

- Manufactured from 100% virgin raw materials in a Class 100,000 environment
- Full material traceability on all items

These luer fittings are ideal for a variety of applications, including syringes or small tubing. Manufactured in compliance with ISO 594-1 standards, these fittings are inspected to be free from contaminants, and are fully traceable. All parts meet tight dimensional tolerances for increased reliability and process purity. Choose from a range of sizes, 1/16" to 1/4", with a variety of connection options. **Pack of 25.**

FREE certificate of compliance is available for all fittings on this page.

See page 61.

Key	Description	Polypropylene		Polycarbonate		Nylon	
		Cat. no.	Price/pk	Cat. no.	Price/pk	Cat. no.	Price/pk
<b>Female luer x hose barb adapters</b>							
<b>A</b>	Female luer x 1/16" hose barb	GM-45508-00		GM-45501-00		GM-45502-00	
	Female luer x 3/32" hose barb	GM-45508-02		GM-45501-02		GM-45502-02	
	Female luer x 1/8" hose barb	GM-30800-08		GM-45501-04		GM-45502-04	
	Female luer x 5/32" hose barb	GM-45508-06		GM-45501-06		GM-45502-06	
	Female luer x 3/16" hose barb	GM-45508-08		GM-45501-08		GM-45502-08	
	Female luer x 1/4" hose barb	GM-30800-06		GM-45501-20		GM-45502-20	
<b>Female luer x hose barb adapters (smooth bore)</b>							
<b>B</b>	Female luer x 1/16" hose barb (smooth bore)	GM-45508-50		GM-45501-50		GM-45502-50	
	Female luer x 3/32" hose barb (smooth bore)	GM-45508-52		GM-45501-52		GM-45502-52	
	Female luer x 1/8" hose barb (smooth bore)	GM-45508-54		GM-45501-54		GM-45502-54	
<b>Female luer x thread adapters</b>							
<b>C</b>	Female luer x 10-32 special tapered thread	GM-45508-70		GM-45501-70		GM-45502-70	
	Female luer x 10-32 UNF thread	GM-45508-60		GM-45501-60		GM-45502-60	
	Female luer x 1/4-28 UNF thread	GM-45508-66		GM-45501-66		GM-45502-66	
	Female luer x 1/4-28 UNF bottom sealing thread	GM-45508-76		—	—	GM-45505-76	
	Female luer x 3/8-27 NPT thread	GM-30800-00		—	—	GM-45505-78	
<b>D</b>	Female luer x 1/8-27 NPT thread elbow	GM-45508-80		—	—	GM-45505-80	
<b>Female luer bulkhead x hose barb adapters</b>							
<b>E</b>	Female luer x 1/4-28 UNF thread to 1/16" hose barb	GM-45508-30		GM-45501-30		GM-45502-30	
	Female luer x 1/4-28 UNF thread to 3/32" hose barb	GM-45508-32		GM-45501-32		GM-45502-32	
	Female luer x 1/4-28 UNF thread to 1/8" hose barb	GM-45508-34		GM-45501-34		GM-45502-34	
<b>Female adapters</b>							
<b>F</b>	Female luer x female luer	GM-45508-22		GM-45501-22		GM-45502-22	
<b>G</b>	Female tee	GM-45508-56		GM-45501-56		GM-45502-56	
<b>H</b>	Female elbow	GM-45508-26		GM-45501-26		GM-45502-26	
<b>I</b>	Female luer x cap	GM-30800-12		GM-45501-28		GM-45502-28	
<b>J</b>	Female luer x cap with tether loop	GM-45508-64		GM-45501-64		GM-45502-64	
<b>Male x female adapters</b>							
<b>K</b>	Male luer x female luer coupler	GM-45508-82		GM-45501-82		GM-45502-82	
<b>L</b>	Male luer x female luer coupler with lock ring	GM-45508-80		GM-45501-80		GM-45502-80	
<b>M</b>	Male luer x female luer elbow	GM-45508-84		GM-45501-84		GM-45502-84	
<b>N</b>	Male x female x female tee	GM-45508-85		GM-45501-85		GM-45502-85	
<b>O</b>	Male x male x female tee	GM-45508-75		GM-45501-75		GM-45502-75	
<b>Male luer lock x hose barb adapters</b>							
<b>P</b>	Male luer lock x 1/16" hose barb	GM-45518-00		GM-45504-00		GM-45505-00	
	Male luer lock x 3/32" hose barb	GM-45518-02		GM-45504-02		GM-45505-02	
	Male luer lock x 1/8" hose barb	GM-30800-24		GM-45504-04		GM-45505-04	
	Male luer lock x 5/32" hose barb	GM-45518-06		GM-45504-06		GM-45505-06	
	Male luer lock x 3/16" hose barb	GM-45518-08		GM-45504-08		GM-45505-08	
	Male luer lock x 1/4" hose barb	GM-30800-22		GM-45504-19		GM-45505-19	
<b>Male luer x hose barb adapters (for use with separate rotating lock ring "R")</b>							
<b>Q</b>	Male luer x 1/16" hose barb	GM-45518-40		GM-45504-40		GM-45505-40	
	Male luer x 3/32" hose barb	GM-45518-42		GM-45504-42		GM-45505-42	
	Male luer x 1/8" hose barb	GM-45518-44		GM-45504-44		GM-45505-44	
	Male luer x 5/32" hose barb	GM-45518-46		GM-45504-46		GM-45505-46	
	Male luer x 3/16" hose barb	GM-45518-48		GM-45504-48		GM-45505-48	
	Male luer x 1/4" hose barb	GM-45518-50		GM-45504-50		GM-45505-50	
<b>R</b>	Snap luer lock ring	GM-45518-74		GM-45504-74		GM-45505-74	
<b>Male slip luer x hose barb adapters (no lock ring)</b>							
<b>S</b>	Male luer x 1/16" hose barb	GM-45518-22		GM-45504-22		GM-45505-22	
	Male luer x 3/32" hose barb	GM-45518-24		GM-45504-24		GM-45505-24	
	Male luer x 1/8" hose barb	GM-45518-26		GM-45504-26		GM-45505-26	
	Male luer x 5/32" hose barb	GM-45518-28		GM-45504-28		GM-45505-28	
	Male luer x 3/16" hose barb	GM-45518-52		GM-45504-52		GM-45505-52	
	Male luer x 1/4" hose barb	GM-45518-54		GM-45504-54		GM-45505-54	



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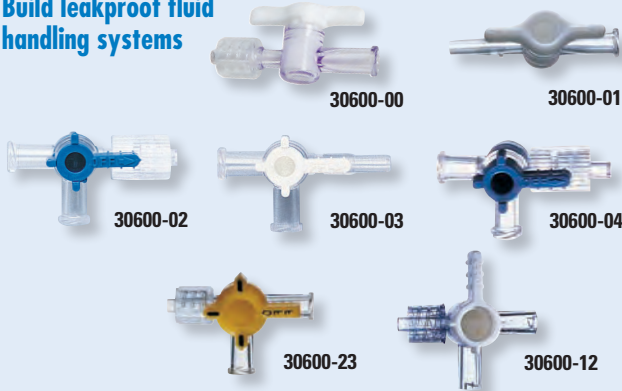


# Stock up & Save!

Mix and match to save 10, 15 or 20%

## Plastic Luer Stopcocks and Manifolds

Build leakproof fluid handling systems



### Polycarbonate Stopcocks

HDPE handles rotate 360° on one-way stopcocks, 180° on three-way stopcocks, and 360° on four-way stopcocks.

Type	Description	Pack of 10		Pack of 100	
		Catalog number	Price	Catalog number	Price
<b>Standard stopcocks</b>					
1-way	Male lock	<a href="#">GM-30600-00</a>		<a href="#">GM-30600-05</a>	
1-way	Male luer	<a href="#">GM-30600-01</a>		<a href="#">GM-30600-06</a>	
3-way	Male lock†	<a href="#">GM-30600-02</a>		<a href="#">GM-30600-07</a>	
4-way	Male luer	<a href="#">GM-30600-03</a>		<a href="#">GM-30600-08</a>	
4-way	Male lock	<a href="#">GM-30600-04</a>		<a href="#">GM-30600-09</a>	
<b>Large-bore stopcocks</b>					
3-way	Male lock	<a href="#">GM-30600-23</a>		<a href="#">GM-30600-25</a>	
4-way	Male lock	<a href="#">GM-30600-12</a>		<a href="#">GM-30600-17</a>	

†Locking ring does not rotate.

### PVDF Stopcocks

PVDF body with polypropylene insert.

Catalog number	Type	Description	Qty	Price
<b>Natural PVDF with polypropylene insert</b>				
<a href="#">GM-31200-70</a>	2-way	Female luer lock	1	
<a href="#">GM-31200-80</a>	3-way	Female luer lock	1	
<b>Black PVDF</b>				
<a href="#">GM-31200-90</a>	1-way	Male luer lock x male luer lock	10	
<a href="#">GM-31200-91</a>	1-way	Male luer lock x female luer	10	
<a href="#">GM-31200-92</a>	1-way	Female luer x female luer	10	



### High-Pressure Polycarbonate Stopcocks

Pressure rating up to 1050 psi.

Catalog number	Type	Description	Price/pk of 10
<a href="#">GM-30526-32</a>	2-way	Male luer lock x female luer	
<a href="#">GM-30526-34</a>	3-way	Female luer (2) x male luer lock	

### Polycarbonate Manifolds

Manifolds have polyurethane stems, HDPE handles, and female ports.



Ports	Rotation	Individual manifolds		Pack of 10	
		Catalog number	Price	Catalog number	Price
2	180°	<a href="#">GM-06464-81</a>		<a href="#">GM-30600-44</a>	
3	360°	<a href="#">GM-06464-83</a>		<a href="#">GM-30600-41</a>	
4	180°	<a href="#">GM-06464-85</a>		<a href="#">GM-30600-42</a>	
5	360°	<a href="#">GM-06464-87</a>		<a href="#">GM-30600-43</a>	

## Metal Luer Fittings

### Easy to disassemble for cleaning

- Select 316 stainless steel fittings for your harsh chemical environments
- Autoclavable



Key	Description	316 stainless steel		Nickel-plated brass	
		Catalog number	Price/ea	Catalog number	Price/ea
<b>A</b>	Female luer x male luer	<a href="#">GM-41507-20</a>		<a href="#">GM-41507-50</a>	
<b>B</b>	Female luer x male luer lock	<a href="#">GM-41507-21</a>		<a href="#">GM-41507-51</a>	
<b>C</b>	Male luer plug	<a href="#">GM-41507-22</a>		<a href="#">GM-41507-54</a>	
	Male luer lock plug	<a href="#">GM-41507-23</a>		<a href="#">GM-41507-52</a>	
<b>D</b>	Female luer plug	<a href="#">GM-41507-24</a>		<a href="#">GM-41507-53</a>	
<b>E</b>	Male luer x male luer	—	—	<a href="#">GM-41507-57</a>	
<b>F</b>	Male luer lock x male luer lock	<a href="#">GM-41507-90</a>		<a href="#">GM-41507-55</a>	
<b>G</b>	Female luer x female luer	<a href="#">GM-41507-89</a>		<a href="#">GM-41507-56</a>	
<b>H</b>	Male luer x 1/4" hose barb	—	—	<a href="#">GM-41507-60</a>	
	Male luer lock x 1/16" hose barb	<a href="#">GM-41507-26</a>		<a href="#">GM-41507-62</a>	
<b>I</b>	Male luer lock x 1/8" hose barb	<a href="#">GM-41507-25</a>		<a href="#">GM-41507-61</a>	
	Male luer lock x 1/4" hose barb	<a href="#">GM-41507-27</a>		<a href="#">GM-41507-66</a>	
	Female luer x 1/16" hose barb	<a href="#">GM-41507-29</a>		<a href="#">GM-41507-64</a>	
<b>J</b>	Female luer x 1/8" hose barb	<a href="#">GM-41507-28</a>		<a href="#">GM-41507-63</a>	
	Female luer x 3/16" hose barb	<a href="#">GM-41507-30</a>		<a href="#">GM-41507-65</a>	
	Male luer lock x 10-32 UNF thread	<a href="#">GM-41507-31</a>		<a href="#">GM-41507-70</a>	
<b>K</b>	Male luer lock x 1/4-28 UNF thread	<a href="#">GM-41507-32</a>		<a href="#">GM-41507-73</a>	
	Male luer lock x 1/8" NPT	<a href="#">GM-41507-44</a>		<a href="#">GM-41507-84</a>	
	Male luer lock x 1/4" NPT	<a href="#">GM-41507-45</a>		<a href="#">GM-41507-85</a>	
	Female luer x 10-32 UNF thread	<a href="#">GM-41507-33</a>		<a href="#">GM-41507-71</a>	
<b>L</b>	Female luer x 1/4-28 UNF thread	<a href="#">GM-41507-34</a>		<a href="#">GM-41507-72</a>	
	Female luer x 1/8" NPT	<a href="#">GM-41507-46</a>		<a href="#">GM-41507-86</a>	
	Female luer x 1/4" NPT	<a href="#">GM-41507-48</a>		<a href="#">GM-41507-87</a>	

# You're Out? We're Not!

Thousands of **highlighted** items



## Cole-Parmer Barbed Fittings

Designed for quick and easy assembly without tools

Combine these fittings with our flexible tubing for use in your low-pressure applications (less than 30 psi).

**High-Density Polyethylene (HDPE).** Very good chemical resistance. Temp range: -65 to 150°F (-53 to 65°C). Sterilize by ethylene oxide.

**Nylon.** Good chemical resistance. Temp range: -50 to 250°F (-46 to 121°C). Sterilize by ethylene oxide.

**Polypropylene (PP).** Very good chemical resistance. Temp range: 9 to 180°F (-13 to 66°C). Sterilize by ethylene oxide or gamma irradiation.

**PVDF.** Excellent chemical resistance. Temp range: -80 to 265°F (-62 to 129°C). Sterilize by ethylene oxide or autoclave.



**Straight connector**  
30703-07



**Reducing connector**  
30622-35



**NPT male threaded adapter**  
30621-26



**Y connector**  
30703-93



FREE certificate of compliance is available for all fittings on this page.

See below.

Tubing ID	HDPE			Nylon			Polypropylene			PVDF		
	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
<b>Straight connectors</b>												
1/16"	<a href="#">GM-30622-47</a>	10		<a href="#">GM-30622-48</a>	10		<a href="#">GM-40622-49</a>	10		<a href="#">GM-30703-00</a>	10	
3/32"	<a href="#">GM-30622-44</a>	10		<a href="#">GM-30622-45</a>	10		<a href="#">GM-40622-46</a>	10		<a href="#">GM-30703-01</a>	10	
1/8"	<a href="#">GM-30622-53</a>	10		<a href="#">GM-30622-54</a>	10		<a href="#">GM-41518-05</a>	10		<a href="#">GM-30703-02</a>	10	
3/16"	<a href="#">GM-30622-55</a>	10		<a href="#">GM-30622-56</a>	10		<a href="#">GM-40622-57</a>	10		<a href="#">GM-30703-04</a>	10	
1/4"	<a href="#">GM-30621-85</a>	10		<a href="#">GM-30621-86</a>	10		<a href="#">GM-40610-00</a>	10		<a href="#">GM-30703-05</a>	10	
3/8"	<a href="#">GM-30621-89</a>	10		<a href="#">GM-30621-90</a>	10		<a href="#">GM-40610-02</a>	10		<a href="#">GM-30703-07</a>	10	
1/2"	<a href="#">GM-30621-92</a>	10		<a href="#">GM-30621-93</a>	10		<a href="#">GM-40610-03</a>	10		<a href="#">GM-30703-08</a>	10	
5/8"	<a href="#">GM-30621-79</a>	10		<a href="#">GM-30621-80</a>	10		<a href="#">GM-40610-04</a>	10		<a href="#">GM-30703-09</a>	10	
3/4"	<a href="#">GM-30621-81</a>	10		<a href="#">GM-30621-82</a>	10		<a href="#">GM-40610-05</a>	5		<a href="#">GM-30703-10</a>	5	
1"	<a href="#">GM-30621-83</a>	10		<a href="#">GM-30621-84</a>	10		<a href="#">GM-40610-06</a>	5		<a href="#">GM-30703-11</a>	5	
<b>Reducing connectors</b>												
1/8" x 1/16"	<a href="#">GM-31518-29</a>	10		<a href="#">GM-30622-22</a>	25		<a href="#">GM-40622-23</a>	25		<a href="#">GM-30703-41</a>	10	
1/4" x 1/8"	<a href="#">GM-30622-27</a>	10		<a href="#">GM-30622-28</a>	10		<a href="#">GM-41518-36</a>	10		<a href="#">GM-30703-50</a>	10	
1/4" x 3/16"	<a href="#">GM-30622-29</a>	10		<a href="#">GM-30622-30</a>	10		<a href="#">GM-40622-32</a>	10		<a href="#">GM-30703-52</a>	10	
3/8" x 1/4"	<a href="#">GM-30622-35</a>	10		<a href="#">GM-30703-99</a>	10		<a href="#">GM-40610-08</a>	10		<a href="#">GM-30703-54</a>	10	
1/2" x 1/4"	<a href="#">GM-30622-38</a>	10		<a href="#">GM-30622-39</a>	10		<a href="#">GM-40610-10</a>	10		<a href="#">GM-30703-56</a>	10	
1/2" x 3/8"	<a href="#">GM-30622-42</a>	10		<a href="#">GM-30622-43</a>	10		<a href="#">GM-40610-12</a>	10		<a href="#">GM-30703-58</a>	10	
3/8" x 1/4"	<a href="#">GM-30621-96</a>	10		<a href="#">GM-30621-97</a>	10		<a href="#">GM-40610-13</a>	10		<a href="#">GM-30703-59</a>	10	
5/8" x 1/2"	<a href="#">GM-30622-03</a>	10		<a href="#">GM-30622-04</a>	10		<a href="#">GM-40610-16</a>	10		<a href="#">GM-30703-62</a>	10	
3/4" x 1/2"	<a href="#">GM-30622-09</a>	5		<a href="#">GM-30622-10</a>	5		<a href="#">GM-40610-18</a>	5		<a href="#">GM-30703-64</a>	5	
1" x 1/2"	<a href="#">GM-30622-15</a>	5		<a href="#">GM-30622-16</a>	5		<a href="#">GM-40610-20</a>	5		<a href="#">GM-30703-66</a>	5	
1" x 3/4"	<a href="#">GM-30622-13</a>	5		<a href="#">GM-30622-14</a>	5		<a href="#">GM-40610-22</a>	5		<a href="#">GM-30703-68</a>	5	
<b>Y connectors</b>												
1/16"	<a href="#">GM-30726-01</a>	10		<a href="#">GM-30726-21</a>	10		<a href="#">GM-40726-41</a>	10		<a href="#">GM-30703-90</a>	10	
3/32"	<a href="#">GM-30726-02</a>	10		<a href="#">GM-30726-22</a>	10		<a href="#">GM-40726-42</a>	10		<a href="#">GM-30703-91</a>	10	
1/8"	<a href="#">GM-30726-03</a>	10		<a href="#">GM-30726-23</a>	10		<a href="#">GM-40726-43</a>	10		<a href="#">GM-30703-92</a>	10	
3/16"	<a href="#">GM-30726-04</a>	10		<a href="#">GM-30726-24</a>	10		<a href="#">GM-40726-44</a>	10		<a href="#">GM-30726-64</a>	10	
1/4"	<a href="#">GM-30726-05</a>	10		<a href="#">GM-30726-25</a>	10		<a href="#">GM-40726-45</a>	10		<a href="#">GM-30726-65</a>	10	
3/8"	<a href="#">GM-30726-06</a>	10		<a href="#">GM-30726-26</a>	10		<a href="#">GM-40726-46</a>	10		<a href="#">GM-30703-93</a>	10	
1/2"	<a href="#">GM-30726-07</a>	10		<a href="#">GM-30726-27</a>	10		<a href="#">GM-40726-47</a>	10		<a href="#">GM-30703-94</a>	10	
5/8"	<a href="#">GM-30726-08</a>	10		<a href="#">GM-30726-28</a>	10		<a href="#">GM-40726-48</a>	10		<a href="#">GM-30726-68</a>	10	
<b>NPT male threaded adapters, NPT(M) x tubing ID</b>												
1/8" x 1/8"	<a href="#">GM-30621-26</a>	10		<a href="#">GM-30621-27</a>	10		<a href="#">GM-40621-28</a>	25		<a href="#">GM-30704-07</a>	10	
1/8" x 1/4"	<a href="#">GM-30621-31</a>	10		<a href="#">GM-30621-32</a>	10		<a href="#">GM-40610-36</a>	10		<a href="#">GM-30704-09</a>	10	
1/4" x 1/8"	<a href="#">GM-30621-42</a>	10		<a href="#">GM-30621-44</a>	10		<a href="#">GM-40621-45</a>	10		<a href="#">GM-30621-43</a>	10	
1/4" x 1/4"	<a href="#">GM-30621-46</a>	10		<a href="#">GM-30621-47</a>	10		<a href="#">GM-40610-38</a>	10		<a href="#">GM-30704-11</a>	10	
3/8" x 1/4"	<a href="#">GM-30621-56</a>	10		<a href="#">GM-30621-57</a>	10		<a href="#">GM-40610-41</a>	10		<a href="#">GM-30704-14</a>	10	
3/8" x 3/8"	<a href="#">GM-30621-62</a>	10		<a href="#">GM-30621-63</a>	10		<a href="#">GM-40610-42</a>	10		<a href="#">GM-30704-15</a>	10	
1/2" x 1/4"	<a href="#">GM-30621-73</a>	10		<a href="#">GM-30621-74</a>	10		<a href="#">GM-40610-44</a>	10		<a href="#">GM-30704-17</a>	10	
1/2" x 3/8"	<a href="#">GM-30621-75</a>	10		<a href="#">GM-30621-76</a>	10		<a href="#">GM-40610-45</a>	10		<a href="#">GM-30704-18</a>	10	
1/2" x 1/2"	<a href="#">GM-30621-77</a>	10		<a href="#">GM-30621-78</a>	10		<a href="#">GM-40610-46</a>	10		<a href="#">GM-30704-19</a>	10	
3/4" x 1/2"	<a href="#">GM-30621-20</a>	10		<a href="#">GM-30621-21</a>	10		<a href="#">GM-40610-50</a>	5		<a href="#">GM-30704-23</a>	5	
3/4" x 3/4"	<a href="#">GM-30621-12</a>	10		<a href="#">GM-30621-13</a>	10		<a href="#">GM-40610-51</a>	5		<a href="#">GM-30704-24</a>	5	
1" x 1"	<a href="#">GM-31517-18</a>	10		<a href="#">GM-30401-34</a>	10		<a href="#">GM-40610-53</a>	5		<a href="#">GM-30704-26</a>	5	

### FREE Certificates of Compliance

Cole-Parmer will provide a certificate of resin or elastomer compliance FREE at your request with each order of fittings, gaskets, or tubing. Certificates list your company's PO number, order reference number, catalog number, formulation, compound number, lot number (where applicable), and the regulations and agencies the fitting, tubing, or gasket complies with, including FDA, USP, USDA, National Formulary, NSF International, GMP, and 3A.

Look for the red "compliance star" icon throughout this catalog to identify when a certificate of compliance is available.

**compliance certificate**

# Stock up & Save!

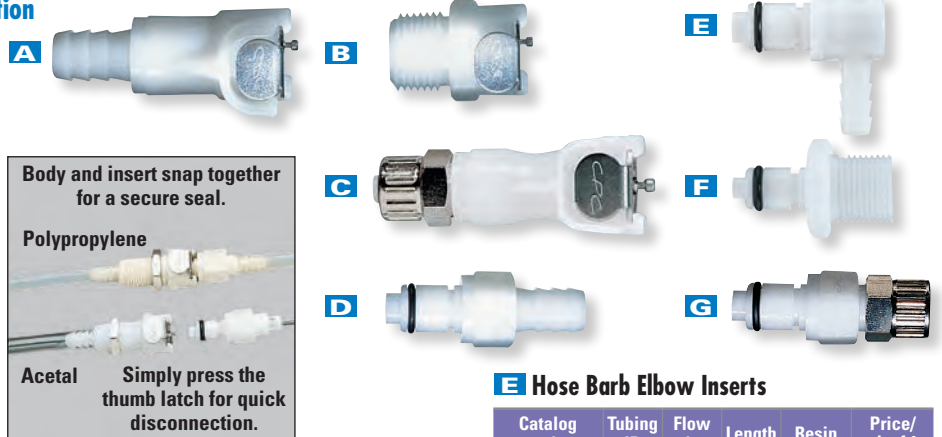
Mix and match to save 10, 15 or 20%

## CPC Quick-Disconnect Couplings

Available in acetal or polypropylene construction

- Choose from three styles—hose barb, compression, and pipe adapter—with standard in-line configurations

For each complete quick-disconnect fitting, order one body and one insert with the same flow size. Plug insert into body to connect fitting—fitting halves lock in place immediately. To disconnect fitting halves, simply press the lever on the coupling body; a spring-operated valve in each fitting half seals the flow path. (“Straight-through” fittings without shutoff valves are also available.) All fitting bodies have 316 stainless steel springs and latches.



### Specifications

	Acetal	Polypropylene (PP)
Body material	Buna N	EPR
Seal material	180°F (82°C)	160°F (71°C)
Max temp	120 psi	100 psi
Max pressure at 70°F (21°C)	28" Hg	28" Hg
Max vacuum	Autoclave or ETO	Gamma or ETO
Sterilization		

### Quick-Disconnect Bodies

(Female Coupling Halves)

#### A Hose Barb Bodies

Catalog number	Tubing ID	Flow size	Length	Resin	Price/pk of 1
<b>Valved fittings</b>					
GM-06360-19	1/16"	1/8"	1.41"	Acetal	
GM-06360-20	1/8"	1/8"	1.65"	Acetal	
GM-06360-22	3/16"	1/8"	1.85"	Acetal	
GM-06360-25	1/4"	1/8"	1.85"	Acetal	
GM-06360-65	1/4"	1/4"	1.95"	Acetal	
GM-06360-67	5/16"	1/4"	1.95"	Acetal	
GM-06360-70	3/8"	1/4"	1.95"	Acetal	
GM-06364-19	1/16"	1/8"	1.41"	PP	
GM-06364-20	1/8"	1/8"	1.67"	PP	
GM-06364-25	1/4"	1/8"	1.87"	PP	
GM-06364-65	1/4"	1/4"	1.97"	PP	
GM-06364-70	3/8"	1/4"	1.97"	PP	
<b>Straight-through fittings</b>					
GM-06361-09	1/16"	1/8"	1.41"	Acetal	
GM-06361-11	1/8"	1/8"	1.65"	Acetal	
GM-06361-12	3/16"	1/8"	1.85"	Acetal	
GM-06361-13	1/4"	1/8"	1.85"	Acetal	
GM-06361-51	1/4"	1/4"	1.95"	Acetal	
GM-06361-52	5/16"	1/4"	1.95"	Acetal	
GM-06361-53	3/8"	1/4"	1.95"	Acetal	

#### B NPT(M) Pipe Adapter Bodies

Catalog number	NPT(M)	Flow size	Resin	Price/pk of 1
<b>Valved fittings</b>				
GM-06359-70	1/8"	1/8"	Acetal	
GM-06359-71	1/4"	1/8"	Acetal	
GM-06359-72	1/4"	1/4"	Acetal	
GM-06359-73	3/8"	1/4"	Acetal	
GM-06359-80	1/8"	1/8"	PP	
GM-06359-81	1/4"	1/8"	PP	
GM-06359-82	1/4"	1/4"	PP	
GM-06359-83	3/8"	1/4"	PP	
<b>Straight-through fittings</b>				
GM-06361-00	1/8"	1/8"	Acetal	
GM-06361-01	1/4"	1/8"	Acetal	
GM-06361-42	1/4"	1/4"	Acetal	
GM-06361-43	3/8"	1/4"	Acetal	

### MORE info!

For a complete quick-disconnect coupling, order a body and an insert from this page, making sure to match flow size.

#### C Compression Bodies

Catalog number	Tubing OD	Flow size	Length	Resin	Price/pk of 1
<b>Valved fittings</b>					
GM-06360-98	1/4"	1/8"	1.73"	Acetal	
GM-06359-90	1/4"	1/4"	1.82"	Acetal	
GM-06359-91	3/8"	1/4"	1.95"	Acetal	
GM-06364-90	1/4"	1/8"	1.74"	PP	
GM-06364-91	3/8"	1/4"	1.97"	PP	
<b>Straight-through fittings</b>					
GM-06361-08	1/4"	1/8"	1.73"	Acetal	
GM-06361-49	3/8"	1/4"	1.95"	Acetal	

### Quick-Disconnect Inserts (Male Coupling Halves)

#### D Hose Barb Inserts

Catalog number	Tubing ID	Flow size	Length	Resin	Price/pk of 1
<b>Valved fittings</b>					
GM-06360-36	1/16"	1/8"	1.35"	Acetal	
GM-06360-40	1/8"	1/8"	1.55"	Acetal	
GM-06360-43	3/16"	1/8"	1.75"	Acetal	
GM-06360-45	1/4"	1/8"	1.58"	Acetal	
GM-06360-80	1/4"	1/4"	1.86"	Acetal	
GM-06360-83	5/16"	1/4"	1.86"	Acetal	
GM-06360-85	3/8"	1/4"	1.86"	Acetal	
GM-06364-38	1/16"	1/8"	1.35"	PP	
GM-06364-40	1/8"	1/8"	1.55"	PP	
GM-06364-45	1/4"	1/8"	1.58"	PP	
GM-06364-80	1/4"	1/4"	1.86"	PP	
GM-06364-85	3/8"	1/4"	1.67"	PP	
<b>Straight-through fittings</b>					
GM-06360-38	1/16"	1/8"	0.80"	Acetal	
GM-06360-42	1/8"	1/8"	1.05"	Acetal	
GM-06360-44	3/16"	1/8"	1.25"	Acetal	
GM-06360-47	1/4"	1/8"	1.25"	Acetal	
GM-06360-82	1/4"	1/4"	1.35"	Acetal	
GM-06360-84	5/16"	1/4"	1.35"	Acetal	
GM-06360-87	3/8"	1/4"	1.35"	Acetal	
GM-06364-39	1/16"	1/8"	0.80"	PP	
GM-06364-42	1/8"	1/8"	1.05"	PP	
GM-06364-47	1/4"	1/8"	1.25"	PP	
GM-06364-82	1/4"	1/4"	1.35"	PP	
GM-06364-87	3/8"	1/4"	1.35"	PP	

#### E Hose Barb Elbow Inserts

Catalog number	Tubing ID	Flow size	Length	Resin	Price/pk of 1
<b>Valved fittings</b>					
GM-06361-39	1/8"	1/8"	1.09"	Acetal	
GM-06361-41	1/4"	1/8"	1.09"	Acetal	
GM-06361-75	1/4"	1/4"	1.22"	Acetal	
GM-06361-76	3/8"	1/4"	1.22"	Acetal	
GM-06361-98	1/8"	1/8"	1.09"	PP	
GM-06361-99	1/4"	1/8"	1.09"	PP	
GM-06362-00	1/4"	1/4"	1.21"	PP	
GM-06362-01	3/8"	1/4"	1.21"	PP	
<b>Straight-through fittings</b>					
GM-06361-27	1/8"	1/8"	0.85"	Acetal	
GM-06361-28	1/4"	1/8"	1.00"	Acetal	
GM-06361-63	1/4"	1/4"	1.10"	Acetal	
GM-06361-64	3/8"	1/4"	1.20"	Acetal	
GM-06361-85	1/8"	1/8"	1.09"	PP	
GM-06361-86	1/4"	1/8"	1.09"	PP	
GM-06361-87	1/4"	1/4"	1.21"	PP	
GM-06361-88	3/8"	1/4"	1.21"	PP	

#### F NPT(M) Pipe Adapter Inserts

Catalog number	NPT(M)	Flow size	Resin	Price/pk of 1
<b>Valved fittings</b>				
GM-06361-29	1/8"	1/8"	Acetal	
GM-06361-31	1/4"	1/8"	Acetal	
GM-06361-65	1/4"	1/4"	Acetal	
GM-06361-66	3/8"	1/4"	Acetal	
GM-06361-89	1/8"	1/8"	PP	
GM-06361-91	1/4"	1/4"	PP	
<b>Straight-through fittings</b>				
GM-06361-17	1/8"	1/8"	Acetal	
GM-06361-18	1/4"	1/8"	Acetal	
GM-06361-54	1/4"	1/4"	Acetal	
GM-06361-55	3/8"	1/4"	Acetal	
GM-06361-79	1/8"	1/8"	PP	
GM-06361-81	1/4"	1/4"	PP	

#### G Compression Inserts

Catalog number	Tubing OD	Flow size	Length	Resin	Price/pk of 1
<b>Valved fittings</b>					
GM-06360-30	1/4"	1/8"	1.45"	Acetal	
GM-06360-35	3/8"	1/8"	1.40"	Acetal	
GM-06360-74	1/4"	1/4"	1.75"	Acetal	
GM-06360-75	3/8"	1/4"	1.68"	Acetal	
GM-06364-30	1/4"	1/8"	1.45"	PP	
GM-06364-75	3/8"	1/4"	1.68"	PP	
<b>Straight-through fittings</b>					
GM-06360-32	1/4"	1/8"	1.15"	Acetal	
GM-06360-37	3/8"	1/8"	1.30"	Acetal	
GM-06360-76	1/4"	1/4"	1.25"	Acetal	
GM-06360-77	3/8"	1/4"	1.38"	Acetal	
GM-06364-32	1/4"	1/8"	1.15"	PP	
GM-06364-77	3/8"	1/4"	1.38"	PP	



# You're Out? We're Not!

Thousands of **highlighted** items



## Plastic Quick-Disconnect Fittings

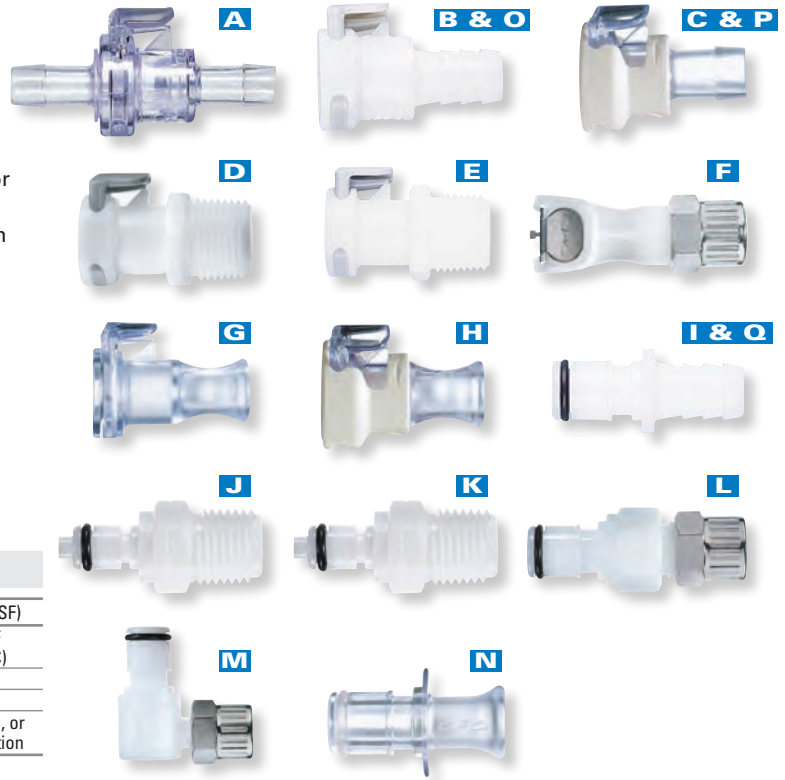
### Acetal fittings are ideal for use with corrosive fluids

- Polycarbonate and polysulfone materials meet USP Class VI requirements

Simply press the thumb latch to disconnect coupling halves. Polycarbonate and polysulfone materials meet USP Class VI requirements and pass all physicochemical, cytotoxicity, leachables, and extractables tests. Order complete couplings or separate bodies and inserts from the tables below.

**Note:** Standard bodies and inserts fit together; won't work with large bodies and inserts and vice versa.

FREE certificate of compliance is available for PC and PSF fittings on this page. **See page 61.**



### Specifications

Body material	Acetal	Polycarbonate (PC)	Polysulfone (PSF)
Temperature range	-40 to 180°F (-40 to 82°C)	-40 to 250°F (-40 to 121°C)	-40 to 300°F (-40 to 148°C)
Max pressure	120 psi	125 psi†	120 psi
Max vacuum	28" Hg	25" Hg	25" Hg
Sterilization	Autoclave or ETO	Autoclave, ETO, or gamma irradiation	Autoclave, ETO, or gamma irradiation

†Max pressure for 1/2" polycarbonate fittings is 60 psi.

### Complete Couplings

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
A	GM-06360-90	1/4" tubing ID	Acetal	—	10	
	GM-31305-00		PC	—	10	
	GM-06360-91	3/8" tubing ID	Acetal	—	10	
	GM-31305-05		PC	—	10	
	GM-31306-05		PSF	—	10	

### Standard Bodies and Caps

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
<b>Barbed bodies</b>						
B	GM-06360-94	1/4" tubing ID	Acetal	1.31" (33.3 mm)	10	
	GM-31311-11		PC		5	
	GM-31311-21		PSF		5	
	GM-06360-95	3/8" tubing ID	Acetal	1.31" (33.3 mm)	10	
	GM-31311-12		PC		5	
	GM-31311-22		PSF		5	
<b>Hose barb coupling bodies with lock</b>						
C	GM-31311-16	1/4" tubing ID	PC	1.31" (33.3 mm)	5	
	GM-31311-26		PSF		5	
	GM-31311-17	3/8" tubing ID	PC	1.31" (33.3 mm)	5	
	GM-31311-27		PSF		5	
<b>BSP straight-through bodies</b>						
D	GM-06360-01	1/4" BSP	Acetal	1.31" (33.3 mm)	10	
	GM-06360-02	3/8" BSP			10	
<b>NPT(M) bodies</b>						
E	GM-06360-00	1/4" NPT	Acetal	1.31" (33.3 mm)	10	
	GM-06360-96	3/8" NPT			10	
<b>Compression coupling bodies</b>						
F	GM-06360-06	1/4" OD	Acetal	1.31" (33.3 mm)	10	
	GM-06360-08	3/8" OD			10	
<b>Sealing caps</b>						
G	GM-31311-64	1/4"	PC	1.31" (33.3 mm)	5	
	GM-31311-74	1/4"	PSF		5	
<b>Sealing caps with lock</b>						
H	GM-31311-67	1/4"	PC	1.31" (33.3 mm)	5	
	GM-31311-77	1/4"	PSF		5	

### Standard Inserts and Plugs

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
<b>Barbed inserts</b>						
I	GM-06360-92	1/4" tubing ID	Acetal	1.28" (32.5 mm)	10	
	GM-31311-61		PC		5	
	GM-31311-71		PSF		5	
	GM-06360-93	3/8" tubing ID	Acetal	1.28" (32.5 mm)	10	
	GM-31311-62		PC		5	
	GM-31311-72		PSF		5	
<b>BSP straight-through inserts</b>						
J	GM-06360-27	1/4" BSP	Acetal	1.28" (32.5 mm)	10	
	GM-06360-97	3/8" BSP			10	
<b>NPT(M) inserts</b>						
K	GM-06360-16	1/4" NPT	Acetal	1.28" (32.5 mm)	10	
	GM-06360-18	3/8" NPT			10	
<b>Compression coupling inserts</b>						
L	GM-06360-21	1/4" OD	Acetal	1.28" (32.5 mm)	10	
	GM-06360-24	3/8" OD			10	
<b>Sealing caps</b>						
M	GM-06360-31	1/4" OD	Acetal	1.28" (32.5 mm)	10	
	GM-06360-34	3/8" OD			10	
<b>Plugs with lock</b>						
N	GM-31311-68	1/4"	PC	1.20" (30.5 mm)	5	
	GM-31311-78	1/4"	PSF		5	

### Large Bodies and Inserts (use these bodies and inserts together)

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
<b>Barbed bodies</b>						
O	GM-31311-13	1/2" tubing ID	PC	1.96" (49.8 mm)	5	
	GM-31311-23		PSF		5	
<b>Hose barb coupling bodies with lock</b>						
P	GM-31311-18	3/8" tubing ID	PC	1.96" (49.8 mm)	5	
	GM-31311-28		PSF		5	
<b>Barbed inserts</b>						
Q	GM-31311-63	1/2" tubing ID	PC	1.90" (48.3 mm)	5	
	GM-31311-73		PSF	1.40" (35.6 mm)	5	

**Stock up & Save!**  
Mix and match to save **10, 15 or 20%**

**CPC High-Flow Quick-Disconnect Couplings**

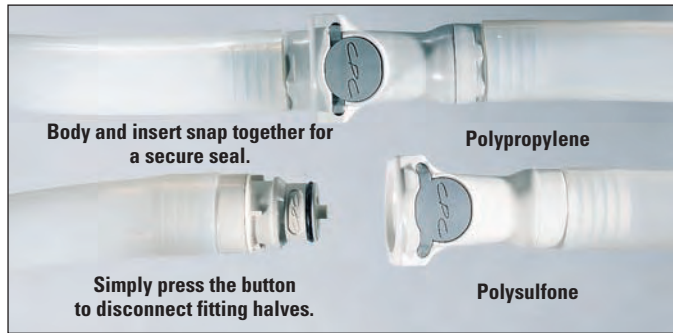
**Valved models offer automatic flow shutoff**

A complete quick-disconnect fitting consists of a body and an insert (order fitting halves separately). Plug insert into coupling body to connect—fitting halves lock into place immediately. To disconnect fitting halves, simply press the button on the coupling body.

