

# Fluid Handling Sourcebook

**Monitor and  
control your  
pumps 24/7  
with *MASTERflexLIVE***

See pages 2-3

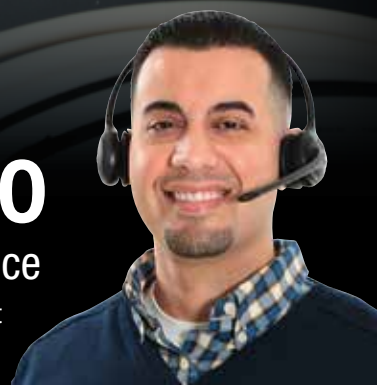


Find  
**>100,000** products  
at **ColeParmer.com**

**1-800-323-4340**

Expert product assistance

Polo, Application Specialist



# Cole-Parmer: experts in science, dedicated to your success

At Cole-Parmer, you come first. We've been in the industry more than 60 years, so we understand your expectations and challenges. That's why you will only find industry-leading brands you can trust, backed by a team of application experts who will work with you to meet your requirements. Consider us part of your team. We are dedicated to being your source for fluid handling products, instrumentation, equipment, and supplies. Your 100% satisfaction is our number one goal.

**We look forward to helping you succeed.**



## Have questions?

We have answers.

Our team of highly-trained technical specialists has more than 150 years of experience solving the most demanding customer applications. We will work with you on product selection, troubleshooting, regulatory compliance, or maintenance and repair. With expertise across scientific and industrial disciplines, we will help you achieve the highest performance and cost effectiveness for your project. Call, email, or live chat today to put us to work for you.



**1-800-323-4340**



**ColeParmer.com**



**sales@coleparmer.com**



**1-847-247-2929**

Go to [ColeParmer.com/Terms](https://www.coleparmer.com/terms) for a full list of terms and conditions. For full information on returns, go to [ColeParmer.com/returns](https://www.coleparmer.com/returns).

©2018 Cole-Parmer Instrument Company, LLC. All rights reserved. Printed in the United States of America. For a listing of Cole-Parmer owned trademarks, go to [ColeParmer.com/trademarks](https://www.coleparmer.com/trademarks). All other trademarks, servicemarks, tradenames, or other logos of third parties are and remain the property of such third parties.

# Ensure Your Accuracy. Get Calibrated.

- ✓ Precalibration
- ✓ Recalibration
- ✓ On-Site
- ✓ Repair



### Conformity\*

ANSI/ISO/IEC 17025:2005 accredited  
 NIST Handbook 150, 2000 Edition  
 ANSI/NCSL Z540-2-1997  
 NIST Technical Note 1297 ISO 9000:2000

\*Please check our scope of accreditation for any limitations.

## INNOCAL®

INNOVATIVE CALIBRATION SOLUTIONS

1-866-INNOCAL (1-866-466-6225)  
 InnoCalSolutions.com info@innocalsolutions.com

## Look Inside for...



Masterflex® L/S®  
 Digital Pump System

★★★★★  
 Customer Approved

### Fluid Handling

Masterflex® Pumps & Tubing	2-34
Ismatec® Pumps & Tubing	35-41
Pumps	42-50
Tubing	52-59
Fittings	60-65
Filtration	66-69
Flowmeters	70-74
Valves	75-76

Cole-Parmer®  
 Digital Batch  
 Mixer



### Equipment & Instrumentation

Balances	77
Baths & Circulators	78
Compressors	79
Mixers	80-84
Pressure	85-86
Spectrophotometers	113
Stirrers & Hot Plates	87-88
Temperature	89-93

NEW

Oakton® pHTestr® 5  
 Pocket Tester



### Electrochemistry

Conductivity	95-98
pH/Ion	99-103

### Stock up & Save!



### Lab Supplies

Bags	104
Beakers	105
Bottles	106-107
Carboys	108
Clamps & Supports	109
Cleaning Solutions	110
Gloves	111
Pipettes & Pipettors	112

Find even more at **ColeParmer.com**

# 1 resource 100,000 products



Research  
 specs and  
 technical articles



Live Chat  
 expert answers  
 immediately



Watch  
 videos to  
 do it right

Plus, convenient  
 tools to help you:

**You Need It.  
 We've Got It!  
 Guaranteed.**



Look for items with a GIS icon and catalog numbers highlighted in orange. If any of these items are not in stock when you order, we will pay the shipping costs!\*

\*GIS items in this catalog are guaranteed in stock through 12/31/18 when you use the two-letter alpha code prefix with the product catalog number. Program valid only in the US and Canada. Cole-Parmer reserves the right to extend or remove GIS items at any time.



# Masterflex® Cloud-Enabled Drives Featuring MasterflexLive™

## Real-time remote pump control and monitoring

- Secure, cloud-enabled platform for control and monitoring of select L/S® and I/P® pumps
- Get real-time control of all pump parameters, including speed, flow rate, dispense volume, and more
- Push notifications alert you to operating conditions and error messages
- Monitor and adjust critical processes running 24/7—no need to be onsite
- “Hands-free” operation lets you control pumps operating inside cleanrooms, glove boxes or isolation chambers
- Access from your PC, tablet or smart-phone (iOS and Android compatible)
- Internet connection via standard Ethernet (RJ45) jack on rear of drive



rpm	Flow range (mL/min)	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Power (50/60 Hz)	Catalog number	Price
<b>L/S cloud-enabled digital drive</b>									
0.02 to 100	0.001 to 588	±0.1%	Yes	4	1/10 hp (75 W)	IP33	90 to 260 VAC	<a href="#">JT-07551-60</a>	
0.1 to 600	0.006 to 3400			2				<a href="#">JT-07551-50</a>	
<b>L/S cloud-enabled digital process drive with 316 stainless steel housing</b>									
0.1 to 600	0.006 to 3400	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	<a href="#">JT-07575-70</a>	
<b>L/S cloud-enabled digital process drive with powder-coat steel housing</b>									
0.1 to 600	0.006 to 3400	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	<a href="#">JT-07575-72</a>	
<b>I/P cloud-enabled digital process drive with 316 stainless steel housing</b>									
0.1 to 650	0.6 to 26,000	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	<a href="#">JT-77420-50</a>	
<b>I/P cloud-enabled digital process drive with powder-coat steel housing</b>									
0.1 to 650	0.6 to 26,000	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	<a href="#">JT-77420-60</a>	

# Monitor and control your pumps via the cloud.

## 24/7 remote access from anywhere

Choose from standard or premium options to meet your pump remote control and monitoring needs.

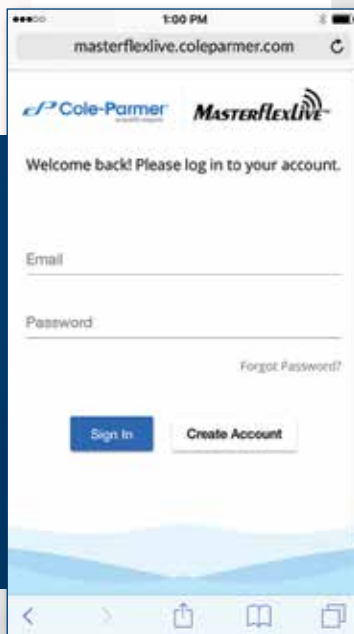
Standard (free) subscription: Get the latest cloud-based technology with secure pump connectivity for remote control and monitoring.

Premium\* subscription: When enhanced security and data control is critical to your operation, select a premium subscription account for complete data access and management. Meets requirements for 21CFR compliance.

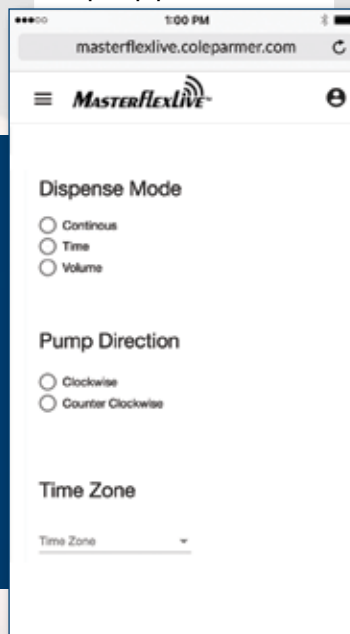
Features	Standard	Premium*
Monitor pump status	✓	✓
Receive alerts & notifications by text or email	✓	✓
Emergency start/stop	✓	✓
Adjust all parameters (start/stop, tubing size, flow rate, dispense volume)	✓	✓
Set up, save, and delete programs	✓	✓
Manage up to 3 user level settings for security	✓	✓
Data access, management, and enhanced security		✓
- Log and time stamp all operating parameters		✓
- Export record of all pump activity		✓
- IQ/OQ documentation		✓
Meet 21CFR compliance		✓

\*Requires a monthly subscription.

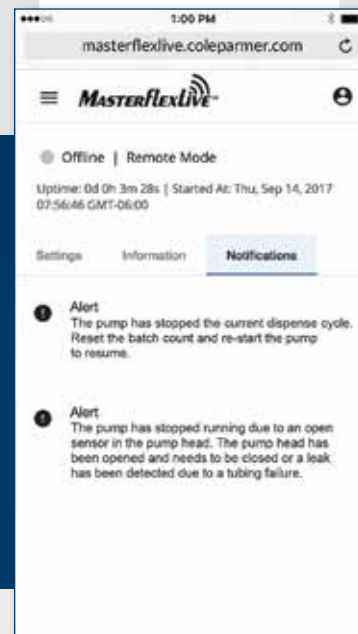
### Create an account



### Manage & control pump parameters



### Get alerts & notifications



For more information, go to  
[ColeParmer.com/MasterflexLive](http://ColeParmer.com/MasterflexLive)

## Masterflex® Drives with Advanced Networking and Communication

Faster, less expensive automation integration—no gateways or adapters needed

- Native Ethernet/IP or Profibus communication—no additional hardware or firmware required
- Includes .EDS or GSD standard text files for upload
- Bluetooth Low Energy (BLE) connectivity and iOS-based mobile app permit local pump monitoring and control
- Cloud-based remote pump monitoring capability provides operational status and alerts
- Compatible with most of today's advanced automation control systems, such as Allen-Bradley®, Siemens®, Emerson®, and Honeywell®

rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Power (50/60 Hz)	With Ethernet/IP		With Profibus	
							Catalog number	Price	Catalog number	Price
<b>L/S network-compatible digital drive</b>										
0.1 to 600	±0.1%	Yes	2	1/10 hp (75 W)	IP33	90 to 260 VAC	<a href="#">JT-07551-40</a>		<a href="#">JT-07551-42</a>	
<b>L/S network-compatible digital process drive with 316 stainless steel housing</b>										
0.1 to 600	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	<a href="#">JT-07575-50</a>		<a href="#">JT-07575-52</a>	
<b>L/S network-compatible digital process drive with powder-coat steel housing</b>										
0.1 to 600	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	<a href="#">JT-07575-60</a>		<a href="#">JT-07575-62</a>	
<b>I/P network-compatible digital process drive with 316 stainless steel housing</b>										
0.1 to 650	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	<a href="#">JT-77420-30</a>		<a href="#">JT-77420-32</a>	
<b>I/P network-compatible digital process drive with powder-coat steel housing</b>										
0.1 to 650	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	<a href="#">JT-77420-40</a>		<a href="#">JT-77420-42</a>	

## 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
- Interface drive to your PC via DB9 serial or USB connector
- Graphical LCD shows four operating modes: continuous run, time dispense, copy dispense, and volume dispense. View pump performance continually
- Antidrip function ensures dispensing accuracy
- Remote control capabilities via DB25 female connector on drive
- Models equipped with open-head sensor stop drive motor when pump head is opened—pair with an open-head sensor equipped pump head (see pages 15–16)

**FEATURES**

- ✓ 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 Easy-Load II pump head 77200-62

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.



rpm	Speed control (resolution)	Open-head sensor	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)		Catalog number	Price
							VAC	Amps		
0.1 to 600	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	No	2	$\frac{1}{10}$ hp (75 W)	IP33		90 to 260 VAC	2.2 at 115 VAC, 1.1 at 230 VAC	JT-07551-20	
		Yes							JT-07551-28	
0.02 to 100	No	4	JT-07551-30							
	Yes		JT-07551-38							

**Accessories**

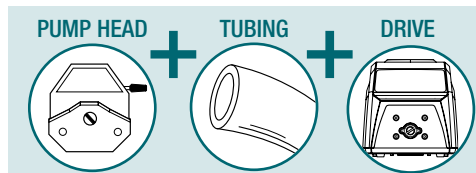
- JT-07523-92 Foot switch**, momentary start/stop; 6-ft (1.8-m) cable
- JT-07523-94 DB25 male connector**. Use to create your own cable
- JT-07523-95 Cable assembly**, DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends for remote control

- JT-07523-98 Tilt bail**, use to securely elevate front of drive
- JT-07523-97 Handheld remote controller**, DB9; for on/off control; route tubing through handle for filling and dispensing applications
- JT-17050-01 NIST-traceable calibration** with data for peristaltic pump drive

**Wait!**

**There's More...**

See pages 15–19 for L/S pump heads and pages 20–21 for L/S tubing.



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

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	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	JT-77924-55	
	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			JT-77924-65	

## 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.
- Flow rate: 0.001 to 3400 mL/min with L/S tubing depending on drive rpm and tubing size
- 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 ±0.1% speed control accuracy and a 6000 to 1 turndown ratio
- Dispense by: volume—volume, copy, or time with programmable delay interval.
- Remote control capabilities via waterproof connection
- Models equipped with open-head sensor stop drive motor when pump head is opened—pair with an open-head sensor equipped pump head (see pages 15–16)

**FEATURES**

- ✓ Flow rates: 0.001 to 3400 mL/min
- ✓ IP66 and NEMA 4X rated
- ✓ Programmable, reversible motor accepts two or four pump heads and offers remote functionality



Drive 07575-38 shown with L/S Easy-Load II pump head 77200-32

**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.

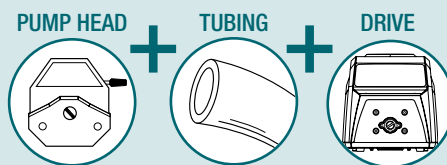


rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power	Catalog number	Price
<b>Digital process drive with 316 stainless steel housing</b>									
0.1 to 600	±0.1%	No	2	1/10 hp (75 W)	IP66	12" x 9" x 9 9/16" (30.5 x 22.9 x 23.6 cm)	90 to 260 VAC, 50/60 Hz	<a href="#">JT-07575-30</a>	
0.02 to 100		Yes	4					<a href="#">JT-07575-38</a>	
		No						<a href="#">JT-07575-35</a>	
<b>Digital process drive with powder-coat steel housing</b>									
0.1 to 600	±0.1%	No	2	1/10 hp (75 W)	IP66	12" x 9" x 9 9/16" (30.5 x 22.9 x 23.6 cm)	90 to 260 VAC, 50/60 Hz	<a href="#">JT-07575-40</a>	
0.02 to 100		Yes	4					<a href="#">JT-07575-48</a>	
		No						<a href="#">JT-07575-45</a>	

### Accessories

- [JT-07575-84](#) Washdown foot switch, momentary start/stop; 6-ft (1.8-m) cable
- [JT-07575-80](#) Cable assembly for remote control; 31-pin round connector and 25-ft (7.9-m) cable with stripped wire ends
- [JT-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive

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



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	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 with 316 SS housing 07575-30 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-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 with powder-coat steel housing 07575-40 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77975-45</a>	



## L/S® Variable-Speed Digital Drives

### Versatile, worry-free operation

- Brushless, maintenance-free motor provides ±0.1% speed control accuracy with 6000:1 turndown ratio
- Bright graphical LCD offers easy programming, four operating modes, and seven languages
- Get more accurate dispensing with preprogrammed calibration
- Drives accept all L/S pump heads for more pumping versatility
- Models equipped with open-head sensor stop drive motor when pump head is opened—pair with an open-head sensor equipped pump head (see pages 15–16)
- Operate remotely via DB25 female connector

#### FEATURES

- ✓ 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
- ✓ Ensure dispensing accuracy with antidrip function
- ✓ Hands-free dispensing via time interval dispense cycles

Four operating modes for more functionality: continuous run, time dispense, copy dispense, and volume dispense



**MASTERFLEX®**

ISO 9001:2008  
CERTIFIED SUPPLIER



rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power	Catalog number	Price
0.1 to 600	±0.1% (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	No	2	1/10 hp (75 W)	IP33	10" x 8.5" x 8.5" (25.4 x 21.6 x 21.6 cm)	90 to 260 VAC, 50/60 Hz	<a href="#">JT-07522-20</a>	
		Yes						<a href="#">JT-07522-28</a>	
0.02 to 100		No	4	1/10 hp (75 W)	IP33	10" x 8.5" x 8.5" (25.4 x 21.6 x 21.6 cm)	90 to 260 VAC, 50/60 Hz	<a href="#">JT-07522-30</a>	
		Yes						<a href="#">JT-07522-38</a>	

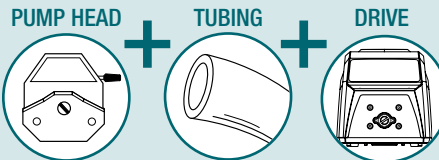
[JT-07523-92](#) Foot switch, momentary start/stop; 6-ft (1.8-m) cable

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

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

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

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



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

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	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="#">JT-77921-65</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)			<a href="#">JT-77921-75</a>	

**Application Solution**



#### Challenge

A manufacturer of safety glass and laminated glass was looking for a pump that could dispense coating resins for plate glass to provide protection and build shatter resistance. The resins used in the process could be polyurethane, epoxy, or other coatings, and in the past the resins ate through dispensing tubing. As a result, the manufacturer needed to find a pump system with tubing that had the appropriate chemical compatibility. Likewise, the pump system needed to offer quick maintenance for tube changes.

#### Solution

The customer tested silicone tubing for chemical resistance and found it to be suitable for the resins being dispensed. The customer then chose the L/S variable-speed digital drive 07522-20 for its precision pumping and speed control. The manufacturer also selected an Easy-Load II pump head for quick maintenance and reduced downtime during tubing changes.