Valved models have a spring-operated 316 SS valve that seals the flow path when fitting halves are disengaged. All fitting bodies have 316 SS latch springs and EPDM seals.

**Specifications**

	Polypropylene	Polysulfone
Body material	Polypropylene	Polysulfone
Temperature range	32 to 160°F (0 to 71°C)	-40 to 280°F (-40 to 137°C)
Max pressure	60 psi	125 psi
Max vacuum	27.5" Hg	27.5" Hg
Sterilization	ETO or gamma	Autoclave, ETO, or gamma



**Quick-Disconnect Bodies (Female Coupling Halves)**

**A Threaded Adapter Bodies**

Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-00</a>		<a href="#">GM-31307-00</a>	
3/8"	1/2"	<a href="#">GM-31303-01</a>		<a href="#">GM-31307-01</a>	
3/8"	3/4"	<a href="#">GM-31303-02</a>		<a href="#">GM-31307-02</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-05</a>		<a href="#">GM-31307-05</a>	
3/8"	1/2"	<a href="#">GM-31303-06</a>		<a href="#">GM-31307-06</a>	
3/8"	3/4"	<a href="#">GM-31303-07</a>		<a href="#">GM-31307-07</a>	

**B Hose Barb Bodies**

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-10</a>		<a href="#">GM-31307-10</a>	
3/8"	1/2"	<a href="#">GM-31303-11</a>		<a href="#">GM-31307-11</a>	
3/8"	5/8"	<a href="#">GM-31303-12</a>		<a href="#">GM-31307-12</a>	
3/8"	3/4"	<a href="#">GM-31303-13</a>		<a href="#">GM-31307-13</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-15</a>		<a href="#">GM-31307-15</a>	
3/8"	1/2"	<a href="#">GM-31303-16</a>		<a href="#">GM-31307-16</a>	
3/8"	5/8"	<a href="#">GM-31303-17</a>		<a href="#">GM-31307-17</a>	
3/8"	3/4"	<a href="#">GM-31303-18</a>		<a href="#">GM-31307-18</a>	

**C Bulkhead Panel Mount Hose Barb Bodies**

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-20</a>		<a href="#">GM-31307-20</a>	
3/8"	1/2"	<a href="#">GM-31303-21</a>		<a href="#">GM-31307-21</a>	
3/8"	5/8"	<a href="#">GM-31303-22</a>		<a href="#">GM-31307-22</a>	
3/8"	3/4"	<a href="#">GM-31303-23</a>		<a href="#">GM-31307-23</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-25</a>		<a href="#">GM-31307-25</a>	
3/8"	1/2"	<a href="#">GM-31303-26</a>		<a href="#">GM-31307-26</a>	
3/8"	5/8"	<a href="#">GM-31303-27</a>		<a href="#">GM-31307-27</a>	
3/8"	3/4"	<a href="#">GM-31303-28</a>		<a href="#">GM-31307-28</a>	



**A** 31303-00



**D** 31303-30



**B** 31303-10



**E** 31303-40



**C** 31303-20



**F** 31303-50

**Quick-Disconnect Inserts (Male Coupling Halves)**

**D Male Threaded Inserts**

Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-35</a>		<a href="#">GM-31307-35</a>	
3/8"	1/2"	<a href="#">GM-31303-36</a>		<a href="#">GM-31307-36</a>	
3/8"	3/4"	<a href="#">GM-31303-37</a>		<a href="#">GM-31307-37</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-30</a>		<a href="#">GM-31307-30</a>	
3/8"	1/2"	<a href="#">GM-31303-31</a>		<a href="#">GM-31307-31</a>	
3/8"	3/4"	<a href="#">GM-31303-32</a>		<a href="#">GM-31307-32</a>	

**E Hose Barb Inserts**

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-45</a>		<a href="#">GM-31307-45</a>	
3/8"	1/2"	<a href="#">GM-31303-46</a>		<a href="#">GM-31307-46</a>	
3/8"	5/8"	<a href="#">GM-31303-47</a>		<a href="#">GM-31307-47</a>	
3/8"	3/4"	<a href="#">GM-31303-48</a>		<a href="#">GM-31307-48</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-40</a>		<a href="#">GM-31307-40</a>	
3/8"	1/2"	<a href="#">GM-31303-41</a>		<a href="#">GM-31307-41</a>	
3/8"	5/8"	<a href="#">GM-31303-42</a>		<a href="#">GM-31307-42</a>	
3/8"	3/4"	<a href="#">GM-31303-43</a>		<a href="#">GM-31307-43</a>	

**F Elbow Hose Barb Inserts**

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-55</a>		<a href="#">GM-31307-55</a>	
3/8"	1/2"	<a href="#">GM-31303-56</a>		<a href="#">GM-31307-56</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">GM-31303-50</a>		<a href="#">GM-31307-50</a>	
3/8"	1/2"	<a href="#">GM-31303-51</a>		<a href="#">GM-31307-51</a>	

# You're Out? We're Not!

Thousands of **highlighted** items



## ADVANTEC® Laboratory Filter Papers

Manufactured to exacting standards for consistent and reliable performance

■ A wide choice of grades and sizes

### A Quantitative Filter Papers

Ideal for gravimetric analysis and environmental monitoring. These papers are made of the highest quality alpha cotton cellulose with low ash content. Papers are double acid washed in hydrochloric acid followed by hydrofluoric acid (No. 3, 5A, 5B, 5C, 6), then rinsed with ultrapure water to neutralize. Paper No. 4A is further treated with nitric acid before washing. Sold in **packs of 100**.

### B Qualitative Filter Papers

Ideal for clarifying and removing precipitates, and preparation for qualitative analysis. These papers are made of 100% alpha cotton cellulose, with 0 to 12 pH tolerance. Maximum temperature is 248°F (120°C). Sold in **packs of 100**.



**A**  
Quantitative filter papers

### Specifications

Grade	Nominal rating (µm)	Thickness (mm)	Weight (g/m <sup>2</sup> )	Flow time <sup>†</sup> (sec)	Absorption speed <sup>‡</sup> (cm)	Wet strength <sup>††</sup> (cm H <sub>2</sub> O)
<b>Quantitative filter papers</b>						
No. 3	Medium (5)	0.23	113	130	7.5	20
No. 4A	Very fine (1)	0.12	96	915	4.0	90
No. 5A	Coarse / gelatinous (7)	0.22	97	60	9.5	15
No. 5B	Medium (4)	0.21	108	195	7.0	20
No. 5C	Fine (1)	0.22	118	570	6.0	25
No. 6	Medium-fine (3)	0.2	103	300	6.0	15
No. 7	Medium (4)	0.18	87	200	7.0	12
<b>Qualitative filter papers</b>						
No. 1	Coarse (6)	0.2	90	45	9.0	15
No. 2	Medium (5)	0.26	125	80	8.0	18
No. 231	Medium	0.18	95	130	7.5	—
No. 232	Medium / medium-fine	0.18	90	250	5.0	—
No. 235	Very fine	0.17	95	1200	4.0	—
No. 131	Medium-fine (3)	0.25	140	240	6.0	20
No. 101	Coarse / gelatinous	0.21	80	50	8.0	15

<sup>†</sup>Flow time is the time in seconds required to filter 100 mL of distilled water at 68°F (20°C) under pressure supplied by a 10-cm water column through a 10 cm<sup>2</sup> section of filter paper.

<sup>‡</sup>Absorption speed is the distance in cm that water will travel in an upright strip of filter paper in ten minutes at 68°F (20°C).

<sup>††</sup>Wet strength is the height in cm of a water column that will rupture a 10 cm<sup>2</sup> section of filter paper.

### A Quantitative Filter Papers

Grade	Applications	5.5 cm	7.0 cm	9.0 cm	11.0 cm	12.5 cm	15.0 cm	18.5 cm
No. 3 Ashless	Medium retention (5 to 10 µm), fast flow rate analysis of soils, fertilizers, cement, and minerals	<a href="#">GM-81050-56</a> /pk	<a href="#">GM-81050-58</a> /pk	<a href="#">GM-81050-60</a> /pk	<a href="#">GM-81050-62</a> /pk	<a href="#">GM-81050-64</a> /pk	<a href="#">GM-81050-66</a> /pk	<a href="#">GM-81050-68</a> /pk
No. 4A Hardened ashless	High wet strength, suitable for use under high pressure, high chemical and pH resistance, retains fine crystalline precipitates (<5 µm), slow flow	<a href="#">GM-81051-90</a> /pk	<a href="#">GM-81051-92</a> /pk	<a href="#">GM-81051-94</a> /pk	<a href="#">GM-81051-96</a> /pk	<a href="#">GM-81051-98</a> /pk	<a href="#">GM-81052-00</a> /pk	<a href="#">GM-81052-02</a> /pk
No. 5A Ashless	Fast flow rate, retains coarse particulates and gelatinous precipitates (>10 µm); filter hydroxides and metallic aerosols, environmental monitoring, silica in steel	<a href="#">GM-81050-80</a> /pk	<a href="#">GM-81050-82</a> /pk	<a href="#">GM-81050-86</a> /pk	<a href="#">GM-81050-88</a> /pk	<a href="#">GM-81050-90</a> /pk	<a href="#">GM-81050-92</a> /pk	<a href="#">GM-81051-10</a> /pk
No. 5B Ashless	Retains medium particles (5 to 10 µm) such as CaCO <sub>3</sub> , PbSO <sub>4</sub> , CaCO <sub>4</sub> , MnCO <sub>3</sub> , ZnCO <sub>3</sub> , ZnS, AgCl	<a href="#">GM-81051-12</a> /pk	<a href="#">GM-81051-14</a> /pk	<a href="#">GM-81051-16</a> /pk	<a href="#">GM-81051-18</a> /pk	<a href="#">GM-81051-20</a> /pk	<a href="#">GM-81051-22</a> /pk	<a href="#">GM-81051-24</a> /pk
No. 5C Ashless	Collect fine precipitates (<5 µm) such as SrSO <sub>4</sub> , BaSO <sub>4</sub> , HgCrO <sub>4</sub> , and colloidal dispersions; gravimetric analysis	<a href="#">GM-81051-42</a> /pk	<a href="#">GM-81051-44</a> /pk	<a href="#">GM-81051-46</a> /pk	<a href="#">GM-81051-48</a> /pk	<a href="#">GM-81051-50</a> /pk	<a href="#">GM-81051-52</a> /pk	<a href="#">GM-81051-54</a> /pk
No. 6 Ashless	Retains medium-fine particulates (2 to 10 µm), trace and precious metals	<a href="#">GM-81051-56</a> /pk	<a href="#">GM-81051-58</a> /pk	<a href="#">GM-81051-60</a> /pk	<a href="#">GM-81051-62</a> /pk	<a href="#">GM-81051-70</a> /pk	<a href="#">GM-81051-72</a> /pk	<a href="#">GM-81051-74</a> /pk
No. 7 Ashless	Highest purity for retaining medium particles (5 to 10 µm), precise gravimetric analysis	<a href="#">GM-81051-76</a> /pk	<a href="#">GM-81051-78</a> /pk	<a href="#">GM-81051-80</a> /pk	<a href="#">GM-81051-82</a> /pk	<a href="#">GM-81051-84</a> /pk	<a href="#">GM-81051-86</a> /pk	<a href="#">GM-81051-88</a> /pk

### B Qualitative Filter Papers

Grade	Applications	5.5 cm	7.0 cm	9.0 cm	11.0 cm	12.5 cm	15.0 cm	18.5 cm
No. 1	Coarse retention; retains large crystalline particles and gelatinous precipitates. Fast flow rate, smooth surface, normal hardness	<a href="#">GM-81048-04</a> /pk	<a href="#">GM-81048-06</a> /pk	<a href="#">GM-81048-08</a> /pk	<a href="#">GM-81048-10</a> /pk	<a href="#">GM-81048-12</a> /pk	<a href="#">GM-81048-14</a> /pk	<a href="#">GM-81048-16</a> /pk
No. 2	Medium retention; retains medium crystalline precipitates, fast flow rate, smooth surface, normal hardness	<a href="#">GM-81048-34</a> /pk	<a href="#">GM-81048-36</a> /pk	<a href="#">GM-81048-38</a> /pk	<a href="#">GM-81048-40</a> /pk	<a href="#">GM-81048-42</a> /pk	<a href="#">GM-81048-46</a> /pk	<a href="#">GM-81048-48</a> /pk
No. 231	Medium retention; retains crystalline precipitates, moderate flow rate, smooth surface, normal hardness	<a href="#">GM-81048-64</a> /pk	<a href="#">GM-81048-66</a> /pk	<a href="#">GM-81048-68</a> /pk	<a href="#">GM-81048-70</a> /pk	<a href="#">GM-81048-72</a> /pk	<a href="#">GM-81048-74</a> /pk	<a href="#">GM-81048-80</a> /pk
No. 232	Retains medium to medium-fine particulates, slow flow rate, smooth, normal hardness	<a href="#">GM-81048-84</a> /pk	<a href="#">GM-81048-86</a> /pk	<a href="#">GM-81048-88</a> /pk	<a href="#">GM-81048-90</a> /pk	<a href="#">GM-81048-92</a> /pk	<a href="#">GM-81048-94</a> /pk	<a href="#">GM-81049-90</a> /pk
No. 235	Highest retention efficiency, retains very fine particulates, very slow flow rate, smooth	—	<a href="#">GM-81050-22</a> /pk	<a href="#">GM-81050-24</a> /pk	<a href="#">GM-81050-26</a> /pk	<a href="#">GM-81050-28</a> /pk	<a href="#">GM-81050-30</a> /pk	<a href="#">GM-81050-32</a> /pk
No. 131	High retention efficiency for medium-fine crystalline precipitates like barium sulfate, slow flow rate, smooth surface, normal hardness	<a href="#">GM-81050-04</a> /pk	<a href="#">GM-81050-10</a> /pk	<a href="#">GM-81050-12</a> /pk	<a href="#">GM-81050-14</a> /pk	<a href="#">GM-81050-16</a> /pk	<a href="#">GM-81050-18</a> /pk	<a href="#">GM-81050-20</a> /pk
No. 101	Coarse retention; seed germination, retains large particles	<a href="#">GM-81050-36</a> /pk	<a href="#">GM-81050-38</a> /pk	<a href="#">GM-81050-40</a> /pk	<a href="#">GM-81050-42</a> /pk	<a href="#">GM-81050-50</a> /pk	<a href="#">GM-81050-52</a> /pk	<a href="#">GM-81050-54</a> /pk



## ADVANTEC® Membranes

### A Cellulose Acetate Membranes

Cellulose acetate (CA) membranes have lower binding affinities for charged macromolecules than cellulose nitrate. Retention is primarily based on precipitate size—use to separate bound and unbound proteins. Membranes also have low-swelling properties making them ideal for use with alcohol-based solutions. Membranes withstand temperatures to 356°F (180°C).

**A**  
06645-04



**B**  
06639-31

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm <sup>2</sup> )		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (25/pk)	
		H <sub>2</sub> O	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.20	>37.1	0.016	2.0	<a href="#">GM-06645-00</a>		<a href="#">GM-06645-02</a>		<a href="#">GM-06645-04</a>		<a href="#">GM-06645-06</a>		<a href="#">GM-06645-08</a>		<a href="#">GM-36230-34</a>	
0.45	>25.9	0.035	4.0	<a href="#">GM-06645-10</a>		<a href="#">GM-06645-12</a>		<a href="#">GM-06645-14</a>		<a href="#">GM-06645-16</a>		<a href="#">GM-06645-18</a>		<a href="#">GM-36230-66</a>	
0.80	>10.0	0.160	14.0	<a href="#">GM-06645-20</a>		<a href="#">GM-06645-22</a>		<a href="#">GM-06645-24</a>		<a href="#">GM-06645-26</a>		<a href="#">GM-06645-28</a>		<a href="#">GM-36230-68</a>	
3.00	>5.0	0.500	54.0	<a href="#">GM-36230-70</a>		<a href="#">GM-36230-72</a>		<a href="#">GM-36230-74</a>		<a href="#">GM-36230-76</a>		<a href="#">GM-36230-78</a>		<a href="#">GM-36230-80</a>	

<sup>†</sup>Using water prefiltered to 0.1 µm at 10 psi.

### B Mixed Cellulose Ester Membranes

Mixed cellulose ester (MCE) membranes are made from over 90% cellulose nitrate for strength and thermostability. These membranes can be exposed to temperatures up to 266°F (130°C). Can be used for many laboratory applications including filter sterilizing biological fluids, microbiology, contamination analysis, and air monitoring.

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm <sup>2</sup> )		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (25/pk)	
		H <sub>2</sub> O <sup>†</sup>	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.10	35.3	0.027	0.67	<a href="#">GM-06639-25</a>		<a href="#">GM-06639-28</a>		<a href="#">GM-06639-31</a>		<a href="#">GM-06639-34</a>		<a href="#">GM-06639-41</a>		<a href="#">GM-36230-81</a>	
0.20	54.5	0.018	2.4	<a href="#">GM-06639-01</a>		<a href="#">GM-06639-05</a>		<a href="#">GM-06639-13</a>		<a href="#">GM-06639-35</a>		<a href="#">GM-06639-17</a>		<a href="#">GM-36230-82</a>	
0.45	35.0	0.045	3.7	<a href="#">GM-06639-02</a>		<a href="#">GM-06639-06</a>		<a href="#">GM-06639-14</a>		<a href="#">GM-06639-36</a>		<a href="#">GM-06639-18</a>		<a href="#">GM-36230-83</a>	
0.80	16.4	0.165	15.0	<a href="#">GM-06645-30</a>		<a href="#">GM-06645-32</a>		<a href="#">GM-06645-34</a>		<a href="#">GM-06645-36</a>		<a href="#">GM-06645-38</a>		<a href="#">GM-36230-84</a>	
1.00	13.9	0.220	20.4	<a href="#">GM-06639-47</a>		<a href="#">GM-06639-49</a>		<a href="#">GM-06639-51</a>		<a href="#">GM-06639-55</a>		<a href="#">GM-06639-53</a>		<a href="#">GM-36230-85</a>	
3.00	10.2	0.300	28.3	<a href="#">GM-06639-26</a>		<a href="#">GM-06639-29</a>		<a href="#">GM-06639-32</a>		<a href="#">GM-06639-39</a>		<a href="#">GM-06639-42</a>		<a href="#">GM-36230-86</a>	
5.00	8.5	0.400	40.9	<a href="#">GM-06639-27</a>		<a href="#">GM-06639-30</a>		<a href="#">GM-06639-33</a>		<a href="#">GM-06639-40</a>		<a href="#">GM-06639-43</a>		<a href="#">GM-36230-87</a>	

<sup>†</sup>Using water prefiltered to 0.1 µm at 10 psi.

## Cole-Parmer® Membranes



**A**  
36229-02



**B**  
36229-34

Customer Approved

“Great product that holds up in the field.”



### A Nylon (Polyamide) Membranes

High protein binding membranes are ideal for filtering or sterilizing nonprotein-containing biological solutions. Inherently hydrophilic membranes do not require prewetting—filter aqueous solutions and organic solvents. Withstand repeated steam sterilization.

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm <sup>2</sup> )	13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.2	49	12	<a href="#">GM-36229-00</a>		<a href="#">GM-36229-02</a>		<a href="#">GM-36229-04</a>		<a href="#">GM-36229-06</a>		<a href="#">GM-36229-08</a>	
0.45	33	26	<a href="#">GM-36229-10</a>		<a href="#">GM-36229-12</a>		<a href="#">GM-36229-14</a>		<a href="#">GM-36229-16</a>		<a href="#">GM-36229-18</a>	

### B PTFE Membranes

Durable-laminated PTFE membranes are unaffected by even the most corrosive compounds, including concentrated acids, alkalis, and propellants. Membranes withstand temperatures from -148 to 266°F (-100 to 130°C). Use these hydrophobic membranes for sterile venting and filtration of gas, air streams, and organic solvents. Prewet with acetone or methanol for aqueous solutions.

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm <sup>2</sup> )	13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.2	20	0.2	<a href="#">GM-36229-20</a>		<a href="#">GM-36229-22</a>		<a href="#">GM-36229-24</a>		<a href="#">GM-36229-26</a>		<a href="#">GM-36229-28</a>	
0.45	13	0.3	<a href="#">GM-36229-30</a>		<a href="#">GM-36229-32</a>		<a href="#">GM-36229-34</a>		<a href="#">GM-36229-36</a>		<a href="#">GM-36229-38</a>	
1.2	4	1.6	<a href="#">GM-36229-40</a>		<a href="#">GM-36229-42</a>		<a href="#">GM-36229-44</a>		<a href="#">GM-36229-46</a>		<a href="#">GM-36229-48</a>	

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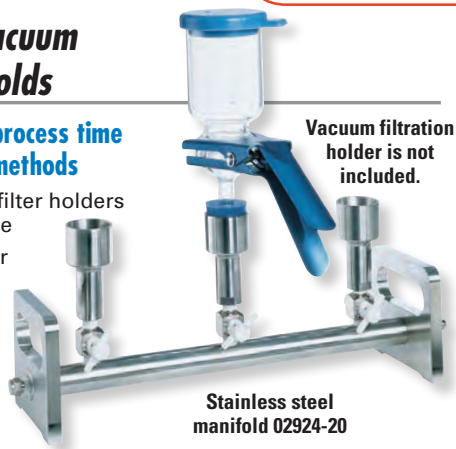
Thousands of **highlighted** items



## ADVANTEC® Vacuum Filtration Manifolds

Significantly reduces process time compared to gravity methods

- Connect three or six filter holders to one vacuum source
- Go to our web site for our full offering of Advantec vacuum filtration holders



**Stainless steel manifold 02924-20**

**Stainless Steel Manifolds** have two- or three-way PTFE valves for each branch to provide individual control of vacuum and air venting. Branches accept no. 8 stoppers. Hose barb accepts 3/8" ID vacuum tubing. Autoclavable.

**PVC Manifolds** have branches with two-way PTFE valves for independent control of vacuum. Hose barb accepts 1/4" ID tubing. Branches accept no. 8 stoppers. Sanitize with ethanol or formaldehyde; do not autoclave. Max temperature is 140°F (60°C).

Catalog number	Valve type	No. of branches	Dimensions (L x W x H)		Price
			in.	cm	
<b>Stainless steel manifolds</b>					
<a href="#">GM-02924-20</a>	2-way	3	18 x 4 3/4 x 7	45.7 x 12.1 x 17.8	
<a href="#">GM-02924-30</a>		6	28 1/2 x 4 3/4 x 7	72.4 x 12.1 x 17.8	
<a href="#">GM-02924-85</a>	3-way	3	18 x 4 3/4 x 7	45.7 x 12.1 x 17.8	
<a href="#">GM-02924-95</a>		6	28 1/2 x 4 3/4 x 7	72.4 x 12.1 x 17.8	
<b>PVC manifolds</b>					
<a href="#">GM-02924-40</a>	2-way	3	17 3/4 x 4 3/4 x 7	45.1 x 12.1 x 17.8	
<a href="#">GM-02924-50</a>		6	34 1/2 x 4 3/4 x 7	87.6 x 12.1 x 17.8	

## Labglass™ Filtration Assemblies

These filtration assemblies are designed for HPLC, particulate, and microbiological contamination filtrations. Sintered glass support provides even, flat support structure for membrane filters.

**What's included:** a coarse fritted glass support base, a graduated glass funnel with 300- or 1000-mL capacity, an anodized aluminum clamp, and a no. 8 silicone stopper with 3/16" hole. Order filtering flasks separately below.



**Filtration assembly 34509-00 with filtering flask 34509-32 (order separately below)**

Catalog number	Diameter	Capacity	Price
<a href="#">GM-34509-00</a>	47 mm	300 mL	
<a href="#">GM-34509-10</a>	90 mm	1000 mL	

[GM-34509-38](#) Replacement funnel; 47-mm diameter, 300-mL capacity

[GM-34509-40](#) Replacement funnel; 90-mm diameter, 1000-mL capacity

## Labglass Filtering Flasks

Attach a 3/8" ID vacuum hose to the sidearm of the flask via the no. 2 hose connector. Insert a funnel into the neck of the flask through a no. 8 rubber stopper joint.

Catalog number	Dimensions	Capacity	Price
<a href="#">GM-34509-32</a>	135 mm OD x 225 mm H	1000 mL	
<a href="#">GM-34509-34</a>	168 mm OD x 292 mm H	2000 mL	
<a href="#">GM-34509-36</a>	208 mm OD x 370 mm H	4000 mL	

## ADVANTEC® Syringe and In-Line Filter Holders

### Polypropylene (PP) Filter Holders

Ideal for ultracleaning and sterilizing liquids under pressure, or for aseptic sampling of liquids and gases. Maximum operating temperature (liquids) is 176°F (80°C); maximum operating pressure is 42 psi (2.9 bar) for the 25-mm holder and 71 psi (4.8 bar) for the 47-mm holder.

Holders feature PP dual support screens and silicone O-rings. Dual support screens allow for flow in both directions. The 25-mm holder features a female luer-lock on the inlet and a male luer-slip on the outlet. The 47-mm holder features a 1/4" NPT(M) thread on the inlet and a 1/4" NPT(M)-female luer-slip on the outlet. Both are autoclavable.



06623-22



06623-32

Catalog number	Type of holder	Diameter	Qty/pk	Price/pk
<a href="#">GM-06623-32</a>	Syringe	25 mm	6	
<a href="#">GM-06623-22</a>	In-line	47 mm	1	

[GM-02930-95](#) Support screen, 25 mm. Pack of 8

[GM-06645-90](#) Support screen, 47 mm. Pack of 4

### Stainless Steel (SS) Filter Holders

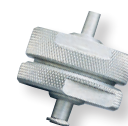
These filter holders have bodies and perforated support screens of 304 SS with PTFE gaskets and silicone O-rings. Autoclave with membrane in place.

**Syringe holders** have luer fittings. Maximum pressure is 99 psi inlet, 42 psi differential.

**In-line holders** have 1/4" NPT(F) and 1/4" NPT(M) ports and are supplied with 3/8" hose barb connectors. Maximum pressure is 71 psi inlet, 29 psi differential.

Catalog number	Type of holder	Diameter	Price/ea
<a href="#">GM-02928-10</a>	Syringe	13 mm	
<a href="#">GM-02928-20</a>	Syringe	25 mm	
<a href="#">GM-02929-10</a>	In-line	25 mm	
<a href="#">GM-02929-20</a>	In-line	47 mm	

02928-20



02929-10



### PFA Filter Holders

Use these PFA holders with chemically aggressive liquids. Dual support screens allow for flow in either direction. Body and support screens of the filters are made of PFA; the O-ring is made of perfluoroelastomer.

The 25-mm holder features a female luer lock on the inlet and male luer slip on the outlet. The 47-mm holder has an air/bleed vent and features combination 1/4" NPT(M) and 1/4" OD tubing adapter connections. Maximum operating temperature is 250°F (121°C). Autoclavable.



06644-62

06644-60

Catalog number	Type of holder	Membrane diameter		Filtration area	Price/ea
		Filter	Prefilter		
<a href="#">GM-06644-60</a>	Syringe	25 mm	21 mm	3.5 cm <sup>2</sup>	
<a href="#">GM-06644-62</a>	In-line	47 mm	42 mm	13.5 cm <sup>2</sup>	

# Your Application Solved! Can't find the right product? Our specialists can!

## Cole-Parmer Syringe Filters

Choose from a wide assortment of membrane types to suit your application. All filters are Triton-free and have a bidirectional membrane support and luer lock inlet/outlet for a secure fit to the syringe. For 50-mm membrane filters only, the inlet/outlet connections are stepped hose barbs that taper to fit 1/4" to 1/2" ID tubing. Membrane type and pore size are printed on each filter for easy identification. All Cole-Parmer syringe filters are 100% integrity tested and manufactured in accordance with ISO 9002 standards. Sterile filters are sterilized by gamma irradiation. They are certified nonpyrogenic, noncytotoxic, and are blister packed.



**Syringe filter 02915-92**  
(syringe not included, order at [www.coleparmer.com/syringes](http://www.coleparmer.com/syringes))



**Built-in prefilter 02915-92**

### Membrane Specifications

Membrane dia	Housing type	Sample volume	Retention volume†	Pressure limit at 25°C	Max temp	Effective filtration area
15 mm	PP	≤5 mL	10 µL	87 psi	127°C	1.7 cm <sup>2</sup>
25 mm	PP	≤100 mL	0.1 mL	87 psi	127°C	4.8 cm <sup>2</sup>
26 mm	Acrylic	≤100 mL	0.1 mL	87 psi	50°C	5.3 cm <sup>2</sup>
50 mm	PP	≤2 L	0.5 mL	60 psi	134°C	20 cm <sup>2</sup>

†Varies for glass prefilters; see glass prefilter table below.

### Built-In Glass Prefilters with Final Filter

Borosilicate glass fiber prefilters combined with cellulose acetate membranes extend the life of the final filter when using viscous, proteinaceous, or particulate-laden samples. Use these filters to eliminate prefiltration step, reduce retention volume and sample loss, and achieve faster flow rates.



02915-40

02915-90

Catalog number	Membrane		Pore size	Housing	Retention volume	Qty/ bx	Price/ bx
	Type	Dia					
<b>Nonsterile filters</b>							
GM-02915-90	Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	100	
GM-02915-92			0.45 µm				
GM-02915-94			0.80 µm				
<b>Sterile filters</b>							
GM-02915-40	Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	50	

### Cellulose Acetate Filters 02915-62

Cellulose acetate membranes exhibit low protein binding—ideal for filtering biological solutions.



02915-60

02915-10

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
<b>Nonsterile filters</b>						
GM-02915-60	0.22 µm	26 mm	Acrylic	Blue	100	
GM-02915-58	0.45 µm			Clear		
GM-02915-62	0.80 µm			Green		
<b>Sterile filters</b>						
GM-02915-12	0.22 µm	26 mm	Acrylic	Blue	50	
GM-02915-00	0.45 µm			Clear		
GM-02915-10	0.80 µm			Green		

### Nitrocellulose Filters

Nitrocellulose (CN) filters exhibit the highest protein retention of all membranes—good binding matrix for macromolecules. Provide fast flow rates with aqueous solutions.



02915-56

02915-52

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
<b>Nonsterile filter</b>						
GM-02915-56	0.20 µm	26 mm	Acrylic	Blue	100	
<b>Sterile filters</b>						
GM-02915-52	0.20 µm	26 mm	Acrylic	Blue	50	
GM-02915-53	0.45 µm					

## TECHNICAL info!

### Typical Filter Applications

Membrane type	Applications
Glass prefilter	One-step prefiltration and filtration. Choose the final membrane to meet your application needs. High particle loading capacity.
Cellulose acetate	Sterilization and clarification of aqueous solutions. Low protein binding.
Nylon	Filtration of organic and aqueous solutions. Low extractables.
PTFE	Sterilization of gases and alcohols; cleaning acids, alkalies, and organic solvents; venting purposes. For aggressive chemicals.
Nitrocellulose	High protein retention; microbiological analysis, waste water treatment; sterilization of aqueous solutions.

### Nylon Filters

Hydrophilic nylon membranes have extremely low levels of extractables and contain no wetting agents. They offer good chemical resistance and are ideal for aqueous and most organic samples.



02915-04

02915-16

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
<b>Nonsterile filters</b>						
GM-02915-16	0.22 µm	25 mm	PP	Natural	100	
GM-02915-14	0.45 µm					
<b>Sterile filters</b>						
GM-02915-04	0.20 µm	25 mm	PP	Red	50	
GM-02915-02	0.45 µm					

### PTFE Filters

Polytetrafluoroethylene (PTFE) membranes are unaffected by most organic solvents, concentrated acids and bases, propellant, and cryogenic fluids. Can be used for gas/air filtration.



29550-08

02915-20

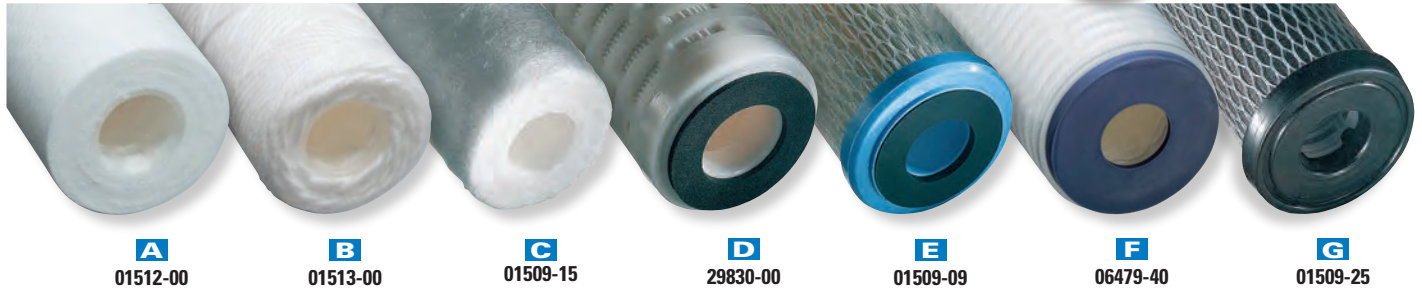
02915-28

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
<b>Nonsterile filters</b>						
GM-29550-08	0.20 µm	15 mm	PP	Natural	100	
GM-29550-10	0.45 µm					
GM-02915-20	0.20 µm	25 mm	PP	Natural	100	
GM-02915-22	0.45 µm					
GM-02915-28	0.20 µm					
GM-02915-30	0.45 µm	50 mm	PP	Natural	20	
<b>Sterile filters</b>						
GM-02915-08	0.20 µm	25 mm	PP	Natural	50	
GM-02915-06	0.50 µm					



# Save Time—Get it Now!

Thousands of **highlighted** items



**A** 01512-00      **B** 01513-00      **C** 01509-15      **D** 29830-00      **E** 01509-09      **F** 06479-40      **G** 01509-25

## Double-Open-End Liquid Filter Cartridges

**A Bonded Gradient-Density Cartridges.** Ideal for removing a broad range of deformable and nondeformable particles. Rigid designs ideal for filtering high-solids, higher-viscosity fluids that require higher differential pressures. Polypropylene fiber medium is thermally bonded to a rigid core for added durability. Cartridges impart no taste, odor or color; suitable to 175°F (79°C).

Catalog number	µm rating, nominal	Flow rate <sup>†</sup>	Length	Price
<b>GM-01512-00</b>	1	2 GPM at <2 psid	10" (25.4 cm)	
<b>GM-01512-08</b>	5			
<b>GM-01512-18</b>	10			
<b>GM-01512-28</b>	25			
<b>GM-01512-38</b>	50			
<b>GM-01512-02</b>	1	5 GPM at <2 psid	20" (50.8 cm)	
<b>GM-01512-12</b>	5			
<b>GM-01512-22</b>	10			
<b>GM-01512-32</b>	25			
<b>GM-01512-42</b>	50			

**B String-Wound Gradient-Density Cartridges.** Ideal for removing a broad range of deformable and non-deformable particles such as sand, silt, sludge, rust, and scale. String-wind pattern has lower pressure drop for higher flow. Polypropylene string is resistant to chemical and bacterial attack; suitable to 150°F (66°C).

Catalog number	µm rating, nominal	Flow rate <sup>†</sup>	Length	Price
<b>GM-01513-00</b>	5	10 GPM at <1 psid	10" (25.4 cm)	
<b>GM-01513-02</b>	30			
<b>GM-01513-04</b>	50			

**C Spun Gradient-Density Cartridges.** Ideal for removing a broad range of deformable and non-deformable particles such as sand, silt, sludge, rust, and scale. Polypropylene construction is resistant to chemical and bacterial attack. One-micron and five-micron cartridges are certified to NSF Standard 42 for materials and impart no taste, odor, or color. Suitable to 145°F (63°C).

Catalog number	µm rating, nominal	Flow rate <sup>†</sup>	Length	Price
<b>GM-01509-14</b>	1	5 GPM at 0.6 psid	10" (25.4 cm)	/ea
<b>GM-01509-15</b>	5	5 GPM at 0.2 psid		/pk of 2
<b>GM-01509-37</b>	1	10 GPM at 0.6 psid	20" (50.8 cm)	/ea
<b>GM-01509-40</b>	5	10 GPM at 0.6 psid		/ea
<b>GM-01509-41</b>	25	10 GPM at 0.2 psid		/ea

**D High-Efficiency Pleated Filter Cartridges.** The pleated polypropylene (PP) design offers flow rates and dirt-loading capacities higher than spun or wound depth cartridges. Biologically safe and designed to comply with FDA requirements for regulated industries. All-PP construction provides broad chemical compatibility. The gradient density microfiber media provides removal of a broader range of particle sizes than typical pleated filters. Suitable to 122°F (50°C).

Catalog number	µm rating, nominal	Flow rate <sup>†</sup>	Length	Price
<b>GM-29830-00</b>	0.2	2 GPM at 1 psid	10" (25.4 cm)	
<b>GM-29830-01</b>		2 GPM at <1 psid	20" (50.8 cm)	

<sup>†</sup>psid refers to pounds per square inch pressure drop through the filter system. For optimal performance, change cartridges at 25 psid.

<sup>‡</sup>To use with aqueous solutions, prewet with methanol, then rinse with water before use.

<sup>††</sup>Pore sizes for polypropylene cartridges are nominal.

<sup>†††</sup>Filtration efficiency and chlorine reduction efficiency are reduced at higher flow rates; chlorine capacity based on 75% reduction using 2 ppm free chlorine feed concentration at 68°F (20°C).

**E Extra-Strength Pleated Cellulose Cartridges.** This cellulose cartridge is blended with polyester for better wet strength. The polyester material allows more pleats to improve flow and dirt loading. Suitable to 165°F (74°C).

Catalog number	µm rating, nominal	Flow rate <sup>†</sup>	Length	Price
<b>GM-01509-11</b>	1	15 GPM at <1 psid	10" (25.4 cm)	
<b>GM-01509-09</b>	5			

**F Filter Cartridges for Ultrapure Applications.** These cartridges are autoclavable to 250°F (121°C) and in-line sterilizable to 257°F (125°C) for up to 30-minute cycles. They are tolerant to an accumulated exposure of 10 hours. The filters may also be sanitized with compatible chemical agents. All cartridges are suitable to 180°F (82°C) at 10 psid.

The cartridges comply with US CFR Title 21 guidelines for repeated food contact, comply with USP Class VI-121°C Plastics guidelines, and pass the MEM Elution Cytotoxicity Test. Aqueous extracts contain less than 0.25 EU/mL.

**Multi-Layer Nylon Cartridges.** These consist of two pleated nylon membranes with the top acting as a prefilter to increase cartridge life and efficiency.

**Glass Microfiber Cartridges.** Made of resin-bonded borosilicate glass microfibers that do not leach flavor-altering substances. Meet NSF Standard 53 for the reduction of cysts. Ideal as prefilters to protect membrane filter/RO systems.

**Polypropylene (PP) Cartridges.** Thermally bonded high-purity PP fiber. Economical for a chemically inert media with high dirt-loading capacity. Suitable for air/gas filtration; FDA-compliant. Hydrophobic; prewet before liquid filtration.<sup>‡</sup>

**Pleated PTFE Cartridges.** Clean room-constructed using thermal welding instead of adhesives or additives. Ideal for the more aggressive liquid or air/gas filtration applications. Hydrophobic; prewet before liquid filtration.<sup>‡</sup>

**Semiconductor Cartridges.** Single-layer PES membrane over PP core. Each is flushed with high-purity water to leach less than 5 ppb TOC and less than 5 ppb trace metals. Ideal for any high-purity chemical or DI water application.

Catalog number	Cartridge type	µm rating <sup>††</sup>	Length	Price
<b>GM-06479-16</b>	Serial nylon	0.2	10" (25.4 cm)	
<b>GM-06479-20</b>		0.45		
<b>GM-06479-24</b>	Glass fiber	3.0	10" (25.4 cm)	
<b>GM-06479-32</b>		1.0		
<b>GM-06479-36</b>	Polypropylene	3.0	10" (25.4 cm)	
<b>GM-06479-40</b>		5		
<b>GM-06479-44</b>	Polypropylene	10	10" (25.4 cm)	
<b>GM-06479-48</b>		0.1		
<b>GM-06479-52</b>	PTFE	0.2	10" (25.4 cm)	
<b>GM-06479-60</b>		0.2		
<b>GM-06479-60</b>	Semiconductor	0.2	10" (25.4 cm)	

**G Economical Carbon-Impregnated Cartridges.** These cellulose cartridges remove organic tastes/odors and chlorine, plus reduce sediment. Best suited for chemically neutral waters with lower chlorine concentrations. The 10" cartridge can treat approximately 2500 gallons at 1 GPM for chlorine<sup>†††</sup>. The 10" cartridge meets NSF Standard 42 for materials. Suitable to 125°F (52°C).

Catalog number	µm rating, nominal	Flow rate <sup>††</sup>	Length	Price
<b>GM-01509-25</b>	5	5 GPM at 4.0 psid	10" (25.4 cm)	
<b>GM-01509-27</b>		5 GPM at 1.0 psid	20" (50.8 cm)	

## "Big Blue" High-Flow Cartridge Systems

### Flow rates up to 50 GPM in a compact, relatively low-cost package

These systems offer up to four times the filtration area than standard cartridge systems, which makes them ideal for high-flow processes. A wide range of cartridges is offered for numerous applications. Order housings and cartridges separately below.

**Housings** and caps are constructed of durable polypropylene and sealed with a Buna N O-ring. Housings are suitable to 100°F (37°C); maximum operating pressure is 100 psi (6.9 bar) for 10" (25.4 cm) housings, 90 psi (6.2 bar) for 20" (50.8 cm) housings.



#### Housings

Catalog number	Port size NPT(F)	Pressure relief valve	Height	Dia	Price
<b>10" housings</b>					
<a href="#">GM-01508-65</a>	3/4"	—	13 1/8" (33.3 cm)	7 1/4" (18.4 cm)	
<a href="#">GM-01508-67</a>	3/4"	Yes			
<a href="#">GM-01508-70</a>	1"	—			
<a href="#">GM-01508-71</a>	1"	Yes	13 1/8" (33.3 cm)	7 1/4" (18.4 cm)	
<a href="#">GM-01508-75</a>	1 1/2"	—			
<a href="#">GM-01507-76</a>	1 1/2"	Yes			
<b>20" housings</b>					
<a href="#">GM-01507-77</a>	3/4"	—	23 3/8" (59.4 cm)	7 1/4" (18.4 cm)	
<a href="#">GM-01507-78</a>	3/4"	Yes			
<a href="#">GM-29802-00</a>	1"	—			
<a href="#">GM-29802-01</a>	1"	Yes	23 3/8" (59.4 cm)	7 1/4" (18.4 cm)	
<a href="#">GM-29802-10</a>	1 1/2"	—			
<a href="#">GM-29802-11</a>	1 1/2"	Yes			

#### Polypropylene String-Wound Gradient-Density Cartridges

feature a string-wind pattern that provides a greater surface area and has a lower pressure drop for higher flow. Polypropylene string is resistant to chemical and bacterial attack; suitable to 165°F (74°C).

Fibrous cartridges have a lower pressure drop than fibrillated cartridges but use an antistatic agent that may cause foaming in some applications. Fibrillated cartridges are non-leaching and offer minimal fiber migration with a higher pressure drop.



29802-35

#### String-Wound Cartridges

Catalog number	µm rating, nominal	Flow rate <sup>†</sup>	Length	Price
<b>Fibrous polypropylene cartridges</b>				
<a href="#">GM-01508-78</a>	0.5	10 GPM at 5 psid	10" (25.4 cm)	
<a href="#">GM-01508-77</a>	1	15 GPM at 4 psid		
<a href="#">GM-01508-76</a>	5	20 GPM at 3 psid		
<a href="#">GM-29802-35</a>	10	20 GPM at 1 psid	20" (50.8 cm)	
<a href="#">GM-29802-36</a>	25	20 GPM at 1 psid		
<a href="#">GM-29802-37</a>	1	30 GPM at 6 psid		
<a href="#">GM-29802-38</a>	5	40 GPM at 6 psid	20" (50.8 cm)	
<a href="#">GM-29802-39</a>	25	40 GPM at 5 psid		

#### Fibrillated polypropylene cartridges

<a href="#">GM-29802-40</a>	5	10 GPM at 16 psid	10" (25.4 cm)	
<a href="#">GM-29802-41</a>	10	15 GPM at 12 psid		
<a href="#">GM-29802-42</a>	25	20 GPM at 10 psid		
<a href="#">GM-29802-43</a>	50	30 GPM at 8 psid	20" (50.8 cm)	
<a href="#">GM-29802-44</a>	100	40 GPM at 8 psid		
<a href="#">GM-29802-45</a>	100	65 GPM at 8 psid		

#### Accessories for Housings

[GM-29802-50 Cartridge coupler](#) combines two 10" (25.4 cm) cartridges to fit a 20" (50.8 cm) housing

**Spanner Wrenches** for added leverage when removing the housing sump for cartridge replacement.

[GM-29802-53 Spanner wrench](#) for 10" (25.4 cm) housings

[GM-29802-54 Spanner wrench](#) for 20" (50.8 cm) housings

Cutaway view of the 20" housing, 29802-00, with dual-layer cartridge 29802-20



01508-70



**Dual-Layer Gradient-Density Cartridges** are high-capacity cartridges that combine a prefiltration layer with a selective postfiltration layer. Each layer is a separate gradient-density filter, which reduces larger particles on the outer layers and finer particles on the inner layers. Ideal for removing a broad range of deformable and nondeformable particles such as sand, silt, sludge, rust, and scale.

This design has a holding capacity that is two to three times traditional spun or wound designs. Cartridges are made of bacteria and chemical-resistant polypropylene; suitable to 145°F (63°C). These cartridges are certified to NSF Standard 42 for materials.



29802-23

#### Dual-Layer Cartridges

Catalog number	Nominal µm rating		Flow rate	Length	Price
	Prefilter	Postfilter			
<a href="#">GM-29802-23</a>	25	1	10 GPM at <1 psi	10" (25.4 cm)	
<a href="#">GM-29802-24</a>	50	5			
<a href="#">GM-29802-25</a>	75	25			
<a href="#">GM-29802-20</a>	25	1	20 GPM at <1 psi	20" (50.8 cm)	
<a href="#">GM-29802-21</a>	50	5			
<a href="#">GM-29802-22</a>	75	25			

<sup>†</sup>psid refers to pounds per square inch pressure drop through the filter system.

<sup>‡</sup>For optimal performance, change cartridges at 25 psid.

<sup>††</sup>At start-up, may contain leachable dust; flush system well after installation.

<sup>†††</sup>Filtration efficiency and chlorine reduction efficiency are reduced at higher flow rates; chlorine capacity based on 75% reduction using 2 ppm free chlorine feed concentration at 68°F (20°C).

# You're Out? We're Not!

Thousands of **highlighted** items



## Cole-Parmer Valved Acrylic Variable-Area Flowmeters for Bench or Panel Mount

### Provides flow control through a highly durable meter body

- Ideal for process plant applications on air sampling equipment, gas analyzers and chemical feed systems for water treatment
- Integrated precision valve allows precise manual flow across the full scale
- The flexible design allows for panel or bench mounting

Machined from solid acrylic blocks, these meters have integral metering tubes that provide precise readings even in aggressive plant environments. The meters' inlet/outlet ports and mounting studs are extended for easy panel installation. An alternate option is a tripod base (sold separately below) which allows for mobility from bench to bench.

**Note:** There are many additional types of acrylic flowmeters not listed here. Contact our Application Specialists for quotes on acrylic meters with special requirements.

### Specifications

#### Accuracy

- 2" and 50-mm flowmeters: ±5% full-scale
- 4" and 100-mm flowmeters: ±3% full-scale
- 5" and 127-mm flowmeters: ±2% full-scale

#### Repeatability: ±0.5% full-scale

**Media type:** liquids or gases

**Max pressure:** 100 psi (6.9 bar)

**Max operating temp:** 150°F (65°C)

#### Connections

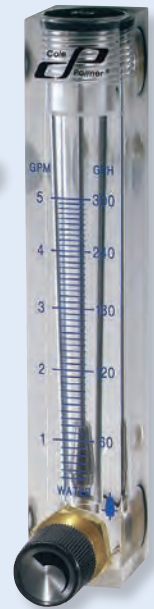
- 2", 4", 50-mm, and 100-mm flowmeters: 1/8" NPT(F)<sup>†</sup>
- 5" and 127-mm flowmeters: 1" NPT(F)

#### Dimensions (W x H x D)

- (not including valve stem):
- 2" and 50-mm flowmeters: 1" x 4" x 2 1/8" (2.5 x 10.2 x 5.4 cm)
  - 4" and 100-mm flowmeters: 1 3/8" x 6 1/2" x 2 1/8" (3.5 x 16.5 x 5.4 cm)
  - 5" and 127-mm flowmeters: 1 3/4" x 10 7/8" x 4 3/4" (4.4 x 27.6 x 12.1 cm)



2" Flowmeter 32460-18 shown with tripod base 32462-50



4" flowmeter 32461-08

**INNOCAL**<sup>®</sup>  
INNOVATIVE CALIBRATION SOLUTIONS

**Ensure the accuracy of your flowmeter!**

[GM-17080-00](#) NIST-traceable calibration with data for air/gas flowmeter

[GM-17080-12](#) NIST-traceable calibration with data for liquid flowmeter

### Materials of Construction

Part	2" and 50 mm	4" and 100 mm	5" and 127 mm
Body	Acrylic		
Fittings	Brass		PVC
Valve	Brass		
O-rings	Buna N		
Float (for air)	Black glass (BG)	316 SS (SS)	

### English-Unit Scales

For liquid applications				For air applications		
Cat. no.	Float <sup>‡</sup>	Flow range	Price	Cat. no.	Flow range	Price
<b>Flowmeters with 2" scale</b>						
<a href="#">GM-32460-00</a>	BG	0.2 to 2 GPH		<a href="#">GM-32460-10</a>	0.1 to 1 scfh	
<a href="#">GM-32460-02</a>	SS	0.4 to 5 GPH		<a href="#">GM-32460-12</a>	0.2 to 2 scfh	
<a href="#">GM-32460-04</a>	BG	1 to 10 GPH		<a href="#">GM-32460-14</a>	0.4 to 5 scfh	
<a href="#">GM-32460-06</a>	SS	2 to 20 GPH		<a href="#">GM-32460-16</a>	0.5 to 10 scfh	
<a href="#">GM-32460-08</a>	SS	4 to 40 GPH		<a href="#">GM-32460-18</a>	2 to 20 scfh	
—	—	—	—	<a href="#">GM-32460-20</a>	3 to 30 scfh	
—	—	—	—	<a href="#">GM-32460-22</a>	4 to 50 scfh	
—	—	—	—	<a href="#">GM-32460-24</a>	10 to 100 scfh	
—	—	—	—	<a href="#">GM-32460-26</a>	20 to 200 scfh	
<b>Flowmeters with 4" scale</b>						
<a href="#">GM-32461-00</a>	SS	1 to 10 GPH		<a href="#">GM-32461-10</a>	0.4 to 5 scfh	
<a href="#">GM-32461-02</a>	SS	2 to 25 GPH		<a href="#">GM-32461-12</a>	1 to 10 scfh	
<a href="#">GM-32461-04</a>	SS	4 to 50 GPH		<a href="#">GM-32461-14</a>	2 to 20 scfh	
<a href="#">GM-32461-06</a>	SS	6 to 60 GPH		<a href="#">GM-32461-16</a>	4 to 40 scfh	
<a href="#">GM-32461-07<sup>†</sup></a>	SS	0.2 to 2.5 GPM		<a href="#">GM-32461-18</a>	10 to 100 scfh	
<a href="#">GM-32461-08<sup>†</sup></a>	SS	0.4 to 5 GPM		<a href="#">GM-32461-20</a>	14 to 150 scfh	
—	—	—	—	<a href="#">GM-32461-22</a>	20 to 200 scfh	
—	—	—	—	<a href="#">GM-32461-24<sup>†</sup></a>	0.5 to 5 scfm	
—	—	—	—	<a href="#">GM-32461-26<sup>†</sup></a>	1 to 10 scfm	
<b>Flowmeters with 5" scale</b>						
<a href="#">GM-32466-50</a>	SS	1 to 10 GPM		<a href="#">GM-32466-60</a>	3 to 25 scfm	
<a href="#">GM-32466-52</a>	SS	2 to 20 GPM		<a href="#">GM-32466-62</a>	4 to 50 scfm	
—	—	—	—	<a href="#">GM-32466-64</a>	10 to 100 scfm	

<sup>†</sup>These models have dual scale: GPM/GPH, scfm/scfh, LPM/LPH; they also have 1/4" NPT(F) connections and use tripod base 32462-60 sold at right.

<sup>‡</sup>Float material key: BG = black glass, SS = stainless steel

### Metric-Unit Scales

For liquid applications				For air applications		
Cat. no.	Float <sup>‡</sup>	Flow range	Price	Cat. no.	Flow range (LPM)	Price
<b>Flowmeters with 50-mm scale</b>						
<a href="#">GM-32460-30</a>	BG	5 to 50 mL/min		<a href="#">GM-32460-40</a>	0.04 to 0.5	
<a href="#">GM-32460-32</a>	SS	10 to 100 mL/min		<a href="#">GM-32460-42</a>	0.1 to 1	
<a href="#">GM-32460-34</a>	SS	20 to 240 mL/min		<a href="#">GM-32460-44</a>	0.4 to 5	
—	—	—	—	<a href="#">GM-32460-46</a>	1 to 10	
—	—	—	—	<a href="#">GM-32460-48</a>	2 to 25	
—	—	—	—	<a href="#">GM-32460-50</a>	4 to 50	
—	—	—	—	<a href="#">GM-32460-52</a>	10 to 100	
<b>Flowmeters with 100-mm scale</b>						
<a href="#">GM-32461-30</a>	SS	4 to 50 mL/min		<a href="#">GM-32461-50</a>	0.4 to 5	
<a href="#">GM-32461-32</a>	SS	10 to 120 mL/min		<a href="#">GM-32461-52</a>	1 to 10	
<a href="#">GM-32461-34</a>	BG	25 to 225 mL/min		<a href="#">GM-32461-54</a>	2 to 20	
<a href="#">GM-32461-36</a>	SS	40 to 400 mL/min		<a href="#">GM-32461-56</a>	3 to 30	
<a href="#">GM-32461-38</a>	SS	40 to 660 mL/min		<a href="#">GM-32461-58</a>	4 to 50	
<a href="#">GM-32461-40</a>	SS	100 to 1500 mL/min		<a href="#">GM-32461-60</a>	10 to 100	
<a href="#">GM-32461-42</a>	SS	200 to 3000 mL/min		<a href="#">GM-32461-62<sup>†</sup></a>	14 to 140	
<a href="#">GM-32461-44<sup>†</sup></a>	SS	0.8 to 9 LPM		<a href="#">GM-32461-64<sup>†</sup></a>	30 to 280	
<a href="#">GM-32461-46<sup>†</sup></a>	SS	1.5 to 20 LPM		—	—	—
<b>Flowmeters with 127-mm scale</b>						
<a href="#">GM-32466-54</a>	SS	4 to 36 LPM		<a href="#">GM-32466-66</a>	100 to 700	
<a href="#">GM-32466-56</a>	SS	5 to 75 LPM		<a href="#">GM-32466-68</a>	100 to 1400	
—	—	—	—	<a href="#">GM-32466-70</a>	400 to 3400	

### Tripod Bases

Durable acrylic base with three leveling screws and spirit level.

Catalog number	Description	Price
<a href="#">GM-32462-50</a>	For one flowmeter with 2" or 50-mm scale	
<a href="#">GM-32462-55</a>	For one flowmeter with 4" or 100-mm scale	
<a href="#">GM-32462-60</a>	For one flowmeter with 1/4" connections	



## Cole-Parmer Panel-Mount Flowmeters

### Many unique features make these the ideal economical flowmeters

- Front shield magnifies scale 16% for more accurate readings
- Fused ceramic scale for a precise, permanent measuring guide
- A vertical-tangential locator line for readings with hairline accuracy

**Aluminum** is economical and good for general use with noncorrosive gases and liquids. A 150-mesh inlet screen is included.

**316 Stainless Steel (SS)** withstands higher temperatures and pressures, and features excellent chemical compatibility. A 150-mesh inlet screen is included.

### Specifications

**Accuracy:** ±5% full-scale  
**Repeatability:** ±0.25% full-scale  
**Minimum flow rate:** approximately 10% of maximum flow rate  
**Maximum pressure:** 200 psi  
**Operating temperature:** -15 to 250°F (-26 to 121°C)  
**Connections:** 1/8" NPT(F)

### Materials of Construction

Part	Aluminum	316 SS
Flowtube	Borosilicate glass	
Fittings, valves	Aluminum	316 SS
O-rings	Buna N	Viton®
Float	Glass, 316 SS, carboloy, sapphire, or tantalum	
Frame	Aluminum, acrylic, polycarbonate	



150-mm flowmeter  
32005-14  
with valve



### Ensure the accuracy of your flowmeter!

- [GM-17080-00](#) NIST-traceable calibration with data for air/gas flowmeter
- [GM-17080-12](#) NIST-traceable calibration with data for liquid flowmeter

### 65-mm Direct-reading Flowmeters

Max flow	Float <sup>†</sup>	Flowmeters without valve				Flowmeters with valve			
		Aluminum fittings		316 SS fittings		Aluminum fittings		316 SS fittings	
		Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
<b>For air</b>									
7 mL/min	G	<a href="#">GM-32010-15</a>		<a href="#">GM-32012-15</a>		<a href="#">GM-32013-15</a>		<a href="#">GM-32015-15</a>	
50 mL/min	SS	<a href="#">GM-32010-01</a>		<a href="#">GM-32012-01</a>		<a href="#">GM-32013-01</a>		<a href="#">GM-32015-01</a>	
100 mL/min	G	<a href="#">GM-32010-03</a>		<a href="#">GM-32012-03</a>		<a href="#">GM-32013-03</a>		<a href="#">GM-32015-03</a>	
250 mL/min	C	<a href="#">GM-32010-05</a>		<a href="#">GM-32012-05</a>		<a href="#">GM-32013-05</a>		<a href="#">GM-32015-05</a>	
500 mL/min	C	<a href="#">GM-32010-07</a>		<a href="#">GM-32012-07</a>		<a href="#">GM-32013-07</a>		<a href="#">GM-32015-07</a>	
1.0 LPM	G	<a href="#">GM-32010-09</a>		<a href="#">GM-32012-09</a>		<a href="#">GM-32013-09</a>		<a href="#">GM-32015-09</a>	
2.0 LPM	SS	<a href="#">GM-32010-11</a>		<a href="#">GM-32012-11</a>		<a href="#">GM-32013-11</a>		<a href="#">GM-32015-11</a>	
5.0 LPM	G	<a href="#">GM-32010-13</a>		<a href="#">GM-32012-13</a>		<a href="#">GM-32013-13</a>		<a href="#">GM-32015-13</a>	
10.0 LPM	SS	<a href="#">GM-32010-17</a>		<a href="#">GM-32012-17</a>		<a href="#">GM-32013-17</a>		<a href="#">GM-32015-17</a>	
16.0 LPM	SS	<a href="#">GM-32010-16</a>		<a href="#">GM-32012-16</a>		<a href="#">GM-32013-16</a>		<a href="#">GM-32015-16</a>	

### 150-mm Direct-reading Flowmeters

Max flow	Float <sup>†</sup>	Flowmeters without valve				Flowmeters with valve			
		Aluminum fittings		316 SS fittings		Aluminum fittings		316 SS fittings	
		Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
<b>For air</b>									
25 mL/min	Sa	<a href="#">GM-32030-00</a>		<a href="#">GM-32032-00</a>		<a href="#">GM-32033-00</a>		<a href="#">GM-32035-00</a>	
50 mL/min	Sa	<a href="#">GM-32000-00</a>		<a href="#">GM-32002-00</a>		<a href="#">GM-32003-00</a>		<a href="#">GM-32005-00</a>	
75 mL/min	C	<a href="#">GM-32000-02</a>		<a href="#">GM-32002-02</a>		<a href="#">GM-32003-02</a>		<a href="#">GM-32005-02</a>	
100 mL/min	C	<a href="#">GM-32000-04</a>		<a href="#">GM-32002-04</a>		<a href="#">GM-32003-04</a>		<a href="#">GM-32005-04</a>	
200 mL/min	SS	<a href="#">GM-32000-06</a>		<a href="#">GM-32002-06</a>		<a href="#">GM-32003-06</a>		<a href="#">GM-32005-06</a>	
300 mL/min	C	<a href="#">GM-32000-08</a>		<a href="#">GM-32002-08</a>		<a href="#">GM-32003-08</a>		<a href="#">GM-32005-08</a>	
500 mL/min	Sa	<a href="#">GM-32030-08</a>		<a href="#">GM-32032-08</a>		<a href="#">GM-32033-08</a>		<a href="#">GM-32035-08</a>	
800 mL/min	G	<a href="#">GM-32030-09</a>		<a href="#">GM-32032-09</a>		<a href="#">GM-32033-09</a>		<a href="#">GM-32035-09</a>	
1.25 LPM	C	<a href="#">GM-32030-10</a>		<a href="#">GM-32032-10</a>		<a href="#">GM-32033-10</a>		<a href="#">GM-32035-10</a>	
2.5 LPM	G	<a href="#">GM-32000-10</a>		<a href="#">GM-32002-10</a>		<a href="#">GM-32003-10</a>		<a href="#">GM-32005-10</a>	
5.0 LPM	Sa	<a href="#">GM-32000-12</a>		<a href="#">GM-32002-12</a>		<a href="#">GM-32003-12</a>		<a href="#">GM-32005-12</a>	
10.0 LPM	G	<a href="#">GM-32000-14</a>		<a href="#">GM-32002-14</a>		<a href="#">GM-32003-14</a>		<a href="#">GM-32005-14</a>	
23 LPM	G	<a href="#">GM-32030-14</a>		<a href="#">GM-32032-14</a>		<a href="#">GM-32033-14</a>		<a href="#">GM-32035-14</a>	
42 LPM	SS	<a href="#">GM-32030-15</a>		<a href="#">GM-32032-15</a>		<a href="#">GM-32033-15</a>		<a href="#">GM-32035-15</a>	
60 LPM	C	<a href="#">GM-32030-16</a>		<a href="#">GM-32032-16</a>		<a href="#">GM-32033-16</a>		<a href="#">GM-32035-16</a>	

<sup>†</sup>Sa = sapphire, C = carboloy, SS = 316 stainless steel, and G = glass

## Cole-Parmer Low Pressure Drop Gas Mass Flowmeters and Controllers

Designed for applications where high accuracy and very low pressure drop are essential

- Measure 30 standard gases with a 200:1 turndown ratio
- Full-scale pressure drops as low as 0.1 psid to 0.69 psid
- Set up and control from an easy-to-use keypad
- Custom units are available—please contact our Application Specialists

Using a newer laminar differential pressure flow technology, these mass flow meters and controllers have a much lower pressure drop across the instrument. Meters and controllers require no warm-up time, and offer a 10 ms response time for meters and 100 ms for controllers. Typical applications include air sampling, natural gas metering and calibration, and gas analysis and totalizing.

Select from 30 different gases in real time with the gas and gas mix calibrations already programmed into the meter or controller. An integrated keypad around the display is all that is required to program the unit for service. The 0 to 5 VDC output permits transmission of the flow value to a remote display, recorder, or controller regulating a valve or pump.

**Battery-Powered Meters** allow you to take the meter from site to site for flow rate establishment and on-site calibration. They have a monochrome display and rechargeable integrated battery packs.

**Voltage-Powered Meters and Controllers** are designed for single-area use and feature a dynamic, color thin-film transistor (TFT) display with backlight. The TFT display simultaneously shows flow rate, line pressure, fluid temperature, and (for controllers) the set point. Easily see when the unit is at max range or out of range—each numeric reading of the four parameters changes to yellow at 100% of range or red at 128% of range. Both power and input/output signals are transmitted through a single multipin connector.

**What's included:** 120/230 VAC power adapter with communications cable and NIST-traceable calibration report supplied by the manufacturer.

**NEW**



32935-30



32935-41

### Specifications

#### Maximum particulate size:

- Up to 1 L/min: 20 µm
- >1 L/min: 50 µm

**Accuracy:** ±0.8% of reading + 0.2% of full-scale

**Repeatability:** ±0.2% full-scale

#### Response time

- Meters: 10 msec
- Controllers: 100 msec

**Operating temperature:** 14 to 122°F  
(-10 to 50°C)

**Maximum pressure:** 50 psi

#### Wetted materials

**Meters:** 303 and 302 stainless steel, Viton PPS, silicone RTV, glass-reinforced nylon, aluminum  
**Controllers:** 303 and 302 stainless steel, Viton PPS, silicone RTV, glass-reinforced nylon, aluminum, 416 stainless steel, nickel, silicon, glass

**Electrical connection:** 8-pin mini-DIN

**Output signal:** 0 to 5 VDC, RS-232

**Input signal:** 12 to 30 VDC, RS-232

**Display:** 4-digit, seven-line LCD; 1¼"H flow display

Flow range	Connections	Dimensions (W x H x D) <sup>†</sup>
<=20 mL/min	10-32 UNF	2.4" x 3.9" x 1.1" (6 x 10 x 2.8 cm)
50 mL/min to 2 L/min	¼" NPT(F)	2.4" x 4.1" x 1.1" (6 x 10 x 2.8 cm)
5 to 20 L/min	¼" NPT(F)	4" x 4.4" x 1.6" (10 x 11 x 4 cm)
40 L/min	½" NPT(F)	4" x 5" x 1.6" (10 x 13 x 4 cm)
50 L/min to 250 L/min	¾" NPT(F)	4" x 5" x 1.6" (10 x 13 x 4 cm)
500 L/min	¾" NPT(F)	5.2" x 5.3" x 2.9" (13 x 13.5 x 7.3 cm)

<sup>†</sup>Dimensions do not include control valve.

Flow range	Battery-powered mass meters with monochrome display			DC-powered (7 to 30 VDC) mass meters with TFT display			DC-powered (12 to 30 VDC) mass controllers with TFT display		
	Catalog number	Pressure drop	Price	Catalog number	Pressure drop	Price	Catalog number	Pressure drop	Price
0 to 0.5 mL/min	<a href="#">GM-32935-00</a>	0.06 psi		<a href="#">GM-32935-20</a>	0.06 psi		<a href="#">GM-32935-40</a>	0.06 psi	
0 to 1 mL/min	<a href="#">GM-32935-01</a>	0.06 psi		<a href="#">GM-32935-21</a>	0.06 psi		<a href="#">GM-32935-41</a>	0.06 psi	
0 to 2 mL/min	<a href="#">GM-32935-02</a>	0.06 psi		<a href="#">GM-32935-22</a>	0.06 psi		<a href="#">GM-32935-42</a>	0.06 psi	
0 to 5 mL/min	<a href="#">GM-32935-03</a>	0.07 psi		<a href="#">GM-32935-23</a>	0.07 psi		<a href="#">GM-32935-43</a>	0.08 psi	
0 to 10 mL/min	<a href="#">GM-32935-04</a>	0.07 psi		<a href="#">GM-32935-24</a>	0.07 psi		<a href="#">GM-32935-44</a>	0.08 psi	
0 to 20 mL/min	<a href="#">GM-32935-05</a>	0.07 psi		<a href="#">GM-32935-25</a>	0.07 psi		<a href="#">GM-32935-45</a>	0.07 psi	
0 to 50 mL/min	<a href="#">GM-32935-06</a>	0.07 psi		<a href="#">GM-32935-26</a>	0.07 psi		<a href="#">GM-32935-46</a>	0.07 psi	
0 to 100 mL/min	<a href="#">GM-32935-07</a>	0.06 psi		<a href="#">GM-32935-27</a>	0.06 psi		<a href="#">GM-32935-47</a>	0.07 psi	
0 to 200 mL/min	<a href="#">GM-32935-08</a>	0.06 psi		<a href="#">GM-32935-28</a>	0.06 psi		<a href="#">GM-32935-48</a>	0.07 psi	
0 to 500 mL/min	<a href="#">GM-32935-09</a>	0.06 psi		<a href="#">GM-32935-29</a>	0.06 psi		<a href="#">GM-32935-49</a>	0.08 psi	
0 to 1 L/min	<a href="#">GM-32935-10</a>	0.07 psi		<a href="#">GM-32935-30</a>	0.07 psi		<a href="#">GM-32935-50</a>	0.10 psi	
0 to 2 L/min	<a href="#">GM-32935-11</a>	0.07 psi		<a href="#">GM-32935-31</a>	0.07 psi		<a href="#">GM-32935-51</a>	0.18 psi	
0 to 5 L/min	<a href="#">GM-32935-12</a>	0.07 psi		<a href="#">GM-32935-32</a>	0.07 psi		<a href="#">GM-32935-52</a>	0.10 psi	
0 to 10 L/min	<a href="#">GM-32935-13</a>	0.08 psi		<a href="#">GM-32935-33</a>	0.08 psi		<a href="#">GM-32935-53</a>	0.12 psi	
0 to 20 L/min	<a href="#">GM-32935-14</a>	0.25 psi		<a href="#">GM-32935-34</a>	0.25 psi		<a href="#">GM-32935-54</a>	0.26 psi	
0 to 40 L/min	<a href="#">GM-32935-15</a>	0.12 psi		<a href="#">GM-32935-35</a>	0.12 psi		<a href="#">GM-32935-55</a>	0.14 psi	
0 to 50 L/min	<a href="#">GM-32935-16</a>	0.14 psi		<a href="#">GM-32935-36</a>	0.14 psi		<a href="#">GM-32935-56</a>	0.17 psi	
0 to 100 L/min	<a href="#">GM-32935-17</a>	0.24 psi		<a href="#">GM-32935-37</a>	0.24 psi		<a href="#">GM-32935-57</a>	0.30 psi	
0 to 250 L/min	<a href="#">GM-32935-18</a>	0.60 psi		<a href="#">GM-32935-38</a>	0.60 psi		<a href="#">GM-32935-58</a>	0.69 psi	
0 to 500 L/min	<a href="#">GM-32935-19</a>	0.39 psi		<a href="#">GM-32935-39</a>	0.39 psi		<a href="#">GM-32935-59</a>	0.69 psi	

[GM-32929-89](#) Replacement communication cable, 8-DIN to stripped ends

[GM-17080-10](#) NIST-traceable recalibration with data

## Compact Gas Mass Flow Controllers

### Precisely control flow rates with built-in valve

- Proven design uses metal body components for added durability

These controllers feature an advanced straight-tube sensor that ensures accurate and repeatable results. Gas flow measurements are unaffected by moderate temperature and pressure variations at the inlet. The meter also allows a four-point calibration across the flow range to improve meter linearity.

The flow rate set point can be established by either a local potentiometer or by a remote 4 to 20 mA or 0 to 5 VDC signal. Output data is sent via a 0 to 5 VDC or 4 to 20 mA signal; an analog-to-RS converter is also available for data collection and analysis on your PC.

All controllers include a detachable 3½-digit LCD that can be tilted up to 90° for easy reading. The display is remote mountable to three feet using extension cable 32662-70.

The controller is protected from polarity reversal or short circuit by a built-in resettable fuse. Aluminum models have wetted materials of anodized aluminum, brass, and Viton®; stainless steel (SS) models have wetted materials of SS and Viton.

**What's included:** NIST-traceable calibration report supplied by the manufacturer.



Adjust flow rate locally with the built-in set point potentiometer.

Controller 32661-22

### TECHNICAL info!

**Accuracy:** These precalibrated flowmeters operate at inlet pressures between 5 and 40 psi and at gas temperatures between 64 and 77°F (18 to 25°C) while maintaining the stated ±1.5% full scale accuracy and linearity. When operating beyond 5 to 40 psi, add ±0.02%/psi full-scale; if operating beyond 64 to 77°F (18 to 25°C), add ±0.15%/°C full-scale.

### Specifications

**Maximum particulate size:** 5 microns

**Accuracy (including linearity)**  
±1.5% full-scale (see above for details)

**Accuracy coefficient, temperature:**  
±0.15%/°C full-scale

**Accuracy coefficient, pressure:**  
±0.01%/psi full-scale

**Repeatability:** ±0.5% full-scale

**Response time:** 2 seconds (typical) to within ±2% of actual flow rate from 25 to 100% of full-scale

**Operating temperature:**

32 to 122°F (0 to 50°C)

**Maximum system pressure:** 1000 psi (69 bar)

**Leak integrity:** 1 x 10<sup>-7</sup> sccs He (max)

**Transducer input power:** 12 VDC,  
1100 mA max; polarity protected

**Output signal:** linear 0 to 5 VDC  
(1000 Ω minimum load), 4 to 20 mA  
(50 to 500 Ω loop resistance)

**Connections (included)**

Models up to 50 sL/min: ¼" compression fittings  
200 sL/min models: ⅜" compression fittings  
500 sL/min models: ½" compression fittings  
1000 sL/min models: ¾" NPT(F) fittings

**Dimensions (W x H x D), not including fittings**

Models up to 5 sL/min: 4¾" x 5⅝" x 1"  
(12.1 x 14.3 x 2.5 cm)  
15 to 100 sL/min models:  
5¼" x 6" x 1¼" (13.3 x 15.2 x 3.2 cm)



Flow range	Pressure drop (max flow)	Aluminum bodies				Price	316 stainless steel bodies				Price
		Air/N <sub>2</sub>	O <sub>2</sub>	H <sub>2</sub>	Ar		Air/N <sub>2</sub>	O <sub>2</sub>	H <sub>2</sub>	Ar	
		Cat. no.	Cat. no.	Cat. no.	Cat. no.		Cat. no.	Cat. no.	Cat. no.	Cat. no.	
0 to 10 sccm	1.06 psi	GM-32660-00	GM-32660-26	GM-32660-52	GM-32660-78		GM-32661-00	GM-32661-26	GM-32661-52	GM-32661-78	
		GM-32660-02	GM-32660-28	GM-32660-54	GM-32660-80		GM-32661-02	GM-32661-28	GM-32661-54	GM-32661-80	
		GM-32660-04	GM-32660-30	GM-32660-56	GM-32660-82		GM-32661-04	GM-32661-30	GM-32661-56	GM-32661-82	
0 to 100 sccm	1.06 psi	GM-32660-06	GM-32660-32	GM-32660-58	GM-32660-84		GM-32661-06	GM-32661-32	GM-32661-58	GM-32661-84	
		GM-32660-08	GM-32660-34	GM-32660-60	GM-32660-86		GM-32661-08	GM-32661-34	GM-32661-60	GM-32661-86	
		GM-32660-10	GM-32660-36	GM-32660-62	GM-32660-88		GM-32661-10	GM-32661-36	GM-32661-62	GM-32661-88	
0 to 1 sL/min	1.06 psi	GM-32660-12	GM-32660-38	GM-32660-64	GM-32660-90		GM-32661-12	GM-32661-38	GM-32661-64	GM-32661-90	
		GM-32660-14	GM-32660-40	GM-32660-66	GM-32660-92		GM-32661-14	GM-32661-40	GM-32661-66	GM-32661-92	
		GM-32660-16	GM-32660-42	GM-32660-68	GM-32660-94		GM-32661-16	GM-32661-42	GM-32661-68	GM-32661-94	
0 to 15 sL/min	3.87 psi	GM-32660-19	GM-32660-45	GM-32660-71	GM-32660-95		GM-32661-19	GM-32661-45	GM-32661-71	GM-32661-95	
	0 to 30 sL/min	3.50 psi	GM-32660-20	GM-32660-46	GM-32660-72		GM-32660-97	GM-32661-20	GM-32661-46	GM-32661-72	
0 to 50 sL/min	11 psi	GM-32660-22	GM-32660-48	GM-32660-74	GM-32660-98		GM-32661-22	—	—	—	
	0 to 100 sL/min	20 psi	GM-32660-24	GM-32660-50	GM-32660-76		GM-32660-99	GM-32661-24	—	—	
0 to 500 sL/min	47 psi	GM-32665-00	—	—	—		GM-32666-00	—	—	—	
		GM-32665-10	—	—	—		GM-32666-10	—	—	—	

**GM-17080-10** NIST-traceable recalibration with data  
**GM-32662-65** Cable, 8-ft (2.4 m) L for connecting flowmeters/controllers to any instrument that accepts analog input signals. DB15(F) connector with bare wire ends

**GM-32662-70** Extension cable, for remote placement of display up to three feet away

**Power Supplies** for operation by AC voltage.

**GM-32662-50** Power supply; US plug, 110 VAC

**GM-32662-55** Power supply; Euro plug, 220 VAC

**GM-32662-60** Power supply; U.K. plug, 240 VAC

**Flow Totalizer 32650-22** displays instantaneous, total, and accumulated flow rates, has 47 different volumetric and mass flow units, and digital interface.

**GM-32650-22** Flowmeter totalizer

### MORE online!

For more information on the Flow Totalizer, go to... [ColeParmer.com](http://ColeParmer.com)



# You're Out? We're Not!

Thousands of **highlighted** items



## Heavy-Duty Flowmeters/Totalizers

### Battery power eliminates the need for expensive wiring

- Two totalizers allow for process or period-specific volume monitoring
- FM-approved for Class I, Division I environments

These heavy-duty in-line flowmeters/totalizers display flow rate and accumulated flow in gallons or liters. The compact, yet robust design makes them ideal for use in manufacturing, pilot-plant, or quality control areas.

All flowmeters measure linearly across a range and record a cumulative volume plus a resettable volume. Meters are factory-calibrated using water but can store two application-specific K-factors determined in process. To conserve power, the six-digit display automatically turns on with flow and then turns off four minutes after flow ceases. The internal parts are simple to replace for easy maintenance—contact our Application Specialists for details.

Meters operate on two lithium batteries (included). Remote installation of the flowmeter body is possible using the optional remote installation kit 05609-93 (order separately below). Calibration containers and replacement battery kits can be ordered below.



Flowmeter 05609-17 with sanitary Tri-Clamp® connection



Flowmeter 05609-23 with NPT(F) connection

### Specifications

**Repeatability:** ±0.1% of reading

**Maximum pressure**

- Aluminum: 300 psig (21 bar);
- NPT SS: 1500 psig (105 bar);
- Tri-Clamp SS: 450 psig (31 bar);
- Flanged SS: 285 psig (19 bar)

**Operating temp:** 14 to 140°F (–10 to 60°C)

**Wetted materials:** 316 SS or aluminum housing, PVDF rotor and supports, tungsten carbide shaft, 316 SS retainers, and ceramic bearings

**Maximum particulate size**

- Models with ≤50 GPM (190 LPM) max flow rate: 125 μm
- Models with >50 GPM (190 LPM) max flow rate: 500 μm

**Display:** 6-digit LCD, 1/2"H (with floating decimal)

**Input power:** two 3 V lithium batteries (included)

**Battery life:** 9000 hours nominal

**Approvals:** EEx II 3 G IIC T4



Catalog number	Flow range	Connections	Body material	Accuracy	Dimensions (W x H x D)	Price
<a href="#">GM-05609-01</a> <a href="#">GM-05609-03</a> <a href="#">GM-05609-05</a>	1 to 10 GPM (3.8 to 37.9 LPM)	1/2" NPT(F) 1/2" NPT(F) 3/4" Tri-Clamp†	Aluminum 316 SS 316 SS	±2% of rdg	4 1/2" x 2" x 1 7/8" (11.4 x 5.1 x 4.8 cm) 4 1/2" x 2" x 1 7/8" (11.4 x 5.1 x 4.8 cm) 5" x 2" x 1 7/8" (12.7 x 5.1 x 4.8 cm)	
<a href="#">GM-05609-07</a> <a href="#">GM-05609-09</a> <a href="#">GM-05609-11</a> <a href="#">GM-05609-13</a>	2 to 20 GPM (7.6 to 75.7 LPM)	3/4" NPT(F) 3/4" NPT(F) 1" Tri-Clamp†	Aluminum 316 SS 316 SS	±2.0% of rdg	4 3/8" x 2" x 2" (11.1 x 5.1 x 5.1 cm) 4 3/8" x 2" x 2" (11.1 x 5.1 x 5.1 cm) 5" x 2" x 2" (12.7 x 5.1 x 5.1 cm)	
<a href="#">GM-05609-15</a> <a href="#">GM-05609-17</a> <a href="#">GM-05609-19</a>	5 to 50 GPM (18.9 to 190 LPM)	1" NPT(F) 1 1/2" Tri-Clamp† 1" ANSI‡	Aluminum 316 SS 316 SS	±1.5% of rdg	4 1/2" x 2" x 2 1/4" (11.4 x 5.1 x 5.7 cm) 4 1/2" x 2" x 2 1/4" (11.4 x 5.1 x 5.7 cm) 5 1/2" x 2" x 2 1/4" (14.0 x 5.1 x 5.7 cm) 4 3/4" x 4 1/4" x 4 1/4" (12.1 x 10.8 x 10.8 cm)	
<a href="#">GM-05609-21</a> <a href="#">GM-05609-23</a> <a href="#">GM-05609-25</a> <a href="#">GM-05609-27</a>	10 to 100 GPM (38 to 380 LPM)	1 1/2" NPT(F) 1 1/2" NPT(F) 2" Tri-Clamp† 1 1/2" ANSI‡	Aluminum 316 SS 316 SS	±1% of rdg	5 3/8" x 2 3/4" x 2 1/8" (13.7 x 7.0 x 7.3 cm) 5 3/8" x 2 3/4" x 2 1/8" (13.7 x 7.0 x 7.3 cm) 6 1/2" x 2 3/4" x 2 1/8" (16.5 x 7.0 x 7.3 cm) 8" x 5" x 5" (20.3 x 12.7 x 12.7 cm)	
<a href="#">GM-05609-29</a> <a href="#">GM-05609-31</a> <a href="#">GM-05609-33</a> <a href="#">GM-05609-35</a>	20 to 200 GPM (6 to 760 LPM)	2" NPT(F) 2" NPT(F) 2 1/2" Tri-Clamp† 2" ANSI‡	Aluminum 316 SS 316 SS	±1% of rdg	6 3/8" x 3 3/8" x 3 1/4" (16.2 x 8.6 x 8.3 cm) 6 3/8" x 3 3/8" x 3 1/4" (16.2 x 8.6 x 8.3 cm) 7" x 3 3/8" x 3 1/4" (17.8 x 8.6 x 8.3 cm) 9 1/2" x 6" x 6" (24.1 x 15.2 x 15.2 cm)	

†Sanitary flange ‡150# ANSI flange

[GM-05610-70 Calibration container](#); HDPE, 5-gal. (19 L) capacity

[GM-05610-96 Replacement battery kit](#)

[GM-05609-93 Remote installation kit](#). Mount display up to 100 feet (30 m) from sensor—ideal for measuring flow in hot pipes (up to 250°F/121°C) or in inaccessible areas. Kit includes a sensor cover with 10-ft (3-m) cable, remote display housing, and installation hardware. FM-approved

[GM-05609-91 Output module](#), pulse output. Module provides a digital open collector output for interfacing with compatible instrumentation

[GM-05609-92 Output module](#), 4 to 20 mA or 5 to 20 volts. Module provides an output for interfacing with compatible instrumentation

[GM-17080-12 NIST-traceable calibration](#)

# Your Application Solved! Can't find the right product? Our specialists can!

## Liquid Level Float Switches and Controllers

Switches are hermetically sealed for durability and long life

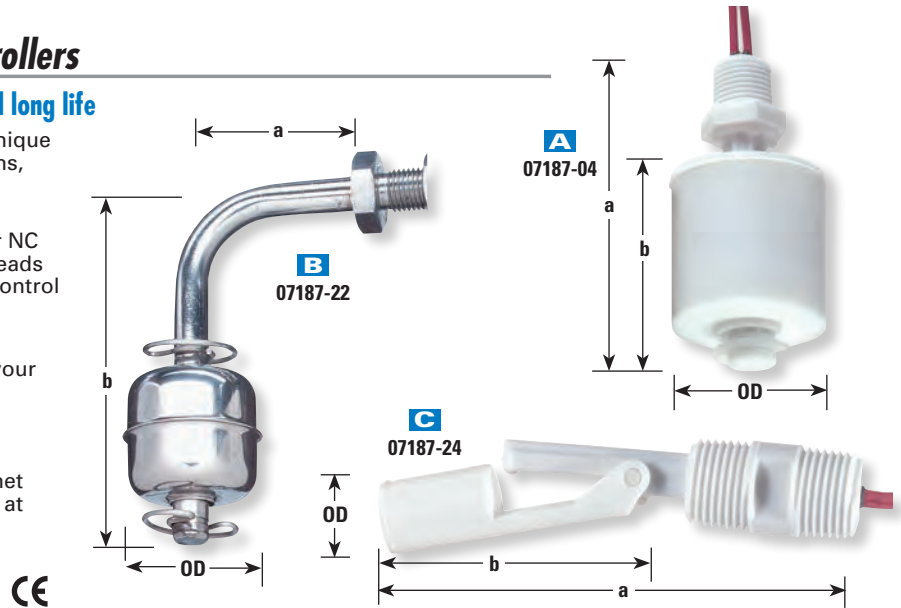
Choose models with special features to meet your unique needs: explosion proof (XPRF) for hazardous locations, slosh shields for turbulent systems, and bulkhead fittings for mounting in tank walls.