## 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 9999 dispense cycles; or SEC—time interval between each dispense cycle (1 to 9999 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/prime, 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 via a DB25 female connector on back of controller

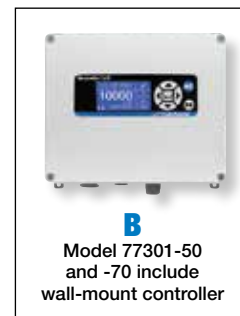
#### B. Washdown Modular Drive with Wall-Mount Controller

- 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 via weather-resistant connection on controller



#### FEATURES

- ✓ Flow rates: 0.001 to 3400 mL/min depending on drive rpm and tubing size
- ✓ Variable speed
- ✓ Programmable, reversible motor accepts up to two pump heads and offers remote functionality



**B**  
Model 77301-50 and -70 include wall-mount controller

MASTERFLEX®



rpm	Speed control	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
<b>A. Digital modular drive with benchtop controller</b>									
0.1 to 600	$\pm 0.1\%$	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	<a href="#">JT-77301-40</a>	
0.02 to 100		4							
<b>B. Digital washdown modular drive with washdown, wall-mount controller</b>									
0.1 to 600	$\pm 0.1\%$	2	1/10 hp (75 W)	IP66	Controller: 9" x 11 3/4" x 4 1/2" (23 x 30 x 11.4 cm) Drive: 15 5/16" 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	<a href="#">JT-77301-50</a>	<a href="#">JT-77301-70</a>
0.02 to 100		4							

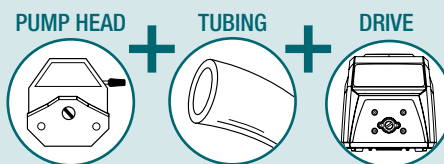
**JT-07523-95 Cable assembly**, for benchtop modular drives 77301-40 and -60; DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends for remote control

**JT-77301-82 Extension cable**, 9 ft (2.7 m) extends distance between motor and controller

**JT-07575-80 Remote control cable** for washdown modular drives 77301-50 and -70; wire to controller/PLC; 25-ft (8.3-m) length

**JT-17050-01 NIST-traceable calibration** for peristaltic pump drive

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



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	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="#">JT-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 washdown modular drive 77301-50 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77923-90</a>	

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

Don't lose control of your metering applications—digital display gives you repeatable control

- Accurate and repeatable settings with 3-digit LED display of rpm
- Pump fluid in either direction with reversible motor—perfect for purging tubing
- Save space and increase productivity by stacking 2 or 4 pump heads on the same drive to create a multichannel pump system
- Two ways to control speed, direction, and start/stop—use either the membrane keypad or remote control capabilities
- Customize for your application—drives accept nine pump head types: Standard, Easy-Load®, Easy-Load® II, Easy-Load® 3, Multichannel, High-Performance, Cartridge, PTFE-Tubing, and PTFE-Diaphragm

### FEATURES

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



Stack up to 4 heads to maximize productivity in less space

MASTERFLEX®

ISO9001:2008  
CERTIFIED SUPPLIER



rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
6 to 600	±0.25% (1 rpm at 600 rpm; 0.1 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33	10" x 8.5" x 8.5" (25.4 x 21.6 x 21.6 cm)	90 to 260	1.8 at 115 VAC, 1.2 at 230 VAC	JT-07528-10	
3 to 300		2						JT-07528-20	
1 to 100		4						JT-07528-30	

**JT-07595-45 Connector**, DB9 male. Use for 4 to 20 mA remote control

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

**JT-77595-35 Foot switch**, DB9 male

**JT-07528-80 Handheld remote controller**; for remote control of start/stop, route tubing through handle for dispensing into containers

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

## L/S® Precision Console Process Drives

Stand up to process and washdown applications—simply hose down to clean

- IP66 and NEMA 4X rated; sealed housing and sealed membrane keypad
- Available with either a 316 SS or a powder-coat steel housing
- Three-digit LED display shows motor rpm—confirm speed setting at a glance
- Open-head sensor stops drive motor when pump head is opened—pair with an open-head sensor equipped pump head (see pages 15–16)
- Remote control capabilities via a watertight connector on back of drive

### FEATURES

- ✓ Flow rates: 0.06 to 3400 mL/min
- ✓ Variable speed from 1 to 600 rpm
- ✓ Stack up to four pump heads for increased flow rates

MASTERFLEX®



Drive 07528-40 shown with L/S Easy-Load II pump head 77200-32

Accurate console drives have powerful motors, speed display, and ±0.25% speed control for precise flow regulation—ideal for metering applications. Separate speed and power (on/off) control lets you maintain speed setting while turning pump on/off. Remote speed control requires cable assembly 77300-32.

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

ISO9001:2008  
CERTIFIED SUPPLIER



rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power	Catalog number	Price
<b>Precision process drives with 316 stainless steel housing</b>									
6 to 600	±0.25%	Yes	2	1/10 hp (75 W)	IP66	12" x 9" x 9 9/16" (30.5 x 22.9 x 23.6 cm)	90 to 260 VAC, 50/60 Hz	JT-07528-40	
1 to 100			4					JT-07528-45	
<b>Precision process drives with powder-coat steel housing</b>									
6 to 600	±0.25%	Yes	2	1/10 hp (75 W)	IP66	12" x 9" x 9 9/16" (30.5 x 22.9 x 23.6 cm)	90 to 260 VAC, 50/60 Hz	JT-07528-50	
1 to 100			4					JT-07528-55	

**JT-77300-32 Cable assembly**, for precision process drives; 18-pin round connector and 25-ft (7.9 m) cable with stripped wire ends

**JT-17050-01 NIST-traceable calibration** for peristaltic pump drive

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

### Place where convenient—ideal for limited spaces, hoods, or isolation chambers

- Easy up-front control of speed, direction, and start/stop
- Reversible motor—purge tubing before or after pumping; pump fluid in either direction
- 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 controller

#### 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**  
Models  
07557-60  
and -70  
include  
wall-mount  
controller



rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
<b>A. Precision modular drives with benchtop controller</b>									
6 to 600	±0.25% (1 rpm at 600 rpm;	2	1/10 hp (75 W)	IP33	Controller: 10½" x 8¼" x 5"	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	JT-07557-00	
1 to 100	0.1 rpm at 100 rpm)	4			Drive: 10¾" x 4¾" x 4½"			JT-07557-10	
<b>B. Precision washdown modular drives with washdown wall-mount controller</b>									
6 to 600	±0.25% (1 rpm at 600 rpm;	2	1/10 hp (75 W)	IP66	Controller: 9" x 11¾" x 4½"	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	JT-07557-60	
1 to 100	0.1 rpm at 100 rpm)	4			Drive: 15⅞" x 7" x 6"			JT-07557-70	

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

**JT-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

**JT-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

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

### Versatile with a wide flow range and simple controls

- Separate motor and controller are connected via a 6-ft (1.9 m) cable—place components where convenient or where space allows
- Single-turn speed control and on/off switch with green power indicator—maintain speed setting while turning pump on and off
- Painted steel housing is IP33 rated for protection from vertically falling water

A perfect upgrade from a fixed-speed drive, these variable-speed drives offer a wider rpm range, ±2% speed regulation, and ETL and CE listings. For added versatility, drives accept all L/S pump heads.

**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.



**FEATURES**

- ✓ Flow rates: 0.06 to 3400 mL/min
- ✓ Variable speed—1 to 100 or 6 to 600 rpm
- ✓ Convenient modular design



rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
6 to 600	±2%	2	1/10 hp (75 W)	Controller: IP33 Motor: IP21	Controller: 8" x 6.4" x 3.4" (20.4 x 16.4 x 8.7 cm) Motor: 7.8" x 3.8" x 4.5" (19.8 x 9.7 x 11.5 cm)	90 to 130	2.2 at 115 VAC	JT-07559-00	
						190 to 260	1.2 at 230 VAC	JT-07559-05	
1 to 100	±2%	4	1/10 hp (75 W)	Controller: IP33 Motor: IP21	Controller: 8" x 6.4" x 3.4" (20.4 x 16.4 x 8.7 cm) Motor: 7.8" x 3.8" x 4.5" (19.8 x 9.7 x 11.5 cm)	90 to 130	2.2 at 115 VAC	JT-07559-10	
						190 to 260	1.2 at 230 VAC	JT-07559-15	

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

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

- ✓ Compact and cost effective
- ✓ Reversible motor accepts up to two pump heads
- ✓ Remote start/stop

- Compact, cost-effective for general fluid transfer applications
- Flow range: 0.42 to 2900 mL/min
- Simple operation with single-turn speed control
- Separate power switch enables you to maintain speed setting when turning drive on/off; front-panel LED indicates power on
- Reversible motor lets you easily prime/purge tubing and pump in either direction
- Remote control of start/stop via DB9 connector on back of drive

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 07555-00 and -05 are not recommended for use with the PTFE-tubing and PTFE-diaphragm pump heads.

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

**NEW**



Shown with L/S Easy-Load II pump head 77200-60

**Flow Rates in mL/min** (flow rates in parentheses can only be obtained with the High-Performance pump head—see page 16)

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			
	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)

†The Standard pump head is not available for L/S 25. ‡Multichannel head is not available for L/S 36.

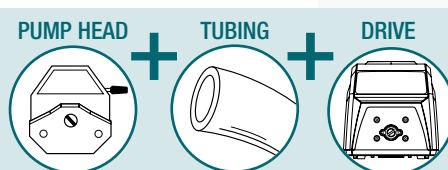


rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H) (23 x 18.3 x 13.4 cm)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
20 to 600	±5%	1	½ hp (37 W)	IP22		90 to 130	1.5	JT-07555-00	
7 to 200		2				180 to 260	0.8	JT-07555-05	
	90 to 130		1.5	JT-07555-10					
			180 to 260	0.8		JT-07555-15			

**JT-77595-35** Foot switch, DB9 male, 6-ft (1.8 m) cable

**JT-07528-80** Handheld remote controller; for control of start/stop, route tubing through handle for dispensing into containers

**JT-17050-01** NIST-traceable calibration for peristaltic pump drive



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

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	16 to 480 mL/min	Easy-Load® II 77200-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Console drive 07555-00 20 to 600 rpm	115 VAC, 50/60 Hz	JT-77910-40	
				Console drive 07555-05 20 to 600 rpm	230 VAC, 50/60 Hz	JT-77910-45	
	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 07555-00 20 to 600 rpm	115 VAC, 50/60 Hz	JT-77910-50	
				Console drive 07555-05 20 to 600 rpm	230 VAC, 50/60 Hz	JT-77910-55	

## L/S® High-Pressure Pumps Pump at pressures up to 125 psi (8.5 bar)

- Three-digit LED display shows motor rpm—confirm speed setting at a glance
- High-performance pump head offers automatic occlusion—optimized when pump head is closed and latched—load tubing in 15 seconds or less
- Pump at pressures up to 125 psi (8.5 bar) with included L/S 16HP tubing—ideal for feed, filtration, and metering applications
- Models equipped with open-head sensor stop the drive motor when pump head is opened

**NEW**



**MASTERFLEX®**

ISO9001:2008  
CERTIFIED SUPPLIER



IP 65  
77914-25,  
-27

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.9 to 90 mL/min	High-Performance 77252-72	PharMed BPT L/S 16HP high- pressure tubing 05664-16 8 ft (2.4 m)	Precision console drive with ABS plastic housing 07528-30 1 to 100 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77914-20</a>	
	0.9 to 90 mL/min	High-Performance (open-head sensor) 77252-62		Precision process drive with powder-coat steel housing 07528-55 1 to 100 rpm		<a href="#">JT-77914-25</a>	
	0.9 to 90 mL/min			Precision process drive with stainless steel housing 07528-45 1 to 100 rpm		<a href="#">JT-77914-27</a>	

## Ultrasonic Flow Sensors Maintain accurate flow rates without affecting working fluid

- Noninvasive design eliminates contact with working fluid—ideal for applications with strict hygienic standards
- Provides accurate readings not affected by fluid color, tube color, or electromagnetic properties of liquids
- Continuously monitor peristaltic pump flow rates and send data directly to your computer with optional communications package
- Ready to use out of the box—calibrated for use with Masterflex L/S® and I/P® platinum-cured silicone tubing
- Easily adapt your application settings using optional communications package

Each sensor comes calibrated to national measurement standards for the appropriately sized Masterflex platinum-cured silicone tubing when water is the working fluid and across the full flow range. Adapt for use with other working fluids or Masterflex tubing materials of the same size with the optional communications package. For best accuracy, the sensor should be calibrated for the specific working fluid.

**What's included:** flow sensor, cable, and calibration certificate.

**MASTERFLEX®**



### Specifications

**Accuracy:** ±2 to 4% after using calibration software  
**Output:** RS-485, 4 to 20 mA, 0 to 20 kHz, or PNP-NPN  
**Enclosure rating:** IP65



**NEW**

Clamp-on sensor design makes setup easy—simply place the tubing in the sensor channel and close the lid.

For Masterflex tubing size	Max flow rate†		Min flow rate		Catalog number	Price
	GPH	mL/min	GPH	mL/min		
<b>Engineered for L/S Precision tubing</b>						
13	0.57	36	0.48	30	<a href="#">JT-33501-13</a>	
14	2.06	130	0.48	30	<a href="#">JT-33501-14</a>	
16	7.61	480	0.48	30	<a href="#">JT-33501-16</a>	
25	15.85	1000	0.48	30	<a href="#">JT-33501-25</a>	
17	26.95	1700	0.48	30	<a href="#">JT-33501-17</a>	
18	36.46	2300	0.48	30	<a href="#">JT-33501-18</a>	
<b>Engineered for L/S High-Performance Precision tubing</b>						
15	14.4	1100	0.48	30	<a href="#">JT-33501-15</a>	
24	28.53	1800	0.48	30	<a href="#">JT-33501-24</a>	
35	41.21	2600	0.48	30	<a href="#">JT-33501-35</a>	
36	53.89	3400	0.48	30	<a href="#">JT-33501-36</a>	
<b>Engineered for I/P Precision tubing</b>						
26	63.4	4000	0.48	30	<a href="#">JT-33501-26</a>	
73	126.8	8000	0.48	30	<a href="#">JT-33501-73</a>	

†Higher flow rates can be measured, the stated maximum flow rate is that of the tubing.

**JT-33501-96 Communications package** for Masterflex ultrasonic flow sensors. Includes software for data capture and calibration on USB drive and connector cable

## L/S® Digital Miniflex® Pumps

Small footprint, yet delivers accurate flow over a wide range

- Flow range of 0.005 to 381 mL/min (depending on tubing size)
- Tubing calibration function ensures accuracy
- Open-head sensor stops drive when pump head is opened
- Remote control via 25-pin connector on back of drive
- Automatic tubing retention makes tube loading quick and easy

Compact, stackable pump with durable ABS housing is easy to wipe down. The Miniflex pump head features a wide occlusion angle that prevents fluid backflow up to the rated pressure of the tubing. Self-lubricating thermoplastic polyester rollers are low friction and long wearing for smooth operation and long life.

### Flow Rates (mL/min) at 0.1 to 300 rpm

Pump model	Precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25
07525-20	0.005 to 14	0.018 to 55	0.061 to 184	0.127 to 381
07525-40	0.005 to 14	0.018 to 55	0.061 to 184	—

Number of channels	rpm	Speed control (repeatability)	Reversible motor	IP rating	Dimensions (L x W x H) (23.9 x 14.0 x 15.7 cm)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
1	0.1 to 300	±0.1%	Yes	IP33	9.4" x 5.5" x 6.2" (23.9 x 14.0 x 15.7 cm)	90 to 260	0.34 at 115 VAC, 0.2 at 230 VAC	JT-07525-20	
2								JT-07525-40	

**JT-07523-92** Foot switch, momentary start/stop; DB25 male; 6-ft (1.8-m) cable

**JT-07523-95** Cable assembly, DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends



**MASTERFLEX®**

Power supplies are:

**ISO9001:2008**  
CERTIFIED SUPPLIER



**JT-07523-97** Handheld remote controller, DB25 male, route tubing through handle for dispensing applications; 6-ft (1.8-m) cable

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

## L/S® Fixed-Speed Drives

Get consistent, repeatable flow rates

- Stackable drives are ideal for field or lab use
- Lighted power switch on front of drive indicates that pump is running
- Accept five different pump head types: Standard, Easy-Load®, Easy-Load II, Easy-Load 3, and Cartridge

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

### 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>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 values shown.

**FEATURES**

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



**MASTERFLEX®**

**ISO9001:2008**  
CERTIFIED SUPPLIER



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 9/16" (15.2 x 13.4 x 11.9 cm)	JT-07540-01	
2						JT-07540-02	
6						JT-07540-06	
12						JT-07540-12	
20						JT-07540-20	
30						JT-07540-30	
60		1				JT-07540-60	
<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 9/16" (15.2 x 13.4 x 11.9 cm)	JT-07542-01	
2						JT-07542-02	
5						JT-07542-06	
10						JT-07542-12	
17						JT-07542-20	
25						JT-07542-30	
50		1				JT-07542-60	

<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.

## Masterflex® Drives Powering Quattroflow™ Pumps Specifically designed to move delicate biological fluids

**NEW**

- Diaphragms enable soft, gentle pumping through the strokes generated by the eccentric shaft
- No mechanical seal or rotating parts that can fail—only the diaphragm and body come in contact with the fluid

MASTERFLEX®

**Quattroflow Pumps** offer a unique four diaphragm (chamber) design, providing the constant low-pulsation, low-shear pumping needed for your biological fluids. In addition, the quaternary diaphragm design enables risk-free dry-running, self-priming, and a high turn-down ratio. Both the single-use and multiple-use models safely and reliably pump plasma products, proteins, monoclonal antibodies, vaccines, and more.

Single-use pump heads have a disposable wetted chamber constructed of solid polypropylene (PP) that can be replaced as a complete unit. This saves you time and money by eliminating the cleaning validation, sterilization process normally associated with permanent multiple-use systems. You can quickly turn around equipment from one batch to the next, maximizing production operations. Plus, fluid path integrity and sterility is ensured with no chance of cross-batch or cross-product contamination. Come presterilized and double bagged.

Multiple-use pump systems ensure total product containment without abrasion and minimal particle creation. Stainless steel construction handles higher pressure applications including cross-flow filtration and chromatography columns.

**Special Masterflex Drives** were developed to best take advantage of the operating parameters of the Quattroflow pumps. Drives feature an intuitive interface, remote control functionality, and a brushless, maintenance-free motor with ±0.1% speed control accuracy. The graphical LCD shows six different parameters: motor rpm, flow rate, dispense volume, cumulative volume, dispense interval time, and copy number. Dispense by volume or time with a user-defined time interval between cycles.

Plastic-enclosed drive has an IP33 rating for benchtop lab applications and has been combined with the lower flow QF150 series pump head.