All models accept 120/240 VAC and operate as NO or NC switches except where noted. Switches include 24" leads (except 07187-12 which has 72" leads). If your level control system exceeds the current rating in the table, use a controller with your switch (sold below).

**A Standard Switches** are installed from the top of your tank—attach your own conduit to protect wiring.

**B Bent Stem Switch** features a 90° stem for side mounting where space is at a premium.

**C Hinged Float Switches** operate by a hinged magnet that swings closed and trips a reed switch. Install at any height in tank.



Catalog number	Wetted materials		Description	Approvals	Max amp rating (resistive load)		Operating temperature	Max psi	Min SG	Dimensions			Mounting	Price
	Stem/float	Other			120 VAC	24 VDC				OD	a	b		
<b>A Standard switches</b>														
<a href="#">GM-07187-02</a>	PP/PP (hollow)	—	NO <sup>†</sup>	NSF, UL <sup>‡</sup> , CSA, CE	0.17 A	0.3 A	-40 to 225°F (-40 to 107°C)	50	0.6	1"	2 <sup>3</sup> / <sub>32</sub> "	1 <sup>9</sup> / <sub>16</sub> "	3 <sup>5</sup> / <sub>8</sub> "-16 1 <sup>1</sup> / <sub>8</sub> " NPT	
<a href="#">GM-07187-04</a>	PP/PP (solid)	—	NO <sup>†</sup>	UL <sup>‡</sup> , CSA, CE	0.17 A	0.3 A	-40 to 150°F (-40 to 66°C)	150	0.9	1"	2 <sup>3</sup> / <sub>32</sub> "	1 <sup>9</sup> / <sub>16</sub> "	3 <sup>5</sup> / <sub>8</sub> "-16 1 <sup>1</sup> / <sub>8</sub> " NPT	
<a href="#">GM-07187-06</a>														
<a href="#">GM-07187-10</a>		PP slosh shield	NO <sup>†</sup> , with slosh shield							1 <sup>1</sup> / <sub>4</sub> "	2 <sup>3</sup> / <sub>32</sub> "	1 <sup>9</sup> / <sub>16</sub> "	1 <sup>1</sup> / <sub>8</sub> " NPT	
<a href="#">GM-07187-12</a>	304 SS/ Buna N	PC, beryllium copper, copper nickel	NO <sup>†</sup> , with slosh shield and 6-ft, 18/2 neoprene cable (waterproof)	UL <sup>‡</sup>	0.17 A	0.3 A	-40 to 140°F (-40 to 60°C)	150	0.55	2 <sup>1</sup> / <sub>32</sub> "	3 <sup>3</sup> / <sub>16</sub> "	2 <sup>9</sup> / <sub>16</sub> "	(2) 3 <sup>1</sup> / <sub>32</sub> " dia holes	
<a href="#">GM-07188-40</a>	CPVC/ CPVC	—	NO <sup>†</sup>	CE	0.17 A	0.3 A	-40 to 180°F (-40 to 82°C)	15	0.85	1 <sup>1</sup> / <sub>2</sub> "	3 <sup>1</sup> / <sub>16</sub> "	2 <sup>25</sup> / <sub>32</sub> "	1 <sup>1</sup> / <sub>4</sub> " NPT	
<a href="#">GM-07187-14</a>	PVDF/ PVDF	—	NO <sup>†</sup>	NSF, FDA	0.17 A	0.3 A	-40 to 250°F (-40 to 121°C)	50	0.86	1"	2 <sup>3</sup> / <sub>32</sub> "	1 <sup>9</sup> / <sub>32</sub> "	1 <sup>1</sup> / <sub>8</sub> " NPT	
<a href="#">GM-07187-16</a>	Brass/ Buna N	316 SS, epoxy	NO <sup>†</sup>	UL <sup>‡</sup> , CSA, CE	0.17 A	0.3 A	Water: to 180°F (82°C) Oil: -40 to 230°F (-40 to 110°C)	150	0.45	1"	2 <sup>1</sup> / <sub>16</sub> "	1 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>8</sub> " NPT	
<a href="#">GM-07187-18</a>	316 SS/ Buna N	316 SS, epoxy								1"	2 <sup>1</sup> / <sub>16</sub> "	1 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>8</sub> " NPT	
<a href="#">GM-07188-35</a>	316 SS/ 316 SS	—	NO <sup>†</sup> , XPRF <sup>‡</sup>	UL <sup>‡</sup> , cUL <sup>‡</sup> , CSA, CE, NSF	0.50 A	0.50 A	-38 to 392°F (-39 to 200°C)	200	0.55	2 <sup>1</sup> / <sub>8</sub> "	3 <sup>3</sup> / <sub>8</sub> "	2 <sup>5</sup> / <sub>8</sub> "	1 <sup>1</sup> / <sub>4</sub> " NPT	
<a href="#">GM-07187-20</a>	316 SS/ 316 SS	316 SS	NO <sup>†</sup>	UL <sup>‡</sup> , CSA, CE	0.17 A	0.3 A	-40 to 480°F (-40 to 249°C)	100	0.7	1 <sup>1</sup> / <sub>2</sub> "	2 <sup>1</sup> / <sub>16</sub> "	1 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>8</sub> " NPT	
<b>B Bent stem switch</b>														
<a href="#">GM-07187-22</a>	316 SS/ 316 SS	—	NO	UL <sup>‡</sup>	0.17 A	0.3 A	-40 to 300°F (-40 to 149°C)	100	0.7	1 <sup>1</sup> / <sub>2</sub> "	1 <sup>3</sup> / <sub>4</sub> "	3 <sup>1</sup> / <sub>4</sub> "	3 <sup>5</sup> / <sub>8</sub> "-24	
<b>C Hinged float switches</b>														
<a href="#">GM-07187-24</a>	PP/PP	—	NO <sup>†</sup> , external mount, conduit	UL <sup>‡</sup> , CSA, CE	0.17 A	0.3 A	-40 to 225°F (-40 to 107°C)	100	0.55	1 <sup>1</sup> / <sub>2</sub> "	4 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	1 <sup>1</sup> / <sub>2</sub> " x 1 <sup>1</sup> / <sub>2</sub> " NPT	
<a href="#">GM-07187-26</a>			NO <sup>†</sup> , internal mount, bulkhead							1 <sup>1</sup> / <sub>2</sub> "	3 <sup>1</sup> / <sub>32</sub> "	2 <sup>3</sup> / <sub>4</sub> "	5 <sup>8</sup> "-11	
<a href="#">GM-07187-28</a>			NO <sup>†</sup> , external mount							1 <sup>1</sup> / <sub>16</sub> "	4 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>8</sub> "	1 <sup>1</sup> / <sub>2</sub> " NPT	
<a href="#">GM-07188-70</a>	PVDF/ PVDF	—	NO <sup>†</sup> , external mount, conduit	UL <sup>‡</sup> , cUL <sup>‡</sup> , CSA, CE, NSF	0.28 A	0.28 A	-9 to 212°F (-23 to 100°C)	100	0.75	1 <sup>1</sup> / <sub>2</sub> "	4 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>16</sub> "	1 <sup>1</sup> / <sub>2</sub> " x 1 <sup>1</sup> / <sub>2</sub> " NPT	
<a href="#">GM-07187-30</a>	Nylon/ Nylon	—	NO <sup>†</sup> , external mount	UL <sup>‡</sup> , CSA, CE	0.17 A	0.30 A	-40 to 250°F (-40 to 121°C)	100	0.65	1 <sup>1</sup> / <sub>16</sub> "	4 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>8</sub> "	1 <sup>1</sup> / <sub>2</sub> " NPT	
<a href="#">GM-07188-45</a>	316 SS/ 316 SS	—	NO <sup>†</sup> , XPRF <sup>‡</sup> , external mount, conduit	UL <sup>‡</sup> , cUL <sup>‡</sup> , CSA, CE, NSF	0.28 A	0.28 A	-38 to 392°F (-39 to 200°C)	300	0.6	5 <sup>8</sup> "	6 <sup>1</sup> / <sub>8</sub> "	3 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> " x 1 <sup>1</sup> / <sub>4</sub> " NPT	

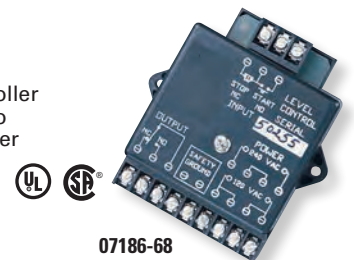
<sup>†</sup>Normally open; change to normally closed (NC) by reversing the float (hinged floats rotate 180°). <sup>‡</sup>UL recognized <sup>††</sup>Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III.

**Controllers** (required for applications exceeding the max amp rating in above table)  
**General-Purpose Controllers** operate as a NO, SPST relay. Controllers withstand temperatures from 32 to 138°F (0 to 59°C).

- [GM-07188-50](#) Single-point controller; 24 to 260 VAC, 5 A load
- [GM-07188-52](#) Dual-point fill controller; 100 to 130 VAC, 5 A load
- [GM-07188-54](#) Dual-point fill controller; 200 to 250 VAC, 5 A load

**Heavy-Duty Controller** is used for single- or dual-point control. Controller withstands temperatures from 64 to 149°F (18 to 65°C). Operates as either a NO or NC, SPDT relay.

- [GM-07186-68](#) Heavy-duty controller; 120/240 VAC, 10 A load



# You're Out? We're Not!

Thousands of **highlighted** items



## Ashcroft® Filled Gauges

Unique Powerflex™ movement isolates vibrations in gauge

- Glycerin fill and pressure snubber minimize needle fluctuations caused by rapid pressure changes, vibrations, or surges



68022-00

Gauges feature 316 stainless steel socket, tube, and case; and plastic lens. All connections are 1/4" NPT(M).

### Specifications

ISO9001:2008  
CERTIFIED SUPPLIER

- Accuracy:** ±1% full-scale  
**Dial size:** 2 1/2" (64 mm)  
**Operating temp:** -50 to 180°F (-45 to 82°C)
- Wetted materials:** 316 SS  
**Lens:** polycarbonate  
**Process connection:** 1/4" NPT(M)

Catalog number	Range	Price
<b>Gauges with bottom connection</b>		
GM-68022-00	30 to 0" Hg	
GM-68022-01	30" Hg to 30 psi	
GM-68022-02	0 to 30 psi	
GM-68022-03	0 to 60 psi	
GM-68022-04	0 to 100 psi	
GM-68022-05	0 to 200 psi	
GM-68022-06	0 to 600 psi	
GM-68022-07	0 to 1000 psi	
GM-68022-08	0 to 2000 psi	
GM-68022-09	0 to 3000 psi	

Cat. no.	Range	Price
<b>Gauges with back connection</b>		
GM-68022-20	30 to 0" Hg	
GM-68022-21	30" Hg to 30 psi	
GM-68022-22	0 to 30 psi	
GM-68022-23	0 to 60 psi	
GM-68022-24	0 to 100 psi	
GM-68022-25	0 to 200 psi	
GM-68022-26	0 to 600 psi	
GM-68022-27	0 to 1000 psi	
GM-68022-28	0 to 2000 psi	
GM-68022-29	0 to 3000 psi	

**GM-68022-90 U-Clamp kit** to panel mount gauges with back connection only

**GM-68022-92 Flange kit** to panel mount gauges with back connection only. Screws not included



Back connected gauge 68022-20 (rear view) shown with U-clamp kit 68022-90



Flange kit 68022-92

## Ashcroft® Low-Pressure Gauges

Effective low-pressure and low-vacuum response with diaphragm

- True zero indication identifies damaged gauges increasing safety and ensuring accuracy
- Built-in snubber minimizes rapid pressure fluctuations



68930-05

Gauges have brass socket, beryllium copper diaphragm capsule, painted steel case, and polycarbonate lens. Bottom connection is 1/4" NPT(M).

### Specifications

ISO9001:2008  
CERTIFIED SUPPLIER

- Accuracy:** ±2-1-2% full-scale†  
**Dial size:** 2 1/2" (64 mm)  
**Operating temp:** -50 to 270°F (-45 to 132°C)  
**Wetted materials:** beryllium copper, brass, polysulfone and RTV silicone  
**Lens:** polycarbonate  
**Process connection:** 1/4" NPT(M)

Cat. no.	Range	Price
<b>Dual-scale low-pressure gauges</b>		
GM-68930-00†	0 to 10" H <sub>2</sub> O; 0 to 2.5 kPa	
GM-68930-01†	0 to 15" H <sub>2</sub> O; 0 to 4 kPa	
GM-68930-02†	0 to 30" H <sub>2</sub> O; 0 to 7.5 kPa	
GM-68930-03	0 to 60" H <sub>2</sub> O; 0 to 15 kPa	
GM-68930-04	0 to 100" H <sub>2</sub> O; 0 to 25 kPa	
GM-68930-05	0 to 160" H <sub>2</sub> O; 0 to 40 kPa	
GM-68930-06	0 to 200" H <sub>2</sub> O; 0 to 50 kPa	
GM-68930-10	0 to 3 psi; 0 to 20 kPa	
GM-68930-11	0 to 5 psi; 0 to 35 kPa	
GM-68930-12	0 to 10 psi; 0 to 70 kPa	

Cat. no.	Range	Price
<b>Dual-scale low-vacuum gauges</b>		
GM-68930-30†	15 to 0" H <sub>2</sub> O; 0 to 4 kPa	
GM-68930-31†	30 to 0" H <sub>2</sub> O; 0 to 7.5 kPa	
GM-68930-32	60 to 0" H <sub>2</sub> O; 0 to 15 kPa	
GM-68930-33	100 to 0" H <sub>2</sub> O; 0 to 25 kPa	
GM-68930-34	200 to 0" H <sub>2</sub> O; 0 to 50 kPa	

†Noted models have an accuracy of ±3-1-3%.

**GM-17040-10 NIST-traceable calibration** with data

## Ashcroft® Digital Pressure Gauges with Backlight

Easy-to-use, three-button programming

- Easy-to-read, 5-digit display with 20-segment bar graph
- IP67-rated case

**NEW**



68334-07

Stainless steel sensor makes this gauge suitable for many applications. Cycle life of 10<sup>8</sup> makes these gauges a great value. Case material is made of PC/ABS. Gauges feature tare, min/max memory, and nine engineering plus one custom engineering units, as well as a bright backlight. Sensor is welded to the socket for added durability. Max pressure indication reduces chances of damage to the unit. Gauges meet ASME B40.7 safety requirement.

### Specifications

ISO9001:2008  
CERTIFIED SUPPLIER



- Accuracy:** ±0.5% full-scale  
**Dial size:** 2 1/2" (64 mm)  
**Units of measure:** psi, " Hg, cm Hg, mm Hg, kPa, mPa, bar, kg/cm<sup>2</sup>, ft H<sub>2</sub>O, and user-defined unit  
**Operating temp:** -4 to 140°F (-20 to 60°C)  
**Wetted materials:** 17-4 ph and 316L stainless steel  
**Lens:** polycarbonate  
**Process connection:** 1/4" NPT(M) bottom  
**Power:** two AA batteries (included)  
**Display:** Upper line: 5-digit, LCD, 0.5"H  
Lower line: 5-character alphanumeric, 0.25"H

Catalog number	Range	Resolution	Price
GM-68334-01	0 to 30" Hg	0.01" Hg	
GM-68334-03	30" Hg to 30 psi	0.01" Hg	
GM-68334-05	30" Hg to 60 psi	0.01" Hg	
GM-68334-07	30" Hg to 100 psi	0.01" Hg	
GM-68334-09	0 to 15 psi	0.001 psi	
GM-68334-11	0 to 30 psi	0.001 psi	
GM-68334-13	0 to 60 psi	0.001 psi	
GM-68334-15	0 to 100 psi	0.01 psi	
GM-68334-17	0 to 200 psi	0.01 psi	
GM-68334-19	0 to 300 psi	0.01 psi	
GM-68334-21	0 to 500 psi	0.01 psi	
GM-68334-23	0 to 750 psi	0.01 psi	
GM-68334-25	0 to 1000 psi	0.1 psi	
GM-68334-27	0 to 5000 psi	0.1 psi	
GM-68334-29	0 to 7500 psi	0.1 psi	
GM-68334-31	0 to 10,000 psi	1 psi	
GM-68334-33	0 to 20,000 psi	1 psi	

**GM-09376-01 Batteries, AA, 4/pk**



# You're Out? We're Not!

Thousands of **highlighted** items



## Cole-Parmer Sealed SS Pressure Transducers

**No epoxies or glues which can cause signal instability or drift**

Units with 4 to 20 mA output have red (positive power) and black (output) wires. Units with 1 to 5 V output have red (positive power), green (output), and white (common) wires. Transducers with ±0.25% accuracy come with NIST-traceable calibration report supplied by the manufacturer.

### Specifications

**Temp range (compensated):** -4 to 176°F (-20 to 80°C)  
**Operating temp :** -40 to 260°F (-40 to 125°C)  
**Process connection:** 1/4" NPT(M)  
**Power:** 9 to 30 VDC



**Electrical connection:** 2-ft (0.6-m) cable  
**Wetted materials:** 17-4 PH stainless steel  
**Dimensions (L x dia):** 2 3/4" x 1 1/2" (7 x 3.8 cm)

Range	4 to 20 mA output		1 to 5 V output	
	Catalog number	Price	Catalog number	Price
<b>Vacuum and compound transducers; ±0.4% accuracy (BFSL)</b>				
30" Hg to 0 psi	<a href="#">GM-07356-10</a>		<a href="#">GM-07356-60</a>	
30" Hg to 30 psi	<a href="#">GM-07356-11</a>		<a href="#">GM-07356-61</a>	
30" Hg to 45 psi	<a href="#">GM-07356-12</a>		<a href="#">GM-07356-62</a>	
30" Hg to 60 psi	<a href="#">GM-07356-13</a>		<a href="#">GM-07356-63</a>	
<b>Pressure transducers; ±0.4% accuracy (BFSL)</b>				
0 to 15 psi	<a href="#">GM-07356-50</a>		<a href="#">GM-07356-00</a>	
0 to 30 psi	<a href="#">GM-07356-51</a>		<a href="#">GM-07356-01</a>	
0 to 60 psi	<a href="#">GM-07356-52</a>		<a href="#">GM-07356-02</a>	
0 to 100 psi	<a href="#">GM-07356-53</a>		<a href="#">GM-07356-03</a>	
0 to 300 psi	<a href="#">GM-07356-54</a>		<a href="#">GM-07356-04</a>	
0 to 750 psi	<a href="#">GM-07356-55</a>		<a href="#">GM-07356-05</a>	
0 to 1000 psi	<a href="#">GM-07356-56</a>		<a href="#">GM-07356-06</a>	
0 to 2000 psi	<a href="#">GM-07356-14</a>		<a href="#">GM-07356-64</a>	
0 to 3000 psi	<a href="#">GM-07356-15</a>		<a href="#">GM-07356-65</a>	
0 to 5000 psi	<a href="#">GM-07356-16</a>		<a href="#">GM-07356-66</a>	
<b>Pressure transducers; ±0.25% accuracy (BFSL); with NIST-traceable calibration report</b>				
0 to 100 psi	<a href="#">GM-68001-04</a>		<a href="#">GM-68001-24</a>	
0 to 200 psi	<a href="#">GM-68001-05</a>		<a href="#">GM-68001-25</a>	
0 to 300 psi	<a href="#">GM-68001-06</a>		<a href="#">GM-68001-26</a>	
0 to 500 psi	<a href="#">GM-68001-07</a>		<a href="#">GM-68001-27</a>	
0 to 1000 psi	<a href="#">GM-68001-08</a>		<a href="#">GM-68001-28</a>	
0 to 2000 psi	<a href="#">GM-68001-09</a>		<a href="#">GM-68001-29</a>	
0 to 3000 psi	<a href="#">GM-68001-10</a>		<a href="#">GM-68001-30</a>	
0 to 5000 psi	<a href="#">GM-68001-14</a>		<a href="#">GM-68001-34</a>	



7356-50

[GM-17090-29](#) NIST-traceable calibration with data

## Dwyer Magnehelic® Differential Pressure Gauges

**Industry standard in indicating positive, negative, or differential pressures**

- Large, easy-to-read 4" (102 mm) dial
- No manometer fluid to evaporate, freeze, or cause toxic or leveling problems



68062-06

The Magnehelic gauge is the industry standard to measure fan and blower pressures, filter resistance, air velocity, furnace draft, pressure drop across orifice plates, liquid levels with bubbler systems, and pressures in fluid amplifier or fluidic systems. The gauge's motion is damped with high-viscosity silicone fluid. The zero adjustment screw is conveniently located in the plastic cover, and is accessible without removing the cover. O-ring seal provides pressure tightness. Rugged design resists shock, vibration, and overpressure.

The helix is precision-made from an alloy of high magnetic permeability. Mounted in jeweled bearings, it turns freely, following the magnetic field to move the pointer across the scale. The samarium cobalt magnet is mounted at one end of range spring and rotates helix without mechanical linkages.

**What's included:** two 1/8" NPT plugs, two 1/8" to rubber tubing adapters, and three mounting adapters with screws.

### Specifications



**Dial size:** 4" (102 mm)  
**Units of measure:** " H<sub>2</sub>O  
**Operating temp:** 20 to 140°F (7 to 60°C)  
**Media compatibility:** air and noncombustible compatible gases  
**Lens:** polycarbonate  
**Process connection:** 1/8" NPT(F)  
**Casing:** aluminum

Catalog number	Range	Accuracy (full-scale)	Price
<a href="#">GM-68062-00</a>	0.05 to 0.2" H <sub>2</sub> O	±4%	
<a href="#">GM-68062-02</a>	0 to 0.25" H <sub>2</sub> O	±4%	
<a href="#">GM-68062-04</a>	0 to 0.5" H <sub>2</sub> O	±3%	
<a href="#">GM-68062-06</a>	0 to 1" H <sub>2</sub> O		
<a href="#">GM-68062-08</a>	0 to 2" H <sub>2</sub> O	±2%	
<a href="#">GM-68062-10</a>	0 to 5" H <sub>2</sub> O		

[GM-17040-10](#) NIST-traceable calibration with data

## Cole-Parmer High-Accuracy Pressure Transducers

**Suitable for high-shock/vibration applications; no seals or O-rings to cause leakage**

■ SS sensor attached to SS electrode forms a variable capacitor  
 Economical, excellent accuracy, and high performance. Ideal for industrial OEM equipment, engines, hydraulic systems, and compressor control. Transducers with 4 to 20 mA output have red (positive power) and black (output) wires. Transducers with 0.5 to 5.5 V output have red (positive power), green (output), and black/white (common) wires.

### Specifications



**Accuracy:** ±0.25% full-scale  
**Temp range (compensated):** -4 to 176°F (-20 to 80°C)  
**Operating temp range:** -40 to 260°F (-40 to 125°C)  
**Process connection:** 1/4" NPT(M)  
**Power:** 9 to 30 VDC  
**Electrical connection:** 2-ft (0.6-m) cable  
**Wetted materials:** 17-4 PH stainless steel  
**Dimensions (L x dia):** 2 3/4" x 1 1/2" (7 x 3.8 cm)

Range	4 to 20 mA output		0.5 to 5.5 V output	
	Catalog number	Price	Catalog number	Price
<b>Compound transmitters</b>				
-14.7 to 0 psi	<a href="#">GM-68075-00</a>		<a href="#">GM-68075-30</a>	
-14.7 to 15 psi	<a href="#">GM-68075-02</a>		<a href="#">GM-68075-32</a>	
<b>Gauge pressure transmitters</b>				
0 to 5 psi	<a href="#">GM-68075-10</a>		<a href="#">GM-68075-40</a>	
0 to 10 psi	<a href="#">GM-68075-12</a>		<a href="#">GM-68075-42</a>	
0 to 25 psi	<a href="#">GM-68075-14</a>		<a href="#">GM-68075-44</a>	
0 to 50 psi	<a href="#">GM-68075-16</a>		<a href="#">GM-68075-46</a>	
0 to 100 psi	<a href="#">GM-68075-18</a>		<a href="#">GM-68075-48</a>	
0 to 250 psi	<a href="#">GM-68075-20</a>		<a href="#">GM-68075-50</a>	
0 to 1000 psi	<a href="#">GM-68075-24</a>		<a href="#">GM-68075-54</a>	

68075-18



[GM-17090-29](#) NIST-traceable calibration

## Cole-Parmer Gas Regulators

Deliver gas at constant pressure and volume, from full cylinder inlet pressure to end point working pressure

### General-Purpose Regulators

These regulators are designed for economy and longevity in applications involving inert and noncorrosive gases. Include 10 µm sintered SS filter, rubber valve seat, nylon-reinforced rubber diaphragm, aluminum-alloy body and bonnet, and brass gauges.

#### A Single-Stage Regulators

are designed for long-life performance where precise pressure control is not desired. Overload protected.

#### B Two-Stage Regulators

reduce cylinder pressure in two stages. Use first stage to approach working pressure; use second stage for precise adjustment of working pressure. Second stage is overload protected.

### High-Purity Regulators

Ideal for corrosive or noncorrosive gas applications. Designed and constructed for diffusion resistance and easy cleanup. Only brass, stainless steel (SS), PTFE, and Kel-F® contact the operating media. Metal diaphragm, packless valves, and high-purity seals minimize or eliminate outgoing and inboard diffusion. Supplied with SS screen filter (25 µm); and brass body, bonnet, and gauges.

**C Single-Stage High-Purity Regulators** are recommended for analytical work where precise pressure control is not critical.

**D Two-Stage High-Purity Regulators** let you precisely regulate working pressure.

### Special-Service Regulators

**E Model 03274-10** is a single-stage unit specially designed for gases that attack brass or copper-bearing alloys. When used with low-vapor-pressure liquefied gases, no inlet gauge is needed. Rubber-supported PTFE diaphragm, Kel-F® seat, aluminum-alloy body and bonnet, SS delivery gauge, and 10 µm sintered SS filter.

**F Model 03274-15** is for regulating corrosive halogen gases. Monel® filter, body, gauges, and diaphragm; chrome-plated brass bonnet; and Kel-F® valve seat.

**G Model 03274-20** is a two-stage 316 SS regulator with packless diaphragm valve—handles electronic and corrosive gases. Only SS and PTFE contact operating media. Excellent diffusion resistance; effective for trace analysis. Metal-to-metal diaphragm seal minimizes leak rate to reduce vacuum purging time and residual contaminant levels. Bubble-tight shutoff.



### Specifications

#### Maximum delivery pressure

- Low psig series-  
Model G (03274-20): 25 psi  
All other low psig models: 50 psi
- High psig series-  
Model F (03274-15): 200 psi  
All other high psi models: 100 psi

#### Maximum inlet pressure

- Model E (03274-10): 400 psi  
All other models: 3000 psi

#### Delivery gauge graduations

- Low psig series  
Model G (03274-20): 1 psi  
All other models: 2 psi
- High psig series: 5 psi

#### Inlet gauge graduations

- Models F and G: 50 psi  
All other models: 100 psi

#### Outlet connection

- Models A, B, E, and F: 1/4" NPT(M)
- Models C, D, and G: 1/4" NPT(F); compression fitting for 6-mm OD tubing included

### Gas/Regulator Selection Table

Gas	Quality grade	Key letter	CGA fitting
Air	Compressor	<b>A-B</b>	346
	Ultrapure, Zero grade	<b>C-D</b>	590
Ar	Ultra high-purity	<b>A-B</b>	580
	Research, Ultrapure	<b>C-D</b>	580
	Zero grade	<b>C-D</b>	580
BF <sub>3</sub>	All	<b>F</b>	330
C <sub>2</sub> H <sub>4</sub>	All	<b>A-B</b>	350
C <sub>2</sub> H <sub>6</sub>	All	<b>A-B</b>	350
CF <sub>4</sub>	All	<b>A</b>	580
CH <sub>4</sub>	Chemically pure, Technical	<b>A-B</b>	350
	Commercial	<b>A-B</b>	350
	Instrument	<b>C-D</b>	350
CO	All	<b>A-B</b>	350
CO <sub>2</sub>	Coleman, Chemically pure	<b>A-B</b>	320
	Research, Anaerobe grade	<b>C-D</b>	320
D <sub>2</sub>	Chemically pure	<b>A-B</b>	350
	Research	<b>C-D</b>	350
H <sub>2</sub>	Ultra high-purity	<b>A-B</b>	350
	Research, Ultrapure	<b>C-D</b>	350
	Zero grade	<b>C-D</b>	350
HCl	Electronic, Technical	<b>F</b>	330
He	High-purity	<b>A-B</b>	580
	Research, Ultrapure	<b>C-D</b>	580
	Zero grade	<b>C-D</b>	580
Kr	Research	<b>C-D</b>	580
N <sub>2</sub>	Ultra high-purity	<b>A-B</b>	580
	Research, Ultrapure	<b>C-D</b>	580
	Zero grade	<b>C-D</b>	580
Ne	Chemically pure	<b>A-B</b>	580
	Research	<b>C-D</b>	580
NF <sub>3</sub>	All	<b>F</b>	330
NH <sub>3</sub>	Electronic	<b>E</b>	660
O <sub>2</sub>	Research, Ultrapure	<b>C-D</b>	540
	Zero grade	<b>C-D</b>	540
	Extra-dry	<b>C</b>	540
SF <sub>6</sub>	All	<b>A-B</b>	590
SiH <sub>4</sub>	Semiconductor	<b>G</b>	350
Xe	All	<b>C-D</b>	580

Key	Type	CGA fitting	Low psig regulators			High psig regulators		
			Catalog number	Capacity	Price	Catalog number	Capacity	Price
<b>A</b>	Single-stage	320	<a href="#">GM-98202-00</a>	2000 scfh		<a href="#">GM-98202-10</a>	3500 scfh	
		346	<a href="#">GM-98202-01</a>	2000 scfh		<a href="#">GM-98202-11</a>	3500 scfh	
		350	<a href="#">GM-98202-02</a>	2000 scfh		<a href="#">GM-98202-12</a>	3500 scfh	
		580	<a href="#">GM-98202-03</a>	2000 scfh		<a href="#">GM-98202-13</a>	3500 scfh	
		590	<a href="#">GM-98202-04</a>	2000 scfh		<a href="#">GM-98202-14</a>	3500 scfh	
<b>B</b>	Two-stage	320	<a href="#">GM-98210-20</a>	1250 scfh		<a href="#">GM-98210-30</a>	1750 scfh	
		350	<a href="#">GM-98210-22</a>	1250 scfh		<a href="#">GM-98210-32</a>	1750 scfh	
		540	<a href="#">GM-98210-24</a>	1250 scfh		<a href="#">GM-98210-34</a>	1750 scfh	
		580	<a href="#">GM-98210-26</a>	1250 scfh		<a href="#">GM-98210-36</a>	1750 scfh	
		590	<a href="#">GM-98210-28</a>	1250 scfh		<a href="#">GM-98210-38</a>	1750 scfh	
<b>C</b>	High-purity single-stage	320	<a href="#">GM-98210-00</a>	270 scfh		<a href="#">GM-98210-10</a>	380 scfh	
		350	<a href="#">GM-98210-02</a>	270 scfh		<a href="#">GM-98210-12</a>	380 scfh	
		540	<a href="#">GM-98210-04</a>	270 scfh		<a href="#">GM-98210-14</a>	380 scfh	
		580	<a href="#">GM-98210-06</a>	270 scfh		<a href="#">GM-98210-16</a>	380 scfh	
		590	<a href="#">GM-98210-08</a>	270 scfh		<a href="#">GM-98210-18</a>	380 scfh	
<b>D</b>	High-purity two-stage	320	<a href="#">GM-98210-00</a>	270 scfh		<a href="#">GM-98210-10</a>	380 scfh	
		350	<a href="#">GM-98210-02</a>	270 scfh		<a href="#">GM-98210-12</a>	380 scfh	
		540	<a href="#">GM-98210-04</a>	270 scfh		<a href="#">GM-98210-14</a>	380 scfh	
		580	<a href="#">GM-98210-06</a>	270 scfh		<a href="#">GM-98210-16</a>	380 scfh	
		590	<a href="#">GM-98210-08</a>	270 scfh		<a href="#">GM-98210-18</a>	380 scfh	
<b>E</b> <b>F</b> <b>G</b>	Specialty	660	<a href="#">GM-03274-10</a>	2200 scfh		—	—	
		330	—	—		<a href="#">GM-03274-15</a>	780 scfh	
		350	<a href="#">GM-03274-20</a>	190 scfh		—	—	

## Two-Way Straight Plastic Ball Valves

Withstand pressures to 125 psi (8.6 bar) and temperatures to 140°F (60°C)



Key	Connections	Wetted parts (body, seals)	C <sub>v</sub>	Orifice size	Max pressure psi (bar)	Max temp	Dimensions (L x H)	Catalog number	Price	
A	1/8" NPT(F)	PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-01		
	1/8" NPT(F)	PVC, Viton®	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-03		
	1/8" NPT(F)	PP, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-04		
	1/8" NPT(F)	PP, Viton	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-06		
A	1/4" NPT(F)	PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-16		
	1/4" NPT(F)	PVC, Viton	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-18		
	1/4" NPT(F)	PP, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-20		
	1/4" NPT(F)	PP, Viton	2	0.312"	125 (8.6)	140°F (60°C)	1 7/8" x 1 1/2"	GM-01377-22		
	1/4" NPT(F)	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 1/2" x 1 1/2"	GM-01377-80		
	3/8" NPT(F)	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	2 1/2" x 1 1/2"	GM-01378-16		
B	1/8" NPT(F) x 1/8" NPT(M)	PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-08		
	1/8" NPT(F) x 1/8" NPT(M)	PVC, Viton	2	0.312"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-10		
	1/8" NPT(F) x 1/8" NPT(M)	PP, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-12		
	1/8" NPT(F) x 1/8" NPT(M)	PP, Viton	2	0.312"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-14		
	1/4" NPT(F) x 1/4" NPT(M)	PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-24		
	1/4" NPT(F) x 1/4" NPT(M)	PVC, Viton	2	0.312"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-26		
	1/4" NPT(F) x 1/4" NPT(M)	PP, Viton	2	0.312"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-28		
	1/4" NPT(F) x 1/4" NPT(M)	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 3/16" x 1 1/2"	GM-01377-82		
	3/8" NPT(F) x 3/8" NPT(M)	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	3" x 1 1/2"	GM-01378-20		
	3/8" NPT(F) x 3/8" NPT(M)	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3" x 1 1/2"	GM-01378-22		
	C	1/4" barb	PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-30	
		1/4" barb	PVC, Viton	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-32	
1/4" barb		PP, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-34		
1/4" barb		PP, Viton	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-36		
1/4" barb		PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3" x 1 1/2"	GM-01377-84		
3/8" barb		PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-42		
3/8" barb		PVC, Viton	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-44		
3/8" barb		PP, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-46		
3/8" barb		PP, Viton	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-48		
3/8" barb		PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3 1/2" x 1 1/2"	GM-01378-24		
D		1/2" barb	PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-50	
		1/2" barb	PVC, Viton	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-52	
	1/2" barb	PP, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-54		
	1/2" barb	PP, Viton	2	0.312"	125 (8.6)	140°F (60°C)	3 3/16" x 1 1/2"	GM-01377-56		
	1/4" NPT(F) x tapered barb	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	3" x 1 1/2"	GM-01377-86		
	1/4" NPT(F) x tapered barb	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3" x 1 1/2"	GM-01377-88		
E	3/8" NPT(F) x tapered barb	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	3 1/2" x 1 1/2"	GM-01378-26		
	3/8" NPT(F) x tapered barb	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3 1/2" x 1 1/2"	GM-01378-28		
	1/4" NPT(M) x tapered barb	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	3" x 1 1/2"	GM-01377-90		
	1/4" NPT(M) x tapered barb	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3" x 1 1/2"	GM-01377-92		
F	3/8" NPT(M) x tapered barb	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	3 1/2" x 1 1/2"	GM-01378-30		
	3/8" NPT(M) x tapered barb	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3 1/2" x 1 1/2"	GM-01378-32		
	1/4" compression	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	3 1/4" x 1 1/2"	GM-01377-94		
G	1/4" compression	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3 1/4" x 1 1/2"	GM-01377-96		
	3/8" compression	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	3 1/2" x 1 1/2"	GM-01378-34		
	3/8" compression	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	3 1/2" x 1 1/2"	GM-01378-36		
H	1/4" NPT(F) x 1/4" JG <sup>†</sup>	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-08		
	1/4" NPT(F) x 1/4" JG <sup>†</sup>	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-10		
I	3/8" NPT(F) x 3/8" JG <sup>†</sup>	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-38		
	3/8" NPT(F) x 3/8" JG <sup>†</sup>	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-40		
	1/4" NPT(M) x 1/4" compression	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	2 7/8" x 1 1/2"	GM-01378-03		
J	1/4" NPT(M) x 1/4" compression	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 7/8" x 1 1/2"	GM-01378-04		
	1/4" NPT(M) x 1/4" JG <sup>†</sup>	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-12		
	1/4" NPT(M) x 1/4" JG <sup>†</sup>	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-14		
K	3/8" NPT(M) x 3/8" JG <sup>†</sup>	PVC, Buna N	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-42		
	3/8" NPT(M) x 3/8" JG <sup>†</sup>	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-44		
	1/4" JG <sup>†</sup>	PVC, EPDM	2	0.312"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01377-38		
K	1/4" JG <sup>†</sup>	PVC, Viton	2	0.312"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01377-40		
	1/4" JG <sup>†</sup>	PVC, EPDM	7	0.437"	125 (8.6)	140°F (60°C)	2 5/8" x 1 1/2"	GM-01378-06		

<sup>†</sup>JG = John Guest®



# You're Out? We're Not!

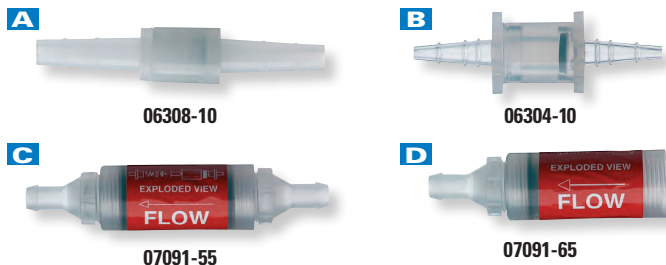
Thousands of **highlighted** items



## Check and Foot Valves with Hose Barb Connections

### Ideal for low-pressure applications

Choose from economical LDPE with neoprene disc; autoclavable PP with neoprene disc; or autoclavable PP with Hastelloy C® springs, O-rings made of Viton®, and built-in 149-µm screen—available in check valves or foot valves.



Catalog number	Tubing ID	Breaking pressure	Max pressure	Price
<b>A LDPE valves</b> ; -14 to 76°F (-26 to 24°C)				
GM-06308-10	5/16" to 1/4"	1 psi	10 psi (0.69 bar)	/ea*
<b>B PP valves</b> ; -14 to 250°F (-26 to 121°C)				
GM-06304-10	1/8" to 1/4"	1/2 psi	20 psi (1.4 bar)	/bg of 6
GM-06304-20	1/4" to 3/8"			/bg of 6
GM-06304-30	3/8" to 1/2"			/bg of 6
<b>C PP check valves</b> with built-in screen; 32 to 140°F (0 to 60°C)				
GM-07091-55	3/8"	1 psi	50 psi (3.4 bar)	/ea
GM-07091-60	1/2"			/ea
<b>D PP foot valves</b> with built-in screen; 32 to 140°F (0 to 60°C)				
GM-07091-65	3/8"	1 psi	50 psi (3.4 bar)	/ea
GM-07091-70	1/2"			/ea

\*Discounts: 10% on 72–359 valves, 15% on 360–1439 valves, 20% on 1440+ valves.