Stainless steel drives have IP66 and NEMA 4X ratings and are designed for both the QF150 and QF1200 series. Sealed stainless steel housing and sealed keypad are protected from dust, water, and chemicals in the washdown environment—simply hose down to clean.



CE

### Applications

- Cross-flow systems
- Tangential flow filtration
- Chromatography systems
- Reaction dosing
- Virus or sterile filtration
- Buffer mixing systems
- Virus cultures
- Bacterial and viral vaccines
- Cell cultures
- Cell culture supernatants
- Enzyme solutions
- Antibodies
- Virus inactivation

Systems				Replacement pump heads	
Pump head model	Drive type	Catalog number	Price	Catalog number	Price
QF150SU (single use)	ABS plastic, IP33	<a href="#">JT-74000-35</a>		<a href="#">JT-76000-00</a>	
	Stainless steel, IP66 and NEMA 4X	<a href="#">JT-74000-37</a>		<a href="#">JT-76000-00</a>	
QF150S (multiple use)	ABS plastic, IP33	<a href="#">JT-74000-31</a>		<a href="#">JT-76000-06</a>	
	Stainless steel, IP66 and NEMA 4X	<a href="#">JT-74000-33</a>		<a href="#">JT-76000-06</a>	
QF1200SU (single use)	Stainless steel, IP66 and NEMA 4X	<a href="#">JT-74000-47</a>		<a href="#">JT-76000-02</a>	
QF1200S (multiple use)	Stainless steel, IP66 and NEMA 4X	<a href="#">JT-74000-43</a>		<a href="#">JT-76000-08</a>	

### Specifications for Quattroflow Pumps

Model	QF150SU (single use)	QF150S (multiple use)	QF1200SU (single use)	QF1200S (multiple use)
Flow range	1 to 180 L/h (0.26 to 48 GPH)	1 to 180 L/h (0.26 to 48 GPH)	20 to 960 L/h (5.3 to 253 GPH)	20 to 960 L/h (5.3 to 253 GPH)
Max pressure	For fluid temp <104°F (40°C) 58 psi (4 bar)	58 psi (4 bar)	58 psi (4 bar)	87 psi (6 bar)
	For fluid temp >104°F (40°C) 58 psi (4 bar)	58 psi (4 bar)	58 psi (4 bar)	58 psi (4 bar)
Max fluid temperature	140°F (60°C)	176°F (80°C)	140°F (60°C)	176°F (80°C)
Suction lift at 300 rpm	6.6 to 9.8 ft (2 to 3 m)	6.6 to 9.8 ft (2 to 3 m)	13.1 to 14.7 ft (4 to 4.5 m)	13.1 to 14.7 ft (4 to 4.5 m)
Volume per revolution	At free output 1.2 mL	1.2 mL	9.6 mL	9.6 mL
	Without connector 15 mL	15 mL	75 mL	75 mL
Connection type	¼" Tri-Clamp®	¼" Tri-Clamp	¾" Tri-Clamp	¾" Tri-Clamp
Position of connectors	In-line	In-line	In-line	In-line
Connector direction options	4	4	4	4
Wetted materials	PP (housing, valve plate), TPE (diaphragm), EPDM (valves, O-rings)	316L SS (housing, valve plate), TPE (diaphragm), EPDM (valves, O-rings)	PP (housing, valve plate), TPE (diaphragm), EPDM (valves, O-rings)	316L SS (housing, valve plate), TPE (diaphragm), EPDM (valves, O-rings)

### Specifications for Masterflex Drives

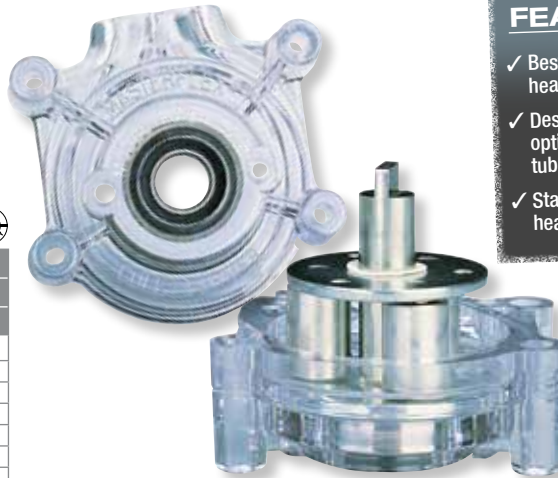
Description	ABS plastic drive for QF150	Stainless steel drive for QF150	Stainless steel drive for QF1200
Speed	3000 rpm	3000 rpm	1700 rpm
Speed control	±0.1%	±0.1%	±0.1%
Motor size	⅛ hp (0.05 kW)	⅛ hp (0.05 kW)	⅜ hp (0.26 kW)
IP rating	IP33	IP66 and NEMA 4X	IP66 and NEMA 4X
Dispense modes	Motor rpm, flow rate, dispense volume, cumulative volume, dispense interval time, and copy number		
Input/output communications	Speed control: scalable 0 to 20 mA, 4 to 20 mA, 0 to 10 V; Pumping direction: requires open collector or contact enclosure; Start/stop/purge: requires open collector or contact closure; Tachometer output: scalable 0 to 20 mA, 4 to 20 mA, 0 to 10 V		
Power	90 to 260 VAC		



## L/S® Standard Pump Heads

Ideal for accurate and repeatable fluid transfer applications

- PC housing allows you to see pump in operation; PPS housing and SS rotors have excellent chemical resistance



### FEATURES

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

Pump tubing size	mL per rev	Flow rates in mL/min		Catalog number†‡		
		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="#">JT-07013-20</a>	<a href="#">JT-07013-21</a>	<a href="#">JT-07013-52</a>
L/S 14	0.21	0.004 to 21	1.3 to 130	<a href="#">JT-07014-20</a>	<a href="#">JT-07014-21</a>	<a href="#">JT-07014-52</a>
L/S 16	0.8	0.016 to 80	4.8 to 480	<a href="#">JT-07016-20</a>	<a href="#">JT-07016-21</a>	<a href="#">JT-07016-52</a>
L/S 17	2.8	0.059 to 280	17 to 1700	<a href="#">JT-07017-20</a>	<a href="#">JT-07017-21</a>	<a href="#">JT-07017-52</a>
L/S 18	3.8	0.077 to 380	23 to 2300	<a href="#">JT-07018-20</a>	<a href="#">JT-07018-21</a>	<a href="#">JT-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="#">JT-07015-20</a>	<a href="#">JT-07015-21</a>	<a href="#">JT-07015-52</a>
L/S 24	2.8	0.057 to 280	17 to 1700	<a href="#">JT-07024-20</a>	<a href="#">JT-07024-21</a>	<a href="#">JT-07024-52</a>
L/S 35	3.8	0.077 to 380	23 to 2300	<a href="#">JT-07035-20</a>	<a href="#">JT-07035-21</a>	—
Price						
L/S 36	4.8	0.096 to 480	29 to 2900	<a href="#">JT-07036-30</a>	<a href="#">JT-07036-31</a>	—
Price						

†PC = polycarbonate PPS = polyphenylene sulfide  
CRS = cold-rolled steel SS = stainless steel

‡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. 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="#">JT-07013-04</a>	
Two	<a href="#">JT-07013-05</a>	
Three	<a href="#">JT-07013-08</a>	
Four	<a href="#">JT-07013-09</a>	
<b>Hardware for Standard Heads L/S 36</b>		
One	<a href="#">JT-07036-01</a>	
Two	<a href="#">JT-07036-02</a>	

## L/S® Easy-Load® II Pump Heads

Automatic retention holds tubing securely in place

- Reduced pulsation and improved pressure performance and mechanical stability with standard four-roller rotor
- Choice of rotors—economical CRS rotors or SS rotors for better chemical resistance and durability
- Don't let pressure get to you. Choose models with adjustable occlusion—tighten for higher pressure, loosen for longer tubing life
- Models with open-head interlock sensor stop drive motor when pump head is open (when used with sensor-equipped drives)

### FEATURES

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



**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.



Pump tubing size accepted	mL per rev	Flow rates in mL/min		Max system pressure† psi (bar)	Fixed occlusion						Adjustable occlusion	
		1 to 100 rpm	6 to 600 rpm		CRS‡ rotor		SS‡ rotor		SS‡ rotor and open-head sensor		SS‡ rotor	
					Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
<b>A. Easy-Load II pump heads for Precision pump tubing (not shown)</b>												
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)								
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)	<a href="#">JT-77200-50</a>		<a href="#">JT-77200-60</a>		<a href="#">JT-77200-30</a>		<a href="#">JT-77201-60</a>	
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)								
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)	<a href="#">JT-77200-52</a>		<a href="#">JT-77200-62</a>		<a href="#">JT-77200-32</a>		<a href="#">JT-77201-62</a>	
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>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)								
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)	<a href="#">JT-77202-50</a>		<a href="#">JT-77202-60</a>		—	—	—	—
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)								

†Actual performance varies depending on pump tubing formulation—values shown are for firm pump tubing. ‡CRS = cold-rolled steel SS = stainless steel

**Mounting Hardware.** Mount up to four L/S Easy-Load II pump heads on a single drive. Mounting hardware is stainless steel.

Heads to be mounted	One	Two	Three	Four
Catalog number	<a href="#">JT-77200-01</a>	<a href="#">JT-77200-02</a>	<a href="#">JT-77200-03</a>	<a href="#">JT-77200-04</a>
Price/st				

## L/S® High-Performance Pump Heads

All-new design offers faster tubing changes and improved ergonomics

- Simply close the pump head and tubing occlusion is optimal and automatic
- Flow rates up to 3400 mL/min with L/S high-performance precision tubing
- Reinforced nylon housing and occlusion bed with stainless steel rotor/roller assembly
- Models with open-head interlock sensor stop drive motor when pump head is open (when used with sensor-equipped drives)
- Compatible with all L/S drives that accept two or more pump heads

### FEATURES

- ✓ Pressures up to 150 psi with L/S high-pressure (HP) pump tubing
- ✓ Automatic tubing occlusion—no need to adjust
- ✓ ATEX Zone 2 rated models available

MASTERFLEX®



**What's included:** mounting hardware and 15" (38 cm) of pump tubing.

ISO9001:2008  
CERTIFIED SUPPLIER

ATEX

Zone 2  
77252-80, 82



Pump tubing size	mL per rev	Flow rates in mL/min		Max system pressure psi (bar)	Catalog number					
		0.02 to 100 rpm	0.1 to 600 rpm		High-Performance pump head with open-head sensor	High-Performance pump head	ATEX-approved High-Performance pump head			
<b>High-performance pump heads for Precision pump tubing</b>										
L/S 16	0.9	0.018 to 90	0.09 to 614	40 (2.7)	JT-77252-60	JT-77252-70	JT-77252-80			
L/S 25	1.9	0.038 to 187	0.19 to 1278	40 (2.7)						
L/S 17	3.0	0.06 to 307	0.30 to 1883	20 (1.4)						
L/S 18	3.8	0.076 to 377	0.38 to 2812	40 (2.7)						
<b>High-performance pump heads for High-Performance Precision pump tubing</b>										
L/S 14HP†	0.3	0.006 to 30	Not recommended	150 (10.3)	JT-77252-62	JT-77252-72	JT-77252-82			
L/S 16HP†	0.9	0.018 to 90	Not recommended	125 (8.5)						
L/S 15HP†	1.7	0.034 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	0.18 to 1100	40 (2.7)						
L/S 24	3.0	0.06 to 300	0.30 to 1800	40 (2.7)						
L/S 35	4.3	0.086 to 430	0.43 to 2600	35 (2.4)						
L/S 36	5.8	0.116 to 580	0.58 to 3400	20 (1.4)						
				Price						

†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 100 rpm drive capable of running two or more pump heads. **Note:** High-Performance pump heads are not stackable.

## L/S® Easy-Load® 3 Pump Heads

No tools or hardware needed

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

### FEATURES

- ✓ Same side tubing entry/exit for space-limited applications
- ✓ Automatic tubing retention
- ✓ Stack up to four heads

MASTERFLEX®

ISO9001:2008  
CERTIFIED SUPPLIER



Pump tubing sizes accepted	mL per rev	Flow rates in mL/min		Maximum system pressure† psi (bar)	Catalog number†	
		1 to 100 rpm	6 to 600 rpm		CRS rotor	SS rotor
<b>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)	JT-77800-50	JT-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>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)	JT-77800-52	JT-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)		
				Price		

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

†CRS = cold-rolled steel SS = stainless steel



**JT-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

Save time with fast tubing changes and reduced maintenance

- No need to remove head to change tubing
- PPS housing offers improved chemical resistance; SS rotor offers increased durability and chemical resistance
- Get four separate pumping channels by mounting up to four heads on one drive
- ATEX Zone 2 approved models rated to EEx II 3 G c II C T6
- Ready to use—include single-channel mounting hardware and 15" (38 cm) of silicone tubing

**FEATURES**

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



**ISO9001:2008** CERTIFIED SUPPLIER  
**ATEX** Zone 2 07516-40, -42

**MASTERFLEX®**

Pump tubing sizes accepted	mL per rev	Flow rates in mL/min		Maximum system pressure psi (bar)	Catalog number†			
		1 to 100 rpm	6 to 600 rpm		White PPS housing		Black PPS housing	ATEX-approved PPS housing
					CRS rotor	SS rotor	SS rotor	SS rotor
<b>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)				
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)	<a href="#">JT-07516-00</a>	<a href="#">JT-07516-10</a>	<a href="#">JT-07518-60</a>	<a href="#">JT-07516-40</a>
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>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)	<a href="#">JT-07516-02</a>	<a href="#">JT-07516-12</a>	<a href="#">JT-07518-62</a>	<a href="#">JT-07516-42</a>
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)				
<b>Price</b>								

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

### Mounting Hardware

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	<a href="#">JT-07013-04</a>	
Two	<a href="#">JT-07013-05</a>	
Three	<a href="#">JT-07013-08</a>	
Four	<a href="#">JT-07013-09</a>	

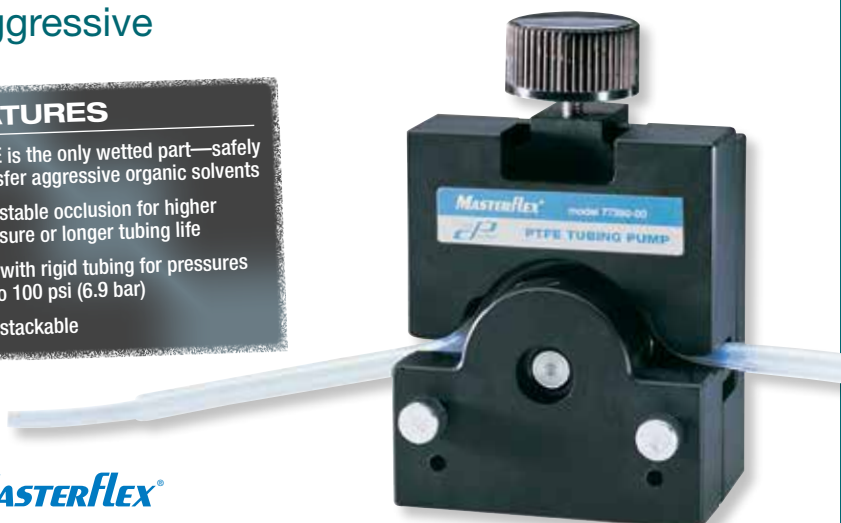
## L/S® PTFE-Tubing Pump Head

Ideal for high-purity fluids and aggressive organic solvents

- Pump fluids at pressures up to 100 psi (6.9 bar)
- Use for applications including filtration, chemical injection, and high-purity sampling
- PTFE tubing is the only wetted part; anodized aluminum and acetal body; stainless steel rotor assembly
- Compatible with L/S drives that accept two or more pump heads (1/10 hp min); For best results, run at 1 to 300 rpm

**FEATURES**

- ✓ PTFE is the only wetted part—safely transfer aggressive organic solvents
- ✓ Adjustable occlusion for higher pressure or longer tubing life
- ✓ Use with rigid tubing for pressures up to 100 psi (6.9 bar)
- ✓ Not stackable



**MASTERFLEX®**

**ISO9001:2008** CERTIFIED SUPPLIER

Flow rates (mL/min at 1 to 300 rpm)		Maximum continuous pressure	Max suction lift	Avg tubing life (100 rpm, 0 psi)	Number of rollers	Catalog number	Price
4-mm OD tubing	6-mm OD tubing						
0.06 to 17	0.25 to 65	100 psi (6.9 bar)	8 ft (2.4 m)	500 hours	Six	<a href="#">JT-77390-00</a>	

**PTFE-Tubing Sets** include two 15" (38 cm) lengths and cannot be substituted with ordinary PTFE tubing.

- [JT-77390-50](#) PTFE-tubing set. 2-mm ID, 4-mm OD. Set of 2
- [JT-77390-60](#) PTFE-tubing set. 4-mm ID, 6-mm OD. Set of 2

**Compression Fittings** adapt tubing sets to your system.

- For 4-mm OD PTFE-Tubing Sets  
[JT-31321-61](#) Straight connector, 40 psi (2.8 bar) max  
[JT-06605-53](#) PTFE extension tubing, 4-mm OD. Pack of 25 ft (7.6 m)

- For 6-mm OD PTFE-Tubing Sets  
[JT-31321-64](#) Straight connector, 135 psi (9.2 bar) max  
[JT-06605-54](#) PTFE extension tubing, 6-mm OD. Pack of 25 ft (7.6 m)

- ✓ Ensure the survival and vitality of live cells
- ✓ Maintain the consistency of shear-sensitive fluids
- ✓ High flow at low rpm

# Masterflex® L/S® Cytoflow™ Pump Heads

- Convex-roller design is gentler on live cells and shear-sensitive fluids—validated by independent test data
- Large-diameter rotor delivers higher flow rates at lower speeds
- Low-speed pumping lets you maintain the consistency and characteristics of shear-sensitive fluids
- 2-roller and 3-roller configurations available—choose 2 rollers for maximum flow rate, 3 rollers for less pulsation
- Compatible with all Masterflex L/S drives that accept two or more pump heads

Developed specifically for pumping delicate live cells and shear-sensitive fluids, the Masterflex L/S Cytoflow pump head is ideal for use in biopharma and microbiology applications where peristaltic pump operators want to minimize cell hemolysis. The extra-large tubing bed combined with fewer rollers results in high flow rates at low motor speeds, which furthers its cell viability advantages.