## Miniature Check Valves

### Use with liquids and gases for pressure or vacuum applications

Breaking pressure is 0.18 psi, closing pressure is 0.014 psi. Maximum temperature (at maximum psi) is 250°F (121°C) for "A" and "C"; 200°F (93°C) for "B." Install in any position.

**Note:** Valves require 1 psi back pressure for a tight seal.



Catalog number	Tubing ID	C <sub>v</sub>	Working pressure	Price
<b>A Nylon body and fluorosilicone diaphragm</b>				
GM-98553-00	1/8"	0.12	3 to 5 psi (0.2 to 0.3 bar)	
GM-98553-01	3/16"	0.13		
GM-98553-02	1/4"	0.13		
<b>B PP body and Viton® diaphragm</b>				
GM-98553-10	1/8"	0.11	3 to 5 psi (0.2 to 0.3 bar)	
GM-98553-11	3/16"	0.12		
GM-98553-12	1/4"	0.12		
GM-98553-13	5/16"	0.13		
<b>C PVDF body and Viton diaphragm</b>				
GM-98553-21	3/16"	0.12	3 to 5 psi (0.2 to 0.3 bar)	
GM-98553-22	1/4"	0.12		
GM-98553-34	3/8"	0.12		

## John Guest® Speedfit Ball Valves

### Easily and quickly disconnect and reconnect water lines

Food-grade polypropylene housing is specifically made for use with potable water.



07391-04

### Specifications

**Maximum pressure:** 150 psi

**Working temperature:** 33 to 150°F (1 to 65°C)

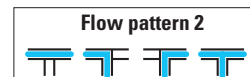
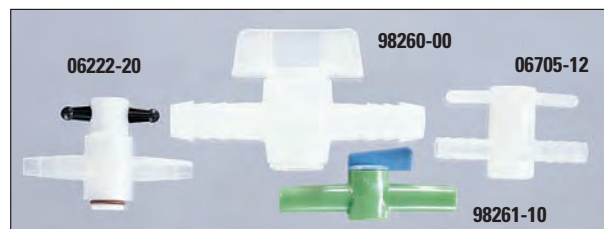
**Wetted parts:** food-grade polypropylene, EPDM, and stainless steel

Catalog number	Valve type	Connection size/type	Price
GM-07391-00	Straight	1/4" OD Speedfit to 1/4" NPT(M)	
GM-07391-02		3/8" OD Speedfit to 3/8" NPT(M)	
GM-07391-04	Straight	1/4" OD Speedfit to 1/4" OD Speedfit	
GM-07391-06		3/8" OD Speedfit to 3/8" OD Speedfit	
GM-07391-08	Elbow	1/4" OD Speedfit to 1/4" NPT(F)	
GM-07391-10		3/8" OD Speedfit to 1/4" NPT(F)	

## Two- and Three-Way Stopcocks with Hose Barb Connections

### Easily adjust flow

**PP stopcocks** have plugs made of PTFE and are autoclavable. Maximum temperature is 275°F (135°C); maximum pressure is 2 psi. **PVDF stopcocks** are rated for 464°F (240°C); maximum pressure is 5 psi. **LDPE stopcocks** are rated for 167°F (75°C); maximum pressure is 7 psi. **HDPE stopcocks** are rated for 203°F (95°C); maximum pressure is 7 psi.



Cat. no.	Tube ID	Orifice	Material	Price/ea
<b>Two-way stopcocks</b>				
GM-06222-20	1/4" to 5/16"	2 mm	PP	
GM-06222-40	1/4" to 3/16"	4 mm		
GM-98260-00	3/8"	1/4"	LDPE	
GM-98260-10	1/2"	3/8"		
GM-98261-10	10 mm	6.8 mm	HDPE	
GM-98261-20	14 mm	10.7 mm		
GM-98261-30	16 mm	12.7 mm		
<b>Three-way stopcocks</b> ; follow flow pattern 2				
GM-06225-20	1/4" to 5/16"	2 mm	PP	
GM-06225-40	1/4" to 3/16"	4 mm		
GM-06705-10	6 mm	4 mm	PVDF	
GM-06705-12	8 mm	6 mm		
GM-06705-14	10 mm	8 mm		

# Oakton® Meters for Any Application

## Testers—

simply dip and read

Conductivity . . . . . 83  
pH . . . . . 87

## Handheld Meters—

take it where you need it

Conductivity . . . . . 84  
pH . . . . . 88  
Dissolved Oxygen . . . . . Online  
Multiparameter . . . . . Online

## Benchtop Meters—

higher precision for  
more accurate results

Conductivity . . . . . 85  
pH/Ion . . . . . 89  
Dissolved Oxygen . . . . . Online  
Multiparameter . . . . . Online

Oakton pH 700 Meter, page 89



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Our expert Application Specialists can help you find the right product for your application.

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Thousands of **highlighted** items



## OAKION® Waterproof EcoTestr™ TDS and EC Pocket Meters

Low-cost testers are perfect for applications where lost or broken meters are a concern

- Nonreplaceable sensor keeps the price down—great for educational or field use
- Easy-to-read display
- Four models to choose from depending on your parameter and range requirements

These economical conductivity and TDS pocket meters feature a large, ergonomically designed display so that you can easily view measurements at a glance. The orientation of the display means there's no need to turn your head or tilt the tester. Waterproof and dustproof housing is designed for use in dirty and damp field conditions. Convenient, built-in belt/pocket clip keeps the tester accessible when not in use.

Stainless steel electrodes are both rugged and chemical resistant, for use in a wide variety of applications. Single-point electronic calibration means you are ready to measure quickly and easily. Additional features include auto-shutoff to prolong battery life, hold function to lock in a measured value, and self-diagnostic error messages. The TDS models also have a self-adjusting TDS factor from 0.40 to 1.0.

**What's included:** four 1.5 V button cell batteries.



Catalog number	GM-35462-10	GM-35462-15	GM-35462-30	GM-35462-35
Description	EcoTestr TDS Low	EcoTestr TDS High	EcoTestr EC Low	EcoTestr EC High
Range	0 to 1990 ppm	0 to 10.0 ppt	0 to 1990 µS	0 to 19.90 mS
Resolution	10 ppm	0.1 ppt	10 µS	0.1 mS
Accuracy	±1% FS	±2% FS	±1% FS	±2% FS
Temperature compensation	Automatic, 0 to 50°C, 2% per °C			
Calibration	One-point digital calibration			
Display	3.5-digit, 1-line LCD			
Power	Four 1.5 V batteries (included), >200 hours life			
Dimensions (L x W x H)	6¼" x 1½" x 1½" (16 x 4 x 3 cm)			
Price				



35462-10

35462-35

**Find MORE!**

For conductivity calibration solutions, see page 86.

**GM-09377-16** Replacement batteries, 1.5 V button cell. Pack of 6

## OAKION® Multirange Waterproof Cup-Style TDSTestr® 11+ and ECTestr® 11+

Operate as either a cup-style or dip-style tester for greater flexibility

- Automatically or manually select measuring range
- Waterproof, dustproof housings float
- Push-button calibration, Hold function, and error messages

Use these testers for either cup-style or dip-style measurements. For cup style, pour a small amount of your sample directly into the sensor cup until it overflows; for dip style, simply immerse tester tip into sample. Replaceable sensor lets you reuse meter body many times over. Valox® housing and stainless steel electrodes for good chemical compatibility.

**Note:** Before measuring, calibrate tester as either cup style or dip style (depending on intended method of use).

**What's included:** protective plastic storage case, lanyard, and batteries.



Features cup-style sensor—draw or grab samples anywhere!



Catalog number	GM-35662-15	GM-35662-35
Description	TDSTestr 11+ Multirange	ECTestr 11+ Multirange
Range	0 to 200.0, 0 to 2000 ppm; 0 to 10.00 ppt 32 to 122°F (0 to 50°C)	0 to 200.0, 0 to 2000 µS/cm; 0 to 20.00 mS/cm 32 to 122°F (0 to 50°C)
Resolution	0.1, 1 ppm; 0.01 ppt 0.1°F (0.1°C)	0.1, 1 µS/cm; 0.01 mS/cm 0.1°F (0.1°C)
Accuracy	±1% full scale ±0.9°F (±0.5°C)	±1% full scale ±0.9°F (±0.5°C)
Temperature compensation	Automatic, 0 to 50°C; 2% per °C	
Calibration	Push-button calibration, one to three points	
Display	4-digit LCD, dual line	
Power	Four 1.5 V alkaline batteries (included), approximately 150 hours continuous use	
Dimensions (L x dia)	6½" x 1½" (17 x 4 cm)	
Price		

**GM-35661-08** Replacement sensor for above cup-style testers

**GM-09377-16** Replacement batteries, 1.5 V button cell. Pack of 6

**GM-17090-30** NIST-traceable calibration for conductivity meter



35662-35

Conductivity

Electrochemistry

pH/Ion



## OAKION® CON 6+, TDS 6+, and SALT 6+ Meters

### Auto-ranging conductivity or TDS with temperature measurements

- CON 6+ and TDS 6+ have five auto-ranging measurement modes—up to 200.0 mS (200.0 ppt)
- Temperature readout in °C with the push of a button
- Rubber boot with built-in stand protects meter and adds functionality

These microprocessor-based meters feature easy, push-button operation that offers high accuracy at an extremely affordable price. A quick and easy single-point calibration covers all five ranges with the CON 6+ and TDS 6+ meters; for greater precision, single points can be calibrated within each of the five measurement ranges. The SALT 6+ features single-point calibration; calibrate using 4487 ppm (4.5 ppt) calibration solution 00653-89 (sold below).

Additional features include a convenient Hold function and auto-off function that shuts meter off after 20 minutes of nonuse. Programming functions allow customization of meter for temperature compensation, temperature coefficient, normalization, cell constant, and conductivity-to-TDS conversion factor (TDS 6+) for better accuracy in varying applications.

**Meters include:** protective rubber boot with stand, conductivity/TDS/temperature probe (K = 1.0), and four AAA batteries.

**Kits include:** protective rubber boot with stand, conductivity/TDS/temperature probe (K = 1.0), calibration solutions, sample bottles, rinse bottle, hard plastic carrying case, and four AAA batteries.

CON TDS SAL °C

CON 6+ meter  
35604-00

SALT 6+ meter  
35604-40

Calibrate NOW & SAVE!

**INNOCAL®**

Save 10% off the NIST-traceable calibration when you order your product precalibrated.

Rubber boot protects meter and doubles as a stand.

ISO9001:2008  
CERTIFIED SUPPLIER

CE 3 year warranty  
Meter only

Catalog number	GM-35604-00	GM-35604-04	GM-35604-20	GM-35604-24	GM-35604-40	GM-35604-44
Precalibrated catalog number	GM-35604-01	GM-35604-05	GM-35604-21	GM-35604-25	GM-35604-41	GM-35604-45
Description	CON 6+ meter	CON 6+ meter kit	TDS 6+ meter	TDS 6+ meter kit	SALT 6+ meter	SALT 6+ meter kit
Range	Conductivity	0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 200.0 mS	0 to 10.00, 10 to 100.0, 100 to 1000 ppm; 1.00 to 10.00, 10.0 to 100.0, up to 200.0 ppt <sup>1</sup>	0 to 10.00, 10 to 100.0, 100 to 1000 ppm; 1.00 to 10.00, 10.0 to 100.0, up to 200.0 ppt <sup>1</sup>	0 to 10.00, 10 to 100.0, 100 to 1000 ppm; 1.00 to 10.00, 10.0 to 100.0, up to 200.0 ppt <sup>1</sup>	1 to 50.0 ppt, 0.1 to 5.00%
	Temperature	-10.0 to 110.0°C	-10.0 to 110.0°C	-10.0 to 110.0°C	-10.0 to 110.0°C	-10.0 to 110.0°C
Resolution	Conductivity	0.01, 0.1, 1 µS; 0.01, 0.1 mS	0.01, 0.1, 1 ppm; 0.01, 0.1 ppt	0.01, 0.1, 1 ppm; 0.01, 0.1 ppt	0.01, 0.1, 1 ppm; 0.01, 0.1 ppt	0.1 ppt, 0.01%
	Temperature	0.1°C	0.1°C	0.1°C	0.1°C	0.1°C
Accuracy	Conductivity	±1% full-scale	±1% full-scale	±1% full-scale	±1% full-scale	±1% full-scale
	Temperature	±0.5°C	±0.5°C	±0.5°C	±0.5°C	±0.5°C
Temperature compensation	Automatic or manual from 0.0 to 50.0°C		Automatic or manual from 0.0 to 50.0°C		Automatic or manual from 0.0 to 50.0°C	
Temperature coefficient	Adjustable from 0 to 3% per °C		Adjustable from 0 to 3% per °C		Adjustable from 0 to 3% per °C	
Normalization temperature	20°C or 25°C, selectable		20°C or 25°C, selectable		20°C or 25°C, selectable	
Cell constant (K)	Selectable, 0.1, 1, and 10		Selectable, 0.1, 1, and 10		1.0	
Conductivity-to-TDS/salt conversion factor	—		0.4 to 1.00 adjustable		Nonlinear compensation	
Calibration points	5 maximum, one per range		5 maximum, one per range		One point in 1 to 50 ppt range	
Display	4-digit LCD, single line		4-digit LCD, single line		4-digit LCD, single line	
Power	Four AAA batteries (included)		Four AAA batteries (included)		Four AAA batteries (included)	
Battery life	100 hours continuous use		100 hours continuous use		100 hours continuous use	
Dimensions	Meter: 5 1/2" L x 2 3/4" W x 1 5/16" H (14 x 7 x 3 cm) Probe: 5 1/8" L x 5/8" dia (13 x 2 cm) with 36" cable		Meter: 5 1/2" L x 2 3/4" W x 1 5/16" H (14 x 7 x 3 cm) Probe: 5 1/8" L x 5/8" dia (13 x 2 cm) with 36" cable		Meter: 5 1/2" L x 2 3/4" W x 1 5/16" H (14 x 7 x 3 cm) Probe: 5 1/8" L x 5/8" dia (13 x 2 cm) with 36" cable	
Price						
Precalibrated price						

<sup>1</sup>With K = 10 probe

**GM-35606-53** Conductivity probe, K = 0.1

**GM-35606-55** Replacement conductivity probe, K = 1.0

**GM-35606-57** Conductivity probe, K = 10

**GM-00653-89** Calibration solution for SALT 6+ meter, 4487 ppm NaCl; 500 mL bottle

**GM-35653-15** Calibration solution for SALT 6+ meter, 3000 ppm NaCl. Pack of 20 (20-mL) pouches

**GM-09376-00** Replacement batteries, AAA. Pack of 12

**GM-17090-30** NIST-traceable calibration with data for conductivity meters

# You're Out? We're Not!

Thousands of **highlighted** items



## OAKTON® Benchtop CON 700 and 2700 Meters

### Economy and advanced meters for benchtop conductivity measurement

- Space-saving design takes up less room on the bench than other meters
- Large display lets you see your measurements from across the lab

Economical Oakton CON 700 meter is an affordable way to take consistent, accurate conductivity measurements in your laboratory. Meter reads 0 to 200.0 mS across five ranges—autoranging features gives the best resolution for your measurements. Memory stores up to 100 readings for later retrieval. Meter features adjustable temperature coefficient for better accuracy, and selectable cell constant for very high or low range measurements. Selectable manual or automatic temperature compensation gives greater precision. Water-resistant membrane keypad and convenient pull-out reference guide provide useful features for the lab.

Oakton CON 2700 meter has advanced features for GLP-compliant readings—all calibration and stored data are stamped with time/date. Advanced setup options allow you to customize the meter to your needs. Informative display shows measurements together with temperature, electrode status, calibration points, time, and date all at once! Bright backlight helps you view readings under all conditions. Visual stability indicator informs you when measurements have stabilized, eliminating guesswork. Nonvolatile memory stores up to 500 data sets. Programmable functions include data logging intervals, limit alarms, and password protection. Data is easily exported to a computer via RS-232 port. Order RS-232 cable and optional RS-232 to USB adapter separately below.

**What's included:** conductivity/temperature probe 35608-74 (CON 700) or 35412-10 (CON 2700), electrode stand, and universal 100/240 VAC power supply.

CON TDS SAL RES °C/°F



CON 2700 meter 35412-00

ISO9001:2008  
CERTIFIED SUPPLIER

CE 3 year warranty  
Meter only

Catalog number	GM-35411-00	GM-35412-00
Pre-calibrated cat. no.	GM-35411-01	GM-35412-01
Description	CON 700	CON 2700
Range	Conductivity: 0.0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 200.0 mS TDS: 0.00 to 100.0 ppt Salinity: — Resistivity: — Temperature: 32.0 to 212°F (0.0 to 100.0°C)	Conductivity: 0.0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 500.0 mS TDS: 0.050 to 500.0 ppt Salinity: 0.0 to 80.0 ppt Resistivity: 2.000 Ω to 20.0 MΩ Temperature: 32.0 to 212°F (0.0 to 100.0°C)
Resolution	Conductivity: 0.01, 0.1, 1 µS; 0.01, 0.1 mS TDS: 0.01, 0.1, 1 ppm; 0.01, 0.1 ppt Salinity: — Resistivity: — Temperature: 0.1°F or °C	Conductivity: 0.01, 0.1 µS; 0.001, 0.01, 0.1 mS TDS: 0.01, 0.1 ppm; 0.001, 0.01, 0.1 ppt Salinity: 0.01, 0.1 ppm; 0.001, 0.01, 0.1 ppt Resistivity: 0.01 MΩ, 0.001, 0.01 kΩ, 0.01, 0.1 Ω Temperature: 0.1°F or °C
Accuracy	Conductivity: ±1% full-scale TDS: ±1% full-scale Salinity: — Resistivity: — Temperature: ±0.9°F (±0.5°C)	Conductivity: ±1% full-scale TDS: ±1% full-scale Salinity: ±1% full-scale Resistivity: ±1% full-scale Temperature: ±0.5°F (±0.3°C)
Temperature compensation	Automatic or manual, adjustable from 0.0 to 10% per °F/°C	Automatic or manual, adjustable from 0.0 to 10% per °F/°C
Cell constant (K)	Select from K = 0.1, 1.0, or 10	0.010 to 10.000
Conductivity-to-TDS factor	Adjustable from 0.4 to 1.0	Adjustable from 0.4 to 1.0
Data logging	100 data sets	500 data sets
Output	—	RS-232
Display	3¼" x 2⅞" (8.3 x 6.2 cm) custom LCD	3¼" x 2⅞" (8.3 x 6.2 cm) graphic LCD with backlight
Power	100/240 VAC with universal adapter (included)	100/240 VAC with universal adapter (included)
Dimensions (L x W x H)	6⅞" x 6⅞" x 2¾" (15.5 x 17.5 x 6.9 cm)	6⅞" x 6⅞" x 2¾" (15.5 x 17.5 x 6.9 cm)
Price		
Pre-calibrated price		



CON 700 meter 35411-00

Catalog number	Cell constant (K)	Body/electrode	Price
<b>2-cell conductivity probes for CON 700 or CON 2700 meters</b>			
GM-35608-72	0.1	Epoxy/platinum	
GM-35608-74	1.0	Ultem®/stainless steel	
GM-35608-76	1.0	Glass/platinum	
GM-35608-78	10	Epoxy/platinum	
<b>4-cell conductivity probes for CON 2700 meter only</b>			
GM-35608-90	0.1	Epoxy/platinum	
GM-35412-10	1.0	Epoxy/graphite	
GM-35608-92	1.0	Glass/platinum	
GM-35608-94	10	Epoxy/platinum	

GM-35420-01 RS-232 cable for 2700 series meters

GM-22050-58 RS-232 to USB adapter (requires cable 35420-01)

GM-17090-30 NIST-traceable calibration with data for conductivity meters

### TECHNICAL info!

#### 2-cell vs 4-cell conductivity probes

Most conductivity meters use either 2-cell or 4-cell conductivity probes. 2-cell probes feature electrode surfaces made of platinum, titanium, gold-plated nickel, or graphite, and are good for general applications. 4-cell electrodes use a reference voltage to compensate for any polarization or fouling of the electrode plates. The reference voltage ensures measurements indicate actual conductivity independent of electrode condition, resulting in higher accuracy.

Conductivity

Electrochemistry

pH/ION

**Cole-Parmer Conductivity Solutions, NIST-Traceable Reference Materials**

Calibration report from an ISO Guide 34 and ISO 17025 accredited lab for the highest accuracy available—up to ±0.25%!

**A Batch-Tested Bottles.** Each bottle includes a NIST-traceable calibration report supplied by the manufacturer and information from batch testing. Also includes step-by-step calibration instructions and temperature-compensation chart. One 16-oz (473-mL) glass bottle.



**A**  
00652-24

**B Individually Tested Bottles.** Individually serial numbered and tested bottles include a NIST-traceable calibration report supplied by the manufacturer and information from individual bottle testing. Also includes step-by-step calibration instructions and temperature-compensation chart. One 16-oz (473-mL) glass bottle.

**C One-Shot® Vials.** These convenient single-use vials eliminate contamination concerns and are ideal for the lab as well as the field. Calibration is performed in the large 3½" (8.9 cm) H x 1¾" (4.4 cm) dia, PE vial that accommodates virtually any conductivity probe. Includes an NIST-traceable calibration report supplied by the manufacturer and temperature-compensation chart. Pack of six vials, each containing 3.4 oz (100 mL) of conductivity solution.



**C**  
00652-62

Catalog number	Conductivity (µS)	Resistivity (MΩ)	TDS (ppm)	Price
<b>A Batch tested</b> , one 16-oz (473-mL) glass bottle				
GM-00652-20	1	1	0.66	
GM-00652-22	5	0.2	3.3	
GM-00652-24	10	0.1	6.6	
GM-00652-26	100	0.01	66	
GM-00652-28	1000	0.001	666	
GM-00652-30	1413	0.00071	933	
GM-00652-32	10,000	0.0001	6666	
GM-00652-34	100,000	0.00001	66,666	
GM-00652-53	150,000	0.0000066	100,000	
GM-00652-55	200,000	0.000005	133,333	

<b>B Individually tested</b> , one 16-oz (473-mL) glass bottle				
GM-00652-40	1	1	0.66	
GM-00652-42	5	0.2	3.3	
GM-00652-44	10	0.1	6.6	
GM-00652-46	100	0.01	66	
GM-00652-48	1000	0.001	666	
GM-00652-50	1413	0.00071	933	
GM-00652-52	10,000	0.0001	6666	
GM-00652-54	100,000	0.00001	66,666	
GM-00652-56	150,000	0.0000066	100,000	
GM-00652-58	200,000	0.000005	133,333	

<b>C One-Shot®</b> , pack of six 3.4-oz (100-mL) vials				
GM-00652-60	5	0.2	3.3	
GM-00652-62	10	0.1	6.6	
GM-00652-64	100	0.01	66	
GM-00652-66	1000	0.001	666	
GM-00652-68	1413	0.00071	933	
GM-00652-70	10,000	0.0001	6666	
GM-00652-72	100,000	0.00001	66,666	
GM-00652-76	150,000	0.0000066	100,000	
GM-00652-78	200,000	0.000005	133,333	
GM-00652-74	Assortment†	—	—	

†Assortment has one 100-mL vial each of 10, 100, 1000, 1413, 10,000, and 100,000 µS.

**OAKTON® Calibration Solutions**

Reliable standards for more accurate readings

Standards have KCl, NaCl and 442 conversions printed on the bottle for ease of use. Temperature corrections are printed on the bottle, with the certified values listed in the tables and are referenced to 25°C.



Includes a NIST-traceable calibration report supplied by the manufacturer. One 17-oz (500-mL) bottle.

00653-16

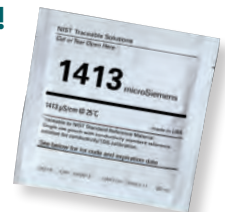
Catalog number	Conductivity (µS)	Conductivity-to-TDS calibration values			Price
		ppm KCl	ppm NaCl	ppm 442	
GM-00653-23	23	11.6	10.7	14.74	
GM-00653-16	84	40.38	38.04	50.5	
GM-00653-47	447	226	215	300	
GM-00653-18	1413	745	702	1000	
GM-00653-15	1500	757	737	1050	
GM-00653-27	2070	1045	1041	1500	
GM-00653-20	2764	1382	1414	2062	
GM-00653-89	8974	5101	4487	7608	
GM-00606-10	12,880	7447	7230	11,367	
GM-00653-50	15,000	8759	8532	13,455	
GM-00653-32	80,000	52,168	48,384	79,688	

**Conductivity Calibration Pouches**

Single-use pouches for calibrating anywhere!

A µS-to-ppm conversion table is printed on each pack for quick reference.

Calibration pouches include a NIST-traceable calibration report supplied by the manufacturer.



35653-11

Catalog number	Conductivity (µS)	Conductivity-to-TDS calibration values			Price/pk of 20
		ppm KCl	ppm NaCl	ppm 442	
GM-35653-09	10	4.8	4.7	7.0	
GM-35653-10	447	226	216	300	
GM-35653-11	1413	745	702	1000	
GM-35653-12	2764	1382	1414	2062	
GM-35653-13	15,000	8759	8532	13,445	
GM-35653-00	Rinse solution	—	—	—	

**MYRON L Calibration Solutions**

Accurate to ±1% for reliable readings

Standards have NaCl and 442™ conversions included for ease of use. Conductivity values referenced to 25°C.

Include a NIST-traceable calibration report supplied by the manufacturer. One 32-oz (946-mL) bottle.

01489-93



Catalog number	Conductivity (µS)	Conductivity-to-TDS calibration values			Price
		ppm KCl	ppm NaCl	ppm 442	
GM-01489-90	23.8	—	11.08	15	
GM-01489-91	46.7	—	21.8	30	
GM-01489-92	70	—	32.8	45	
GM-01489-93	445	—	214	300	
GM-01489-94	700	—	340	478	
GM-01489-95	2060	—	1036	1500	
GM-01489-96	3900	—	2027	3000	
GM-01489-97	7000	—	3740	5687	
GM-01489-98	16,630	—	9462	15,000	
GM-01489-99	30,100	—	18,235	30,000	



# You're Out? We're Not!

Thousands of **highlighted** items



## OAKION® Waterproof EcoTestr™ pH 2 Pocket Meter

**Easy-to-read display with an easy-to-afford price!**

- Ergonomically designed LCD means measurements can be seen at a glance
- Economical and easy to use
- Waterproof and dustproof housing designed for use in dirty or damp field conditions

Easy-to-read display—no need to turn your head or tilt the tester. This low-cost meter is perfect for most applications. Single-junction electrode is recessed to protect against breakage. Meter offers up to three-point calibration with autobuffer recognition for quick calibrations. Automatic temperature compensation ensures accurate reading under changing conditions. Hold function allows you to lock a measured value. Auto-off feature prolongs battery life. Built-in belt clip lets you hang your meter when not in use.

**What's included:** four 1.5 V button cell batteries.

### Specifications

<b>Range:</b> 0.0 to 14.0 pH	<b>Calibration:</b> up to three point	<b>Power:</b> four 1.5 V button cell batteries (included)
<b>Resolution:</b> 0.1 pH	<b>Buffer recognition:</b> 4.0, 7.0, or 10.0	<b>Battery life:</b> >300 hours
<b>Accuracy:</b> ±0.1 pH	<b>Operating temperature:</b> 32 to 122°F (0 to 50°C)	<b>Dimensions (W x H x D):</b> 1½" x 6¼" x 1½" (3.9 x 15.9 x 2.9 cm)
<b>Temp compensation:</b> automatic	<b>Display:</b> three-digit vertical LCD	



Catalog number	Description	Price
<a href="#">GM-35423-10</a>	EcoTestr pH 2 pocket meter	

[GM-09377-16](#) Replacement batteries, 1.5 V. Pack of 6

[GM-17101-45](#) NIST-traceable calibration for pH pocket meters (non-BNC)



35423-10

Conductivity

Electrochemistry

## OAKION® Waterproof Multiparameter Testr™ 35-Series Pocket Meters

**The ultimate testers for pH, conductivity, TDS, salinity, and temperature!**

pH CON TDS SAL °C/°F

Great for water, wastewater, laboratory or plant use, these multiparameter meters combine measurement capabilities of three testers in one convenient pocket-sized unit. Long-life pH electrode and stainless steel pin-style conductivity sensors provide a wide range of sample compatibility. Replaceable sensor module saves you money by reusing the meter body.

Advanced features include up to 5 point pH calibration with NIST or USA autobuffer recognition, auto-shutoff, user-adjustable temperature coefficient, self-adjusting TDS and salinity factor, and low-battery indicator. The IP67-rated housing floats if accidentally dropped into water.

**What's included:** protective plastic storage case, lanyard, and batteries.



Catalog number	<a href="#">GM-35425-00</a>	<a href="#">GM-35425-05</a>	<a href="#">GM-35425-10</a>
Model	PCTestr 35	PTTestr 35	PCSTestr 35
Parameters	pH/conductivity/temperature	pH/TDS/temperature	pH/conductivity/TDS/salinity/temperature
Range	pH: 0 to 14.0 Conductivity: 0 to 2000 µS/cm; 2.00 to 20.00 mS/cm TDS: — Salinity: — Temperature (ATC): 32 to 112°F (0 to 50.0°C)	pH: 0 to 14.0 TDS: 0 to 1000 ppm; 1.00 to 10.00 ppt Salinity: — Temperature (ATC): 32 to 112°F (0 to 50.0°C)	pH: 0.00 to 14.00 Conductivity: 0.0 to 200.0, 200 to 2000 µS/cm; 2.00 to 20.00 mS/cm TDS: 0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt Salinity: 0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt Temperature (ATC): 32 to 112°F (0 to 50.0°C)
Resolution	pH: 0.1 Conductivity: 0.1 µS/cm; 0.01 mS/cm TDS: — Salinity: — Temperature (ATC): 0.1°F (0.1°C)	pH: 0.1 TDS: 1 ppm; 0.01 ppt Salinity: — Temperature (ATC): 0.1°F (0.1°C)	pH: 0.01 Conductivity: 0.1 µS, 1 µS/cm; 0.01 mS/cm TDS: 0.1 ppm, 1 ppm; 0.01 ppt Salinity: 0.1 ppm, 1 ppm; 0.01 ppt; 0.01%
Accuracy	pH: ±0.1 Conductivity: 1% full scale TDS: — Salinity: — Temperature (ATC): ±0.9°F (±0.5°C)	pH: ±0.1 TDS: 1% full-scale Salinity: — Temperature (ATC): ±0.9°F (±0.5°C)	pH: ±0.01 Conductivity: 1% full-scale TDS: 1% full-scale Salinity: 1% full-scale Temperature (ATC): ±0.9°F (±0.5°C)
Temperature compensation	Automatic or manual, 32 to 122°F (0 to 50°C)		
Calibration	pH: 3 to 5 pH points Conductivity: 1 to 3 point standard/manual calibration		
Buffer recognition	USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45		
Display	pH or conductivity or TDS or salinity: 4-digit LCD; Temperature: 4-digit LCD		
Power	Four 1.5 V button cell batteries (included)		
Dimensions (L x dia)	6½" x 1½" (16.5 x 3.8 cm)		
Price			

[GM-35425-50](#) Replacement pH/conductivity/TDS/salinity sensor module

[GM-09377-16](#) Replacement batteries, 1.5 V button cell. Pack of 6

[GM-17101-45](#) NIST-traceable calibration for pH pocket meters (non-BNC)

[GM-17090-30](#) NIST-traceable calibration for conductivity meters



35425-10

pH/lon

## OAKTON® pH 5+ and pH 6+ Meters

High ±0.01 pH accuracy at economical prices

- Convenient, compact design
- Up to five-point push-button calibration with autobuffer recognition
- Displays pH and temperature with the press of a button

These meters are perfect for fast, accurate results. Automatic temperature compensation (ATC) ensures accuracy from 0 to 100°C. The pH 6 also reads mV. Meters include a protective rubber boot that also acts as a meter stand.

**Meter includes:** ATC probe, protective rubber boot, and batteries.

**Meter with probe adds:** pH electrode 59001-65

**Meter kit adds:** "All-in-one" pH electrode, pH buffer solutions, sample bottles, rinse bottle, and carrying case.



35613-54

ISO9001:2008  
CERTIFIED SUPPLIER

CE 3 year  
warranty  
Meter only

Calibrate NOW & SAVE!

INNOCAL®

Save 10% off the NIST-traceable calibration when you order your product precalibrated.

### Specifications

**Display:** 3½-digit LCD

**Temp compensation:** automatic with ATC probe, 0 to 100°C

**Power:** four AAA batteries (included)

**Battery life:** 200 hours continuous

**Dimensions (L x W x H):**  
6¾" x 3¾" x 1⅞"  
(15.7 x 8.5 x 4.2 cm)

Mode	pH	mV (pH 6+ only)	Temperature
Range	0.00 to 14.00 pH	±1000 mV or rel mV	0 to 100.0°C
Resolution	0.01 pH	1 mV	0.1°C
Accuracy	±0.01 pH	±2 mV	±0.5°C
Calibration	Up to five points: pH 1.68, 4.01, 7.00, 10.00, 12.45 (USA); pH 1.68, 4.01, 6.86, 9.18, 12.45 (NIST) pH 4.10, 6.97 (Pb)	±20 mV	Offset 0.1°C increments

Model	Description	Cat. no.	Price	Precalibrated	
				Cat. no.	Price
pH 5+	Meter only	<a href="#">GM-35613-50</a>		<a href="#">GM-35613-51</a>	
pH 6+		<a href="#">GM-35613-20</a>		<a href="#">GM-35613-41</a>	
pH 5+	Meter with probe	<a href="#">GM-35613-52</a>		<a href="#">GM-35613-53</a>	
pH 6+		<a href="#">GM-35613-22</a>		<a href="#">GM-35613-42</a>	
pH 5+	Meter kit	<a href="#">GM-35613-54</a>		<a href="#">GM-35613-55</a>	
pH 6+		<a href="#">GM-35613-24</a>		<a href="#">GM-35613-44</a>	

**GM-59001-65 Replacement pH electrode;** single-junction, gel-filled. Epoxy body, BNC connector

**GM-35811-71 "All-in-one" combination pH probe** with built-in ATC; single-junction sealed, epoxy body, BNC connector

**GM-35811-72 "All-in-one" combination pH probe** with built-in ATC; double junction sealed, epoxy body, BNC connector

**GM-35613-05 Replacement ATC probe,** stainless steel

**GM-09376-00 Replacement batteries,** AAA. Pack of 12

## PH-1 Module for iPhone®/iPad®/iPod®

Convert your iPhone into a pH meter

pH mV °C/°F

- Powered by the iPhone; no charging required
- Transfer data by email or via USB connection
- Calibrate meter with 2, 3, 4...up to 99 points
- Automatic and manual temperature compensation in °F or °C

Easily display pH, mV, ambient temperature, and ATC temperature measurements on your iPhone, iPad, or iPod. Simply plug the PH-1 module into your device to measure and record values, date and time, and GPS location. Follow the on-screen prompts to install the free app, then connect your electrode, select temperature compensation and calibrate. pH and ORP measurements can be taken utilizing any electrode with a BNC connector.

**Note:** iPhone, iPad, or iPod are not included.



NEW

Module 05760-22 with electrode (iPhone® not included)

PH-1 module 05760-12

### Specifications

Range	pH	0.00 to 14.00
	mV	±1250
	Temperature	0 to 100°C
Resolution	pH	0.01
	mV	1
Accuracy	Temperature	0.1°C
	pH	±0.01
	mV	±1
	Temperature	±0.1°C
Temperature compensation	Manual, automatic, ambient air	
Sensor connector	BNC	
Temperature connector	2.5 mm plug, 30 KΩ	
Calibration	Up to 99 points	
Power	From iPhone, iPad, or iPod	
Dimensions (L x W x H)	¾" x ½" x 2" (8.3 x 1.3 x 5.1 cm)	

Catalog number	Description	Price
<a href="#">GM-05760-12</a>	PH-1 module only	
<a href="#">GM-05760-22</a>	PH-1 module with pH/ATC electrode	

**GM-05760-16 pH electrode** with temperature compensation

Find MORE!

For pH Buffers and Solutions, see pages 92.

# You're Out? We're Not!

Thousands of **highlighted** items



## OAKTON® Benchtop pH 700/2700 and Ion 700/2700 Meters

### Designed for the requirements of today's laboratory

- Economical 700 series is ideal for basic laboratory measurements
- Advanced 2700 series handles your GLP/GMP research-grade applications

These Oakton meters are designed to offer you the best value! Compact footprint conserves valuable benchtop space and the extra-large LCD provides excellent visibility—even from a distance. A convenient pull-out quick reference card keeps procedures handy at all times.

**pH 700 and Ion 700 Meters** are ideal for your basic, routine measurements. The pH 700 measures pH, mV, relative mV, and temperature, and the Ion 700 adds ion measurement capabilities with readout in ppm for easy use. Automatic temperature compensation (ATC) maintains reading accuracy even with fluctuating temperatures. Meters features five-point pH calibration, automatic buffer recognition for both USA and NIST pH buffers, Hold function, and electrode diagnostics.

**pH 2700 and Ion 2700 Meters** offer all the features of the 700 series, and meet GLP/GMP requirements with time/date and calibration stamp for all stored data. Advanced options for data logging for customization including alarm features. Large, informative backlit LCD shows readings with temperature, stability indicator, electrode status, calibration points, time and date, and more. Comprehensive self diagnostics make troubleshooting a breeze.

**Meter kits include:** pH electrode 35805-04, ATC probe 35613-13, 60 mL of electrode fill solution, electrode stand, and universal power adapter.



pH mV ISE °C/°F

Conductivity

Electrochemistry

pH/Ion

### Specifications

**Slope control:** 80 to 120%      **Operating temperature:** 32 to 122°F (0 to 50°C)

ISO9001:2008  
CERTIFIED SUPPLIER

CE      3 year warranty  
Meter only

Catalog number	GM-35419-10	GM-35419-20	GM-35420-20	GM-35421-00
Precalibrated catalog number	GM-35419-11	GM-35419-24	GM-35420-21	GM-35421-01
Model	pH 700 kit	Ion 700 kit	pH 2700 kit	Ion 2700 kit
Range	pH	-2.00 to 16.00		-2.000 to 20.000
	mV/Rel mV	±2000		±2000
	ISE	—	0.01 to 2000 ppm	—
	Temperature	32 to 100°F (0.0 to 100.0°C)		32 to 100°F (0.0 to 100.0°C)
Resolution	pH	0.01 pH		0.001, 0.01, 0.1 pH
	mV/Rel mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV		0.1 mV
	ISE	—	0.01 to 2000 ppm	—
	Temperature	0.1°F or °C		0.1°F or °C
Accuracy	pH	±0.01 pH		±0.002 + 1 LSD
	mV/Rel mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV		±0.2 mV
	ISE	—	±0.5% of reading (monovalent); ±1% of reading (divalent)	±0.5% of reading (monovalent); ±1% of reading (divalent)
	Temperature	±0.9°F (±0.5°C)		±0.5°F (±0.3°C)
Calibration	pH	Up to 5 points with autobuffer recognition		Up to 6 points with autobuffer recognition
	mV	Up to ±150 mV offset adjustment		Up to ±150 mV offset adjustment
	ISE	—	From 2 to 5 consecutive points (0.1, 1.0, 10.0, 100.0, 1000 ppm)	From 2 to 8 concentration standards
Temperature compensation	Automatic or manual from 32 to 100°F (0 to 100°C)		Automatic or manual from 32 to 100°F (0 to 100°C)	
Buffer recognition	USA or NIST buffer sets		USA, NIST, DIN, or custom buffer sets	
Data logging	100 data sets		500 data sets with time-and-date stamp	
Output	—		RS-232	
Display	Dual-line 3/4" x 2 7/16" (8.3 x 6.2 cm) LCD		3/4" x 2 7/16" (8.3 x 6.2 cm) graphic LCD with backlight	
Power	100/240 VAC, 50/60 Hz		100/240 VAC, 50/60 Hz	
Dimensions (L x W x H)	6 1/8" x 6 7/8" x 2 3/4" (15.5 x 17.5 x 6.9 cm)		6 1/8" x 6 7/8" x 2 3/4" (15.5 x 17.5 x 6.9 cm)	
Price				
Precalibrated price				

**GM-35811-71** "All-in-one" combination pH electrode; single-junction, gel-filled, epoxy body

**GM-35805-04** Replacement combination pH electrode; double-junction, refillable, glass body

**GM-35613-13** Replacement ATC probe, stainless steel



Your Application Solved! Can't find the right product? Our specialists can!

## Cole-Parmer Epoxy-Body Combination pH and Combination ORP Electrodes

Conductivity

Electrochemistry

pH/Ion

### Get fast, stable readings

- Epoxy-body housing resists impact
- Ideal for your general-purpose applications in the lab or field
- Compatible with most brands of pH meter

These electrodes have the impact-resistant qualities of an epoxy body. Electrodes provide a fast, stable response and are ideal for prolonged pH or ORP readings. Electrodes with sealed, gel-filled design require virtually no maintenance. Electrodes with PTFE reference-junction offers extended electrode life. All listed electrodes have Ag/AgCl reference cells.

**What's included:** 3.3-ft (1-m) cable with BNC connector.



### Watch the VIDEO!

Keep your electrode operating correctly. Learn about proper electrode maintenance.