MASTERFLEX®



**NEW**



Pump tubing size	mL per rev	Flow rates in mL/min		Max system pressure psi (bar)	Catalog number	Price
		0.02 to 100 rpm	0.1 to 600 rpm			
<b>2-roller pump heads for Precision pump tubing</b>						
L/S 16	1.7	0.03 to 170	0.17 to 1000	22 (1.5)	<a href="#">JT-77253-00</a>	
L/S 25	3.9	0.08 to 390	0.39 to 2300	22 (1.5)		
L/S 17	6.1	0.12 to 600	0.61 to 3600	22 (1.5)		
L/S 18	8.6	0.17 to 850	0.86 to 5100	22 (1.5)		
<b>2-roller pump heads for High-Performance Precision pump tubing</b>						
L/S 15	4.0	0.08 to 390	0.40 to 2300	22 (1.5)	<a href="#">JT-77253-02</a>	
L/S 24	6.2	0.12 to 600	0.62 to 3700	22 (1.5)		
L/S 35	9.5	0.19 to 930	0.95 to 5600	22 (1.5)		
L/S 36	12.8	0.26 to 1270	1.3 to 7600	22 (1.5)		
<b>3-roller pump heads for Precision pump tubing</b>						
L/S 16	1.6	0.03 to 160	0.16 to 980	22 (1.5)	<a href="#">JT-77253-10</a>	
L/S 25	3.5	0.07 to 340	0.35 to 2000	22 (1.5)		
L/S 17	5.6	0.11 to 550	0.56 to 3300	22 (1.5)		
L/S 18	7.7	0.15 to 770	0.77 to 4600	22 (1.5)		
<b>3-roller pump heads for High-Performance Precision pump tubing</b>						
L/S 15	3.5	0.07 to 340	0.35 to 2000	22 (1.5)	<a href="#">JT-77253-12</a>	
L/S 24	5.7	0.11 to 570	0.57 to 3400	22 (1.5)		
L/S 35	7.8	0.16 to 780	0.78 to 4600	22 (1.5)		
L/S 36	9.6	0.19 to 950	0.96 to 5700	22 (1.5)		

## Cell Viability Test Data

Hemolysis of blood cells was used to evaluate the sensitivity of several pump designs for live cell circulation. In vitro testing was completed using citrated bovine blood circulated through several peristaltic pump systems and settings to establish optimal conditions. Each pump system was evaluated against its Average Hemolytic Index for 180 minutes.

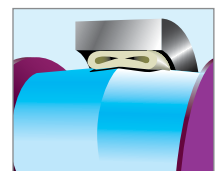
## Factors Affecting Shear Sensitivity

### Pump Motor Speed

Flow rates in peristaltic pumps are dictated by the rotation speed of the motor, measured in revolutions per minute (rpm). Peristaltic pumps generally present linear flow rates versus rpm with the tubing diameter, number of rollers, and overall occlusion bed size affecting the amount of flow per revolution. Chart 1 shows that the motor speed is very dominant in a pump's ability to maintain cell viability during recirculation.

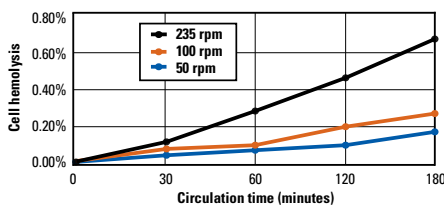
### Pump Head Occlusion

Less tubing occlusion allowed space for the blood cells to shift around the force of the roller which decreased the overall percent of hemolysis. Chart 2 compares the effect of flat rollers versus convex rollers on pumps running at the same speed. In this case, equipping a pump head with less than full occlusion improves cell viability 10 to 25%.

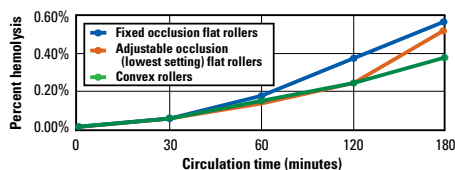


Convex roller

**Chart 1: Comparison of Speeds on Cell Hemolysis**



**Chart 2: Percent Hemolysis Comparing Pump Head Occlusion Settings**



## L/S® Multichannel Pump Heads

### Get low-pulsation synchronous flow in multiple channels without 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
- 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.



**FEATURES**

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



Stack heads for even more channels!



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

†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 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="#">JT-06447-13</a> /pk of 8	<a href="#">JT-06447-14</a> /pk of 8	<a href="#">JT-06447-16</a> /pk of 8	<a href="#">JT-06447-15</a> /pk of 4	<a href="#">JT-06447-24</a> /pk of 4	<a href="#">JT-06447-35</a> /pk of 4
Silicone (platinum-cured)		<a href="#">JT-06421-13</a> /pk of 8	<a href="#">JT-06421-14</a> /pk of 8	<a href="#">JT-06421-16</a> /pk of 8	<a href="#">JT-06421-15</a> /pk of 4	<a href="#">JT-06421-24</a> /pk of 4	<a href="#">JT-06421-35</a> /pk of 4
BioPharm Plus Silicone (platinum-cured)		<a href="#">JT-96116-13</a> /pk of 8	<a href="#">JT-96116-14</a> /pk of 8	<a href="#">JT-96116-16</a> /pk of 8	<a href="#">JT-96116-15</a> /pk of 4	<a href="#">JT-96116-24</a> /pk of 4	<a href="#">JT-96116-35</a> /pk of 4
PharMed® BPT		<a href="#">JT-96114-13</a> /pk of 8	<a href="#">JT-96114-14</a> /pk of 8	<a href="#">JT-96114-16</a> /pk of 8	<a href="#">JT-96114-15</a> /pk of 4	<a href="#">JT-96114-24</a> /pk of 4	<a href="#">JT-96114-35</a> /pk of 4
Chem-Durance® Bio		<a href="#">JT-96117-13</a> /pk of 8	<a href="#">JT-96117-14</a> /pk of 8	<a href="#">JT-96117-16</a> /pk of 8	<a href="#">JT-96117-15</a> /pk of 4	<a href="#">JT-96117-24</a> /pk of 4	<a href="#">JT-96117-35</a> /pk of 4
Viton®		<a href="#">JT-96428-13</a> /pk of 8	<a href="#">JT-96428-14</a> /pk of 8	<a href="#">JT-96428-16</a> /pk of 8	<a href="#">JT-96428-15</a> /pk of 4	<a href="#">JT-96428-24</a> /pk of 4	<a href="#">JT-96428-35</a> /pk of 4

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

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



Application Solution

#### Challenge

A pharmaceutical manufacturer needed to dispense volumes of 300 mL in 15 seconds or less repeating three times per minute; and 20 mL in 2 seconds or less repeating 20 times per minute. The desired accuracy target for both applications was ±1.5%. The efficiency of simultaneously pumping multiple channels was critical.

#### Solution

The manufacturer now uses a Masterflex L/S digital drive with an L/S four-channel pump head 07536-04. Size L/S 15 two-stop silicone tubing (06421-15) met the smaller flow requirement; while size L/S 35 two-stop silicone tubing (06421-35) met the larger flow requirement. Careful calibration of the drive, and the synchronous multichannel flow capability of the pump head enabled the manufacturer to meet the accuracy target.

## L/S® Pump Tubing

Ensure optimal performance from your Masterflex pump



### Silicone (platinum-cured)

- Low protein binding, fungus resistant, phthalate and latex-free
- Accommodates a wide temperature range

### Silicone (peroxide-cured)

- Greater physical compression capability
- Economical, longer tubing life

### BioPharm Silicone (platinum-cured)

- Low absorption; excellent biocompatibility
- Very low extractable; weather, ozone, corona, radiation resistant

### BioPharm Plus Silicone (platinum-cured)

- Ultra-smooth—minimizes particle entrapment
- Very low extractable—ideal for lab, biotech, and pharmaceutical

### Puri-Flex™

- Heat sealable, weldable, and economical
- Long pump life when compared to silicone or many other TPE tubings

### C-Flex®

- Heat sealable, weldable, economical
- Better resistance to pH fluctuations

### C-Flex® ULTRA

- Longest life of any C-Flex formulation
- Lowest spallation and reduced residue

### PharMed® BPT

- >10,000 hours of tubing life; sealable, weldable
- Ideal for tissue and cell culture work

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")
Flow range (approximate)†	0.06 to 36 mL/min	0.21 to 130 mL/min	0.8 to 480 mL/min	1.7 to 1000 mL/min	2.8 to 1700 mL/min	3.8 to 2300 mL/min

## L/S Precision Pump Tubing

Formulation	Complies with	Qty/pk	●	●	○	○	○	○
Silicone (platinum-cured)	MASTERFLEX USP Class V, EP, FDA, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">JT-96410-13</a>	<a href="#">JT-96410-14</a>	<a href="#">JT-96410-16</a>	<a href="#">JT-96410-25</a>	<a href="#">JT-96410-17</a>	<a href="#">JT-96410-18</a>
Silicone (peroxide-cured)	MASTERFLEX USP Class VI, EP, FDA, 3A, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">JT-96400-13</a>	<a href="#">JT-96400-14</a>	<a href="#">JT-96400-16</a>	<a href="#">JT-96400-25</a>	<a href="#">JT-96400-17</a>	<a href="#">JT-96400-18</a>
BioPharm Silicone (platinum-cured)	MASTERFLEX USP Class VI, EP, FDA, 3A, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">JT-96420-13</a>	<a href="#">JT-96420-14</a>	<a href="#">JT-96420-16</a>	<a href="#">JT-96420-25</a>	<a href="#">JT-96420-17</a>	<a href="#">JT-96420-18</a>
BioPharm Plus Silicone (platinum-cured)	MASTERFLEX USP Class VI, EP, FDA, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">JT-96440-13</a>	<a href="#">JT-96440-14</a>	<a href="#">JT-96440-16</a>	<a href="#">JT-96440-25</a>	<a href="#">JT-96440-17</a>	<a href="#">JT-96440-18</a>
Puri-Flex™	MASTERFLEX USP Class VI, FDA, 3A, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">JT-96419-13</a>	<a href="#">JT-96419-14</a>	<a href="#">JT-96419-16</a>	<a href="#">JT-96419-25</a>	<a href="#">JT-96419-17</a>	<a href="#">JT-96419-18</a>
C-Flex®	MASTERFLEX USP Class VI, EP, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">JT-06424-13</a>	<a href="#">JT-06424-14</a>	<a href="#">JT-06424-16</a>	<a href="#">JT-06424-25</a>	<a href="#">JT-06424-17</a>	<a href="#">JT-06424-18</a>
C-Flex® ULTRA	MASTERFLEX USP Class VI, EP, REACH, RoHS, ADCF	7.6 m (25 ft)	—	<a href="#">JT-06434-14</a>	<a href="#">JT-06434-16</a>	<a href="#">JT-06434-25</a>	<a href="#">JT-06434-17</a>	<a href="#">JT-06434-18</a>
PharMed® BPT	MASTERFLEX USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06508-13</a>	<a href="#">JT-06508-14</a>	<a href="#">JT-06508-16</a>	<a href="#">JT-06508-25</a>	<a href="#">JT-06508-17</a>	<a href="#">JT-06508-18</a>
PharmaPure® <sup>1</sup>	MASTERFLEX USP Class VI, EP, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06435-13</a>	<a href="#">JT-06435-14</a>	<a href="#">JT-06435-16</a>	<a href="#">JT-06435-25</a>	<a href="#">JT-06435-17</a>	<a href="#">JT-06435-18</a>
GORE® STA-PURE® Series PCS <sup>2</sup>	—	35.6 cm (14")	—	<a href="#">JT-96241-14</a>	<a href="#">JT-96241-16</a>	<a href="#">JT-96241-25</a>	<a href="#">JT-96241-17</a>	<a href="#">JT-96241-18</a>
GORE® STA-PURE® Series PFL <sup>2</sup>	—	35.6 cm (14")	—	<a href="#">JT-96242-14</a>	<a href="#">JT-96242-16</a>	<a href="#">JT-96242-25</a>	<a href="#">JT-96242-17</a>	<a href="#">JT-96242-18</a>
Chem-Durance® Bio <sup>3</sup>	MASTERFLEX USP Class VI, FDA, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06442-13</a>	<a href="#">JT-06442-14</a>	<a href="#">JT-06442-16</a>	<a href="#">JT-06442-25</a>	<a href="#">JT-06442-17</a>	<a href="#">JT-06442-18</a>
Solve-Flex® <sup>2</sup>	—	3.6 m (12 ft)	—	—	<a href="#">JT-96446-16</a>	—	<a href="#">JT-96446-17</a>	—
Tygon® E-LFL	MASTERFLEX USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">JT-06440-13</a>	<a href="#">JT-06440-14</a>	<a href="#">JT-06440-16</a>	<a href="#">JT-06440-25</a>	<a href="#">JT-06440-17</a>	<a href="#">JT-06440-18</a>
Tygon E-Food (B-44-4X)	MASTERFLEX FDA, EU Food, NSF, 3A, REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">JT-06418-13</a>	<a href="#">JT-06418-14</a>	<a href="#">JT-06418-16</a>	<a href="#">JT-06418-25</a>	<a href="#">JT-06418-17</a>	<a href="#">JT-06418-18</a>
Tygon E-Lab (E-3603)	MASTERFLEX USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">JT-06509-13</a>	<a href="#">JT-06509-14</a>	<a href="#">JT-06509-16</a>	<a href="#">JT-06509-25</a>	<a href="#">JT-06509-17</a>	<a href="#">JT-06509-18</a>
Tygon Fuel & Lubricant (F-4040-A)	MASTERFLEX REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">JT-06401-13</a>	<a href="#">JT-06401-14</a>	<a href="#">JT-06401-16</a>	<a href="#">JT-06401-25</a>	<a href="#">JT-06401-17</a>	<a href="#">JT-06401-18</a>
Tygon Chemical <sup>1</sup> (2001)	MASTERFLEX FDA 21 CFR 175.300, REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">JT-06475-13</a>	<a href="#">JT-06475-14</a>	<a href="#">JT-06475-16</a>	<a href="#">JT-06475-25</a>	<a href="#">JT-06475-17</a>	<a href="#">JT-06475-18</a>
Norprene® (A-60 G)	MASTERFLEX NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06404-13</a>	<a href="#">JT-06404-14</a>	<a href="#">JT-06404-16</a>	<a href="#">JT-06404-25</a>	<a href="#">JT-06404-17</a>	<a href="#">JT-06404-18</a>
Norprene Food (A 60 F)	MASTERFLEX FDA, 3A, NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06402-13</a>	<a href="#">JT-06402-14</a>	<a href="#">JT-06402-16</a>	<a href="#">JT-06402-25</a>	<a href="#">JT-06402-17</a>	<a href="#">JT-06402-18</a>
Viton®	MASTERFLEX FDA, ADCF	7.6 m (25 ft)	<a href="#">JT-96412-13</a>	<a href="#">JT-96412-14</a>	<a href="#">JT-96412-16</a>	<a href="#">JT-96412-25</a>	<a href="#">JT-96412-17</a>	<a href="#">JT-96412-18</a>

†Determined under the following conditions: Using a 1 to 600 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).

## FEATURES

- ✓ Custom extruded to fit Masterflex pumps
- ✓ Engineered for long life in peristaltic pump applications

### PharmaPure®

- Nontoxic and nonhemolytic biocompatible
- Long life even under pressure with VERY low spallation

### GORE® STA-PURE® Series PCS

- Long life—even in pressures up to 100 psi
- Excellent flow stability

### GORE® STA-PURE® Series PFL

- Long life—even in pressures up to 100 psi
- Excellent biocompatibility and flow stability

### Chem-Durance® Bio

- Excellent chemical compatibility and biocompatibility
- Excellent life and durability under pressure

### Solve-Flex®

- Excellent chemical resistance, especially solvents
- Fluoropolymer lined with low spallation

### Tygon® E-LFL

- Longest life of all Tygon formulations
- Broad chemical resistance

### Tygon E-Food (B-44-4X)

- Smooth inner surface unaffected by commercial sanitizers
- Nontoxic; will not affect taste or odor

### Tygon E-Lab (E-3603)

- Ideal for general transfer use
- Nonaging, nonoxidizing, low gas permeability

### Tygon Fuel & Lubricant (F-4040-A)

- Formulated to transport hydrocarbons, petroleum products, and distillates
- Low gas permeability

### Tygon Chemical (2001)

- Excellent chemical resistance
- Plasticizer-free with low gas permeability

### Norprene® (A-60 G)

- Up to 10,000 hours of tubing life
- Excellent choice for pressure/vacuum applications
























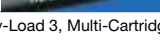
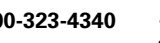
### Norprene Food (A 60 F)

- Ideal for high-temperature food applications
- Resists heat, ozone, acids, and alkalis

### Viton®

- Perfect for applications where FDA and chemical compatibility is needed
- Resists corrosives, solvents, and oils at elevated temperatures

## L/S High-Performance Precision Pump Tubing

Formulation	Complies with	Qty/pk	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")
			Flow range (approximate) <sup>†</sup>	1.7 to 1000 mL/min (1.8 to 1100 mL/min)	2.8 to 1700 mL/min (3.0 to 1800 mL/min)	3.8 to 2300 mL/min (4.3 to 2600 mL/min)	4.8 to 2900 mL/min (5.8 to 3400 mL/min)
							
Silicone (platinum-cured)		USP Class V, EP, FDA, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-96410-15</a>	<a href="#">JT-96410-24</a>	<a href="#">JT-96410-35</a>	<a href="#">JT-96410-36</a>
Silicone (peroxide-cured)		USP Class VI, EP, FDA, 3A, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-96400-15</a>	<a href="#">JT-96400-24</a>	<a href="#">JT-96400-35</a>	<a href="#">JT-96400-36</a>
BioPharm Silicone (platinum-cured)		USP Class VI, EP, FDA, 3A, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-96420-15</a>	<a href="#">JT-96420-24</a>	<a href="#">JT-96420-35</a>	<a href="#">JT-96420-36</a>
BioPharm Plus Silicone (platinum-cured)		USP Class VI, EP, FDA, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-96440-15</a>	<a href="#">JT-96440-24</a>	<a href="#">JT-96440-35</a>	<a href="#">JT-96440-36</a>
Puri-Flex™		USP Class VI, FDA, 3A, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-96419-15</a>	<a href="#">JT-96419-24</a>	<a href="#">JT-96419-35</a>	<a href="#">JT-96419-36</a>
C-Flex®		USP Class VI, EP, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-06424-15</a>	<a href="#">JT-06424-24</a>	<a href="#">JT-06424-35</a>	<a href="#">JT-06424-36</a>
C-Flex® ULTRA		USP Class VI, EP, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-06434-15</a>	<a href="#">JT-06434-24</a>	<a href="#">JT-06434-35</a>	<a href="#">JT-06434-36</a>
PharMed® BPT		USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06508-15</a>	<a href="#">JT-06508-24</a>	<a href="#">JT-06508-35</a>	<a href="#">JT-06508-36</a>
PharmaPure®†		USP Class VI, EP, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06435-15</a>	<a href="#">JT-06435-24</a>	—	—
GORE® STA-PURE® Series PCS <sup>‡</sup>		USP Class VI	35.6 cm (14")	<a href="#">JT-96241-15</a>	<a href="#">JT-96241-24</a>	<a href="#">JT-96241-35</a>	<a href="#">JT-96241-36</a>
GORE® STA-PURE® Series PFL <sup>‡</sup>		USP Class VI	35.6 cm (14")	<a href="#">JT-96242-15</a>	<a href="#">JT-96242-24</a>	<a href="#">JT-96242-35</a>	<a href="#">JT-96242-36</a>
Chem-Durance® Bio <sup>†</sup>		USP Class VI, FDA, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06442-15</a>	<a href="#">JT-06442-24</a>	<a href="#">JT-06442-35</a>	<a href="#">JT-06442-36</a>
Solve-Flex®†		USP Class VI	3.6 m (12 ft)	—	<a href="#">JT-96446-24</a>	—	—
Tygon® E-LFL		USP Class VI, EP, FDA, EU Food, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">JT-06440-15</a>	<a href="#">JT-06440-24</a>	<a href="#">JT-06440-35</a>	<a href="#">JT-06440-36</a>
Tygon E-Food (B-44-4X)		FDA, EU Food, NSF, 3A, REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">JT-06418-15</a>	<a href="#">JT-06418-24</a>	<a href="#">JT-06418-35</a>	<a href="#">JT-06418-36</a>
Tygon E-Lab (E-3603)		USP Class VI, FDA, EU Food, NSF, REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">JT-06509-15</a>	<a href="#">JT-06509-24</a>	<a href="#">JT-06509-35</a>	<a href="#">JT-06509-36</a>
Tygon Fuel & Lubricant (F-4040-A)		REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">JT-06401-15</a>	<a href="#">JT-06401-24</a>	<a href="#">JT-06401-35</a>	<a href="#">JT-06401-36</a>
Tygon Chemical <sup>†</sup> (2001)		FDA 21 CFR 175.300, REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">JT-06475-15</a>	<a href="#">JT-06475-24</a>	—	—
Norprene® (A-60 G)		NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06404-15</a>	<a href="#">JT-06404-24</a>	<a href="#">JT-06404-35</a>	<a href="#">JT-06404-36</a>
Norprene Food (A 60 F)		FDA, 3A, NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06402-15</a>	<a href="#">JT-06402-24</a>	<a href="#">JT-06402-35</a>	<a href="#">JT-06402-36</a>
Viton®		FDA, AOCF	7.6 m (25 ft)	<a href="#">JT-96412-15</a>	<a href="#">JT-96412-24</a>	<a href="#">JT-96412-35</a>	<a href="#">JT-96412-36</a>

<sup>†</sup>Not compatible with Easy-Load 3, Multi-Cartridge, or High-Performance pump heads.

## I/P® Digital Console Process Drives

### Maintenance-free drives built for process applications

- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense
- Dispense by volume, copy, or time with programmable delay interval
- Models equipped with open-head sensor stop drive motor when pump head is opened—pair with an open-head sensor equipped pump head (see page 26)

**Models 77420-10 and -18** feature a 316 stainless steel housing with an anodized aluminum base. Ideal for pharmaceutical, dairy, biotech, and food and beverage applications.

**Models 77420-20 and -28** feature a powder-coated steel housing with anodized aluminum base. Use 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. Shipped with country-specific plug/cord set; please specify ultimate destination when ordering.



#### FEATURES

- ✓ Flow rates: 0.0006 to 19 LPM
- ✓ Accuracy of ±0.1% speed control
- ✓ Four-line graphical display
- ✓ 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

MASTERFLEX®

ISO9001:2008  
CERTIFIED SUPPLIER



rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power	Catalog number	Price
<b>Digital process drive with 316 stainless steel housing</b>									
0.1 to 650	±0.1%	No	2	¾ hp (280 W)	IP66	16 <sup>1</sup> / <sub>16</sub> " x 11 <sup>1</sup> / <sub>8</sub> " x 12 <sup>7</sup> / <sub>8</sub> "	90 to 260 VAC, 50/60 Hz	JT-77420-10	
		Yes						JT-77420-18	
<b>Digital process drive with powder-coat steel housing</b>									
0.1 to 650	±0.1%	No	2	¾ hp (280 W)	IP66	16 <sup>1</sup> / <sub>16</sub> " x 11 <sup>1</sup> / <sub>8</sub> " x 12 <sup>7</sup> / <sub>8</sub> "	90 to 260 VAC, 50/60 Hz	JT-77420-20	
		Yes						JT-77420-28	

#### Accessories

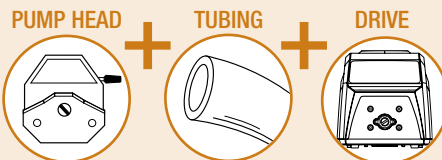
**JT-07575-84 Washdown foot switch**, momentary start/stop; 6-ft (1.8-m) cable

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

**JT-17050-01 NIST-traceable calibration** for peristaltic pump drive

### Choose a convenient Complete System

One catalog number includes all 3!



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.001 to 8.0 LPM	Easy-Load® 77602-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive with 316 SS housing 77420-10 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77964-20</a>	
	0.001 to 8.0 LPM	Easy-Load 77602-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive with powder-coat steel housing 77420-20 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77964-30</a>	



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

## Get precise digital dispensing with virtually no maintenance

- 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
- 6-ft (1.8-m) cable connects drive and controller; optional extension cable is available

### A. Modular Drive 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 DB25 female connector on controller

### 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
- Remote control capabilities via weather-resistant connection on controller

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



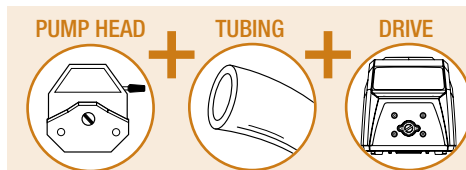
rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
<b>A. Digital modular dispensing drive with benchtop controller</b>									
0.1 to 650	±0.1% (0.1 rpm at 650 rpm)	2	3/8 hp (280 W)	IP33	Controller: 10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

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

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

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

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



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

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.001 to 8 LPM	Easy-Load® 77602-10	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="#">JT-77970-40</a>	
	0.001 to 8 LPM	Easy-Load 77602-10	C-Flex ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital washdown dispensing drive 07594-10 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77970-50</a>	

**Application Solution**

**Challenge**

A customer is pouring hot wax into containers that hold from 50 grams to 3 pounds. Another peristaltic pump was used to pump the wax, but it was slow. The customer needs to put the containers on a conveyor belt and wants to operate the pump with a remote control feature so that the operator does not get too close to the wax. Intervals of 1 to 2 seconds between filling sessions is required, so this needs to be controlled by the pump as well.

**Solution**

The larger I/P pump system 77970-50 fulfills the customer's needs to accurately dispense wax into a range of container capacities in quick succession with time-controlled intervals. Plus, the option to remotely control the pump allows the operator to be a safe distance away.

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

Place motor and controller where convenient with modular design

- Easy control of speed, direction, and start/stop with membrane keypad
- Ideal for metering and critical transfer applications
- 6-ft (1.8-m) cable connects drive and controller; optional extension cable is available

### A. Modular Drive with Benchtop Controller

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

### 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
- Remote control via weather-resistant connection on controller

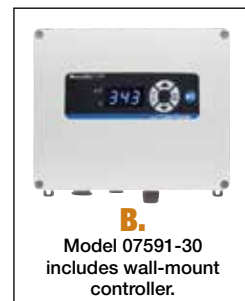
**What's included:** 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.



**A.**  
07591-20

### FEATURES

- ✓ Flow rates: 0.036 to 19 LPM
- ✓ Accuracy of ±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.



rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
<b>A. Precision modular drive with benchtop controller</b>									
6 to 650	±0.25% (1 rpm at 650 rpm)	2†	1/5 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	<a href="#">JT-07591-20</a>	
<b>B. Precision washdown modular drive with wall-mount controller</b>									
6 to 650	±0.25% (1 rpm at 650 rpm)	2†	1/5 hp (149 W)	IP66	Controller: 10 1/8" 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	<a href="#">JT-07591-30</a>	

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

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

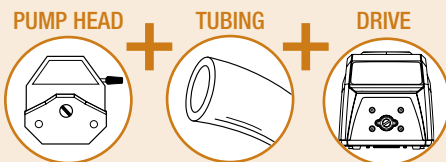
[JT-07595-47](#) Cable assembly for benchtop drive 07591-20; DB9 male connector and 25-ft (7.9-m) cable with stripped wire terminal ends. Use for remote control

[JT-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

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

## Choose a convenient Complete System

One catalog number includes all 3!



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.06 to 8 LPM	Easy-Load® 77602-10	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="#">JT-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)	Washdown modular drive 07591-30 6 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77962-30</a>	

## I/P® Precision Process Drives

### Powerful, low-maintenance drives keep you pumping

- Don't worry about moisture, chemicals, or dust—IP55-rated nonchip epoxy-coated steel housing
- Goes where you need it—compact and light enough to carry with one hand, powerful enough to drive two pump heads
- Get up to speed quickly—easy to adjust speed knob and LED display for improved repeatability

**FEATURES**

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



**MASTERFLEX®**

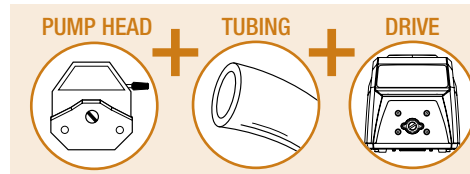
ISO 9001:2008  
CERTIFIED SUPPLIER



Motor speed (rpm)	Speed control (repeatability)	Pump heads accepted	Motor size	Dimensions	Power (50/60 Hz)		Catalog number	Price
					VAC	Amps		
<b>Variable-speed brushless process drive</b>								
33 to 650	±0.25% (2% of max rpm)	2	1/8 hp (0.25 kW)	14"L x 10"W x 9"H (35.6 x 25.4 x 22.9 cm)	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	<a href="#">JT-77410-10</a>	
<b>Variable-speed brushless process drive with remote input/output</b>								
33 to 650	±0.25% (2% of max rpm)	2	1/8 hp (0.25 kW)	14"L x 10"W x 9"H (35.6 x 25.4 x 22.9 cm)	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	<a href="#">JT-77411-00</a>	

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

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



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

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.4 to 8 LPM	Easy-Load® 77602-10	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="#">JT-77963-10</a>	
	0.7 to 17 LPM	High-Performance 77600-62	Tygon® E-LFL I/P 88 tubing 06440-88 3 ft (1 m)	Brushless process drive 77410-10 33 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">JT-77963-20</a>	



## Need Help Selecting?

Trust our **expert** Application Specialists to help you find the right product.

1-800-323-4340    sales@coleparmer.com    ColeParmer.com

## I/P® High-Performance Pump Heads

### Get higher flow rates and pressure

- Easily transfer viscous fluids
- Pump up to 19 LPM for higher volume processing
- Durable design for longer life—made of stainless steel rollers, bearings, rotor plates, and rotor shaft. Occlusion bed is made of thermoset polyester
- Compatible with I/P drives that accept two or more pump heads; pump head is not stackable



Pump tubing sizes accepted	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="#">JT-77600-62</a>	<a href="#">JT-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

### FEATURES

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

## I/P® Easy-Load® Pump Heads

### Minimize downtime with faster tubing changes

- Optimize pressure capabilities and tubing life with adjustable occlusion
- Less maintenance and quieter operation with included tang boot
- No more loose pump heads—five-screw mounting for more secure attachment
- Adjust flow rate to your needs—can pump from 0.01 to 13 LPM
- PPS housing with CRS or SS rotor available. CRS rotors have sealed bearings; SS rotors have PTFE-sealed bearings
- Model with open-head interlock sensor stops drive motor when pump head is open (when used with sensor-equipped drives)

### FEATURES

- ✓ 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 sizes accepted	mL per rev	Flow rates (LPM) at indicated rpm			Maximum system psi (bar)	Catalog number†				
		100	540	20 to 650		White PPS housing			Black PPS housing	ATEX-approved; PPS housing
						CRS rotor	SS rotor	SS rotor and open-head sensor	SS rotor	SS rotor
I/P 26	6.15	0.6	3.2	0.12 to 4	40 (2.7)	<a href="#">JT-77602-00</a>	<a href="#">JT-77602-10</a>	<a href="#">JT-77602-30</a>	<a href="#">JT-77601-60</a>	<a href="#">JT-77602-80</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	20 (1.4)					
<b>Price</b>										

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

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

# Wait!

There's More at  
**ColeParmer.com**

Browse **100,000+** products plus find  
**Technical Resources** to help you choose

# Masterflex® Drives Enhance Worker Protection

You take your safety seriously, and so do we.

You review every step of the process to take care of your staff and to benefit your business. We've added a new option to our Masterflex product line to help enhance protection in your workplace.

## Open-Head Interlock Sensor Technology

Available integrated into select L/S® and I/P® drives or as a retrofit system, the open-head interlock sensors add an extra level of protection for operators who maintain pumps. When paired with an open-head sensor equipped pump head, the drive automatically shuts down when the pump head is opened, eliminating exposure to the moving rollers connected to the drive shaft.

Read the article *How Masterflex Pumps with Open Head Sensors Enhance Worker Protection* on our web site at <https://www.coleparmer.com/tech-article/enhanced-worker-safety-open-head-interlock-sensor>

## Masterflex products with integrated open-head sensors

- L/S Computer-Compatible Digital Drives [page 5](#)
- L/S Digital Console Process Drives [page 6](#)
- L/S Variable-Speed Digital Drives [page 7](#)
- L/S Precision Console Process Drives [page 9](#)
- L/S High-Pressure Pumps [page 12](#)
- L/S Digital Miniflex® Pumps [page 13](#)
- L/S Easy-Load II Pump Heads [page 15](#)
- L/S High-Performance Pump Heads [page 16](#)
- I/P Digital Console Process Drives [page 22](#)
- I/P Easy-Load Pump Head [page 26](#)



## Upgrade your Existing Drives

Use the retrofit system controller to incorporate open-head sensors into pump systems you already have. The system includes a control box that easily connects to your drive and an open-head sensor equipped pump head. If pump head is opened during operation, the interlock control box instantly shuts down the drive.

The retrofit system is compatible with select L/S and I/P drives. Controller 77097-00 includes power cables and a single extension cable to connect one sensor-equipped pump head. Order optional extension cable 77097-20 to connect a second pump head.

- [JT-77097-00](#) Open-head interlock sensor control box
- [JT-77097-02](#) Power cable for hard-wired 115 VAC drives
- [JT-77097-20](#) Optional extension cable, 6 ft (1.8 m)



SAFE  
FIRST  
533  
DAYS  
WITHOUT  
INCIDENT

## I/P® Pump Tubing

Ensure optimal performance from your Masterflex pump



### Silicone (platinum-cured)

- Low protein binding, fungus resistant, phthalate and latex-free
- Accommodates a wide temperature range

### Silicone (peroxide-cured)

- Greater physical compression capability
- Economical, longer tubing life

### BioPharm Silicone (platinum-cured)

- Low absorption; excellent biocompatibility
- Very low extractable; weather, ozone, corona, radiation resistant

### BioPharm Plus Silicone (platinum-cured)

- Ultra-smooth—minimizes particle entrapment
- Very low extractable—ideal for lab, biotech, and pharmaceutical

### Puri-Flex™

- Heat sealable, weldable, and economical
- Long pump life when compared to silicone or many other TPE tubings

### C-Flex®




- Heat sealable, weldable, economical
- Better resistance to pH fluctuations

### C-Flex® ULTRA

- Longest life of any C-Flex formulation
- Lowest spallation and reduced residue

## I/P Precision Pump Tubing

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 (⅜")	12.7 mm (½")
Flow range (approximate)†	0.01 to 4 LPM 0.002 to 1.1 GPM	0.01 to 8 LPM 0.002 to 2.1 GPM	0.02 to 13 LPM 0.005 to 3.5 GPM

Formulation	Complies with	Qty/pk			
Silicone (platinum cured)	USP Class V, EP, FDA, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-96410-26</a>	<a href="#">JT-96410-73</a>	<a href="#">JT-96410-82</a>
Silicone (peroxide cured)	USP Class VI, EP, FDA, 3A, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-96400-26</a>	<a href="#">JT-96400-73</a>	<a href="#">JT-96400-82</a>
BioPharm Silicone (platinum)	USP Class VI, EP, FDA, 3A, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-96420-26</a>	<a href="#">JT-96420-73</a>	<a href="#">JT-96420-82</a>
BioPharm Plus Silicone (platinum)	USP Class VI, EP, FDA, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-96440-26</a>	<a href="#">JT-96440-73</a>	<a href="#">JT-96440-82</a>
Puri-Flex™	USP Class VI, FDA, 3A, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-96419-26</a>	<a href="#">JT-96419-73</a>	<a href="#">JT-96419-82</a>
C-Flex®	USP Class VI, EP, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-06424-26</a>	<a href="#">JT-06424-73</a>	<a href="#">JT-06424-82</a>
C-Flex® ULTRA	USP Class VI, EP, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-06434-26</a>	<a href="#">JT-06434-73</a>	<a href="#">JT-06434-82</a>
PharMed® BPT	USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06508-26</a>	<a href="#">JT-06508-73</a>	<a href="#">JT-06508-82</a>
PharmaPure® †	USP Class VI, EP, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06435-26</a>	<a href="#">JT-06435-73</a>	<a href="#">JT-06435-82</a>
GORE® STA-PURE® Series PCS	USP Class VI	0.6 m (2 ft)	<a href="#">JT-96241-26</a>	<a href="#">JT-96241-73</a>	<a href="#">JT-96241-82</a>
GORE® STA-PURE® Series PFL	USP Class VI	0.6 m (2 ft)	<a href="#">JT-96242-26</a>	<a href="#">JT-96242-73</a>	<a href="#">JT-96242-82</a>
Chem-Durance® Bio†	USP Class VI, FDA, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06442-26</a>	<a href="#">JT-06442-73</a>	<a href="#">JT-06442-82</a>
Tygon® E-LFL	USP Class VI, EP, FDA, EU Food, REACH, RoHS, AECF	7.6 m (25 ft)	<a href="#">JT-06440-26</a>	<a href="#">JT-06440-73</a>	<a href="#">JT-06440-82</a>
Tygon E-Food (B-44-4X)	FDA, EU Food, NSF, 3A, REACH, RoHS, AECF	15.2 m (50 ft)	<a href="#">JT-06418-26</a>	<a href="#">JT-06418-73</a>	<a href="#">JT-06418-82</a>
Tygon E-Lab (E-3603)	USP Class VI, FDA, EU Food, NSF, REACH, RoHS, AECF	15.2 m (50 ft)	<a href="#">JT-06509-26</a>	<a href="#">JT-06509-73</a>	<a href="#">JT-06509-82</a>
Tygon Fuel & Lubricant (F-4040-A)	REACH, RoHS, AECF	15.2 m (50 ft)	<a href="#">JT-06401-26</a>	<a href="#">JT-06401-73</a>	<a href="#">JT-06401-82</a>
Tygon Chemical (2001)†	FDA 21 CFR 175.300, REACH, RoHS, AECF	15.2 m (50 ft)	<a href="#">JT-06475-26</a>	<a href="#">JT-06475-73</a>	<a href="#">JT-06475-82</a>
Norprene® (A 60 G)	NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06404-26</a>	<a href="#">JT-06404-73</a>	<a href="#">JT-06404-82</a>
Norprene Food (A 60 F)	FDA, 3A, NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">JT-06402-26</a>	<a href="#">JT-06402-73</a>	<a href="#">JT-06402-82</a>
Viton®	FDA, AECF	7.6 m (25 ft)	<a href="#">JT-96412-26</a>	<a href="#">JT-96412-73</a>	—

†Determined under these conditions: Using a 1 to 650 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F). ‡Recommended for use with Easy-Load® pump heads only.