[ColeParmer.com/videos](http://ColeParmer.com/videos)



Key	Description	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
<b>General-purpose pH electrodes</b>							
<b>A</b>	General purpose For dirty samples	Single	Sealed	176°F (80°C)	127 x 12	<a href="#">GM-59001-65</a>	
		Double				<a href="#">GM-59001-70</a>	
<b>B</b>	General purpose, refillable For dirty samples, refillable	Single	Refillable <sup>†</sup>	176°F (80°C)	148 x 12	<a href="#">GM-05992-30</a>	
		Double				<a href="#">GM-05991-12</a>	
<b>C</b>	General purpose, with removable bulb guard	Single	Sealed	176°F (80°C)	148 x 12	<a href="#">GM-05992-40</a>	
<b>D</b>	Extra-long neck for test tube sampling	Single	Sealed	176°F (80°C)	220 x 6	<a href="#">GM-05990-45</a>	
<b>E</b>	Flat tip for surface or low-volume sampling	Single	Sealed	176°F (80°C)	127 x 12	<a href="#">GM-05990-65</a>	
<b>PTFE reference-junction pH electrodes (clog resistant)</b>							
<b>F</b>	General purpose For dirty samples	Single	Sealed	212°F (100°C)	110 x 12	<a href="#">GM-05992-00</a>	
		Double				<a href="#">GM-05992-02</a>	
<b>Special-purpose pH electrodes</b>							
<b>G</b>	Right-angle mount	Single	Sealed	176°F (80°C)	140 x 12	<a href="#">GM-05992-55</a>	
<b>H</b>	Coiled-cable for dirty samples	Double				<a href="#">GM-05993-28</a>	
<b>I</b>	Spear-tip for dirty samples					110 x 10	<a href="#">GM-59002-24</a>
<b>ORP electrodes</b>							
<b>A</b>	General purpose For dirty samples	Single	Sealed	176°F (80°C)	127 x 12	<a href="#">GM-59001-75</a>	
		Double				<a href="#">GM-59001-77</a>	
<b>J</b>	General purpose, refillable	Single	Refillable <sup>††</sup>	176°F (80°C)	155 x 12	<a href="#">GM-05990-55</a>	

<sup>†</sup>Use fill solution 05992-48

<sup>‡</sup>Use fill solution 05993-26

<sup>††</sup>Use fill solution 05992-47

[GM-05992-48](#) Reference fill solution, 4 M KCl. Two 125-mL bottles  
[GM-05993-26](#) Reference fill solution, KCl gel with AgCl. 1 qt (956 mL)

[GM-05992-47](#) Reference fill solution, 3.8 M KCl with AgCl.  
Two 125-mL bottles

[GM-05983-25](#) Adapter, BNC to US standard plug

# You're Out? We're Not!

Thousands of **highlighted** items



## OAKTON® pH Buffer Solutions

Quality buffers keep meters reading accurately

Oakton buffers for meters with 0.01 resolution are standardized against NIST-traceable pH references. Sold in individual bottles: 500-mL bottles are available in cases of 12; the 4-L bottles in cases of four.

pH	500-mL bottles				1-L bottles		4-L bottles			
	Catalog number	Price/ea	Catalog number	Price/cs of 12	Catalog number	Price/ea	Catalog number	Price/ea	Catalog number	Price/cs of 4
1.68	<b>GM-00654-01</b>									
4.01	<b>GM-00654-00</b>		<b>GM-05942-21</b>		<b>GM-05942-22</b>		<b>GM-05942-24</b>		<b>GM-05942-25</b>	
6.86	<b>GM-00654-03</b>									
7.00	<b>GM-00654-04</b>		<b>GM-05942-41</b>		<b>GM-05942-42</b>		<b>GM-05942-44</b>		<b>GM-05942-45</b>	
9.18	<b>GM-00654-07</b>									
10.00	<b>GM-00654-08</b>		<b>GM-05942-61</b>		<b>GM-05942-62</b>		<b>GM-05942-64</b>		<b>GM-05942-65</b>	
12.45	<b>GM-00654-12</b>									



Conductivity

Electrochemistry

pH/Ion

## pHydrion® Plastic pH Test Strips

Immediate pH results available in brilliant long-lasting colors

**NEW**

These direct-reading pH strips provide a simple, single color match with three times the matching area than competitive strips. Premium-quality plastic strips offer clear single color matches at every pH interval. Pack contains 100 test strips in a handy flip-top vial with matching color chart.



59200-40

Catalog number	pH range	Price/pk
<b>GM-59200-40</b>	0 to 14	
<b>GM-59200-42</b>	0 to 6	
<b>GM-59200-44</b>	5 to 9	
<b>GM-59200-46</b>	6.5 to 13	
<b>GM-59200-48</b>	5.5 to 8	

## OAKTON® pH Buffer Pouches

Accurate and convenient calibrations on the go

Buffers are standardized against NIST-traceable pH references. Pack of 20 pouches.

Catalog number	pH	Price/pk
<b>GM-35653-01</b>	4.01	
<b>GM-35653-02</b>	7.00	
<b>GM-35653-03</b>	10.00	
<b>GM-35653-00</b>	Rinse solution	



35653-00

**GM-35653-04** Buffer pouch assortment pack; contains five pouches each of pH 4, 7, and 10 buffers and rinse solution

## OAKTON® pH Buffer and pH Solution Packs

Economical and convenient packages for pH measurement and maintenance

The pH buffer pack includes one 500-mL bottle each of pH 4, 7, and 10 NIST-traceable buffers. The complete pH solution pack also includes one 500-mL bottle of cleaning solution and one 500-mL bottle of electrode storage solution.



05942-15

Catalog number	Description	Qty/pk	Price/pk
<b>GM-05942-10</b>	pH buffer pack	3 bottles	
<b>GM-05942-15</b>	pH solution pack	5 bottles	

## Cole-Parmer pH Buffers, NIST-Traceable Reference Materials

Include a calibration report from an ISO Guide 34 and ISO 17025 accredited laboratory

Available as colorless or color-coded solutions, in multiple packaging sizes

**NEW**

Cole-Parmer pH buffers are compared against and are traceable to NIST Standard Reference Materials. Each bottle includes a NIST-traceable calibration report supplied by the manufacturer. Also includes step-by-step calibration instructions and temperature compensation chart. Store at room temperature.



00651-06

00651-70

pH	500-mL bottles		1-L bottles		4-L bottles	
	Catalog number	Price	Catalog number	Price	Catalog number	Price

### Colorless buffers

4.01	<b>GM-00651-00</b>		<b>GM-00651-30</b>		<b>GM-00651-70</b>	
7.00	<b>GM-00651-02</b>		<b>GM-00651-32</b>		<b>GM-00651-72</b>	
10.00	<b>GM-00651-04</b>		<b>GM-00651-34</b>		<b>GM-00651-74</b>	

### Color-coded buffers

4.01 (red)	<b>GM-00651-06</b>		<b>GM-00651-36</b>		<b>GM-00651-76</b>	
7.00 (yellow)	<b>GM-00651-08</b>		<b>GM-00651-38</b>		<b>GM-00651-78</b>	
10.00 (blue)	<b>GM-00651-10</b>		<b>GM-00651-40</b>		<b>GM-00651-80</b>	

**MORE online!**

For more pH accessories, go to . . .

[ColeParmer.com](http://ColeParmer.com)

## OAKION® Electrode Cleaning and Storage Solutions

Keep your electrodes performing accurately



00653-04

00653-06

Remove grease, oil deposits, and protein from your electrodes with our cleaning solution. After cleaning, keep your electrodes in proper working condition with our storage solution. Available as an individual 500-mL bottle or in a case of 24.

Solution type	Catalog number	Price/ea	Catalog number	Price/cs
Cleaning	<a href="#">GM-00653-06</a>		<a href="#">GM-35655-06</a>	
Storage	<a href="#">GM-00653-04</a>		<a href="#">GM-35655-04</a>	

## pH Buffer Tablets

Ideal when small amounts of buffer are needed

To make your own fresh buffer solutions, simply stir a tablet into 20 mL of distilled water. Bag of 50.



55200-00

Catalog number	pH	Price/bg
<a href="#">GM-55200-00</a>	4	
<a href="#">GM-55200-02</a>	7	

## Thermo Scientific™ Orion™ pH Buffers

Color-coded for ease of use



55350-48

55350-44

55350-40

Thermo Scientific Orion pH buffers are available in a 475-mL (pint) bottle and portable 5 x 60-mL convenience packs. The All-in-One™ pH buffer kits include a pint each of 4, 7, and 10 buffer; either ROSS™ or standard electrode storage solution; and electrode storage bottle.

Each buffer is color-coded for easy identification and packaged with buffer/temperature tables for accurate calibrations. Standardized against NIST-traceable pH references for superior accuracy.

pH	5 x 60-mL bottles		475-mL bottles	
	Catalog number	Price	Catalog number	Price
1.68	<a href="#">GM-55350-26</a>		<a href="#">GM-55350-28</a>	
4.01	<a href="#">GM-55350-40</a>		<a href="#">GM-55350-42</a>	
5.00	—	—	<a href="#">GM-55350-38</a>	
6.86	<a href="#">GM-55350-54</a>		<a href="#">GM-55350-56</a>	
7.00	<a href="#">GM-55350-44</a>		<a href="#">GM-55350-46</a>	
9.18	<a href="#">GM-55350-58</a>		<a href="#">GM-55350-60</a>	
10.01	<a href="#">GM-55350-48</a>		<a href="#">GM-55350-52</a>	
12.46	<a href="#">GM-55350-62</a>		<a href="#">GM-55350-64</a>	

[GM-55350-66](#) ROSS All-in-One pH buffer kit

[GM-55350-68](#) Standard All-in-One pH buffer kit

## OAKION®

### Flexible Electrode Holder

Keeps electrodes in position

Holds up to four standard size electrodes (14-mm dia max) and one ATC probe. Weighted 6" (15.2 cm) diameter base lets you pivot holder 360° for added convenience. Flexible arm lets you move electrode side to side or up and down while keeping electrode at a constant vertical angle.



Catalog number	Description	Price
<a href="#">GM-35617-50</a>	Electrode holder	

## OAKION® Reference Fill Solutions

Easily refill electrodes

Choose from two types of solutions: 3.8 KCl saturated with AgCl for Ag/AgCl electrodes, or 4 KCl for calomel (Hg/Hg<sub>2</sub>Cl<sub>2</sub>). Both solutions come in a pack of two 125-mL bottles with syringe for easy dispensing.



05992-47

Catalog number	Description	Price/pk
<a href="#">GM-05992-47</a>	3.8 KCl with AgCl	
<a href="#">GM-05992-48</a>	4 KCl	

### MORE online!

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[ColeParmer.com](#)

## OAKION® Waterproof pHTestr® Calibration Kits

Everything you need to calibrate—in one convenient kit!



35634-90

Store and organize all the components you need for fast, reliable calibration and measurement. The hard carrying case contains all the materials you need to calibrate in the field including premixed, premeasured buffers.

**What's included:** one pHTestr except model 35624-70; two single-use pouches of pH 4.01, pH 7.00, pH 10.00 each, and rinse solution; one sample jar; and sturdy carrying case.

Catalog number	Meter included	Price
<a href="#">GM-35624-70</a>	None	
<a href="#">GM-35634-70</a>	Waterproof pHTestr 10	
<a href="#">GM-35634-80</a>	Waterproof pHTestr 20	
<a href="#">GM-35634-90</a>	Waterproof pHTestr 30	



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## Cole-Parmer Self-Cleaning Flat pH and ORP Electrodes

### Flat electrode surface prevents buildup of solids

- Double junctions for difficult applications
- Annular junction reduces reference cell fouling

Flat surface does not collect suspended solids—fluid flow across the electrode provides a cleaning action that extends electrode life and improves performance.

Choose either a CPVC housing or chemical-resistant Ryton® PPS housing. Both electrode types have a Viton® O-ring to hold glass bulb in place. Built-in ATC elements and BNC connectors match a variety of meters and controllers.



Ryton PPS electrode 27003-22

### Specifications

<b>Thread size:</b> 3/4" NPT(M)	<b>Cable:</b> 10 ft (3 m), with BNC connector
<b>Insertion depth:</b> 1.75" (4.4 cm)	<b>Temperature range</b>
<b>Housing length:</b> 6.75" (17.1 cm)	CPVC: 32 to 176°F (0 to 80°C)
<b>Housing material:</b> CPVC or Ryton PPS	Ryton PPS: 32 to 212°F (0 to 100°C)
	<b>Maximum pressure:</b> 100 psi

### pH Electrodes

pH electrodes, CPVC housing, 0 to 12 pH		pH electrodes, Ryton PPS housing, 0 to 12 pH		ATC element	ATC connector
Cat. no.	Price	Cat. no.	Price		
GM-27003-00		GM-27003-20		None	None
GM-27003-02		GM-27003-22		100 Ω RTD	Mini audio plug
GM-27003-12		GM-27003-23		100 Ω RTD	Tinned ends
GM-27003-04		GM-27003-24		1 kΩ RTD	Spade lugs
GM-27003-06		GM-27003-26		100 kΩ thermistor	1/4" phone plug
GM-27003-10		GM-27003-30		3 kΩ Balco	Spade lugs

### ORP Electrodes

Catalog number	Housing material	Band type	Price
GM-27003-40	CPVC	Platinum	
GM-27003-50	Ryton PPS	Platinum	
GM-27003-60	Ryton PPS	Gold	

## Cole-Parmer pH and ORP Electrodes with Probe Guard

### Guard allows full-sized bulb, but protects against damage

- Economical single-junction or rugged double-junction designs

These combination electrodes have 3/4" NPT(M) threads on both ends for use as a submersion or in-line sensor.

Select either a single- or double-junction reference and your choice of temperature compensating (ATC) elements. Double-junction electrodes resist contamination from heavy metals, organics, or compounds that might react with the AgCl reference solution.



### Specifications

<b>Thread size:</b> 3/4" NPT(M)	<b>Cable:</b> 10 ft (3 m), with BNC pH connector
<b>Insertion depth:</b> 1.75" (4.4 cm)	<b>Temperature range:</b>
<b>Housing length:</b> 6.75" (17.1 cm)	32 to 176°F (0 to 80°C)
<b>Housing material:</b> CPVC	<b>Maximum pressure:</b> 100 psi

Catalog number	ATC element	ATC connector	Price
<b>Insertion/submersion, single-junction pH electrodes, 0 to 14 pH</b>			
GM-05993-10	None	None	
GM-27300-21	100 Ω RTD	Mini audio plug	
GM-27300-23	100 Ω RTD	Tinned ends	
GM-27300-24	1 kΩ RTD	Spade lugs	
<b>Insertion/submersion, double-junction pH electrodes, 0 to 14 pH</b>			
GM-27301-20	None	None	
GM-27301-21	100 Ω RTD	Mini audio plug	
GM-27301-23	100 Ω RTD	Tinned ends	
GM-27301-24	1 kΩ RTD	Spade lugs	
<b>Insertion/submersion, single-junction ORP electrode</b>			
GM-27300-19	None	None	
<b>Insertion/submersion, double-junction ORP electrode</b>			
GM-27301-19	None	None	

## Cole-Parmer Semi-Domed Rugged pH Electrodes

### Unique design protects bulb

- Reduce electrolyte leakage and sample contamination—stand up to viscous samples better than PTFE junctions
- Extended life in severe applications
- Graphite-tipped models eliminate electrical noise from your system

These double-junction electrodes have a revolutionary annular ceramic reference-junction and a uniform pore size that reduces contamination and clogging. All electrodes are threaded for insertion into a pipe tee or a submersion pipe. Choose between chemical-resistant Ryton® PPS or graphite-tipped electrodes with solution ground.



Electrode 27020-00

Graphite-tipped electrode 27020-60

### Specifications

<b>Thread size:</b> 3/4" or 1" NPT(M)	<b>Cable:</b> 10 ft (3 m), with BNC pH connector
<b>Insertion depth:</b> 0.9" (2.3 cm)	<b>Temperature range:</b>
<b>Housing length:</b> 5.9" (15 cm)	32 to 230°F (0 to 110°C)
<b>Housing material:</b> Ryton PPS	<b>Maximum pressure:</b> 150 psi

pH electrodes		pH electrodes with graphite tips		ATC element	ATC connector
Catalog number	Price	Catalog number	Price		
<b>3/4" NPT(M) threading, hexagonal body, Ryton PPS, 0 to 14 pH</b>					
GM-27020-00		GM-27020-40		None	None
GM-27020-02		GM-27020-42		100 Ω RTD	Mini audio plug
GM-27020-03		GM-27020-43		100 Ω RTD	Tinned ends
GM-27020-06		GM-27020-46		1 kΩ RTD	Spade lugs
<b>1" NPT(M) threading, round body, Kynar® PVDF, 0 to 14 pH</b>					
GM-27020-20		GM-27020-60		None	None
GM-27020-22		GM-27020-62		100 Ω RTD	Mini audio plug
GM-27020-23		GM-27020-63		100 Ω RTD	Tinned ends
GM-27020-26		GM-27020-66		1 kΩ RTD	Spade lugs

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## EUTECH INSTRUMENTS pH 500 1/4-DIN pH/ORP Transmitter with Display

### Displays pH or ORP plus temperature with 4 to 20 mA output

- Scaleable pH or ORP output with automatic temperature compensation (ATC)
- Accommodates solution ground for use in electrically noisy environments

The pH 500 industrial transmitter with display allows easy setup and calibration without tools. Features input to output isolation plus it accommodates electrodes with a solution ground to operate in symmetrical mode, ensuring proper operation in electrically noisy environments. Display allows local monitoring of measurement and temperature and output signal to a centralized control, data logging, or recording system. Mounting holes allow easy installation on plates, poles, or walls. Order the BNC-to-stripped-wire adapter 56105-60 for proper connections. Order ORP or pH electrodes with solution ground at right.



56717-20

### Accessories

**GM-27018-02** Ryton® PPS body pH electrode with 100 Ω Pt RTD, solution ground, and 10-ft (3-m) cable

**GM-27018-40** Ryton® PPS body, platinum wire ORP electrode with solution ground, and 10-ft (3-m) cable

**GM-56105-60** BNC-to-stripped-wire adapter; connects pH electrodes with BNC connectors to meters with terminal strips

Catalog number		Transmitter	Precalibrated transmitter
		<a href="#">GM-56717-20</a>	<a href="#">GM-56717-27</a>
Range	pH		0.00 to 14.00
	mV		-1000 to 1000
	Temperature		-10 to 110°C
Resolution	pH		0.01 pH
	mV		1 mV
	Temperature		0.1°C
Accuracy	pH		±0.01 pH
	mV		±2 mV
	Temperature		±0.5°C
Temperature compensation		Automatic or manual, 100 Ω Pt RTD, 2- or 3-wire system	
Calibration	pH		Offset ±1 pH
	mV		Offset ±50 mV
	Temperature		None
Slope		Slope 80 to 120%	
Output		4 to 20 mA	
Display		Dual-line LCD	
Housing		1/4-DIN, IP65	
Power		12 to 24 VDC	
Dimensions (W x H x D)		3 3/4" x 3 3/4" x 2 5/8" (96 x 96 x 66 mm)	
Price			

**Calibrate NOW & SAVE!**

**INNOCAL®**

Save 10% off the NIST-traceable calibration when you order your product precalibrated.

## EUTECH INSTRUMENTS pH 190 1/8-DIN pH/ORP Controller

### Improved user interface allows direct access to calibration mode and set point adjustment

- Universal power supply input from 85 to 250 VAC/DC allows use at multiple sites
- Automatic temperature compensation ensures accurate measurements
- Galvanically isolated 4 to 20 mA output for remote monitoring or logging data



56700-10

The 1/8-DIN controller displays the measured parameter value or temperature with a touch of a button. The user interface of the popular pH 200 series was simplified for quick set point review and programming. Access into the calibration mode is accomplished by simply pressing keys on the front panel—no need to remember and enter security codes. All information is displayed on the 14-segment LED display that is easy to read in low light installations.

The controller has two relays that can be set for any combination of low/high level on/off (limit) control. Independently adjustable hysteresis provides accurate control in varying applications and prevents relay chatter near the set point. All data is retained in the nonvolatile memory.

The controller can operate in asymmetrical or symmetrical mode. Asymmetrical mode uses standard industrial pH electrodes and is acceptable for environments that are not electrically noisy. Symmetrical mode eliminates electronic noise problems when using electrodes with solution grounds. Order 100 Ω Pt RTD, tinned-end electrodes with BNC pH connections separately at right.



Catalog number		Controller	Precalibrated controller
		<a href="#">GM-56700-10</a>	<a href="#">GM-56700-75</a>
Range	pH		0.00 to 14.00
	mV		-999 to 1000
	Temperature		-10 to 110°C
Resolution	pH		0.01
	mV		1
	Temperature		0.1°C
Accuracy	pH		±0.01
	mV		±2
	Temperature		±0.5°C
Temperature compensation		Manual or automatic from 0 to 100°C, 100 Ω Pt RTD, 2 or 3 wire	
Control type		On/off (limit)	
Number of set points		Two (high, low)	
Display		4-digit, 14-segment LED	
Output	Relay	Two SPDT (120 VAC, 6 A max; 240 VAC, 3 A max)	
	Current	4 to 20 mA, 200 Ω max load	
Power		85 to 250 VAC, 50/60 Hz	
Dimensions (W x H x D)		3 3/4" x 1 7/8" x 6" (96 x 48 x 152 mm), 1/8 DIN	
Price			

**GM-27018-02** Ryton® PPS body pH electrode with 100 Ω Pt RTD, solution ground, and 10-ft (3-m) cable

**GM-27018-40** Ryton® PPS body, platinum wire ORP electrode with solution ground, and 10-ft (3-m) cable

**GM-50001-00** Power cord; US standard plug, 6 ft (1.8-m), 120 VAC

## Compact USB Data Loggers

### Direct-to-USB connection and easy-to-use functionality

- User-programmable alarm thresholds
- All data loggers come with software



This selection of USB data loggers measures and records a variety of parameters including temperature, humidity, voltage, current, and carbon monoxide. Simply insert any of these compact, 4.5" (11.4 cm) L loggers into your computer USB port, name it, choose your required sampling rate, select high and low alarms if required, and set the logger start time. Once configured, the logger can be removed from the computer to log independently. Data is downloaded back onto the PC where it can be analyzed and viewed as a graph using included software.

**A Temperature.** The low-cost model 23039-51 stores over 4000 readings and has a fixed 30-minute sampling rate and a measurement range of 14 to 122°F (-10 to 50°C). For ambient temperature measurements between -31 to 176°F (-35 to 80°C), model 23039-50 stores over 16,000 readings. For application requiring an extended temperature range, model 23039-66 measures from -40 to 257°F (-40 to 125°C), stores over 32,000 readings, and features a stainless steel enclosure for more hostile environments.

**B Temperature, Thermocouple.** Models 23039-60 and -64 accept type J, K, and T thermocouples via a connector in the base of the unit and are supplied with one type K thermocouple rated from 32 to 752°F (0 to 400°C). These loggers store more than 32,000 readings. Model 23039-64 offers the additional feature of a 4-digit LCD.

**C Temperature/Humidity.** These loggers measure temperature and humidity from 31 to 176°F (-35 to 80°C) and 0 to 100% RH, calculate dew point, and store over 16,000 readings per parameter. Models 23039-65 and -67 offer increased accuracy. Models 23039-62 and -65 feature a 2½-digit LCD showing latest log and min/max log and have immediate, delayed, and push-to-start logging.

**D Real-Time Temperature/Humidity.** Model 23039-59 stays permanently connected to your computer USB port—displaying real-time ambient temperature, humidity, and calculated dew point on the PC monitor. Ideal for server room applications, this data logger can be programmed to send an e-mail or text message when a user-selectable alarm has been reached.

**E Process.** Model 23039-54 has a 0 to 30 VDC measurement range and stores over 32,000 readings. Current measurement is provided by model 23039-56 which stores over 32,000 readings covering the 4 to 20 mA measurement range. Both units can be connected to external sensors via screw terminals located in their caps.

**F Carbon Monoxide.** Use model 23039-58 for a 0 to 1000 ppm range and model 23039-68 for a 0 to 300 ppm measurement range; both store more than 32,000 readings. A bright red LED will flash and an audible alarm will sound when the user-determined level is exceeded.

**What's included:** configuration software and battery.



Catalog number	No. of channels	Range	Resolution	Accuracy	Readings	Display	Battery life (typical)	Price
<b>A Temperature data loggers</b>								
<a href="#">GM-23039-51</a>	1	14 to 122°F (-10 to 50°C)	2°F (1°C)	±2°F (±1°C)	4080	No	1 month	
<a href="#">GM-23039-50</a>	1	-31 to 176°F (-35 to 80°C)	1°F (0.5°C)	±2°F (±1°C)	32,510	No	1 year	
<a href="#">GM-23039-66</a>	1	-40 to 257°F (-40 to 125°C)	0.2°F (0.1°C)	±0.4°F (±0.2°C)	32,510	No	3 years	
<b>B Temperature data loggers, include a type K thermocouple</b>								
<a href="#">GM-23039-60</a>	1	Type K: -328 to 2462°F (-200 to 1350°C)	1°F (0.5°C)	±2°F (±1°C)	32,510	No	6 months	
<a href="#">GM-23039-64</a>		Type J: -328 to 2174°F (-200 to 1190°C)				Yes		
<b>C Temperature/humidity data loggers</b>								
<a href="#">GM-23039-52</a>	2	-31 to 176°F (-35 to 80°C)	1°F (0.5°C)	±1°F (±0.5°C)	16,382	No	1 year	
<a href="#">GM-23039-62</a>		0 to 100% RH	0.5% RH	±3.0% RH	16,379	Yes		
<a href="#">GM-23039-67</a>	2	-31 to 176°F (-35 to 80°C)	1°F (0.5°C)	±0.6°F (±0.3°C)	16,382	No	1 year	
<a href="#">GM-23039-65</a>		0 to 100% RH	0.5% RH	±2.0% RH	16,379	Yes		
<b>D Real-time temperature/humidity data logger</b>								
<a href="#">GM-23039-59</a>	2	-4 to 158°F (-20 to 70°C)	0.1°F (0.1°C)	±3°F (±1.5°C)	7 days worth <sup>†</sup>	No	—	
<b>E Process data loggers</b>								
<a href="#">GM-23039-54</a>	1	0 to 30 VDC	50 mV	±1% of reading	32,510	No	1 year	
<a href="#">GM-23039-56</a>	1	4 to 20 mA	0.05 mV	±1% of reading	32,510	No	1 year	
<b>F Carbon monoxide data loggers<sup>‡</sup></b>								
<a href="#">GM-23039-58</a>	1	0 to 1000 ppm	0.5 ppm CO	±6 ppm	32,510	No	3 months	
<a href="#">GM-23039-68</a>	1	0 to 300 ppm	0.5 ppm CO	±4 ppm	32,510	No	3 months	

<sup>†</sup>Data file is overwritten at the beginning of each new logging session. Software provides the option to save the data permanently to the hard drive.  
<sup>‡</sup>Not a life-saving device.



## Stir-Pak® Heavy-Duty Mixer Systems

Modular system for maximum versatility—order components separately or as a convenient system

### 1 Speed Controller

Solid-state controller offers precise speed control with a 100:1 adjustment range. A separate “forward/off/reverse” switch works independently from the speed control dial—allowing you to repeat mixer speed settings from one run to the next. Torque limiting provides greater system protection and reduced motor gear failure. An LED indicates when power is on. Remote controller is connected to the mixer head via a 6-ft (1.8-m), three-wire cord—protects electronics from hazardous spills or splashes.

### 2 Mixer Heads

These rugged mixer heads feature TENV, permanent-magnet DC motor with permanently lubricated ball bearing construction. Integral adjustable-tilt mounting assembly that permits the rotation of the mixer head from 0 to 30° for proper placement of shaft and propeller.

**High-Torque, Low-Speed Mixer Heads** feature a keyless chuck that accepts mixing shafts from 5/16" to 3/8" (8 to 10 mm) dia.

**High-Speed, Low-Torque Mixer Heads** incorporate a hollow through-shaft and a precision hand-tightened collet; collet accepts 3/8" (10 mm) dia mixing shafts. The design lets you quickly position the mixing propeller at any depth within the container without moving the mixer head.

**Complete systems include:** speed controller, mixer head, shaft, propeller, clamp and stand.



Stir-Pak high-speed, low-torque mixer system 50007-32



### MORE online!

For a complete listing of accessories for mixers, go to... [ColeParmer.com/Mixers](http://ColeParmer.com/Mixers)

1 Controller			2 Mixer heads					Complete systems				
Catalog number	Power (VAC, Hz)	Price	Catalog number	Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Price	Catalog number	Price	
GM-50007-00	115, 50/60		GM-50007-10	High torque, low speed; with keyless chuck	2 to 180	1/15	340	115, 50/60		GM-50007-12		
GM-50007-05	230, 50/60		GM-50007-15					230, 50/60		GM-50007-17		
GM-50007-00	115, 50/60		GM-50007-20					115, 50/60		GM-50007-22		
GM-50007-05	230, 50/60		GM-50007-25		9 to 900	1/15	70	230, 50/60		GM-50007-27		
GM-50007-00	115, 50/60		GM-50007-30	High speed, low torque; with adjustable through-shaft collet	23 to 2300	1/10	45	115, 50/60		GM-50007-32		
GM-50007-05	230, 50/60		GM-50007-35					230, 50/60		GM-50007-37		
GM-50007-00	115, 50/60		GM-50007-40			60 to 6000	1/10	17	115, 50/60		GM-50007-42	
GM-50007-05	230, 50/60		GM-50007-45					230, 50/60		GM-50007-47		

## SERVO DYNE™ Electronic Mixers

Monitor and control speed, torque, and batch time digitally

### 1 Controller

Provide precise control of mixing speed within ±0.2% despite changes in viscosity, temperature, or line voltage. Monitor torque, set torque limits, or measure and control differential torque with mixer head in use and sets the appropriate rpm and torque limits for that motor. Operates on 115 VAC, 50/60 Hz.

### 2 Mixer Heads

Permanent-magnet DC motor with permanently lubricated ball-bearing construction for maintenance-free operation.

Optical shaft encoder relays the exact motor rotation speed data to the electronic mixer controller. Adjustable-tilt mounting assembly permits rotation of mixer head from 0° to 30° for proper positioning of shaft and propeller.

**High-Torque, Low-Speed Models** have a keyless chuck that accepts mixing shafts up to 3/8" (10 mm) in diameter.

**High-Speed, Low-Torque Models** have an adjustable, through-shaft precision hand-tightened collet that accepts 3/8" (10 mm) dia mixing shafts. Through-shaft design allows positioning the mixing propeller at any depth without moving the mixer head.

**Complete systems include:** speed controller, mixer head, shaft, propeller, clamp and stand.



Servodyne low-speed, high-torque mixer system 50008-22



1 Controller		2 Mixer heads					Complete systems			
Catalog number	Price	Catalog number	Description	Speed (rpm)	hp	Max torque (in-oz)		Price	Catalog number	Price
GM-50008-00		GM-50008-10	High torque, low speed; with keyless chuck	3 to 180	1/15	340	510		GM-50008-12	
		GM-50008-20		20 to 900	1/15	70	105		GM-50008-22	
		GM-50008-30	High speed, low torque; with adjustable through-shaft collet	60 to 2300	1/10	45	65		GM-50008-32	
		GM-50008-40		150 to 6000	1/10	17	25		GM-50008-42	

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Thousands of **highlighted** items



## Cole-Parmer Digital Reversing Mixer

### Timed cycles save time and give repeatable and accurate results!

- Clockwise and counterclockwise rotation for a variety of mixing applications
- Reversing timed cycles to control vortexing and aeration
- Brushless DC motor maintains speeds at all viscosities

This mixer touts a powerful 1/10-hp maintenance-free brushless DC motor that provides 142 in-oz of torque—enough power to mix solutions up to 20,000 cps or up to 6.6 gallons (25 liters). The through-shaft housing and motor design allow easy impeller height adjustments, resulting in less downtime in between sample or impeller changes. The rpm of the motor is displayed and controlled to  $\pm 1$  rpm or 3% of the reading (whichever is greater) so you can be certain of repeatable and accurate mixing at all viscosities. The overload protection system protects your mixer if the torque exceeds the mixer ratings.

The one-touch reversing feature allows your solutions to be thoroughly mixed faster by reversing the direction of the mixing impeller and giving a new mixing profile to the system. The timed cycle feature provides the ability to control vortexing and minimizes aeration of the solution by reversing between clockwise and counterclockwise stirring. The maximum cycle time is 2000 seconds (33 minutes) in increments of 1 second.

Countdown timer can be easily set from 1 minute to 2000 minutes (33 hours) in 1-minute increments. The mixer immediately stops when the timer reaches "0" and gives three beeps to alert when complete. The innovative sample light illuminates the mixing area to show how well the solution is being mixed so you can make adjustments to the speed, mixing direction, or impeller.

**Mixer includes:** mixer head, adjustable chuck (accepts rod up to 3/8" [9.5 mm] dia), chuck key, mounting support rod, external power supply, and grounded power cord with plug assembly.

**Complete system adds:** propeller/shaft, support stand, and clamp.



Catalog number	Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Price
<b>GM-50004-00</b>	Mixer only	40 to 2010	1/10	142	100 to 230, 50/60	
<b>GM-50004-10</b>	Complete system					

**GM-17050-03** NIST-traceable calibration for mixers



**Complete system 50004-10 includes mixer, support stand, clamp, and mixer propeller.**

## IKA® EUROSTAR 20 and EUROSTAR 40 Digital Mixers

### Maintenance-free, continuous-duty mixers ideal for general laboratory use

- Simple, reliable mixers for volumes up to 6.6 gallons (25 liters) and viscosities up to 30,000 cps
- Stirring speeds up to 2000 rpm are automatically maintained as viscosity changes

These mixers feature a through-shaft design that permits adjustment of shaft length and impeller depth—allowing you to place or remove mixing vessels without repositioning the mixer. The motor and drive unit are conveniently integrated into a compact aluminum and thermoplastic housing with easy-to-use controls and a clear LED display of rpm. Mixers feature infinitely adjustable stepless speed control. Continuous comparison of shaft speed to desired speed is maintained and variations are adjusted automatically—guarantees a constant speed even with changes in fluid viscosity.

Quiet fan-cooled motors feature thermal overload shut-off, and an efficient heat-dissipating design to ensure a long service life. Motor is maintenance-free and rated for continuous duty. Safety circuits ensure automatic cut-off in an anti-stall or overload condition.

**EUROSTAR 20 Digital Mixer** (50702-30 and -35) handles volumes up to 4 gallons (15 liters) and viscosities up to 10,000 cps.

**EUROSTAR 40 Digital Mixer** (50702-40 and -45) will mix volumes up to 6.6 gallons (25 liters) and viscosities up to 30,000 cps.

**What's included:** chuck (accepts up to 3/8" [10 mm] dia shaft); 6 1/4"L x 1/2" dia (159 mm x 13 mm) mounting rod; and a 6 1/2-ft (2-m) three-wire power cord with plug.

### Specifications

Motor power input	Dimensions (W x H x D):
Eurostar 20: 56 watts	3 3/8" x 9 3/4" x 8 1/16"
Eurostar 40: 112 watts	(86 x 248 x 208 mm)



Catalog number	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Price
<b>Eurostar 20 digital mixer</b>					
<b>GM-50702-30</b>	30 to 2000	1/16	28.3	115, 50/60	
<b>GM-50702-35</b>				230, 50/60	
<b>Eurostar 40 digital mixer</b>					
<b>GM-50702-40</b>	30 to 2000	1/8	56.6	115, 50/60	
<b>GM-50702-45</b>				230, 50/60	

**NEW**



50702-30

**INNOCAL®**  
INNOVATIVE CALIBRATION SOLUTIONS

**GM-17050-03** NIST-traceable calibration with data for mixers

## IKA® RW 20 Digital Dual-Range Mixer

### Complete system—ready to use out of box

- Through-shaft design provides virtual limitless adjustment for impeller depth
- Two speed ranges to suit a variety of mixing applications
- Maintenance-free motor rated for continuous duty

Use this versatile, affordable mixer for liquid volumes up to 5 gallons (18.9 liters) and viscosities up to 10,000 cps (approximately the viscosity of honey). Select speed from 60 to 2000 rpm in two ranges for a variety of applications. Through-shaft design permits adjustment of shaft length and impeller depth—allows you to place or remove mixing vessels without repositioning the mixer.

Motor and drive unit are conveniently integrated into a compact aluminum and thermoplastic housing with easy-to-use controls. Quiet, fan-cooled motor features thermal overload shut-off and an efficient heat-dissipating design to ensure a long service life. Maintenance-free motor is rated for continuous duty. Mixer features stepless speed control. The ½" (13 mm) LCD shows rotational speed in rpm and enables you to precisely control and repeat process parameters.

**What's included:** chuck (accepts up to ¾" [10 mm] dia shafts); 6¼"L x ½" dia (159 mm L x 10 mm dia) mounting rod; four-blade propeller; mixer stand; clamp; and a 6½-ft (2-m), three-wire power cord (115 VAC model includes plug).



### Specifications



**Motor power input:** 70 watts      **Dimensions (W x H x D):**  
3½" x 11½" x 8¾" (89 x 292 x 187 mm)

Catalog number	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Price
GM-50705-00	60 to 500/240 to 2000	1/25	259	115, 50/60	
GM-50705-10				230, 50/60	

## Real-Torque Digital™ Brushless Mixers

### Set speed maintained even as fluid viscosity changes

- Chuck guard encloses spinning chuck for added safety
- Includes torque tare function to set torque reading at zero

The unique, two-speed transmission delivers constant performance under changing conditions. Mixers feature a sparkless, brushless DC motor that provides a long, maintenance-free service life. The totally enclosed nonventilated motor is rated for continuous duty. Overload protection automatically shuts off the mixer if maximum torque is exceeded—an LED light signals overload conditions. The through-shaft design lets you easily alter shaft length and propeller depth. Mixers have a cast aluminum alloy housing.

**What's included:** calibration certificate, stainless steel chuck and key (accepts up to ¾" [9.5 mm] dia shafts), chuck guard, 5"L x ½" dia (127 mm L x 13 mm dia) mounting rod, and 6-ft (1.8-m) cord with three-prong plug.

### Specifications



**Motor:** ½ hp      **Dimensions (L x W x H):** 8" x 4" x 9" (203 x 102 x 229 mm)

Catalog number	Speed range (torque)		Power (50/60 Hz)	Price
	Low speed	High speed		
GM-50800-00	12 to 360 rpm (800 in-oz)	360 to 1800 rpm (160 in-oz)	115 VAC	
GM-50800-05			230 VAC	
GM-50800-10	20 to 600 rpm (480 in-oz)	600 to 3000 rpm (96 in-oz)	115 VAC	
GM-50800-15			230 VAC	
GM-50800-20	40 to 1200 rpm (240 in-oz)	1200 to 6000 rpm (48 in-oz)	115 VAC	
GM-50800-25			230 VAC	

**GM-04561-24 Heavy-duty clamp,** holds rods up to 1½" (30 mm) dia. Made of 304 SS with chemical-resistant epoxy coating

**GM-50001-93 Mixer safety stand.** Cast zinc-aluminum base has chemical-resistant epoxy coating. The 304 SS rod measures 28"H x 1" dia (711 mm H x 25 mm dia)

**GM-04552-88 Replacement mixer chuck** with key

Mixer 50800-10



Chuck guard for added protection

**U-Shaped Paddle Assemblies** of electropolished 304 SS. Ideal for your large-volume or high-viscosity mixing. Shafts measure ¾" dia x 36"L (9.5 mm dia x 914 mm L).

Catalog number	Paddle dia, in. (mm)	Price
GM-50801-64	4 (102)	
GM-50801-66	5 (127)	
GM-50801-68	10 (254)	

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## Accessories for Laboratory Mixers

### A-J General-Purpose 316 SS Shafts, Extension Rods, Sleeves, and Propellers

**A Shafts.** All  $\frac{3}{8}$ " (9.5 mm) dia shafts are machined ( $\frac{1}{2}$ " [13 mm] length) on one end to accept a  $\frac{5}{16}$ " (8 mm) bore dia propeller. Made of passivated stainless steel.

Catalog number	Shaft dimensions, dia x L, in. (mm)	Price
<b>GM-04552-20</b>	$\frac{5}{16}$ x 12 (8 x 305)	
<b>GM-04552-30</b>	$\frac{5}{16}$ x 18 (8 x 457)	
<b>GM-04552-25</b>	$\frac{3}{8}$ x 12 (10 x 305)	
<b>GM-04552-35</b>	$\frac{3}{8}$ x 18 (10 x 457)	
<b>GM-04552-00</b>	$\frac{3}{8}$ x 24 (10 x 610)	
<b>GM-04552-05</b>	$\frac{3}{8}$ x 30 (10 x 762)	

**Extension Rods and Sleeves** increase shaft length. One sleeve is required to connect each extension rod to your shaft.

Length in. (mm)	$\frac{1}{4}$ " (6 mm) dia rods		$\frac{5}{16}$ " (8 mm) dia rods	
	Cat. no.	Price	Cat. no.	Price
6 (152)	<b>GM-04366-10</b>		<b>GM-04367-10</b>	
12 (305)	<b>GM-04366-20</b>		<b>GM-04552-20</b>	
18 (457)	<b>GM-04366-30</b>		<b>GM-04552-30</b>	

**E Extension rods;** include Allen wrench

**C Sleeves;** for use with extension rods above

3 (76)	<b>GM-04363-00</b>	<b>GM-04364-00</b>
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**D Turbine Propellers** are for airless mixing in deep containers. Made of 316 SS.

**E Two-Blade Propellers** 1" dia with  $\frac{5}{16}$ " (8-mm).

**F Three-Blade Propellers** are for general-purpose mixing. Use alone or mount several on a single shaft for thorough agitation. Made of electropolished 316 SS.

**G Lightweight Three-Blade Propellers** have blades that twist to achieve the desired pitch.

**H Folding Propeller** is for use in narrow-mouth vessels. Folded diameter is  $1\frac{1}{16}$ " (18 mm).

**I Ring Guard Propeller** protects dip tubes or sensors in your mixing vessel.

**J Dispersion Blade,** high-shear for tearing action, low flow.  $\frac{5}{16}$ " (8-mm) bore.

Key	Catalog number	Overall dia, in. (mm)	Bore dia, in. (mm)	Price
<b>D</b>	<b>GM-04552-10</b>	2 (51)	$\frac{3}{16}$ (8)	
	<b>GM-04552-15</b>	2 (51)	$\frac{3}{8}$ (10)	
<b>E</b>	<b>GM-04552-61</b>	1 (25)	$\frac{5}{16}$ (8)	
	<b>GM-04552-40</b>	1 (25)	$\frac{5}{16}$ (8)	
	<b>GM-04552-45</b>	1 $\frac{1}{2}$ (38)	$\frac{5}{16}$ (8)	
<b>F</b>	<b>GM-04552-50</b>	2 (51)	$\frac{5}{16}$ (8)	
	<b>GM-04552-55</b>	2 (51)	$\frac{3}{8}$ (10)	
	<b>GM-04552-60</b>	3 (76)	$\frac{5}{16}$ (8)	
<b>G</b>	<b>GM-04349-10</b>	2 (51)	$\frac{1}{4}$ (6)	
	<b>GM-04349-00</b>	3 $\frac{1}{2}$ (89)	$\frac{5}{16}$ (8)	
<b>H</b>	<b>GM-04543-00</b>	2 (51) open	$\frac{5}{16}$ (8)	
<b>I</b>	<b>GM-04545-00</b>	2 (51)	$\frac{3}{16}$ (8)	
<b>J</b>	<b>GM-04552-62</b>	1 $\frac{1}{16}$ (33)	$\frac{5}{16}$ (8)	

### K-O High-Shear 304 SS Metric Shaft and Propellers

**K Mixing Shaft** for use with any 10 mm dia or adjustable  $\frac{3}{8}$ " (10 mm) dia chuck. Measures 10 mm dia X 500 mm L.

Threaded shaft end accepts only propellers "L" through "O".

**GM-04370-02** Mixing shaft

**L Turbine Propellers** for airless mixing in deep containers. Threaded 10-mm dia bore requires shaft 04370-02 (above).

**M Dual-Blade Propellers** for viscous fluids. Threaded 10-mm dia bore fits only shaft model 04370-02 (above).

**N Four-Blade Propellers** are for general-purpose vortex mixing. Threaded 10-mm dia bore fits only shaft model 04370-02 (above).

**O Folding Propeller** is for use in narrow-mouth vessels. Folded diameter is  $\frac{3}{4}$ " (18 mm). Threaded 10-mm dia bore fits only shaft model 04370-02 (above).

Key	Cat. no.	Overall diameter	Price
<b>L</b>	<b>GM-04370-15</b>	2 $\frac{3}{8}$ " (60 mm)	
	<b>GM-04370-16</b>	3 $\frac{1}{16}$ " (100 mm)	
<b>M</b>	<b>GM-04370-18</b>	3 $\frac{1}{16}$ " (100 mm)	
	<b>GM-04370-19</b>	1 $\frac{1}{8}$ " (28 mm)	
<b>N</b>	<b>GM-04370-11</b>	2 $\frac{1}{16}$ " (75 mm)	
	<b>GM-04370-12</b>	2 $\frac{3}{8}$ " (60 mm)	
	<b>GM-04370-13</b>	1 $\frac{1}{2}$ " (40 mm)	
<b>O</b>	<b>GM-04370-14</b>	1 $\frac{1}{8}$ " (48 mm) [open]	

### P Flexible Couplings

Flexible couplings are for use with glass mixing shafts. Rubber-bodied sleeve lets you make connections without a rubber hose—absorbs shock and reduces mixer noise and vibration. Couplings measure 4" (102 mm) long.

Catalog number	Fits mixing shaft OD	Fits motor shaft OD	Price
<b>GM-50401-53</b>	10 mm	$\frac{5}{16}$ " (8 mm)	
<b>GM-50401-51</b>		$\frac{3}{8}$ " (10 mm)	

### Mixer Testing Beads

Test your mixer/impeller system for clumping and settling. These highly visible beads are calibrated to simulate particles in your fluid and let you easily visualize mixing patterns. Use both sizes simultaneously to determine effect on different-sized particles.



Cat. no.	Color	Bead diameter	Price
<b>GM-04560-70</b>	Red	4.5 mm	
<b>GM-04560-71</b>	Yellow	3 mm	



## **Koflo** In-Line Static Mixers

### Mix fluids as you pump them through a pipe line

- These economical, long-lasting, in-line mixers are more convenient than most motorized mixers
- In-line mixers prevent overmixing and undermixing, and resist fouling in your pipes or tubes
- Virtually maintenance free and need no spare parts

In-line mixers are efficient and can withstand large pressure changes—up to 1500 psi with smallest sizes. Mixing elements in pipe and tube mixers are securely attached to the mixer walls, so internal pressure changes cannot collapse elements and stop flow.

### How it Works

With in-line static mixers, the mixer does not move through the fluid—the fluid moves through the mixer. As this illustration shows, mixing takes place around the centerline and in the direction of flow.

- 1 Pump pushes a stream of liquid into the mixer.
- 2 The stream of liquid is then split and forced to the opposite outside walls.
- 3 A vortex is created along the centerline axis of the pipe.
- 4 The vortex is sheared and the process recurs with the opposite rotation. This clockwise/counterclockwise motion mixes the liquid to ensure a homogeneous end product.

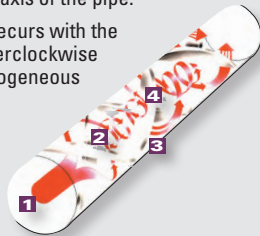
Use the Reynolds equation and the table below to determine the minimum number of elements you need for efficient mixing.

Reynolds equation:  $Re = \frac{3157QS}{\mu D}$

- Re = Reynolds number  
 - Q = Flow rate (gallons per minute)  
 - S = Specific gravity  
 -  $\mu$  = Viscosity (centipoise)  
 - D = Inside pipe diameter (inches)

Reynolds number	Elements required
>1000	6
500 to 1000	12

Note: If the Reynolds number is less than 500, call our Application Specialists for assistance.



### Disposable In-Line Mixers

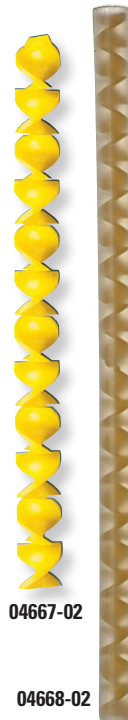
Ideal for your one-time mixing applications, these disposable polyacetal mixers are available unmounted or mounted in polypropylene tubing. Adjust unmounted mixer length to get optimal mixing action—shorten by cutting or extend by using more than one mixer.

Unmounted Mixers can be used with any standard tubing having the same tubing ID as the element OD given in the table. They work well with flexible tubing.

Catalog number	Element OD/ tubing ID, in. (mm)	Number of elements	Mixer length, in. (mm)	Price/pk of 10
<a href="#">GM-04667-02</a>	3/16 (5)	12	3 1/2 (89)	2 3/4 (60)
<a href="#">GM-04667-12</a>		24	4 3/4 (118)	
<a href="#">GM-04667-04</a>	1/4 (6)	12	3 (76)	6 (152)
<a href="#">GM-04667-14</a>		24	6 (152)	
<a href="#">GM-04667-06</a>	3/8 (10)	12	4 3/4 (121)	9 1/2 (241)
<a href="#">GM-04667-16</a>		24	9 1/2 (241)	
<a href="#">GM-04667-08</a>	1/2 (13)	12	5 (127)	10 (254)
<a href="#">GM-04667-18</a>		24	10 (254)	

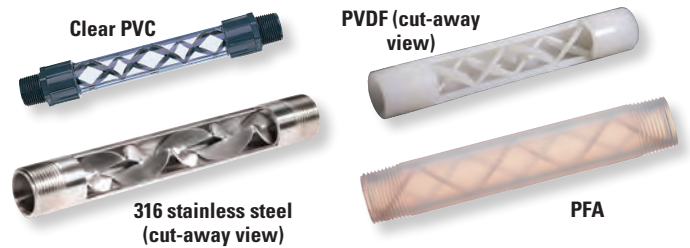
Mounted Mixers can be used with any compression fitting with the same tubing OD.

Catalog number	Tubing OD, in. (mm)	Number of elements	Mixer length, in. (mm)	Price/pk of 10
<a href="#">GM-04668-02</a>	3/16 (8)	12	3 1/2 (89)	5 3/4 (146)
<a href="#">GM-04668-12</a>		24	5 3/4 (146)	
<a href="#">GM-04668-04</a>	3/8 (10)	12	4 3/4 (108)	7 1/4 (184)
<a href="#">GM-04668-14</a>		24	7 1/4 (184)	
<a href="#">GM-04668-06</a>	1/2 (13)	12	6 1/2 (165)	11 1/4 (286)
<a href="#">GM-04668-16</a>		24	11 1/4 (286)	
<a href="#">GM-04668-08</a>	3/4 (16)	12	8 1/2 (216)	14 1/2 (368)
<a href="#">GM-04668-18</a>		24	14 1/2 (368)	



### Pipe Mixers

Install these mixers directly into your process line to achieve a 100% mixed output—mixing elements are welded inside the pipe. All mixers have threaded ends. Choose PVC, 316 stainless steel, PVDF, or PFA. The clear PVC mixers are ideal for a visual check of your mixing processes. Models with removable elements are available on request—call our Application Specialists for details.



Catalog number	NPT(M)	Pipe ID, in. (mm)	No. of elements	Mixer length, in. (mm)	Price
<b>Clear PVC schedule 40 pipe mixers</b>					
<a href="#">GM-04669-85</a>	3/8"	0.473 (12)	6	6 1/2 (165)	11 (279)
<a href="#">GM-04669-87</a>			12	12 (305)	
<a href="#">GM-04669-89</a>	1/2"	0.602 (15.3)	6	7 (178)	12 (305)
<a href="#">GM-04669-91</a>			12	15 (381)	
<a href="#">GM-04669-92</a>	3/4"	0.804 (20.4)	6	9 (229)	11 (279)
<a href="#">GM-04669-93</a>			12	18 (457)	
<a href="#">GM-04669-94</a>	1"	1.029 (26.1)	6	11 (279)	15 (381)
<a href="#">GM-04669-95</a>			12	28 (711)	
<a href="#">GM-04669-96</a>	1 1/2"	1.590 (40.4)	6	15 (381)	19 (483)
<a href="#">GM-04669-97</a>			12	35 (889)	
<a href="#">GM-04669-98</a>	2"	2.047 (52)	6	19 (483)	35 (889)
<a href="#">GM-04669-99</a>			12		
<b>Standard PVC schedule 80 pipe mixers</b>					
<a href="#">GM-04669-00</a>	1/2"	0.62 (15.7)	6	5 (127)	10 (254)
<a href="#">GM-04669-06</a>			12	7 (178)	
<a href="#">GM-04669-02</a>	3/4"	0.742 (18.8)	6	4 (101)	14 (356)
<a href="#">GM-04669-08</a>			12	10 (254)	
<a href="#">GM-04669-04</a>	1"	0.957 (243)	6	10 (254)	19 (483)
<a href="#">GM-04669-10</a>			12	15 (381)	
<a href="#">GM-04669-78</a>	1 1/2"	1.50 (38.1)	6	15 (381)	26 (660)
<a href="#">GM-04669-79</a>			12	18 (457)	
<a href="#">GM-04669-83</a>	2"	1.939 (49.2)	6	18 (457)	33 (838)
<a href="#">GM-04669-81</a>			12		
<b>316 stainless steel schedule 40 pipe mixers</b>					
<a href="#">GM-04669-05</a>	1/4"	0.364 (9.2)	6	3 (76.2)	6 (152)
<a href="#">GM-04669-07</a>			12	8 (203)	
<a href="#">GM-04669-09</a>	3/8"	0.493 (12.5)	6	4 (101)	5 (127)
<a href="#">GM-04669-11</a>			12	10 (254)	
<a href="#">GM-04669-12</a>	1/2"	0.62 (15.7)	6	5 (127)	7 (178)
<a href="#">GM-04669-18</a>			12	13 (330)	
<a href="#">GM-04669-14</a>	3/4"	0.82 (20.8)	6	7 (178)	9 (229)
<a href="#">GM-04669-20</a>			12	17 (439)	
<a href="#">GM-04669-16</a>	1"	1.05 (26.7)	6	9 (229)	13 (330)
<a href="#">GM-04669-22</a>			12	26 (660)	
<a href="#">GM-04669-23</a>	1 1/2"	1.61 (40.9)	6	13 (330)	17 (432)
<a href="#">GM-04669-24</a>			12	33 (838)	
<a href="#">GM-04669-25</a>	2"	2.067 (52.5)	6	17 (432)	33 (838)
<a href="#">GM-04669-26</a>			12		
<b>PVDF schedule 80 pipe mixers</b>					
<a href="#">GM-04669-28</a>	1/2"	0.546 (13.9)	6	5 (127)	9 (229)
<a href="#">GM-04669-29</a>			12	6 (152)	
<a href="#">GM-04669-30</a>	3/4"	0.742 (18.8)	6	6 (152)	12 (305)
<a href="#">GM-04669-34</a>			12	8 (203)	
<a href="#">GM-04669-32</a>	1"	0.957 (243)	6	8 (203)	15 (381)
<a href="#">GM-04669-36</a>			12	12 (305)	
<a href="#">GM-04669-38</a>	1 1/2"	1.50 (38.1)	6	12 (305)	24 (610)
<a href="#">GM-04669-40</a>			12	16 (406)	
<a href="#">GM-04669-42</a>	2"	1.939 (49.2)	6	16 (406)	31 (787)
<a href="#">GM-04669-44</a>			12		
<b>PFA schedule 80 pipe mixers</b>					
<a href="#">GM-04668-20</a>	1/2"	0.546 (13.9)	6	5 (127)	9 (229)
<a href="#">GM-04668-22</a>			12	6 (152)	
<a href="#">GM-04668-24</a>	3/4"	0.742 (18.8)	6	6 (152)	12 (305)
<a href="#">GM-04668-26</a>			12	8 (203)	
<a href="#">GM-04668-27</a>	1"	0.957 (24.3)	6	8 (203)	15 (381)
<a href="#">GM-04668-29</a>			12		

# You're Out? We're Not!

Thousands of **highlighted** items



## StableTemp Hot Plates, Stirrers, and Stirring Hot Plates

### Microprocessor for precise control of speed and temperature throughout entire range

- Hot Surface Warning safety symbol remains lit until top plate cools below 50°C
- Cast-aluminum base has molded contours to divert liquid spills away from internal components
- Easy-to-read LED display improves accuracy



**Hot Plates, Stirrers, and Stirring Hot Plates** are designed for general laboratory applications. These low-profile hot plates, stirrers and stirring hot plates feature a digital heat display and a two-piece spill-resistant cast-aluminum housing that deflects spills away from critical components. The easy-to-read digital display shows set point temperature for improved accuracy and repeatability. Built-in support rod mount, with thumbscrew, accommodates rods up to 13 mm in diameter. Choose corrosion-resistant ceramic for high-temperature applications or rugged aluminum for temperature uniformity.



03407-10

**Advanced Hot Plate and Stirring Hot Plate** are designed for applications that require precise accuracy and repeatability. Separate heat and stir displays show actual and set point temperature and stir speed, allowing repeatable accurate results. Unit includes a temperature probe kit which contains a 6" (15.2 cm) L PTFE-coated stainless steel probe, 18" (46 cm) L support rod, and probe clamp. Timer will shut off heating, stirring, or both; and sound an audible alarm to alert user. Over-temperature protection system cuts off power to unit in overheat condition protecting both user and sample.

**What's included:** detachable 6-ft (1.8-m) cord with plug and PTFE stir bar. Advanced model also includes a temperature probe kit.



Catalog number	Top plate		Heating		Stirring		Dimensions (W x H x D)	Power				CE	Plug type	Price
	Dimensions	Material	Temp range	Max load	Speed range	Max capacity		VAC	Hz	Amps	Watts			
<b>StableTemp hot plates</b>														
GM-03405-00	4" x 4"	Ceramic	86 to 1004°F (30 to 540°C)	15 lb (6.8 kg)	—	—	5 1/2" x 3 3/4" x 9 3/4" (14 x 9.5 x 24.8 cm)	120	50/60	3.4	410	No	U.S. std	
GM-03405-05	(10.2 x 10.2 cm)							230	50/60	1.9	460	Yes	Euro	
GM-03405-10	7" x 7"	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	—	—	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	8.6	1040	No	U.S. std	
GM-03405-15	(17.8 x 17.8 cm)							230	50/60	5	1200	Yes	Euro	
GM-03405-20	7" x 7"	Aluminum	86 to 572°F (30 to 300°C)	25 lb (11.4 kg)	—	—	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	5.6	670	No	U.S. std	
GM-03405-25	(17.8 x 17.8 cm)							230	50/60	2.9	690	Yes	Euro	
GM-03405-30	10" x 10"	Ceramic	86 to 752°F (30 to 400°C)	35 lb (15.9 kg)	—	—	11 1/2" x 4" x 15 3/4" (29.2 x 10.2 x 40 cm)	120	50/60	12	1440	No	U.S. std	
GM-03405-35	(25.4 x 25.4 cm)							230	50/60	6.6	1600	Yes	Euro	
<b>StableTemp stirrers</b>														
GM-03406-00	4" x 4"	Ceramic	—	—	30 to 1200 rpm	5 L	5 1/2" x 3 3/4" x 9 3/4" (14 x 9.5 x 24.8 cm)	120	50/60	0.4	15	No	U.S. std	
GM-03406-05	(10.2 x 10.2 cm)							230	50/60	0.2	20	Yes	Euro	
GM-03406-10	7" x 7"	Ceramic	—	—	30 to 1200 rpm	20 L	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	0.4	18	No	U.S. std	
GM-03406-15	(17.8 x 17.8 cm)							230	50/60	0.2	15	Yes	Euro	
GM-03406-20	7" x 7"	Aluminum	—	—	30 to 1200 rpm	20 L	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	0.5	25	No	U.S. std	
GM-03406-25	(17.8 x 17.8 cm)							230	50/60	0.3	25	Yes	Euro	
GM-03406-30	10" x 10"	Ceramic	—	—	30 to 1200 rpm	20 L	11 1/2" x 4" x 15 3/4" (29.2 x 10.2 x 40 cm)	120	50/60	0.4	30	No	U.S. std	
GM-03406-35	(25.4 x 25.4 cm)							230	50/60	0.2	15	Yes	Euro	
<b>StableTemp stirring hot plates</b>														
GM-03407-00	4" x 4"	Ceramic	86 to 1004°F (30 to 540°C)	15 lb (6.8 kg)	30 to 1200 rpm	5 L	5 1/2" x 3 3/4" x 9 3/4" (14 x 9.5 x 24.8 cm)	120	50/60	3.4	410	No	U.S. std	
GM-03407-05	(10.2 x 10.2 cm)							230	50/60	1.9	460	Yes	Euro	
GM-03407-10	7" x 7"	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	30 to 1200 rpm	20 L	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	8.6	1040	No	U.S. std	
GM-03407-15	(17.8 x 17.8 cm)							230	50/60	5	1200	Yes	Euro	
GM-03407-20	7" x 7"	Aluminum	86 to 572°F (30 to 300°C)	25 lb (11.4 kg)	30 to 1200 rpm	20 L	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	5.6	670	No	U.S. std	
GM-03407-25	(17.8 x 17.8 cm)							230	50/60	3	710	Yes	Euro	
GM-03407-30	10" x 10"	Ceramic	86 to 752°F (30 to 400°C)	35 lb (15.9 kg)	30 to 1200 rpm	20 L	11 1/2" x 4" x 15 3/4" (29.2 x 10.2 x 40 cm)	120	50/60	12	1440	No	U.S. std	
GM-03407-35	(25.4 x 25.4 cm)							230	50/60	6.6	1600	Yes	Euro	
<b>StableTemp advanced hot plate</b>														
GM-03405-40	7" x 7"	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	—	—	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	8.6	1040	No	U.S. std	
GM-03405-45	(17.8 x 17.8 cm)							230	50/60	5	1200	Yes	Euro	
<b>StableTemp advanced stirring hot plate</b>														
GM-03407-40	7" x 7"	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	30 to 1200 rpm	20 L	8 1/2" x 3 3/4" x 12 3/4" (21.6 x 9.5 x 32.4 cm)	120	50/60	8.6	1040	No	U.S. std	
GM-03407-45	(17.8 x 17.8 cm)							230	50/60	5	1200	Yes	Euro	

### Cole-Parmer Stir Bar Kits

- Chemically inert, low-friction, leakproof PTFE coating provides maximum energy transfer
- Available with or without spinning rings; rings reduce friction and noise

Bar type	With spinning ring	Without spinning ring
Catalog number	GM-04775-99	GM-04775-98
Length x diameter†	Two each of the following sizes: 1/2" x 5/16", 5/8" x 5/16", 1" x 3/8", 1 1/2" x 3/8", 2" x 3/8", 2 1/2" x 3/8"	Two each of the following sizes: 7/16" x 3/16", 1/2" x 5/16", 3/4" x 5/16", 1" x 3/8", 1 1/4" x 3/8", 1 1/2" x 3/8", 2" x 3/8", 2 1/2" x 1/2", 3" x 1/2"
Total/pk	12 stir bars	18 stir bars
Price/pk		

†Diameter given does not include the diameter of the spinning ring.



04775-99



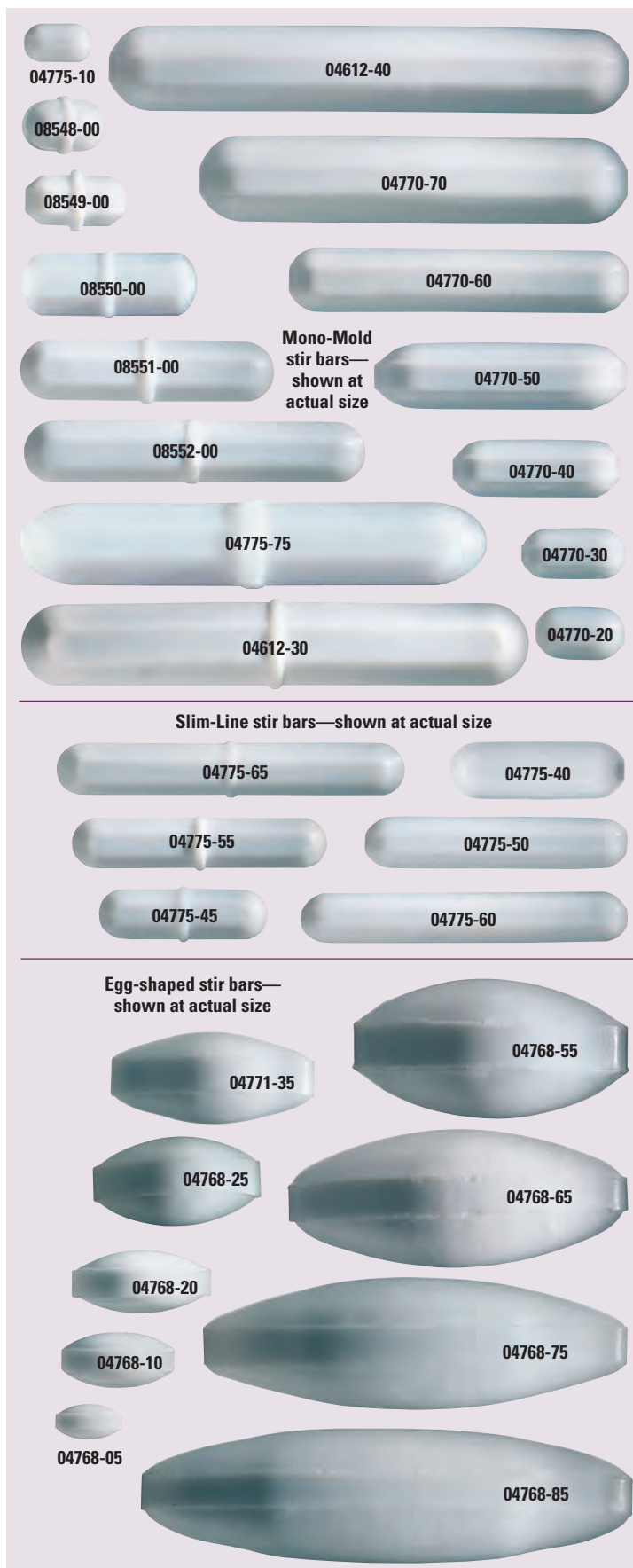
Data Loggers

Mixers

Equipment & Instrumentation

Stirrers & Hot Plates

Temperature



## Stir Bars

### Resist "spin out" at high speeds

- Super-strong alnico V magnets remain coupled to drive magnets even at high speeds
- Chemically inert, low-friction, leakproof PTFE coating provides smooth spinning and maximum energy transfer

### Mono-Mold® Stir Bars

Mono-Mold magnetic stir bars are the standard all-purpose stir bar. Available with or without spinning rings; rings reduce contact area between stir bar and vessel, reducing friction and noise.

Size		With spinning ring		Without spinning ring	
Length	Diameter†	Cat. no.	Price	Cat. no.	Price
7/16" (11.1 mm)	3/16" (4.8 mm)	—	—	<a href="#">GM-04775-10</a>	
1/2" (12.7 mm)	5/16" (7.9 mm)	<a href="#">GM-08548-00</a>		<a href="#">GM-04770-20</a>	
5/8" (15.9 mm)	5/16" (7.9 mm)	<a href="#">GM-08549-00</a>		<a href="#">GM-04770-30</a>	
1" (25.4 mm)	3/8" (9.5 mm)	<a href="#">GM-08550-00</a>		<a href="#">GM-04770-40</a>	
1 1/2" (38.1 mm)	3/8" (9.5 mm)	<a href="#">GM-08551-00</a>		<a href="#">GM-04770-50</a>	
2" (50.8 mm)	3/8" (9.5 mm)	<a href="#">GM-08552-00</a>		<a href="#">GM-04770-60</a>	
2 1/2" (63.5 mm)	3/8" (9.5 mm)	<a href="#">GM-04775-75</a>		—	—
2 1/2" (63.5 mm)	1/2" (12.7 mm)	—	—	<a href="#">GM-04770-70</a>	
3" (76.2 mm)	1/2" (12.7 mm)	<a href="#">GM-04612-30</a>		<a href="#">GM-04612-40</a>	

†Diameter given does not include the diameter of the spinning ring.

### Slim-Line® Stir Bars

Slim-Line stir bars feature a slimmer profile and larger length to diameter ratio. Available with or without spinning rings.

Size		With spinning ring		Without spinning ring	
Length	Diameter†	Cat. no.	Price	Cat. no.	Price
1" (25.4 mm)	5/16" (7.9 mm)	<a href="#">GM-04775-45</a>		<a href="#">GM-04775-40</a>	
1 1/2" (38.1 mm)	5/16" (7.9 mm)	<a href="#">GM-04775-55</a>		<a href="#">GM-04775-50</a>	
2" (50.8 mm)	5/16" (7.9 mm)	<a href="#">GM-04775-65</a>		<a href="#">GM-04775-60</a>	

†Diameter given does not include the diameter of the spinning ring.

### Egg-Shaped Stir Bars

Egg-shaped stir bars have oval magnets—ideal for use in round-bottom flasks. Shape conforms to flask bottom and ensures complete mixing.

Catalog number	Length	Diameter	For flask sizes	Price
<a href="#">GM-04768-05</a>	3/8" (9.5 mm)	3/16" (4.8 mm)	10 to 20 mL	
<a href="#">GM-04768-10</a>	5/8" (15.9 mm)	1/4" (6.4 mm)	50 to 100 mL	
<a href="#">GM-04768-20</a>	1 3/16" (20.6 mm)	3/8" (9.5 mm)	100 to 200 mL	
<a href="#">GM-04768-25</a>	1" (25.4 mm)	1/2" (12.7 mm)	100 to 200 mL	
<a href="#">GM-04771-35</a>	1 1/4" (31.8 mm)	5/8" (15.9 mm)	300 to 500 mL	
<a href="#">GM-04768-55</a>	1 5/8" (41.3 mm)	3/4" (19.1 mm)	500 to 1000 mL	
<a href="#">GM-04768-65</a>	2" (50.8 mm)	3/4" (19.1 mm)	2000 to 5000 mL	
<a href="#">GM-04768-75</a>	2 1/2" (63.5 mm)	3/4" (19.1 mm)	2000 to 5000 mL	
<a href="#">GM-04768-85</a>	3" (76.2 mm)	3/4" (19.1 mm)	5000 to 10000 mL	

### Stir Bar Retrievers

Retrieve stir bars without messy spills or breakage. Alnico V magnet is completely enclosed. Model 08555-20 features a flexible shaft of PTFE for odd-shaped, and narrow-mouth containers.

[GM-08555-20](#) Stir bar retriever, flexible shaft; PTFE, 14 3/4" (37.5 cm)

[GM-08555-40](#) Stir bar retriever, polyethylene, 17" (43.2 cm)



# You're Out? We're Not!

Thousands of **highlighted** items



## OAKTON® Temp-Series Thermocouple Thermometers

### Heavy-duty thermometers offer versatility and accuracy

- Exclusive, 3-way hands-free operation
- Large, easy-to-read screen with backlight
- Rugged armor is built to withstand the toughest conditions

These robust and reliable meters work in any environment from the lab to the production floor. All models are ergonomically designed for both large and small hands alike. Sealed keypad and ABS plastic case meet IP54 standards for splash resistance. Each thermometer is individually factory calibrated. Automatic field calibration is easily performed.

**Temp-10 Single-Input Thermometers** feature an easy-to-use control panel; Min/Max and Hold functions; °F/°C selection; auto shutoff; and low-battery indicator.

**Temp-100 Dual-Input Thermometer** is designed for either single or simultaneous dual readings. Meter accepts all type J, T, E, and K thermocouple probes with miniconnector. Store up to 1000 sets of readings in the nonvolatile memory. Take differential temperature measurements with the T1/T2 function. The multidata LCD simultaneously indicates the readings of each probe, as well as the differential reading. For improved readability with rapidly changing temperatures, the meter resolution is keypad selectable.

**Temp-300 Dual-Input Thermometer with Data Logging** can manually store or automatically log up to 2000 sets of readings in real time, and data be downloaded to your PC via a USB port. Log interval is selectable from 1 second to 60 minutes. Take differential temperature measurements with the T1/T2 function. The dot matrix display simultaneously indicates the readings of each probe, as well as the differential reading. For improved readability during rapidly changing temperatures, the meter resolution is keypad selectable. Additional meter features include Min/Max, Hold, and average functions; temperature units in °F, °C, °R, or K; offset; time stamp/clock; countdown timer; out-of-range alarm with audible/visible indicator; auto shutoff; and low-battery indicator. Order an optional AC adapter to conserve battery life during extended operations.

**What's included:** protective rubber armor boot with built-in stand and three AA batteries.

### Specifications

**Display:** 4-digit LCD, 2 1/4" x 1 1/2" backlit viewing area

**Battery life:** 400 hours with sleep mode (without the use of backlighting, buzzer, and USB)

**Dimensions (W x H x D):** 4" x 7" x 2" (102 x 178 x 51 mm), with protective boot

**Power:** three AA batteries (included)

Catalog number	Description	Range	Resolution	Accuracy	Price
<a href="#">GM-91427-00</a>	Temp-10 single input	Type J: -346 to 2192°F (-210 to 1200°C)	0.1°F/°C between -199.9 to 999.9°, 1° below -199.9° and above 999.9°	Below -238°F (-150°C): ±0.25% of reading ±2°F (±1°C) Above -238°F (-150°C): ±0.1% of reading ±0.7°F (±0.4°C)	
<a href="#">GM-91427-10</a>		Type K: -418 to 2501°F (-250 to 1372°C)			
<a href="#">GM-91427-20</a>		Type T: -418 to 752°F (-250 to 400°C)			
<a href="#">GM-91427-40</a>	Temp-100 dual input	Type J: -346°F to 2192°F (-210°C to 1200°C) Type K: -418°F to 2501°F (-250°C to 1372°C) Type T: -418°F to 752°F (-250°C to 400°C) Type E: -418°F to 1832°F (-250°C to 1000°C)	0.1°F/°C between -99.9 to 999.9°, 1° below -99.9° and above 999.9°	Below -148°F (-99.9°C): ±0.25% of reading ±2°F (±1°C) Above -148°F (-99.9°C): ±0.1% of reading ±0.7°F (±0.4°C)	
<a href="#">GM-91427-50</a>	Temp-300 dual input with data logging	Type J: -346 to 2192°F (-210 to 1200°C) Type K: -418 to 2501°F (-250 to 1372°C) Type T: -418 to 752°F (-250 to 400°C) Type E: -418 to 1832°F (-250 to 1000°C) Type R: 32 to 3214°F (0 to 1768°C) Type S: 32 to 3214°F (0 to 1768°C) Type N: -418 to 2372°F (-250 to 1300°C) Type B: 392 to 3272°F (200 to 1800°C)	0.1°F/°C between -199.9 to 999.9°, 1° below -199.9° and above 999.9°	Type J, K, T, E, and N: ±0.25% of reading ±2°F (±1°C) below -148°F (-99.9°C), ±0.1% of reading ±0.7°F (±0.4°C) above -238°F (-150°C) Type R, S, and B: ±0.1% of reading ±2°F (±1°C)	

[GM-35427-85](#) Oakton "Hands-Free" option includes two magnets and hook-and-loop strap

[GM-91427-99](#) Adapter, 115/240 VAC

[GM-35427-80](#) Replacement boot with built-in stand

[GM-17002-10](#) NIST-traceable calibration for thermocouple system (meter with probe)

[GM-09376-01](#) Replacement batteries, AA. Pack of 4



91427-10



Data Loggers

Mixers

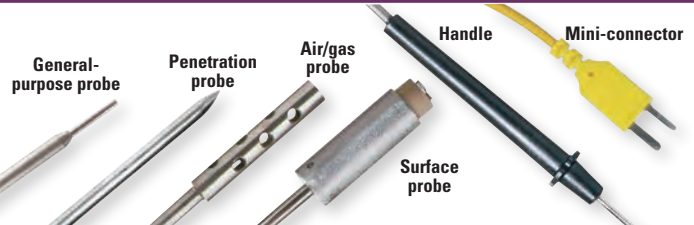
Equipment & Instrumentation

Stirrers & Hot Plates

Temperature

### Some of Our Most Popular Thermocouple, Thermistor, and RTD Probes

All probes include a 5-ft (1.5-m) coiled cord with strain relief spring that protects from repeated flexing and tugging. Ergonomic, easy-to-grip glass-filled nylon handle provides maximum insulation and impact resistance; fingerstops prevent fingers from sliding and prevent probe from rolling. Thermocouples and RTD includes rugged thermoset plastic miniconnector.



Probe Type	General-purpose probes 5" (12 cm) L			Penetration probes 4" (10 cm) L			Air/gas probes 8.5" (21 cm) L			Surface probes 9.9" (25 cm) L		
	Max temp	Cat. no.	Price	Max temp	Cat. no.	Price	Max temp	Cat. no.	Price	Max temp	Cat. no.	Price
J	1400°F (760°C)	<a href="#">GM-08517-55</a>		1400°F (760°C)	<a href="#">GM-08517-65</a>		1000°F (537°C)	<a href="#">GM-08517-75</a>		1200°F (649°C)	<a href="#">GM-08517-60</a>	
K	1652°F (900°C)	<a href="#">GM-08516-55</a>		1652°F (900°C)	<a href="#">GM-08516-65</a>			<a href="#">GM-08516-75</a>		1200°F (649°C)	<a href="#">GM-08516-60</a>	
T	752°F (400°C)	<a href="#">GM-08500-55</a>		752°F (400°C)	<a href="#">GM-08500-65</a>			<a href="#">GM-08500-75</a>		650°F (343°C)	<a href="#">GM-08500-60</a>	
RTD	932°F (500°C)	<a href="#">GM-08117-70</a>		932°F (500°C)	<a href="#">GM-08117-85</a>		932°F (500°C)	<a href="#">GM-08117-90</a>		932°F (500°C)	<a href="#">GM-08117-75</a>	
Thermistor	212°F (100°C)	<a href="#">GM-93824-00</a>		212°F (100°C)	<a href="#">GM-93824-30</a>		212°F (100°C)	<a href="#">GM-93823-05</a>				

# You're Out? We're Not!

Thousands of **highlighted** items



## OAKTON® Super-Mini TempTestr® Infrared Thermometer

IR thermometry at its most basic, but does just about everything you need!



39642-01



Just aim the unit, press the button on top, and either hold it to take a continuous temperature reading or release the button to hold the temperature on the display for 15 seconds. It measures temperature from -27 to 230°F (-33 to 110°C); under the back cover there is a switch which can be pressed to display the temperature in either Fahrenheit or Celsius. Features a built-in battery-life indicator.

**What's included:** built-in pocket clip, wrist strap, and two batteries.



Catalog number	GM-39642-01
Range	-27 to 230°F (-33 to 110°C)
Resolution	0.5°F (0.2°C) of reading
Accuracy	±2.5% of reading or 3.6°F (2.0°C)
Response time	Less than one second for 95% of reading
Emissivity	0.95 fixed
Distance-to-target ratio	1:1
Display	LCD
Power	Two LR44/359 batteries (included)
Dimensions (H x dia)	3½" x ¾" (8.9 x 1.9 cm)
Price	

## OAKTON® Mini TempTestr® Infrared Thermometer

Economical noncontact thermometer fits right in your pocket!



- Surface temperature readings in <1 second
- Turn on, point, take reading!

Features include switchable °F/°C display, hold function to freeze readings for 7 seconds, continuous monitoring function, adjustable emissivity, Min/Max memory readings, flip-open stand, and soft touch keypad.

**What's included:** metal case, wrist strap, and spare battery.



39642-00



Catalog number	GM-39642-00
Range	-30 to 430°F (-33 to 220°C)
Resolution	0.5°F (0.2°C) of reading
Accuracy	±2% of rdg or ±4°F (2°C)
Response time	Less than one sec
Emissivity	Adjustable from 0.01 to 1.00
Distance-to-target-size ratio	1:1
Display	LCD
Power	One 3 V battery (included)
Dimensions (W x H x D)	1½" x 2½" x 1½" (3.8 x 6.4 x 1.3 cm)
Price	

Data Loggers

Mixers

Equipment & Instrumentation

Stirrers & Hot Plates

Temperature

## OAKTON® Mini-InfraPro™ Infrared Thermometers

Remain safe while taking accurate readings

Infrared thermometers have become the preferred tool for diagnostics and inspection where temperature is an indicator. Oakton IR thermometers are valued by professionals in a variety of industries—from industrial maintenance to food service because they quickly, accurately and safely measure surface temperature. Since infrared meters do not contact the objects being measured, they are the safest way to measure hot, hard-to-reach, or moving parts while eliminating potential damage and contamination. These units feature Fahrenheit or Celsius selectable units, current and maximum readings, seven second auto hold, continuous scanning, and power off. Pistol-grip handle is comfortable and easy to use.

**What's included:** one 9 V battery and storage pouch.



39641-06



Catalog number	GM-39641-04	GM-39641-06
Pre-calibrated cat. no.	GM-39641-08	GM-39641-12
Description	Mini-InfraPro 4	Mini-InfraPro 6
Range	0 to 750°F (-18 to 400°C)	-20 to 932°F (-30 to 500°C)
Resolution	±1% of reading or ±2°F (±1°C)	±1% of reading or ±2°F (±1°C)
Accuracy	±5°F (±3°C) from 0 to 30°F (-18 to -1°C), ±2% or 3.5°F (2°C) from 30 to 275°F (-1 to 525°C), whichever is greater	±2°F (±1°C) from 50 to 86°F (10 to 30°C), ±1.5% of reading or ±3°F (1.5°C), whichever is greater
Response time	500 msec, 95% response	500 msec, 95% response
Emissivity	0.95 fixed	0.95 fixed
Laser sighting	Single point, offset class II	Single point, offset Class II
Distance-to-target ratio	8:1	10:1
Display	LCD, backlit	LCD, backlit
Power	One 9 V battery (included)	One 9 V battery (included)
Dimensions (W x H x D)	4" x 6" x 1½" (10.2 x 15.2 x 3.8 cm)	4" x 6" x 1½" (10.2 x 15.2 x 3.8 cm)
Price		
Pre-calibrated price		

Calibrate NOW & SAVE!

**INNOCAL®**

Save 10% off the NIST-traceable calibration when you order your product precalibrated.

**GM-09376-04** Replacement batteries, 9 V. Pack of 4

**GM-17004-00** NIST-traceable calibration report with data for infrared thermometers



## OAKTON® Temperature Controller

### No more sample overheating

- Plug in your device, set parameters, and run—no need to monitor sample
- Data log with Temp 9500 series for better evaluation of results

Oakton's Temp 9000 series temperature controllers let you plug your heating devices right into the convenient receptacle for precise control. Both models provide excellent control accuracy and power capabilities, making them ideal for pilot process plants, R & D labs, or for OEM requirements.

These units offer multiple safety features. Output power to load device is automatically shut down in the event of a broken sensor or control loop break. The outlet power receptacle is fused separately from the controller for added safety. Overtemperature protection shuts down the system if the user-settable limit or timer is exceeded. Audible and visual out-of-range alarms are also featured. Nonvolatile EEPROM memory stores setup and operating parameters, even if power is lost.