## FEATURES

- ✓ Custom extruded to fit Masterflex pumps
- ✓ Engineered for long life in peristaltic pump applications

### PharMed® BPT

- >10,000 hours of tubing life; sealable, weldable
- Ideal for tissue and cell culture work

### PharmaPure®

- Nontoxic and nonhemolytic biocompatible
- Long life even under pressure with VERY low spallation

### GORE® STA-PURE® Series PCS

- Consistent flow rate
- Long life—even in pressures up to 100 psi

### GORE® STA-PURE® Series PFL

- Long life—even in pressures up to 100 psi
- Excellent biocompatibility and flow stability

### Chem-Durance® Bio

- Excellent chemical compatibility and biocompatibility
- Excellent life and durability under pressure

### Tygon® E-LFL

- Longest life of all Tygon formulations
- Broad chemical resistance

### Tygon E-Food (B-44-4X)

- Smooth inner surface unaffected by commercial sanitizers
- Nontoxic; will not affect taste or odor

### Tygon E-Lab (E-3603)

- Ideal for general transfer use
- Nonaging, nonoxidizing, low gas permeability

### Tygon Fuel & Lubricant (F-4040-A)

- Formulated to transport hydrocarbons, petroleum products, and distillates
- Low gas permeability

### Tygon Chemical (2001)

- Excellent chemical resistance
- Plasticizer-free with low gas permeability

### Norprene® (A-60 G)

- Up to 10,000 hours of tubing life
- Excellent choice for pressure/vacuum applications

### Norprene Food (A 60 F)




- Ideal for high-temperature food applications
- Resists heat, ozone, acids, and alkalis

### Viton®

- Perfect for applications where FDA and chemical compatibility is needed
- Resists corrosives, solvents, and oils at elevated temperatures

## I/P High-Performance Precision Pump Tubing

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")
Flow range (approximate)†	0.01 to 8 LPM 0.002 to 2.1 GPM	0.02 to 17 LPM 0.005 to 4.5 GPM	0.03 to 19 LPM 0.007 to 5.0 GPM

Formulation	Complies with	Qty/pk			
Silicone (platinum cured)	USP Class V, EP, FDA, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">JT-96510-70</a>	<a href="#">JT-96510-88</a>	<a href="#">JT-96510-89</a>
BioPharm Silicone (platinum)	USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">JT-96421-70</a>	<a href="#">JT-96421-88</a>	<a href="#">JT-96421-89</a>
BioPharm Plus Silicone (platinum)	USP Class VI, EP, FDA, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">JT-96441-70</a>	<a href="#">JT-96441-88</a>	<a href="#">JT-96441-89</a>
Puri-Flex™	USP Class VI, FDA, 3A, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">JT-96419-70</a>	<a href="#">JT-96419-88</a>	<a href="#">JT-96419-89</a>
C-Flex®	USP Class VI, EP, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">JT-06424-70</a>	<a href="#">JT-06424-88</a>	<a href="#">JT-06424-89</a>
PharMed® BPT	USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06508-70</a>	<a href="#">JT-06508-88</a>	—
GORE® STA-PURE® Series PCS††	USP Class VI	0.6 m (2 ft)	—	<a href="#">JT-96241-88</a>	<a href="#">JT-96241-89</a>
GORE® STA-PURE® Series PFL††	USP Class VI	0.6 m (2 ft)	—	<a href="#">JT-96242-88</a>	<a href="#">JT-96242-89</a>
Chem-Durance® Bio	USP Class VI, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06442-70</a> <a href="#">/15.2 m (50 ft)</a>	<a href="#">JT-06442-88</a>	<a href="#">JT-06442-89</a>
Tygon E-LFL	USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">JT-06440-70</a>	<a href="#">JT-06440-88</a>	<a href="#">JT-06440-89</a>
Tygon E-Food (B-44-4X)	FDA, EU Food, NSF, 3A, REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">JT-06418-70</a>	<a href="#">JT-06418-88</a>	<a href="#">JT-06418-89</a>
Tygon E-Lab (E-3603)	USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">JT-06509-70</a>	<a href="#">JT-06509-88</a>	<a href="#">JT-06509-89</a>
Norprene® (A 60 G)	NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">JT-06404-70</a>	<a href="#">JT-06404-88</a>	<a href="#">JT-06404-89</a>
Norprene Food (A 60 F)	FDA, 3A, NSF, REACH, RoHS	7.6 m (25 ft)	—	<a href="#">JT-06402-88</a>	<a href="#">JT-06402-89</a>

††Recommended for use with Standard and Easy-Load® pump heads only.



There's More at **ColeParmer.com**

Browse **100,000+** products plus find **Technical Resources** to help you choose

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

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

### 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

### 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

### 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

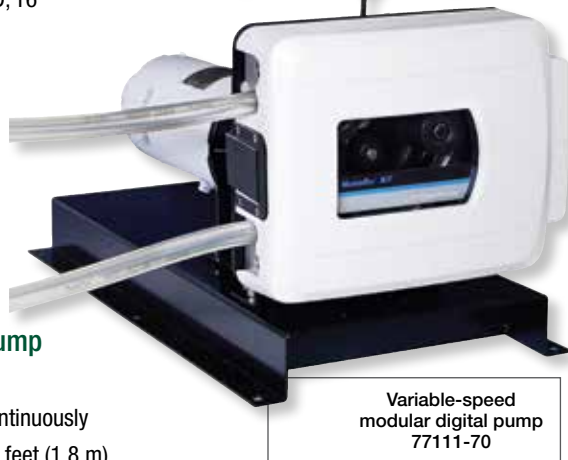
### Variable-Speed Modular Digital Pump

- 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 pump tubing, and a 6-ft (1.8-m) power cord (115 VAC: US standard plug; 230 VAC: European plug).



Fixed-speed pump  
77111-60



Variable-speed  
modular digital pump  
77111-70

### FEATURES

- ✓ 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

MASTERFLEX®

### Flow Rates in LPM (GPM)

rpm	PerfectPosition® pump tubing	
	B/T 87	B/T 91
321	18.9 (5.0)	42 (11.1)
271	16.0 (4.2)	35 (9.4)
35 to 321	1.9 to 17.7 (0.5 to 4.7)	4.0 to 37 (1.06 to 9.8)
12 to 321	0.71 to 18.9 (0.19 to 5.0)	1.4 to 42 (0.4 to 11.1)

ISO9001:2008  
CERTIFIED SUPPLIER



77111-37, Zone 2 77111-30, Except  
-67, -77, -80 77111-80 -37 77111-30, -37

Motor type	Motor size	rpm	IP rating	Mounting type	Dimensions (L x W x H)	Power		Catalog number	Price
						VAC (Hz)	Amps		
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	<a href="#">JT-77111-30</a>	
		271				220 (50)	6.3	<a href="#">JT-77111-37</a>	
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		<a href="#">JT-77111-80</a>	
Variable-speed (±5%)	½ hp (0.37 kW)	12 to 321	Controller: IP56 Drive: IP56	Direct-drive	27" x 15.8" x 17.4" (68.6 x 40 x 44.2 cm)	115 (50/60)	6.5	<a href="#">JT-77111-60</a>	
						230 (50/60)	3.3	<a href="#">JT-77111-67</a>	
Variable-speed digital (±0.3%)	¾ hp (0.56 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 15¾" x 15" (68.6 x 40.0 x 38.4 cm)	90 to 130 (50/60)	10.5	<a href="#">JT-77111-70</a>	
						190 to 260 (50/60)	5.7	<a href="#">JT-77111-77</a>	

[JT-77300-32](#) Remote cable, required for remote control operation of models 77111-70 and -77; 25 ft (7.6 m)

[JT-77111-90](#) Bracket for digital controller on models 77111-70 and -77

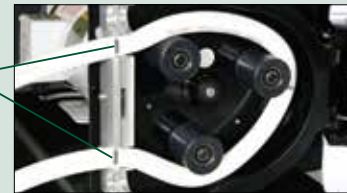


## B/T® PerfectPosition® Pump Tubing




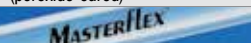


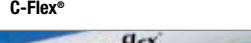





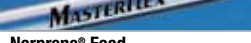

### Position more easily—retention marks indicate exact placement

- Optimized for use in B/T pumps to provide the pumping life, flow, and repeatability that you expect

PerfectPosition indicator marks confirm proper loading and ensure optimal performance.



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 (1/2")	19.0 mm (3/4")
Flow range (approximate)†	0.67 to 18.9 LPM (0.17 to 5.0 GPM)	1.4 to 42 LPM (0.4 to 11.1 GPM)

Pump tubing formulation	Description		
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>– Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC</li> <li>– Low protein binding, fungus-resistant, phthalate and latex free</li> <li>– Accommodates a wide temperature range</li> </ul>	<a href="#">JT-96510-87</a> 3 m (10 ft)/pk	<a href="#">JT-96510-91</a> 3 m (10 ft)/pk
<b>Silicone</b> (peroxide-cured) 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC</li> <li>– Greater physical compression capability</li> <li>– Economical, long life</li> </ul>	<a href="#">JT-96400-87</a> 3 m (10 ft)/pk	<a href="#">JT-96400-91</a> 3 m (10 ft)/pk
<b>BioPharm Plus Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC</li> <li>– Ultra-smooth inner surface minimizes particle entrapment</li> <li>– Very low extractable—ideal for lab, biotech pharma applications</li> </ul>	<a href="#">JT-96445-87</a> 3 m (10 ft)/pk	<a href="#">JT-96445-91</a> 3 m (10 ft)/pk
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, FDA, REACH, RoHS, ADFC</li> <li>– Heat sealable, weldable, and economical</li> <li>– Long pump life compared to silicone or many TPE tubings</li> </ul>	<a href="#">JT-96419-87</a> 3 m (10 ft)/pk	<a href="#">JT-96419-91</a> 3 m (10 ft)/pk
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, EP, REACH, RoHS, ADFC</li> <li>– Heat sealable, weldable, economical</li> <li>– Better resistance to pH fluctuations</li> </ul>	<a href="#">JT-06424-87</a> 3 m (10 ft)/pk	<a href="#">JT-06424-91</a> 3 m (10 ft)/pk
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, EP, FDA, NSF-51, REACH, RoHS</li> <li>– Over 10,000 hours of tubing life, sealable, weldable</li> <li>– Ideal for tissue and cell culture work</li> </ul>	<a href="#">JT-06507-87</a> 3 m (10 ft)/pk	<a href="#">JT-06507-91</a> 3 m (10 ft)/pk
<b>PharmaPure®</b> 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, EP, FDA, REACH, RoHS</li> <li>– Nontoxic and nonhemolytic biocompatible</li> <li>– Long life even under pressure with VERY low spallation</li> </ul>	<a href="#">JT-06437-87</a> 3 m (10 ft)/pk	<a href="#">JT-06437-91</a> 3 m (10 ft)/pk
<b>Chem-Durance® Bio</b> 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, FDA, REACH, RoHS</li> <li>– Excellent chemical compatibility and biocompatibility</li> <li>– Excellent pump life and durability under pressure</li> </ul>	<a href="#">JT-06443-87</a> 3 m (10 ft)/pk	<a href="#">JT-06443-91</a> 3 m (10 ft)/pk
<b>Tygon® E-FLL</b> 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADFC</li> <li>– Longest life of all Tygon formulations</li> <li>– Broad chemical resistance</li> </ul>	<a href="#">JT-06440-87</a> 3 m (10 ft)/pk	<a href="#">JT-06440-91</a> 3 m (10 ft)/pk
<b>Tygon® E-Food</b> (B-44-4X) 	<ul style="list-style-type: none"> <li>– Complies with FDA, EU Food, NSF-51, 3A, REACH, RoHS, ADFC</li> <li>– Smooth inner surface unaffected by commercial sanitizers</li> <li>– Nontoxic, will not affect taste or odor</li> </ul>	<a href="#">JT-06418-87</a> 3 m (10 ft)/pk	<a href="#">JT-06418-91</a> 3 m (10 ft)/pk
<b>Norprene® Food</b> (A-60-F) 	<ul style="list-style-type: none"> <li>– Complies with FDA, 3A, NSF-51, REACH, RoHS</li> <li>– Ideal for high-temperature food applications</li> <li>– Resists heat, ozone, acids, and alkalis</li> </ul>	<a href="#">JT-06399-87</a> 3 m (10 ft)/pk	<a href="#">JT-06399-91</a> 3 m (10 ft)/pk
<b> Gore® STA-PURE® Series PCS</b> 	<ul style="list-style-type: none"> <li>– Complies with USP Class VI</li> <li>– Excellent flow stability—even under pressures up to 100 psi</li> </ul>	<a href="#">JT-96241-87</a> 0.68 m (27")/pk	<a href="#">JT-96241-91</a> 0.68 m (27")/pk

†Determined under the following conditions: Using a 11 to 321 rpm drive; 0 bar (0 psi) at inlet, 0.03 bar (0.5) psi at outlet; water temperature at 22°C (72°F).

## C/L® Variable-Speed Compact Pumps

### Pump in even the tightest spaces!

- Pump fluids in either direction—easily switchable reversing motor
- Easy tubing changes—open cover and release occlusion bed in one motion

#### A. C/L Single-Channel Pumps

- Stop/start remotely via contact closure
- MAX button quickly primes or purges tubing
- Pump from 0.002 to 43 mL/min

#### B. C/L Digital Microflex® Pump

- Icon-driven menu allows quick programming and setup
- Flow range of 0.00013 to 43 mL/min
- Copy dispense function for filling and dispensing applications
- Remote control of speed, direction, and start/stop/prime via 25-pin connector on back of drive
- Microflex pump head accepts continuous lengths of tubing for clean flow paths
- Tubing calibration ensures accuracy



**A**



**B**

#### FEATURES

- ✓ Flow range: 0.00013 to 43 mL/min
- ✓ Reversible pumping
- ✓ Remote control capabilities

MASTERFLEX®

ISO9001:2008  
CERTIFIED SUPPLIER

Power supplies are:



rpm	Speed control (repeatability)	Number of channels	Number of rollers	Reversible motor	IP rating	Dimensions—¼ DIN (L x W x H)	Power		Catalog number	Price
							VAC, Hz	Amps		
<b>A. C/L single-channel compact pumps</b>										
1.7 to 10	±5%	1	4	Yes	IP22	7" x 3¼" x 3½" (17.8 x 9.5 x 8.9 cm)	90 to 260, 50/60	110 mA at 115 VAC	<a href="#">JT-77122-04</a>	
13 to 80							12 VDC†	—		
50 to 300			3				90 to 260, 50/60	175 mA at 115 VAC	<a href="#">JT-77122-14</a>	
							12 VDC†	—	<a href="#">JT-77122-16</a>	
							90 to 260, 50/60	400 mA at 115 VAC	<a href="#">JT-77122-24</a>	
							12 VDC†	—	<a href="#">JT-77122-26</a>	
<b>B. C/L digital Microflex pump</b>										
0.1 to 300	±0.1%	1	3	Yes	IP33	8½" x 5½" x 6¾" (20.5 x 14 x 15.7 cm)	90 to 260	0.34 at 115 VAC, 0.2 at 230 VAC	<a href="#">JT-77123-00</a>	

†Power supply not included with 12 VDC models.