### Temp 9000 Models

- Simple on/off to sophisticated PID control
- Simultaneous view of both the measured and set point on the two-line alphanumeric display
- Temperature scale selectable to read in °C, °F, K (Kelvin), or °R (Rankine)
- Offset function allows you to correct for probe error
- Front panel indicates output and alarm conditions
- Built-in grid support bracket allows the unit to be mounted onto a laboratory frame or grid
- Accepts eight thermocouple types with miniconnectors

**What's included:** 1.8-m (6-ft) power cord.

### Specifications

Input type	Range
J	-310 to 1832°F (-190 to 1000°C)
K	-328 to 2502°F (-200 to 1372°C)
T	-328 to 752°F (-200 to 400°C)
E	-328 to 1832°F (-200 to 1000°C)
N	-328 to 2372°F (-200 to 1300°C)
B	392 to 3272°F (200 to 1800°C)
R	32 to 3214°F (0 to 1768°C)
S	32 to 3214°F (0 to 1768°C)
Thermistor†	400 series: -22 to 212°F (-30 to 100°C) 700 series: 5 to 212°F (-15 to 100°C)
100 Ω Pt RTD‡	-328 to 1472°F (-200 to 800°C)

†Temp 9500 models only.

‡Use a 250 Ω resistor to convert to a 1 to 5 V signal.

### Control type

Temp 9000 models: on/off and PID  
Temp 9500 models: on/off, programmable PID, autotune PID, ramp and soak

**Resolution:** 0.1°, 1° above 999.9° and below -99.9°

### Accuracy [span equals 1000°F (540°C) min]

**Types J, K, T, E, and N:** ±0.1% of span  
**Types B, R, and S:** ±0.2% of span  
Thermistor: ±0.4% of span 0.7°F (0.5°C)  
RTD: ±0.1% of span

**Display:** LCD

**Operating temperature:** 32 to 104°F (0 to 40°C); 0 to 90% RH, noncondensing

**Digital output†:** USB (Temp 9500 only)

**Control output:** powered receptacle rated for 115 VAC, 15 A max or 230 VAC, 10A max††

**Alarm output:** one SPDT relay rated for 24 VAC, 1 A max; resistive (Temp 9500 only)

**Dimensions (W x H x D):** 8" x 3 3/4" x 9" (20.3 x 9.5 x 22.9 cm)



Catalog number	Description	Communication	Control output	Alarm output	Ramp/soak	Power (49 to 61 Hz)	Price
GM-89800-01	Temp 9000 thermocouple controllers	None	1800 watts	No	No	115 VAC, 15 A max	
GM-89800-02			2300 watts			230 VAC, 10 A max††	
GM-89800-03	Temp 9500 thermocouple, thermistor, RTD controllers	USB	1800 watts	Yes	Yes	115 VAC, 15 A max	
GM-89800-04			2300 watts			230 VAC, 10 A max††	

††For 230 VAC models, the control output uses a universal IEC plug. You may need an adapter for your local requirements.

[GM-17101-63](#) NIST-traceable calibration with data



89800-03

Probe not included

### Temp 9500 Data Logging Models

Offer all the features of the Temp 9000 controller, plus nine-segment ramp and soak profiling for more complex processes, USB computer interface, and free software that features real time visual of set points and process activity, along with data logging.

- Ramp-and-soak profiling for more complicated processes
- USB computer interface and free software that features real-time graphing
- Data log more than 100K data points in adjustable increments from 1 second to 999 seconds
- Alarm relay output
- Accepts eight thermocouple types with miniconnectors, plus thermistor probes with 1/4" phono plugs and RTD probes with 3-pin ANSI or Oakton®/Digi-Sense® connector.

**What's included:** 1.8-m (6-ft) power cord.

Data Loggers

Mixers

Equipment & Instrumentation

Stirrers & Hot Plates

Temperature

# Sample Prep and Storage Made Easy

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*Stiring Hot Plate page 101*

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## Cole-Parmer Tri-Corner Beakers, PP

### Easily pour from any corner

Polypropylene beakers feature a tri-corner design that provides three dripless pouring spouts. Beakers are perfect for use with stirrers—flat bottom keeps stir bars centered. Graduated with an accuracy of  $\pm 5\%$ . Withstand temperatures to 250°F (121°C). **Autoclavable.**



Tri-corner beakers

Catalog number	Capacity mL (oz)	Dimensions (H x dia)	Qty/pk	Price/1 pk	Save 10% 6-29 pks
GM-06020-01	50 (1.5)	2¼" x 2½" (5.7 x 6.7 cm)			
GM-06020-03	100 (3.5)	2¾" x 3¼" (7.1 x 8.4 cm)	100		
GM-06020-05	250 (8)	3½" x 4" (8.8 x 10.1 cm)			
GM-06020-07	400 (13)	4¾" x 4½" (11.1 x 11.5 cm)	100		
GM-06020-09	800 (26)	5¾" x 5¼" (13.7 x 13.4 cm)	100		
GM-06020-11	1000 (32)	5¾" x 5½" (14.3 x 14.1 cm)	100		
GM-06010-07	Five of each above	—	30		

## Disposable Griffin Low-Form Beakers, PP

### Molded-in graduations won't wear off

Polypropylene beakers are graduated in mL and oz. Molded-in stacking ribs prevent beakers from sticking together when stacked. **Autoclavable.**

Catalog number	Capacity mL (oz)	Graduations (mL)	Dimensions (H x OD)	Qty/pk	Price/1 pk	Save 10% 6-29 pks
GM-06006-12	15 (0.5)	5	1½" x 1½" (3.8 x 3.8 cm)	100		
GM-06006-15	15 (0.5)	5	1½" x 1½" (3.8 x 3.8 cm)	1000		
GM-06006-22	30 (1)	5	1¾" x 1¾" (4.4 x 4.4 cm)	100		
GM-06006-25	30 (1)	5	1¾" x 1¾" (4.4 x 4.4 cm)	1000		
GM-06006-32	50 (1.7)	5	2" x 2" (5.1 x 5.1 cm)	100		
GM-06006-35	50 (1.7)	5	2" x 2" (5.1 x 5.1 cm)	1000		
GM-06006-42	100 (3.5)	5	2½" x 2½" (6.4 x 6.4 cm)	100		
GM-06006-45	100 (3.5)	5	2½" x 2½" (6.4 x 6.4 cm)	1000		
GM-06006-52	150 (5)	5	3¼" x 2¾" (8.3 x 7 cm)	100		
GM-06006-55	150 (5)	5	3¼" x 2¾" (8.3 x 7 cm)	1000		
GM-06006-63	250 (8)	10	3½" x 3¼" (8.9 x 8.3 cm)	50		
GM-06006-65	250 (8)	10	3½" x 3¼" (8.9 x 8.3 cm)	500		
GM-06006-72	400 (13)	25	4½" x 3¾" (11.4 x 9.5 cm)	50		
GM-06006-75	400 (13)	25	4½" x 3¾" (11.4 x 9.5 cm)	500		
GM-06006-83	600 (20)	25	5" x 4½" (12.7 x 11.4 cm)	25		
GM-06006-85	600 (20)	25	5" x 4½" (12.7 x 11.4 cm)	500		



## Graduated Beakers with Easy-Grip Handles

### Broad range of materials to suit your needs

All beakers have molded-in graduations that never rub off. Beakers are available in five resin types: PMP, HDPE, PP, PC, and PFA.

Catalog number	Capacity mL (oz)	Dimensions (H x OD)	Qty/pk	Price/1 pk	Save 10% 6-29 pks
<b>Thermo Scientific™ Nalgene™ polymethylpentene (PMP) beakers</b>					
GM-06004-97	1000 (32)	7¼" x 6½" (18.4 x 16.5 cm)			
GM-06004-99	3000 (96)	7¾" x 9" (19.4 x 22.9 cm)	1		
<b>Thermo Scientific Nalgene high-density polyethylene (HDPE) beakers</b>					
GM-06005-10	1000 (32)	7¼" x 6¾" (18.4 x 16.2 cm)			
GM-06005-20	3000 (96)	7¾" x 9" (19.4 x 22.9 cm)	1		
<b>Polypropylene (PP) beakers</b>					
GM-06008-35	250 (8)	4¾" x 2¾" (12.1 x 7.0 cm)			
GM-06008-40	500 (16)	5¼" x 3¾" (13.3 x 9.2 cm)	1		
GM-06008-50	1000 (32)	6¾" x 4¾" (17.1 x 11.7 cm)			
GM-06008-60	2000 (64)	8½" x 5¾" (21.6 x 14.9 cm)			
GM-06008-70	3000 (96)	9½" x 6¾" (24.1 x 17.1 cm)	1		
GM-06008-80	5000 (160)	10½" x 8¼" (27.0 x 21 cm)			
<b>Polycarbonate (PC) beakers</b>					
GM-06004-80	470 (16)	4¾" x 4" (12.1 x 10.2 cm)	1		
GM-06004-85	950 (32)	5¼" x 5" (14.6 x 12.7 cm)			
GM-06004-90	1900 (64)	7" x 6" (17.8 x 15.2 cm)	1		
GM-06004-95	3800 (128)	9¼" x 7½" (23.5 x 19.1 cm)			
<b>Thermo Scientific Nalgene PFA beakers</b>					
GM-06006-00	1000 (32)	7" x 6¼" (17.8 x 15.9 cm)			
GM-06006-05	3000 (96)	7¾" x 8¾" (18.7 x 22.2 cm)	1		



Beakers

Bottles

Cable Ties

Carboys

Containers

Pipettes

Lab Supplies



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Mix and match to save 10, 15 or 20%

**Stock up & \$ave!**  
Mix and match to save 10, or 15%

Beakers

Bottles

Cable Ties

Carboys

Containers

Pipettes

Lab Supplies

**Cole-Parmer**  
**Wide-Mouth Bottles, HDPE**



**Reliable storage at an affordable price**

These leakproof, reliable, translucent high-density polyethylene (HDPE) bottles provide excellent chemical resistance. Ideal for noncontaminating storage of liquids, solids, chemicals and food-grade products. Include leakproof closures.



06045-24

Capacity mL (oz)	Dimensions (H x dia)	Cap size	Catalog number	Qty/ pk	Price/ pk
30 (1)	2¾" x 1¼"	22 mm	<a href="#">GM-06045-16</a>	12	
60 (2)	3¼" x 1½"	22 mm	<a href="#">GM-06045-18</a>		
125 (4)	4" x 2"	28 mm	<a href="#">GM-06045-24</a>		
250 (8)	5¾" x 2¾"	28 mm	<a href="#">GM-06045-26</a>		
500 (16)	6½" x 3"	28 mm	<a href="#">GM-06045-28</a>	12	
1000 (32)	8¼" x 3½"	28 mm	<a href="#">GM-06045-44</a>	6	
2000 (64)	9¾" x 4¾"	45 mm	<a href="#">GM-06045-46</a>	1	

**Sample Bottles, HDPE**

**Economical solution for sampling needs**

Bottles have good chemical resistance. Include polypropylene cap with polyethylene foam liner. Mailing tubes for 06049-01 are listed below table.



06043-01

Catalog number	Capacity mL (oz)	Dimensions (H x OD)	Qty/ pk	Price/ 1 pk
<a href="#">GM-06043-01</a>	180 (6)	4½" x 2¼" (11.4 x 5.7 cm)	300	
<a href="#">GM-06049-01</a>	250 (8)	6" x 2" (15.2 x 5.1 cm)	329	
<a href="#">GM-06050-05</a>	500 (16)	8" x 2¾" (20.3 x 6.0 cm)	198	

[GM-06049-30](#) Mailing tubes for bottle 06049-01. Carton of 240

**DON'T CHANGE IT**

Our chemical compatibility database provides important information on chemical resistance—check it out at [ColeParmer.com/ChemChart](#)



**Qorpak® Glass Sample Bottles**  
**Precleaned by Vacuum and Ionization**

**Save time—no need to prewash bottles**

- Vacuum and ionization process removes contaminants such as dirt, dust, carton lint, oil, aerosols, and fine glass particles
- Individually sealed for long-term storage with no contamination
- Bottles come with PTFE-lined caps; jars are available with PTFE-lined or pulp/vinyl-lined caps
- Clear wide-mouth square glass bottles have French square design for a more efficient use of shelf space while making the container easier to grip when pouring



Capacity mL (oz)	Dimensions (H x OD)	Neck size (mm)	Catalog number	Qty/ cs	Price/ cs
<b>A Clear narrow-mouth bottles</b>					
30 (1)	3½" x 1¾" (79 x 31 mm)	20	<a href="#">GM-34606-00</a>	48	
60 (2)	3½" x 1¾" (94 x 33 mm)	20	<a href="#">GM-34606-10</a>	24	
120 (4)	4¾" x 1¾" (112 x 48 mm)	22	<a href="#">GM-34606-20</a>		
240 (8)	5¾" x 2¾" (137 x 60 mm)	24	<a href="#">GM-34606-30</a>		
480 (16)	6¾" x 3" (168 x 75 mm)	28	<a href="#">GM-34606-40</a>	12	
960 (32)	8¾" x 3½" (210 x 94 mm)	33	<a href="#">GM-34606-50</a>		
<b>B Clear wide-mouth square glass bottles</b>					
15 (½)	2¾" x 1¾" (62 x 24 mm)	20	<a href="#">GM-34610-00</a>	48	
30 (1)	2¾" x 1¾" (72 x 35 mm)	24	<a href="#">GM-34610-10</a>		
60 (2)	3¾" x 1½" (86 x 37 mm)	28	<a href="#">GM-34610-20</a>		
120 (4)	4¾" x 1¾" (112 x 45 mm)	33	<a href="#">GM-34610-30</a>	24	
240 (8)	5¾" x 2" (137 x 51 mm)	43	<a href="#">GM-34610-40</a>		
480 (16)	6½" x 2¾" (167 x 62 mm)	48	<a href="#">GM-34610-50</a>		
960 (32)*	8" x 1¾" (202 x 33 mm)	58	<a href="#">GM-34610-60</a>	12	
<b>C Amber narrow-mouth glass bottles</b>					
60 (2)	3½" x 1½" (94 x 39 mm)	20	<a href="#">GM-34607-00</a>	24	
120 (4)	4¾" x 1¾" (112 x 48 mm)	22	<a href="#">GM-34607-10</a>		
240 (8)	5¾" x 2¾" (138 x 60 mm)	24	<a href="#">GM-34607-20</a>		
480 (16)	6¾" x 3" (168 x 75 mm)	28	<a href="#">GM-34607-30</a>	12	
960 (32)	8¾" x 3½" (210 x 94 mm)	33	<a href="#">GM-34607-40</a>		
<b>D Amber wide-mouth glass bottles</b>					
30 (1)	2¾" x 1¾" (65 x 36 mm)	28	<a href="#">GM-34609-00</a>	24	
60 (2)	3" x 1½" (75 x 44 mm)	33	<a href="#">GM-34609-10</a>		
120 (4)	3½" x 2½" (95 x 54 mm)	38	<a href="#">GM-34609-20</a>		
240 (8)	4½" x 2¾" (119 x 65 mm)	45	<a href="#">GM-34609-30</a>	12	
480 (16)	5½" x 3¾" (146 x 81 mm)	53	<a href="#">GM-34609-40</a>		
960 (32)	7" x 3½" (178 x 89 mm)	58	<a href="#">GM-34609-50</a>		
<b>E Clear wide-mouth glass jars with PTFE lined caps</b>					
30 (1)	1½" x 1½" (43 x 43 mm)	43	<a href="#">GM-34608-00</a>	24	
60 (2)	1¾" x 2¾" (49 x 55 mm)	53	<a href="#">GM-34608-10</a>		
120 (4)	2½" x 2¾" (69 x 60 mm)	58	<a href="#">GM-34608-20</a>		
270 (9)	3½" x 2¾" (89 x 73 mm)	70	<a href="#">GM-34608-30</a>	12	
480 (16)	3¾" x 3¾" (96 x 91 mm)	89	<a href="#">GM-34608-40</a>		
960 (32)	6½" x 3½" (170 x 95 mm)	89	<a href="#">GM-34608-50</a>		
<b>F Clear wide-mouth glass jars with pulp/vinyl lined caps</b>					
30 (1)	1½" x 1½" (43 x 43 mm)	43	<a href="#">GM-34608-05</a>	24	
60 (2)	1¾" x 2¾" (49 x 55 mm)	53	<a href="#">GM-34608-15</a>		
120 (4)	2½" x 2¾" (69 x 60 mm)	58	<a href="#">GM-34608-25</a>		
270 (9)	3½" x 2¾" (89 x 73 mm)	70	<a href="#">GM-34608-35</a>	12	
480 (16)	3¾" x 3¾" (96 x 91 mm)	89	<a href="#">GM-34608-45</a>		
960 (32)	6½" x 3½" (170 x 95 mm)	89	<a href="#">GM-34608-55</a>		

\*Graduated in mL and oz.

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## Solid-Design Cable Ties

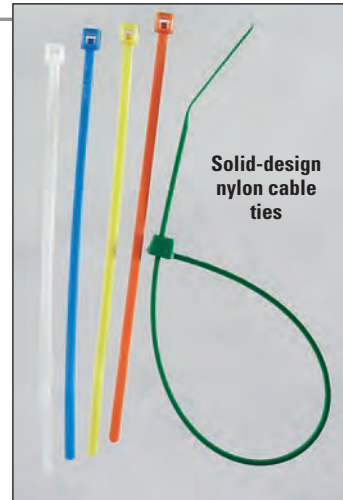
### Injection-molded plastic won't corrode or stretch

These solid 6/6 nylon ties hold heavy loads; bend tip for simple installation. Durable locking mechanism holds securely even when used to bundle vibrating or flexing materials. Ties continue to hold tension even in oily spray or wet environments. Easily apply ties by hand or use a tensioning tool—order tools separately online.

Ties withstand temperatures to 185°F (85°C). Black ties are UV and weather resistant from -40 to 221°F (-40 to 105°C). All ties remain flexible to -40°F (-40°C). Melting temperature is 495°F (257°C). Efficient range of ties may be higher or lower depending on your specific application.

All ties are UL-component recognized, are self-extinguishing as per UL 94 Flam. class: V-2, and meet military specification MS3367.

Go to [www.coleparmer.com](http://www.coleparmer.com) for our full selection of cable ties, with differing lengths and tensile strengths.



Solid-design nylon cable ties



06830-51 and -55 have a write-on identification tab



Catalog number	Length	Bundle dia	Color	Qty/pk	Price/pk
<b>Miniature, 18-lb tensile strength</b>					
<a href="#">GM-06830-66</a>	4" (10.2 cm)	7/8" (2.2 cm)	White	100	
<a href="#">GM-06830-52</a>				1000	
<a href="#">GM-06830-51†</a>				1000	
<a href="#">GM-06830-68</a>	4" (10.2 cm)	7/8" (2.2 cm)	Black	100	
<a href="#">GM-06830-67</a>				1000	
<a href="#">GM-06830-11</a>	4" (10.2 cm)	7/8" (2.2 cm)	Red	100	
<a href="#">GM-06830-61</a>				1000	
<a href="#">GM-06830-12</a>	4" (10.2 cm)	7/8" (2.2 cm)	Blue	100	
<a href="#">GM-06830-62</a>				1000	
<a href="#">GM-06830-13</a>	4" (10.2 cm)	7/8" (2.2 cm)	Green	100	
<a href="#">GM-06830-63</a>				1000	
<a href="#">GM-06830-14</a>	4" (10.2 cm)	7/8" (2.2 cm)	Yellow	100	
<a href="#">GM-06830-64</a>				1000	
<a href="#">GM-06830-15</a>	4" (10.2 cm)	7/8" (2.2 cm)	Orange	100	
<a href="#">GM-06830-65</a>				1000	

Catalog number	Length	Bundle dia	Color	Qty/pk	Price/pk
<b>Intermediate, 40-lb tensile strength</b>					
<a href="#">GM-06830-76</a>	5½" (14.0 cm)	1¼" (3.2 cm)	White	100	
<a href="#">GM-06830-54</a>			White	1000	
<a href="#">GM-06830-78</a>	5½" (14.0 cm)	1¼" (3.2 cm)	Black	100	
<a href="#">GM-06830-77</a>			Black	1000	
<a href="#">GM-06830-87</a>	8" (20.3 cm)	2½" (5.4 cm)	White	100	
<a href="#">GM-06830-30</a>			White	1000	
<a href="#">GM-06830-89</a>	8" (20.3 cm)	2½" (5.4 cm)	Black	100	
<a href="#">GM-06830-88</a>			Black	1000	
<a href="#">GM-06830-16</a>	8" (20.3 cm)	2½" (5.4 cm)	Red	100	
<a href="#">GM-06830-31</a>			Red	1000	
<a href="#">GM-06830-17</a>	8" (20.3 cm)	2½" (5.4 cm)	Blue	100	
<a href="#">GM-06830-32</a>			Blue	1000	
<a href="#">GM-06830-18</a>	8" (20.3 cm)	2½" (5.4 cm)	Green	100	
<a href="#">GM-06830-33</a>			Green	1000	
<a href="#">GM-06830-19</a>	8" (20.3 cm)	2½" (5.4 cm)	Yellow	100	
<a href="#">GM-06830-34</a>			Yellow	1000	
<a href="#">GM-06830-21</a>	8" (20.3 cm)	2½" (5.4 cm)	Orange	100	
<a href="#">GM-06830-41</a>			Orange	1000	

Catalog number	Length	Bundle dia	Color	Qty/pk	Price/pk
<b>Standard, 50-lb tensile strength</b>					
<a href="#">GM-06830-43</a>	7½" (19.1 cm)	1¾" (4.4 cm)	White	100	
<a href="#">GM-06830-56</a>				1000	
<a href="#">GM-06830-55†</a>				1000	
<a href="#">GM-06830-45</a>	7½" (19.1 cm)	1¾" (4.4 cm)	Black	100	
<a href="#">GM-06830-44</a>				1000	
<a href="#">GM-06830-47</a>	11" (27.9 cm)	3" (7.6 cm)	White	100	
<a href="#">GM-06830-46</a>				1000	
<a href="#">GM-06830-49</a>	11" (27.9 cm)	3" (7.6 cm)	Black	100	
<a href="#">GM-06830-48</a>				1000	
<a href="#">GM-06830-58</a>	15" (38.1 cm)	4" (10.2 cm)	White	100	
<a href="#">GM-06830-53</a>				500	
<a href="#">GM-06830-29</a>	15" (38.1 cm)	4" (10.2 cm)	Black	100	
<a href="#">GM-06830-28</a>				500	

Catalog number	Length	Bundle dia	Color	Qty/pk	Price/pk
<b>Heavy duty, 120-lb tensile strength</b>					
<a href="#">GM-06830-36</a>	14½" (36.8 cm)	4" (10.2 cm)	White	50	
<a href="#">GM-06830-91</a>				100	
<a href="#">GM-06830-93</a>	14½" (36.8 cm)	4" (10.2 cm)	Black	50	
<a href="#">GM-06830-92</a>				100	
<a href="#">GM-06830-37</a>	21" (53.3 cm)	6" (15.2 cm)	White	50	
<a href="#">GM-06830-94</a>				Black	50
<a href="#">GM-06830-38</a>	24" (61.0 cm)	7" (17.8 cm)	White	50	
<a href="#">GM-06830-97</a>				Black	50
<a href="#">GM-06830-39</a>	28" (71.1 cm)	8" (20.3 cm)	White	50	
<a href="#">GM-06830-98</a>				Black	50

Catalog number	Length	Bundle dia	Color	Qty/pk	Price/pk
<b>Extra heavy duty, 175-lb tensile strength</b>					
<a href="#">GM-06830-42</a>	34" (86.4 cm)	10" (25.4 cm)	White	50	
<a href="#">GM-06830-99</a>				Black	50

†Ties 06830-51 and -55 have a textured, write-on identification tab.

## Crescent® Plastic-Cutting Diagonal Pliers

### Get close and accurate cutting

These solid-joint diagonal pliers are designed specifically for cutting plastic material. Extra slim design, ground-flat back, oval-shaped jaws, and flush ground cutting edges permit close trimming and accurate cutting in tight areas. Vinyl cushion grips and coil springs provide user comfort and reduce fatigue. Pliers measure 6" (15.2 cm) L; nose measures 27/32" (21 mm) L x 47/64" (19 mm) W.



97109-25

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Catalog number	Description	Price
<a href="#">GM-97109-25</a>	Plastic-cutting diagonal pliers	

# You're Out? We're Not!

Thousands of **highlighted** items



## Cole-Parmer® Economical Heavy-Duty Carboys with Shoulder Handle, PP



### Designed for easy filling and dispensing

Heavy-duty graduated polypropylene (PP) carboys feature octagonal shape for increased rigidity when full. Offset neck allows easier filling and pouring. Molded shoulder handle is sealed at the ends to prevent contamination. Models with the leakproof spigot are supplied with a tube fitting to accept 0.31" (8-mm) ID tubing. Carboys include a PP screw closure. Maximum temperature is 275°F (135°C). **Autoclavable.**



62507-10

62507-15

Catalog number	Liters (gallons)	Dimensions (L x W x H)		Cap size	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks
		in.	cm				
<b>Heavy-duty carboys with shoulder handle</b>							
<b>GM-62507-00</b>	5 (1¼)	7½ x 7½ x 10½	19.1 x 19.1 x 27.0	45 mm	1		
<b>GM-62507-10</b>	10 (2½)	9½ x 9½ x 14½	23.8 x 23.8 x 35.9	90 mm	1		
<b>GM-62507-20</b>	20 (5¼)	11½ x 11½ x 16½	30.2 x 30.2 x 41.9	90 mm	1		
<b>Heavy-duty carboys with shoulder handle and spigot</b>							
<b>GM-62507-05</b>	5 (1¼)	7½ x 7½ x 10½	19.1 x 19.1 x 27.0	45 mm	1		
<b>GM-62507-15</b>	10 (2½)	9½ x 9½ x 14½	23.8 x 23.8 x 35.9	90 mm	1		
<b>GM-62507-25</b>	20 (5¼)	11½ x 11½ x 16½	30.2 x 30.2 x 41.9	90 mm	1		

Beakers

Bottles

Cable Ties

Carboys

Containers

Pipettes

Lab Supplies

## Thermo Scientific™ Nalgene™ Round Carboys, LDPE

### Durable, leakproof storage for even corrosive materials

All 10-liter and larger carboys are graduated in 1-gallon and 5-liter increments and feature wide shoulder grips that make them easy to grasp. The 4-liter model 06065-10 has a shoulder tab-grip with an 11-mm hole. Polypropylene (PP) cap ensures leakproof seal.

Carboys with PP spigots accept 5/8" ID tubing and come with adapters for 1/4" and 1/2" ID tubing. Carboys with tubulation feature a hose barb, molded in at bottom of carboy for strength and leak resistance, which allows near-complete drainage. Tubing is not included—order at [www.coleparmer.com/tubing](http://www.coleparmer.com/tubing).



Wide-mouth style carboy 06056-22

Carboy with spigot 06065-32



Leakproof



Carboy with tubulation 06080-52 (tubing not included)

Catalog number	Liters (gallons)	Dimensions (H x dia)		Cap size	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks
		in.	cm				
<b>Carboys with shoulder handles</b>							
<b>GM-06031-32</b>	10 (2½)	15¼ x 9¾	38.7 x 25.0	83B	1		
<b>GM-06031-42</b>	15 (4)	17 x 11¼	43.2 x 28.6	83B			
<b>GM-06031-52</b>	20 (5)	20¾ x 11	52.7 x 27.9	83B			
<b>GM-06031-62</b>	25 (6½)	23¾ x 11¾	59.4 x 28.9	83B			
<b>GM-06031-72</b>	50 (13)	26¾ x 15	68.0 x 38.1	83B			
<b>Wide-mouth carboys with shoulder handles</b>							
<b>GM-06056-22</b>	10 (2½)	13½ x 9¾	34.3 x 24.8	100 mm	1		
<b>GM-06056-32</b>	15 (4)	15¾ x 11¾	39.0 x 28.9	100 mm			
<b>GM-06056-52</b>	20 (5)	19 x 11	48.3 x 27.9	100 mm			
<b>Carboy with spigot and shoulder handles</b>							
<b>GM-06065-10</b>	4 (1)	13¼ x 6	33.7 x 15.2	38-430	1		
<b>GM-06065-22</b>	10 (2½)	15¾ x 9¾	39.0 x 24.8	83B			
<b>GM-06065-32</b>	20 (5)	20¾ x 11	53.0 x 27.9	83B			
<b>GM-06065-52</b>	25 (6½)	23¾ x 11¾	59.4 x 28.9	83B			
<b>GM-06065-62</b>	50 (13)	26¾ x 15	68.2 x 37.9	83B			
<b>Carboys with ½" OD tubulation and shoulder handles</b>							
<b>GM-06080-42</b>	10 (2½)	15¾ x 9¾	39.0 x 25.0	83B	1		
<b>GM-06080-52</b>	20 (5¼)	20¾ x 11	53.0 x 27.9	83B			

**GM-06258-30** Replacement cap; PP, 83B. Pack of 2

**GM-63000-16** Replacement cap; PP, 100 mm. Pack of 12

**GM-63000-18** Replacement cap; PP, 38-430. Pack of 12

**GM-06070-22** Replacement spigot, PP

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[ColeParmer.com/Carboys](http://ColeParmer.com/Carboys)



# Stock up & Save!

Mix and match to save 10, 15 or 20%

## Cole-Parmer Disposable Lab Containers, PPCO

### Stackable containers save space

Translucent polypropylene copolymer (PPCO) containers resist damage from boiling and freezing, and are impervious to most lab chemicals (including formaldehyde). Come with tight-fitting lids.



Catalog number	Capacity mL (oz)	Dimensions (H x OD)		Qty/pk	Price/pk	Save 10% 6-29 pks
		in.	cm			
<a href="#">GM-06727-00</a>	120 (4)	1½ x 3½	2.8 x 8.9	250		
<a href="#">GM-06727-10</a>	240 (8)	2¼ x 2¾	7.0 x 7.0	250		
<a href="#">GM-06727-20</a>	480 (16)	3¾ x 2¾	9.2 x 7.0	100		
<a href="#">GM-06727-30</a>	960 (32)	4¾ x 3¾	11.7 x 8.6	100		
<a href="#">GM-06727-35</a>	2000 (64)	6 x 5½	15.2 x 14.0	50		
<a href="#">GM-06727-42</a>	2500 (83)	5¾ x 6¾	14.6 x 16.8	25		
<a href="#">GM-06727-50</a>	5000 (170)	8½ x 7¾	20.6 x 19.7	25		



## Graduated Sample Containers, PP

### Leakproof design for better sample containment

Graduated polypropylene (PP) containers are translucent, unbreakable, and chemical-resistant. Containers tolerate strong acids, alkalis, and most organic solvents. Full-turn screw thread provides leakproof seal. Choose from sterile or nonsterile versions; sterile containers are individually bagged.

**NEW**

**STERILE**

Catalog number	Capacity mL (oz)	Dimensions (H x OD)		Description	Qty/pk	Price/1 pk	Save 10% 6-29 pks
		in.	cm				
<a href="#">GM-06049-40</a>	118 (4)	3 x 2½	7.6 x 6.4	Sterile	100		
<a href="#">GM-06049-50</a>	118 (4)	3 x 2½	7.6 x 6.4	Nonsterile with white tab	500		



06049-50

## Cole-Parmer Graduated Cylinders, PP and PMP

### Molded graduations will not wear off

Cylinders are calibrated "to contain." Polypropylene (PP) cylinders offer very good chemical resistance; transparent polymethylpentene (PMP) cylinders offer good chemical and heat resistance. Meet ISO Standard 6706. **Autoclavable.**



Capacity (mL)	Graduations (mL)	Height	Qty/pk	Polypropylene (PP) cylinders		Polymethylpentene (PMP) cylinders	
				Catalog number	Price	Catalog number	Price
10	0.2	5½" (14.0 cm)	1	<a href="#">GM-06137-70</a>		<a href="#">GM-06137-50</a>	
25	0.5	6¾" (16.9 cm)	1	<a href="#">GM-06137-72</a>		<a href="#">GM-06137-52</a>	
50	1.0	7¾" (20.0 cm)	1	<a href="#">GM-06137-74</a>		<a href="#">GM-06137-54</a>	
100	1.0	9¾" (23.8 cm)	1	<a href="#">GM-06137-76</a>		<a href="#">GM-06137-56</a>	
250	2.0	12¾" (31.5 cm)	1	<a href="#">GM-06137-78</a>		<a href="#">GM-06137-58</a>	
500	5.0	14¾" (36.0 cm)	1	<a href="#">GM-06137-80</a>		<a href="#">GM-06137-60</a>	
1000	10.0	17¾" (44.0 cm)	1	<a href="#">GM-06137-82</a>		<a href="#">GM-06137-62</a>	
2000	20.0	21" (53.3 cm)	1	<a href="#">GM-06137-84</a>		<a href="#">GM-06137-64</a>	



PP 06137-74

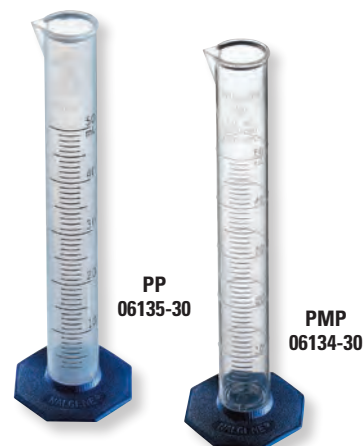
PMP 06137-54

## Thermo Scientific™ Nalgene™ Calibrated Graduated Cylinders, PP and PMP

### Easy-to-read molded graduations

Calibrated T.C./T.D. at 20°C. Polypropylene (PP) cylinders offer very good chemical resistance; transparent polymethylpentene (PMP) cylinders offer good chemical and heat resistance. Meet ASTM Class B, E 1272 specifications and ISO Standard 6706. Nonwetting; no meniscus. **Autoclavable,** but may affect accuracy. Call for additional sizes.

Capacity (mL)	Graduations (mL)	Tolerance (mL)	Height	Qty/pk	Polypropylene (PP) cylinders		Polymethylpentene (PMP) cylinders	
					Catalog number	Price/pk	Catalog number	Price/pk
10	0.2	±0.20	4¾" (11.0 cm)	1	<a href="#">GM-06135-10</a>		<a href="#">GM-06134-10</a>	
50	1.0	±0.50	7¾" (18.4 cm)	1	<a href="#">GM-06135-30</a>		<a href="#">GM-06134-30</a>	
100	1.0	±1.00	9¾" (25.1 cm)	1	<a href="#">GM-06135-40</a>		<a href="#">GM-06134-40</a>	
500	5.0	±4.00	15½" (39.4 cm)	1	<a href="#">GM-06135-60</a>		<a href="#">GM-06134-60</a>	
1000	10.0	±6.00	17¾" (45.1 cm)	1	<a href="#">GM-06135-70</a>		<a href="#">GM-06134-70</a>	
4000	50.0	±29.00	24" (61.0 cm)	1	<a href="#">GM-06135-90</a>		<a href="#">GM-06134-90</a>	



PP 06135-30

PMP 06134-30

Beakers

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# You're Out? We're Not!

Thousands of **highlighted** items

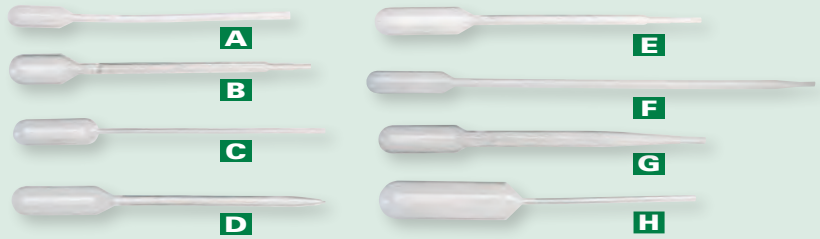


## Cole-Parmer Disposable Transfer Pipettes

### Easy draw and precision delivery

- Deliver repeatable, uniform drops

Use these unbreakable low-density polyethylene (LDPE) pipettes to eliminate the chance of contamination from rubber bulbs. Configured to fit into a variety of vessels. Choose the bulb draw and graduations or drops/mL needed for measurement and delivery.



Key	Catalog number	Description	Graduations		Bulb draw	Total capacity	Drops per mL	Length in. (mm)	Qty/pk	Price/pk
			Increments	Maximum						
<b>A</b>	<b>GM-06226-37</b>	Small bulb, graduated	0.1 mL	0.3 mL	0.8 mL	1.5 mL	21	4 <sup>5</sup> / <sub>8</sub> (117)	500	
<b>B</b>	<b>GM-06226-41</b>	Small bulb, graduated	0.25 mL	1 mL	2.2 mL	3.9 mL	25	5 <sup>1</sup> / <sub>2</sub> (140)	500	
<b>C</b>	<b>GM-06226-65</b>	Large capacity, thin stem	—	—	3.3 mL	4.6 mL	25	6 <sup>1</sup> / <sub>8</sub> (156)	500	
<b>D</b>	<b>GM-06226-67</b>	Large capacity, fine tip	—	—	3.5 mL	5.8 mL	50	6 <sup>1</sup> / <sub>4</sub> (159)	500	
<b>E</b>	<b>GM-06226-61</b>	Large capacity, graduated	0.25 mL	1 mL	3.4 mL	5.8 mL	25	6 <sup>1</sup> / <sub>8</sub> (156)	500	
<b>F</b>	<b>GM-06226-69</b>	Large capacity, extra-long stem	—	—	2.3 mL	6.0 mL	25	9 (229)	400	
<b>G</b>	<b>GM-06226-63</b>	Large capacity, graduated	0.5 mL	3.0 mL	3.2 mL	7.5 mL	20	6 <sup>1</sup> / <sub>8</sub> (156)	500	
<b>H</b>	<b>GM-06226-51</b>	Jumbo bulb, long stem	—	—	8.0 mL	15.0 mL	19	6 <sup>1</sup> / <sub>8</sub> (156)	250	

## Cole-Parmer Pipettors

### Soft plunger movement minimizes hand fatigue

- Excellent accuracy and performance at an economical price
- Ergonomic, lightweight design

Pipettors feature streamlined, low-pressure tip ejector for easy access to narrow containers. They facilitate last drop dispensing and reverse pipetting technique with two-stage plunger operation for blow-out. Easy to calibrate and disassemble for routine servicing or autoclaving.

Adjustable-volume and multichannel pipettors feature quick, easy click-stop, digital volume settings. Individually calibrated in accordance with DIN 12650 Standards and supplied with a computer-generated calibration document supplied by the manufacturer and calibration tool.

### Specifications



**Tip ejector:** tip ejector with blow-out step

**Autoclavable:** single-channel models have autoclavable tip cone and lower section assembly; multichannel models are fully autoclavable

Catalog number	Volume	Increments (µL)	Accuracy	Reproducibility	Price
<b>Single-channel fixed-volume pipettors</b>					
<b>GM-21600-00</b>	100 µL				
<b>GM-21600-02</b>	200 µL				
<b>GM-21600-04</b>	500 µL	—	±0.3%	±0.2%	
<b>GM-21600-06</b>	1000 µL				
<b>GM-21600-08</b>	5000 µL				
<b>Single-channel adjustable-volume pipettors</b>					
<b>GM-21600-10</b>	0.1 to 10 µL	0.1	±2.5%	±1.33%	
<b>GM-21600-12</b>	5 to 50 µL	1.0	±1.3%	±0.7%	
<b>GM-21600-14</b>	10 to 100 µL	1.0	±1.1%	±0.4%	
<b>GM-21600-16</b>	20 to 200 µL	1.0	±0.9%	±0.3%	
<b>GM-21600-18</b>	100 to 1000 µL	10.0	±0.8%	±0.2%	
<b>GM-21600-20</b>	500 to 5000 µL	100.0	±0.6%	±0.2%	
<b>Eight-channel pipettors</b>					
<b>GM-21600-01</b>	0.5 to 10 µL	0.1	±4.0 to ±1.5%	±4.0 to ±1.5%	
<b>GM-21600-03</b>	2 to 20 µL	0.1	±4.0 to ±1.5%	±4.0 to ±1.0%	
<b>GM-21600-05</b>	5 to 50 µL	1	±3.0 to ±0.5%	±2.0 to ±0.5%	
<b>GM-21600-07</b>	10 to 100 µL	1	±1.5 to ±0.5%	±1.5 to ±0.5%	
<b>GM-21600-09</b>	20 to 200 µL	1	±1.5 to ±0.5%	±1.0 to ±0.5%	
<b>GM-21600-11</b>	40 to 300 µL	1.0	±1.0 to ±0.5%	±0.8 to ±0.2%	
<b>Twelve-channel pipettors</b>					
<b>GM-21600-13</b>	0.5 to 10 µL	0.1	±4.0 to ±1.5%	±4.0 to ±1.5%	
<b>GM-21600-15</b>	2 to 20 µL	0.1	±4.0 to ±1.5%	±4.0 to ±1.0%	
<b>GM-21600-17</b>	5 to 50 µL	1	±3.0 to ±0.5%	±2.0 to ±0.5%	
<b>GM-21600-19</b>	10 to 100 µL	1	±1.5 to ±0.5%	±1.5 to ±0.5%	
<b>GM-21600-21</b>	20 to 200 µL	1	±1.5 to ±0.5%	±1.0 to ±0.5%	
<b>GM-21600-23</b>	40 to 300 µL	1.0	±1.0 to ±0.5%	±0.8 to ±0.2%	

**GM-17104-00** NIST-traceable calibration with data. Price is per channel



21600-12

21600-23

### Tips

Catalog number	Volume (µL)	Qty/pk	Price/pk
<b>GM-25711-02</b>	0.2 to 10	1000	
<b>GM-25711-06</b>	0.2 to 10	960	
<b>GM-25711-12</b>	0 to 200	1000	
<b>GM-25711-14</b>	0 to 200	960	
<b>GM-25711-50</b>	200 to 1300	1000	
<b>GM-25711-70</b>	1000 to 5000	1000	
<b>GM-25711-71</b>	1000 to 5000	500	
<b>GM-25711-72</b>	1000 to 5000	250	

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