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

**For A models:**

[JT-77120-03](#) Brackets for panel mounting. Set of 2

[JT-77200-07](#) Replacement power supply, 100 to 240 VAC, for pump 77122-24

[JT-77120-11](#) Replacement power supply, 100 to 240 VAC, for pumps 77122-04, -14

**For B model:**

[JT-07523-92](#) Foot switch, momentary start/stop; DB25 male; 6-ft (1.8-m) cable

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

[JT-07523-97](#) Handheld remote controller, DB25 male, route tubing through handle for dispensing applications; 6-ft (1.8-m) cable

[JT-77123-80](#) Replacement single-channel Microflex pump head

[JT-07525-90](#) Replacement power supply, 90 to 260 VAC

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	<a href="#">JT-06460-10</a>	—	<a href="#">JT-07625-10</a>	<a href="#">JT-95809-10</a>	<a href="#">JT-06449-10</a>	—	<a href="#">JT-96418-10</a>	<a href="#">JT-95718-10</a>	<a href="#">JT-95712-10</a>
0.25	<a href="#">JT-06460-12</a>	—	<a href="#">JT-07625-12</a>	<a href="#">JT-95809-12</a>	<a href="#">JT-06449-12</a>	—	<a href="#">JT-96418-12</a>	<a href="#">JT-95718-12</a>	<a href="#">JT-95712-12</a>
0.51	<a href="#">JT-06460-18</a>	<a href="#">JT-95590-18</a>	<a href="#">JT-07625-18</a>	<a href="#">JT-95809-18</a>	<a href="#">JT-06449-18</a>	<a href="#">JT-97632-18</a>	<a href="#">JT-96418-18</a>	<a href="#">JT-95718-18</a>	<a href="#">JT-95712-18</a>
0.89	<a href="#">JT-06460-26</a>	<a href="#">JT-95590-26</a>	<a href="#">JT-07625-26</a>	<a href="#">JT-95809-26</a>	<a href="#">JT-06449-26</a>	<a href="#">JT-97632-26</a>	<a href="#">JT-96418-26</a>	<a href="#">JT-95718-26</a>	<a href="#">JT-95712-26</a>
1.14	<a href="#">JT-06460-30</a>	<a href="#">JT-95590-30</a>	<a href="#">JT-07625-30</a>	<a href="#">JT-95809-30</a>	<a href="#">JT-06449-30</a>	<a href="#">JT-97632-30</a>	<a href="#">JT-96418-30</a>	<a href="#">JT-95718-30</a>	<a href="#">JT-95712-30</a>
1.42	<a href="#">JT-06460-34</a>	<a href="#">JT-95590-34</a>	<a href="#">JT-07625-34</a>	<a href="#">JT-95809-34</a>	<a href="#">JT-06449-34</a>	<a href="#">JT-97632-34</a>	<a href="#">JT-96418-34</a>	<a href="#">JT-95718-34</a>	<a href="#">JT-95712-34</a>
2.06	<a href="#">JT-06460-42</a>	<a href="#">JT-95590-42</a>	<a href="#">JT-07625-42</a>	<a href="#">JT-95809-42</a>	<a href="#">JT-06449-42</a>	<a href="#">JT-97632-42</a>	<a href="#">JT-96418-42</a>	<a href="#">JT-95718-42</a>	<a href="#">JT-95712-42</a>
2.79	<a href="#">JT-06460-48</a>	<a href="#">JT-95590-48</a>	<a href="#">JT-07625-48</a>	<a href="#">JT-95809-48</a>	<a href="#">JT-06449-48</a>	<a href="#">JT-97632-48</a>	<a href="#">JT-96418-48</a>	<a href="#">JT-95718-48</a>	<a href="#">JT-95712-48</a>
Length/pk	30.4 m (100 ft)	15.2 m (50 ft)	15.2 m (50 ft)	30.4 m (100 ft)	30.4 m (100 ft)	15.2 m (50 ft)	15.2 m (50 ft)	15.2 m (50 ft)	15.2 m (50 ft)
Price/pk									

#### 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	
1.7 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	
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 0.39	0.11 to 0.66	0.43 to 2.6	1.2 to 7.5	1.9 to 11.4	2.8 to 17.1	5.3 to 32	7.2 to 43	
0.1 to 300	0.00013 to 0.39	0.0002 to 0.66	0.0009 to 2.6	0.003 to 7.5	0.004 to 11.4	0.006 to 17.1	0.011 to 32	0.014 to 43	

## Catalyst™ FH100 and FH100D Peristaltic Pumps

### You'll be up to speed and pumping in no time at all

- Integrated pump and drive systems are provided fully assembled, reducing setup time
- Pump head accepts multiple tubing sizes for a broad flow range
- Integral pump head allows tubing change in less than 30 seconds—tubing occlusion is automatic when pump head is closed
- Interlock switch powers unit down when pump head is opened for tubing change
- Contamination-free pumping—the fluid contacts only the tubing

#### A. Catalyst FH100 Precision Peristaltic Pumps

- Intuitive keypad is easy to use—quickly increase or decrease flow
- Digital display of speed (rpm) for accurate control and repeatability
- Reversible motor permits purging of tubing before and after use
- Remote control capability is ideal for automated process applications

#### B. Catalyst FH100D Digital Peristaltic Dispensing Pumps

- Accurate dispensing from a simple, ready-to-use pump
- Clear multiline LCD displays all operational parameters
- Control capabilities include programmable dispensing in volume, time, or copy modes
- Programmed delay between cycles for convenient automated dispensing
- Programmable in seven languages—provides easy intuitive setup
- Optimize system accuracy by calibrating the pump system under application conditions—the calibration is stored in memory—one calibration value per tubing size



A



B



Flow range (mL/min)	Tubing sizes accepted (mm ID)	Speed range	Speed control (repeatability)	Remote control input	Reversible motor	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
<b>A. Catalyst FH100 pump accepts 1.6 mm (thin-wall) tubing</b>									
0.5 to 3000	0.8, 1.6, 3.2, 4.8, 6.4, 8.0	4 to 400 rpm	±0.25%	4 to 20 mA, 0 to 10 V	Yes	90 to 260	1.6 at 115 VAC, 1.9 at 230 VAC	<a href="#">JT-77722-00</a>	
<b>A. Catalyst FH100X pump accepts 2.4 mm (thick-wall) tubing</b>									
14 to 4000	4.8, 6.4, 8.0, 9.5	4 to 400 rpm	±0.25%	4 to 20 mA, 0 to 10 V	Yes	90 to 260	1.6 at 115 VAC, 1.9 at 230 VAC	<a href="#">JT-77722-02</a>	
<b>B. Catalyst FH100D pump accepts 1.6 mm (thin-wall) tubing</b>									
0.5 to 3000	0.8, 1.6, 3.2, 4.8, 6.4, 8.0	4 to 400 rpm	±0.25%	0 to 20 mA, 4 to 20 mA, 0 to 10 V scalable	Yes	90 to 260	1.6 at 115 VAC, 1.9 at 230 VAC	<a href="#">JT-77722-10</a>	
<b>B. Catalyst FH100DX pump accepts 2.4 mm (thick-wall) tubing</b>									
14 to 4000	4.8, 6.4, 8.0, 9.5	4 to 400 rpm	±0.25%	0 to 20 mA, 4 to 20 mA, 0 to 10 V scalable	Yes	90 to 260	1.6 at 115 VAC, 1.9 at 230 VAC	<a href="#">JT-77722-12</a>	

#### Accessories

**JT-07528-80 Handheld remote controller** for models FH100 and FH100X.

DB9; for on/off control; route tubing through handle for filling applications

**JT-07523-97 Handheld remote controller** for models FH100D and FH100DX.

DB25; for on/off control; route tubing through handle for dispensing applications

**JT-17050-01 NIST-traceable calibration** with data for peristaltic pumps

#### Tubing Coils

Description	1.6 mm (thin-wall) tubing for FH100 and FH100D pumps						2.4 mm (thick-wall) tubing for FH100X and FH100DX pumps			
	0.8 mm	1.6 mm	3.2 mm	4.8 mm	6.4 mm	8.0 mm	4.8 mm	6.4 mm	8 mm	9.5 mm
Inner diameter	0.8 mm	1.6 mm	3.2 mm	4.8 mm	6.4 mm	8.0 mm	4.8 mm	6.4 mm	8 mm	9.5 mm
Hose barb size	1/32"	1/16"	1/8"	3/16"	1/4"	5/16"	3/16"	1/4"	5/16"	3/8"
Flow (mL/min)	0.5 to 40	2.0 to 150	6.5 to 550	16 to 1200	24 to 2000	36 to 3000	14 to 1200	24 to 2000	36 to 3000	48 to 4000
Length/pk	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)	15 m (49.2 ft)
Silicone, platinum-cured	—	<a href="#">JT-97000-71</a>	<a href="#">JT-97000-72</a>	<a href="#">JT-97000-73</a>	<a href="#">JT-97000-74</a>	<a href="#">JT-97000-75</a>	<a href="#">JT-97000-76</a>	<a href="#">JT-97000-77</a>	<a href="#">JT-97000-78</a>	<a href="#">JT-97000-79</a>
PharMed® BPT	<a href="#">JT-97000-20</a>	<a href="#">JT-97000-21</a>	<a href="#">JT-97000-22</a>	<a href="#">JT-97000-23</a>	<a href="#">JT-97000-24</a>	<a href="#">JT-97000-25</a>	—	—	—	—
Norprene® Food	—	<a href="#">JT-97000-41</a>	<a href="#">JT-97000-42</a>	<a href="#">JT-97000-43</a>	<a href="#">JT-97000-44</a>	<a href="#">JT-97000-45</a>	—	—	—	—
Tygon® E-Food	—	<a href="#">JT-97000-61</a>	<a href="#">JT-97000-62</a>	<a href="#">JT-97000-63</a>	<a href="#">JT-97000-64</a>	<a href="#">JT-97000-65</a>	—	<a href="#">JT-97000-67</a>	<a href="#">JT-97000-68</a>	<a href="#">JT-97000-69</a>

## Masterflex® Pump Accessories

### A. 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.



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

### B. On/Off Foot Switches

Foot switches allow for remote control of specific functions of your Masterflex drive. All units have a 6-ft (1.8 m) cord. Verify the connector type on your drive before ordering.



Description	Cat. no.	Price
DB9 male connector; for 07528-, 07557-, and 07591-series Masterflex drives	<a href="#">JT-77595-35</a>	
DB25 male connector; for 07522-, 07523-, 07551-, 77301-, and 07594-series Masterflex drives	<a href="#">JT-07523-92</a>	
18-pin round water-tight connector; for 07557-, 07591-, and 77411-series Masterflex drives	<a href="#">JT-07595-43</a>	
31-pin round water-tight connector; for 07575-, 77301-, 07594-, and 77420-series Masterflex drives	<a href="#">JT-07575-84</a>	

### C. DB9 Cable Assembly

Use these 9-pin interface cable assemblies with Masterflex L/S® drives (07550- and 07551-series). Cable measures 6 ft (1.8 m) long.



Description	Catalog number	Price
Interface cable with DB9 (M/F)	<a href="#">JT-22050-54</a>	

### D. USB to DB9(M) RS-232 Serial Adapter Cable

Use this cable to connect the Masterflex 07550- and 07551-series Computer Compatible drives to a PC with USB port. Will also connect other peripheral devices equipped with RS-232 serial interface including balances, printers, scanners, and PDA's. Includes 2-ft cable and driver software. Supports data transfer speeds up to 12 Mbps; compatible with Windows® 2000/XP/Vista/7.



Description	Catalog number	Price
USB to DB9(M) RS-232 serial adapter cable	<a href="#">JT-22050-58</a>	

### E. Remote Control Connectors

Combine these connectors with 20 to 22 gauge shielded wire to create your own interface cable. Maximum cable length is 1000 ft (300 m).



Description	Catalog number	Price
DB9 male connector. Wire only the pins needed	<a href="#">JT-07595-45</a>	
DB25 male connector. Wire only the pins needed	<a href="#">JT-07523-94</a>	

### F. Handheld Remote Controllers

These handheld controllers are designed to control basic 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).



Description	Cat. no.	Price
DB9 male connector; for 07528-series Masterflex L/S drives; control start/stop and direction	<a href="#">JT-07528-80</a>	
DB25 male connector; for 07523-series and 07551-series Masterflex L/S drives; control start/stop, direction, and prime	<a href="#">JT-07523-97</a>	
Stripped wire ends; control start/stop, direction, and prime	<a href="#">JT-07595-62</a>	

### G. Remote Control Cable Assemblies

Cable assemblies include terminal connector and 25 ft (7.9 m) cable with stripped wire ends. Verify the connector type on your drive before ordering.

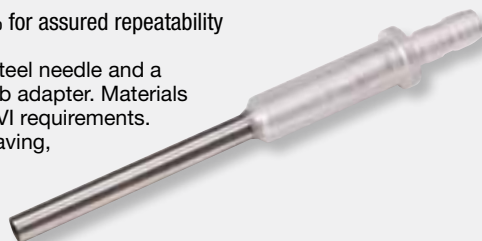


Description	Cat. no.	Price
DB9 male connector; for 07528-, 07557-, and 07591-series Masterflex drives	<a href="#">JT-07595-47</a>	
DB25 male connector; for 07522-, 07523-, 07551-, 77301-, and 07594-series Masterflex drives	<a href="#">JT-07523-95</a>	
18-pin round water-tight connector; for 07557-, 07591-, and 77411-series Masterflex drives	<a href="#">JT-77300-32</a>	
31-pin round water-tight connector; for 07575-, 77301-, 07594-, and 77420-series Masterflex drives	<a href="#">JT-07575-80</a>	

## Overlook Filler/Dispensing Nozzles

- Maximize the speed, precision, and accuracy of dispensing and filling applications
- Dimensional tolerances of ±0.05% for assured repeatability

Nozzles feature a 316L stainless steel needle and a polycarbonate base with hose barb adapter. Materials meet FDA, USDA and USP Class VI requirements. Sterilize by ethylene oxide, autoclaving, or gamma irradiation.



Tubing ID	Catalog number	Price/ea
1/32"	<a href="#">JT-30619-06</a>	
1/16"	<a href="#">JT-30619-01</a>	
1/8"	<a href="#">JT-30619-07</a>	
3/16"	<a href="#">JT-30619-02</a>	
1/4"	<a href="#">JT-30619-08</a>	
5/16"	<a href="#">JT-30619-03</a>	
3/8"	<a href="#">JT-30619-09</a>	
1/2"	<a href="#">JT-30619-04</a>	
5/8"	<a href="#">JT-30619-10</a>	
3/4"	<a href="#">JT-30619-05</a>	

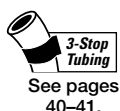
## Reglo Independent Channel Control (ICC) Pumps

### Pump each channel at different speeds and directions!

- Each pump performs the job of up to four separate pumps
- Additional options in channel and roller configurations allow balanced pulsation control at desired flow rate
- USB interface for quick computer connections using redesigned graphical user-interface

These two-, 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 43 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.

Deliver or dispense at multiple flow rates—all from a single space-saving pump.



#### Specifications

**Speed:** 0.1 to 100 rpm      **Pressure:** up to 14.5 psi (1.0 bar)  
**Accuracy:** ±1%



Channels	Rollers	Tubing	Power (VAC, Hz)	Catalog number	Price
<b>Benchtop pumps</b>					
2	6	Three-stop	100 to 240, 50/60	<a href="#">JT-78001-58</a>	
	8			<a href="#">JT-78001-60</a>	
	12			<a href="#">JT-78001-62</a>	
3	6	Three-stop	100 to 240, 50/60	<a href="#">JT-78001-68</a>	
	8			<a href="#">JT-78001-70</a>	
	12			<a href="#">JT-78001-72</a>	
4	6	Three-stop	100 to 240, 50/60	<a href="#">JT-78001-78</a>	
	8			<a href="#">JT-78001-80</a>	
	12			<a href="#">JT-78001-82</a>	
<b>Panel-mount pumps</b>					
2	8	Three-stop	100 to 240, 50/60	<a href="#">JT-78001-43</a>	
3	8			<a href="#">JT-78001-45</a>	
4	8			<a href="#">JT-78001-47</a>	
4	12			<a href="#">JT-78001-49</a>	

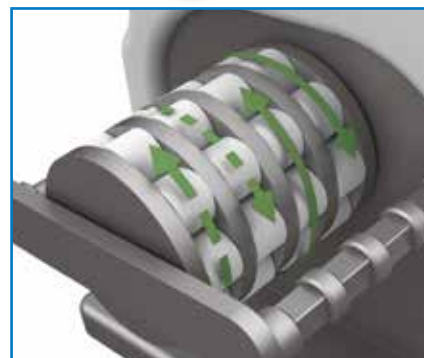
#### Accessories

[JT-78016-98](#) Replacement Click'n'go™ tubing cassette, POM-C

[JT-78016-96](#) Click'n'go™ tubing cassette, PVDF

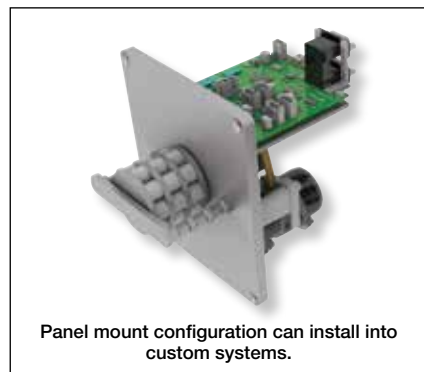
#### Flow Ranges (mL/min per channel)

Tubing ID (mm)	6 rollers	8 rollers	12 rollers
0.13	0.0002 to 0.14	0.0002 to 0.11	0.0001 to 0.093
0.51	0.0019 to 1.9	0.0017 to 1.7	0.0016 to 1.6
0.57	0.0024 to 2.4	0.0021 to 2.1	0.0019 to 1.9
0.64	0.0030 to 3.0	0.0026 to 2.6	0.0024 to 2.4
0.95	0.0064 to 6.4	0.0056 to 5.6	0.0050 to 5.0
1.02	0.0073 to 7.3	0.0063 to 6.3	0.0056 to 5.6
1.42	0.013 to 13	0.011 to 11	0.0094 to 9.4
1.75	0.019 to 19	0.016 to 16	0.013 to 13
1.85	0.021 to 21	0.017 to 17	0.014 to 14
2.54	0.033 to 33	0.027 to 27	0.019 to 19
2.79	0.036 to 36	0.031 to 31	0.021 to 21
3.17	0.043 to 43	0.035 to 35	0.024 to 24



#### Independent Channel Design

- ✓ Up to four independently controllable channels
- ✓ Flexibility of bidirectional flow in each channel
- ✓ Continuous pumping or precision dispensing
- ✓ Enhanced accuracy through separate channel calibration



Panel mount configuration can install into custom systems.

## IPC Low-Flow High-Accuracy Pumps

### Fewer tubing changes

- Planetary drive for less pulsation and longer tubing life
- Smooth rotation and accurate liquid flow provided by eight SS rotors
- Easy repeatability with four-digit LED
- Simple to use—automatic occlusion cartridges provide reproducible results
- Five modes for pumping or dispensing including flow rate, time, batches, drip-free, and volume
- Control via keypad, computer, or remote control
- IP and IP-N pumps available online



Choose from 4, 8, 12, 16 and 24 channel configurations for application flexibility.

4 channel

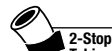
8 channel

12 channel

16 channel

24 channel

**ISMATEC®**



See pages 40–41.

#### Specifications

**Accuracy:** better than  $\pm 1\%$

#### Pressure

Click'n'go cassettes: up to 14.5 psi (1 bar)  
Pressure lever cassettes: up to 22 psi (1.5 bar)

ISO9001:2008  
CERTIFIED SUPPLIER



Flow range per channel (mL/min)	Channels	Rollers	Speed (rpm)	Cassette style	Tubing	115 VAC, 50/60 Hz		230 VAC, 50/60 Hz	
						Catalog number	Price	Catalog number	Price
<b>IPC-N models</b>									
0.0004 to 11	4	8	0.11 to 11.25	Click'n'go	Two-stop	<a href="#">JT-78001-00</a>		<a href="#">JT-78001-06</a>	
	8					<a href="#">JT-78001-10</a>		<a href="#">JT-78001-16</a>	
	12					<a href="#">JT-78001-20</a>		<a href="#">JT-78001-26</a>	
	16					<a href="#">JT-78001-30</a>		<a href="#">JT-78001-36</a>	
0.0004 to 11	24	8	0.11 to 11.25	Pressure lever (adjustable occlusion)	Two-stop	<a href="#">JT-78001-40</a>		<a href="#">JT-78001-46</a>	
	8					<a href="#">JT-78000-11</a>		<a href="#">JT-78000-17</a>	
	16					<a href="#">JT-78000-31</a>		<a href="#">JT-78000-37</a>	
	24					<a href="#">JT-78000-41</a>		<a href="#">JT-78000-47</a>	
<b>IPC models</b>									
0.002 to 44	4	8	0.4 to 45	Click'n'go	Two-stop	<a href="#">JT-78001-02</a>		<a href="#">JT-78001-08</a>	
	8					<a href="#">JT-78001-12</a>		<a href="#">JT-78001-18</a>	
	12					<a href="#">JT-78001-22</a>		<a href="#">JT-78001-28</a>	
	16					<a href="#">JT-78001-32</a>		<a href="#">JT-78001-38</a>	
0.002 to 44	24	8	0.4 to 45	Pressure lever (adjustable occlusion)	Two-stop	<a href="#">JT-78001-42</a>		<a href="#">JT-78001-48</a>	
	4					<a href="#">JT-78000-03</a>		<a href="#">JT-78000-09</a>	
	8					<a href="#">JT-78000-13</a>		<a href="#">JT-78000-19</a>	
	12					<a href="#">JT-78000-23</a>		<a href="#">JT-78000-29</a>	
0.002 to 44	16	8	0.4 to 45	Pressure lever (adjustable occlusion)	Two-stop	<a href="#">JT-78000-33</a>		<a href="#">JT-78000-39</a>	
	24					<a href="#">JT-78000-43</a>		<a href="#">JT-78000-49</a>	

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

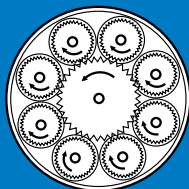
[JT-78001-95](#) Replacement Click'n'go™ cartridge, POM-C

[JT-78001-90](#) Repl. adjust. occlusion cartridge with pressure lever

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

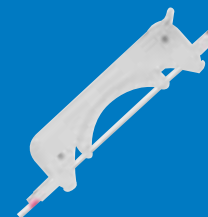
#### Planetary Drive System

With the planetary drive system, each roller is directly driven by the sun wheel. This mechanism prevents axial push-pull friction on the tubing—resulting in longer tubing life, lower pulsation, and high repeatability.



#### Pressure Level Cassettes

These cassettes feature a pressure lever that allows you to set a different tubing pressure for each channel. Depending on the application, tubing material, and diameter, you can adjust to optimal tubing pressure for your requirements.



## ecoline Pumps

### Save space—pumps stack easily

- Durable stainless steel housing and four stabilizing feet for easier stacking
- Simple setup and operation—start, stop, and reverse flow with a single switch
- Rotors accommodate 1.6 or 2.4 mm wall tubing

Pumps A, B, C, and E are controllable remotely via an analog input signal (0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, or 4 to 20 mA); start/stop drive or reverse direction via contact closure (eight-pin DIN). Input signals from your existing instruments actuate drive functions.

#### A–C. Single-Channel Pumps

- Minimize tubing wear and ensure automatic centering with convex roller

#### D. Masterflex® L/S® Easy-Load® Pump

- Change tubing quickly with easily accessible head
- Polysulfone housing and stainless steel rotor



#### E. Minicartridge Pumps

- No adjustments needed—spring-loaded cassettes for optimal occlusion at all times
- Get consistent, low-pulse flow with 6 or 12 rollers



Key	Flow range per channel (mL/min)	Channels	Rollers	Speed	Tubing	115 VAC, 60 Hz		230 VAC, 50 Hz	
						Cat. no.	Price	Cat. no.	Price
<b>Single-channel pumps</b>									
A	1.7 to 5400	1	2	3.5 to 350 rpm	Pump (pg 41)	<a href="#">JT-78022-10</a>		<a href="#">JT-78022-12</a>	
B	1.6 to 5000		3			<a href="#">JT-78022-20</a>		<a href="#">JT-78022-22</a>	
C	0.25 to 1300		3			<a href="#">JT-78022-30</a>		<a href="#">JT-78022-32</a>	
<b>Easy-Load pump</b>									
D	0.23 to 1600	1	3	3.5 to 350 rpm	Masterflex® (pgs 20–21)	<a href="#">JT-78022-50</a>		<a href="#">JT-78022-52</a>	
<b>Minicartridge pumps with Click'n'go cassettes</b>									
E	0.01 to 130	8	6	3.5 to 350 rpm	Three-stop (pgs 40–41)	<a href="#">JT-78022-40</a>		<a href="#">JT-78022-42</a>	
	0.0075 to 75	4	12			<a href="#">JT-78022-60</a>		<a href="#">JT-78022-62</a>	



**JT-07624-64** Optional adjustable occlusion cassette with pressure lever, POM-C

**JT-78016-98** Replacement Click'n'go™ cassette, POM-C

**JT-07610-25** Foot switch, momentary contact

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

## Reglo Compact Multichannel Pumps

### No more inconsistent results

- Consistent flow and reduced tubing wear for improved results
- Very small footprint for a stand-alone “smart” pump
- Easy channel changes—Click'n'go™ minicartridges snap in place

**A. Reglo Analog Pumps.** Speed is adjustable in 1% steps (2 to 100%) via 2-digit potentiometer. Control speed remotely. Start/stop pump or change direction via contact closure; monitor speed through frequency output.

**B. Reglo Digital Programmable Pumps.** Continuously pump or dispense in any of four modes—flow rate, time, batches, or drip-free. Pumps feature analog input and output controls, as well as an RS-232 interface for control by a computer. Remote control capable.



**B** Reglo digital pump 78017-00 is fully programmable.

Channels	Rollers	Speed (rpm)	Tubing	A. Reglo Analog pumps				B. Reglo Digital programmable pumps with calibrating function			
				Flow range per channel (mL/min)	115 VAC, 50/60 Hz		230 VAC, 50/60 Hz		Flow range per channel (mL/min)	115/230 VAC, 50/60 Hz	
					Cat. no.	Price	Cat. no.	Price		Cat. no.	Price
2	6	3.2 to 160	Three-stop	0.005 to 68	<a href="#">JT-78016-00</a>		<a href="#">JT-78016-02</a>		0.003 to 68	<a href="#">JT-78016-42</a>	
	8			0.004 to 57	<a href="#">JT-78016-10</a>		<a href="#">JT-78016-12</a>		0.002 to 57	<a href="#">JT-78017-02</a>	
	12			0.003 to 38	<a href="#">JT-78017-25</a>		<a href="#">JT-78017-27</a>		0.002 to 38	<a href="#">JT-78016-47</a>	
4	6	2.0 to 100	Three-stop	0.003 to 43	<a href="#">JT-78017-30</a>		<a href="#">JT-78017-32</a>		0.002 to 43	<a href="#">JT-78017-42</a>	
	8			0.003 to 35	<a href="#">JT-78016-30</a>		<a href="#">JT-78016-32</a>		0.002 to 35	<a href="#">JT-78017-12</a>	
	12			0.002 to 24	<a href="#">JT-78017-35</a>		<a href="#">JT-78017-37</a>		0.001 to 24	<a href="#">JT-78017-22</a>	

#### Minicartridges

Optional adjustable-occlusion minicartridge to manually vary pressure on each channel.

**JT-07624-64** Optional adjustable occlusion cassette with pressure lever, POM-C

**JT-07624-96** Replacement Click'n'go cassette, PVDF

## BVP and MCP Quick-Couple Drives

### Create a custom system with interchangeable pump heads

- Mount pump heads quickly with turn-and-lock mounting system
- Select from interchangeable tubing pump heads to achieve flow rates from 0.003 to 3700 mL/min
- Remote control and programming options add versatility
- Process washdown drives are IP-65 rated

#### BVP Standard and Process Drives

- Prime, flush, or prevent overflow with Max/Slow toggle switch

**BVP Standard Drive** features analog input that remote control of speed, start/stop or flow direction. **BVP Process Washdown Drive** is similar to the BVP Standard model, plus has a digital display for speed. The IP65-rated housing is ideal for dusty, humid, or corrosive environment and in cleanroom areas. The stainless steel housing is sealed for added durability.

#### MCP Standard and Process Programmable Digital Drives

- Save time—recall and store up to four programs
- Preprogrammed with tubing sizes and heads for faster setup
- Use the RS-232 interface to automate your lab or operate independently via the keypad—RS-232 in for remote operation; RS-232 out for cascading pumps

**MCP Standard Drive** is programmable to dispense by volume, time, flow rate, batches with variable pause time, stored programs, roller back steps, or number of dispensing cycles. Digital display shows speed, flow rate, dispensing volume, dispensing time, and pause time. **MCP Process Washdown Drive** adds an IP65-rated housing for washdown applications—ideal for dispensing and filling in dusty, humid, or corrosive environment and in cleanroom areas. The stainless steel housing is sealed for added durability.



BVP Standard drive 78002-10

BVP Process washdown drive 78003-10

MCP Standard programmable digital drive 78002-00 can store four programs downloaded from your computer.



#### REQUIRED System Components

- 1) Quick-couple drive 38
- 2) Pump head 38–39
- 3) Tubing 40–41

#### Specifications

Duty cycle: continuous



78003-08, -10, -12 only

Model	BVP Standard drive		BVP Process washdown drive		MCP Standard drive		MCP Process washdown drive
Catalog number	JT-78002-10	JT-78002-12	JT-78003-10	JT-78003-12	JT-78002-00	JT-78002-02	JT-78003-08
Programmable	No		No		Yes		Yes
Speed	2.4 to 240 rpm (indicated as 1 to 99.9%)		1 to 240 rpm		1 to 240 rpm		1 to 240 rpm
Resolution	0.1% via 3-digit potentiometer		0.1 rpm		0.1 rpm		0.1 rpm
Flow range/channel	0.003 to 3700 mL/min		0.001 to 3700 mL/min		0.001 to 3700 mL/min		0.001 to 3700 mL/min
Flow rate settings	—		—		μL/min, mL/min, L/min		μL/min, mL/min, L/min
Remote control capabilities	Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 VDC or 0 to 12 kHz Start/stop, rotation direction		Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 VDC or 0 to 7.2 kHz Start/stop, rotation direction, autostart		RS-232 (1 in, 1 out), 1 analog Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 VDC or 0 to 12 kHz Start/stop, rotation direction, autostart		RS-232 (1 in, 1 out), 1 analog Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 VDC or 0 to 7.2 kHz Start/stop, rotation direction, autostart
IP rating	IP30		IP65		IP30		IP65
Power	115 VAC, 50/60 Hz	230 VAC, 50/60 Hz	115 VAC, 50/60 Hz	230 VAC, 50/60 Hz	115 VAC, 50/60 Hz	230 VAC, 50/60 Hz	115/230 VAC, 50/60 Hz
Price							

## Pump Heads for Quick-Couple Drives

### A. Washdown Pump Heads

**Dismantle for easy cleaning**—ideal for hygienic applications. Convex rollers and concave tube-bed maintain the integrity of material being pumped. Coated aluminum with stainless steel rollers.

Flow range (mL/min)	Channels	Rollers	Tubing	Wall thickness	Max pressure	Catalog number	Price
0.49 to 3700	1	2	Pump (pages 40–41)	1.6 mm	22 psi (1.5 bar)	JT-78002-11	
3.6 to 3100	1	2		2.4 mm	36 psi (2.5 bar)	JT-78002-13	
0.45 to 3400	1	3		1.6 mm	22 psi (1.5 bar)	JT-78002-16	
3.3 to 2900	1	3		2.4 mm	36 psi (2.5 bar)	JT-78002-14	





### B. Minicartridge Pump Heads

**Minimize pulsation with more rollers.** Get up to 24 channels with 78002-50 and 07623-00 below. Get up to 16 channels of the smoothest flow with 78002-90 and 07623-30 below.

Flow range (mL/min)	Channels	Rollers	Tubing	Max pressure	Catalog number	Price
0.002 to 100	8 (up to 24)	6	Two-stop (pages 40–41)	14.5 psi (1.0 bar) <sup>†</sup>	<a href="#">JT-78002-50</a>	
0.001 to 57	4 (up to 16)	12			<a href="#">JT-78002-90</a>	

<sup>†</sup>22 psi (1.5 bar) achievable with pressure lever cassettes.

[JT-07623-00](#) **Eight-channel extension pump head.** Use up to two with 78002-50 to get 24 channels

[JT-07623-30](#) **Four-channel extension pump head.** Use up to three with 78002-90 to get 16 channels

### C. Standard Cartridge Pump Heads

**Ideal pump head for multichannel applications at higher flow rates.** Click'n'go™ cartridges allow quick and easy tubing changes.

Flow range (mL/min)	Channels	Rollers	Tubing	Max pressure	Catalog number	Price
0.002 to 230	8	8	Two-stop (pages 40–41)	14.5 psi (1.0 bar) <sup>†</sup>	<a href="#">JT-78002-34</a>	
	12				<a href="#">JT-78002-36</a>	

<sup>†</sup>22 psi (1.5 bar) achievable with pressure lever cassettes.

### D. Tubing Bed Pump Heads

**Ideal for delicate substances which require gentle occlusion setting.** Spring-loaded tubing bed adjusts occlusion for optimum pressure and tubing.

Flow range (mL/min)	Channels	Rollers	Tubing	Max pressure	Catalog number	Price
1.1 to 1110	2	6	Pump (pages 40–41)	22 psi (1.5 bar)	<a href="#">JT-07611-10</a>	
0.09 to 530	3				<a href="#">JT-07611-15</a>	

### E. Quick-Change Pump Heads

**Hinged tube-bed allows rapid tube change-over.** Easily accessible pump head. Self-centering tube-track results in longer tubing-life. Stainless steel rollers.

Flow range (mL/min)	Channels	Rollers	Tubing	Max pressure	Catalog number	Price
0.08 to 880	1	3	Pump (pages 40–41)	22 psi (1.5 bar)	<a href="#">JT-78002-22</a>	
0.44 to 2800					<a href="#">JT-78002-20</a>	

### F. High-Viscosity Pump Head

**Ideal for media with high viscosity or with a certain level of solid content.** Accepts tubing with 1.6-mm and 2.4-mm wall thickness (for elevated differential pressures). Stainless steel rollers. Pressure on tubing adjustable via rollers.

Flow range (mL/min)	Channels	Rollers	Tubing	Max pressure	Catalog number	Price
0.41 to 3600	1	3	Pump (pages 40–41)	36 psi	<a href="#">JT-78002-60</a>	

### G. Masterflex® Easy-Load® Pump Heads

**Allows for fast and easy tubing changes.** Accepts Masterflex L/S® pump tubing (see pages 20–21). Requires mounting plate below.

Flow range (mL/min)	Channels	Rollers	Tubing	Max pressure	Catalog number	Price
3.4 to 672	1 (up to 2)	3	L/S 15, L/S 24	20 psi	<a href="#">JT-07516-12</a>	
0.12 to 912			L/S 13, L/S 14, L/S 16, L/S 17, L/S 18, L/S 25		<a href="#">JT-07516-10</a>	

[JT-78020-90](#) **Mounting plate** for Masterflex Easy-Load pump head

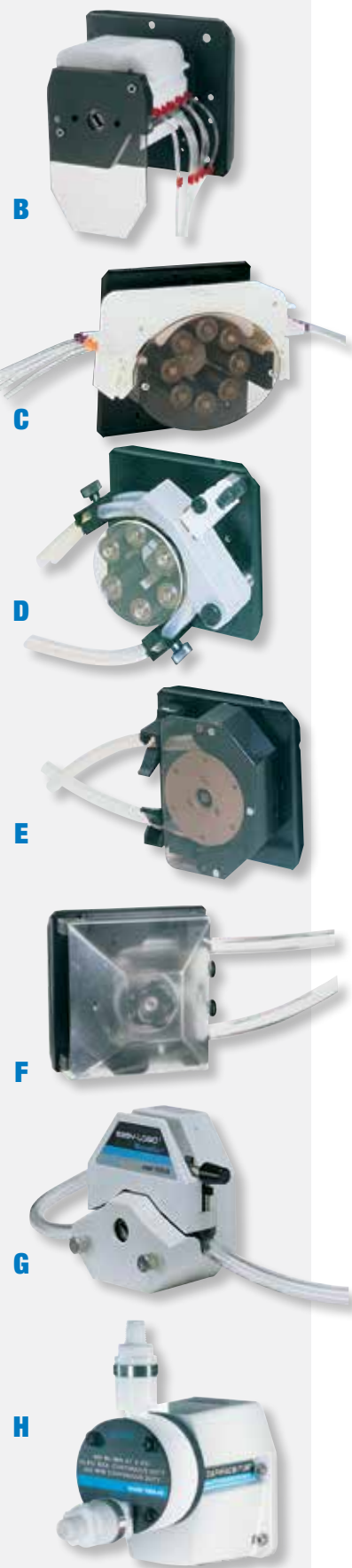
[JT-07013-05](#) **Mounting hardware** to stack two Easy-Load pump heads

### H. PTFE-Diaphragm Pump Heads

**Pump almost any fluid** with these chemically inert PTFE-diaphragm pump heads. Pump heads withstand temperatures up to 150°F (66°C). Requires adapter 78002-70 to mount to Quick-Couple drives.

Flow range (mL/min)	Ball check	Rollers	Tubing	Max pressure	Catalog number	Price
0.5 to 60	Glass	1/8" NPT(M)	Pump (pages 40–41)	75 psi	<a href="#">JT-07090-62</a>	
4 to 480	PTFE	1/4" NPT(M)		50 psi	<a href="#">JT-07090-42</a>	

[JT-78002-70](#) **Adapter** for mounting PTFE Diaphragm pump heads onto 78002- and 78003-series drives



## 2- and 3-Stop Color-Coded Tubing for Ismatec® Pumps

Don't confuse your tubing—  
color-coded stops for easy identification

**STEP 1:** Choose a tubing material & select the catalog number prefix.

Make sure to choose 2-stop or 3-stop tubing based on what your pump uses!

**STEP 3:** Complete your system with extension tubing.

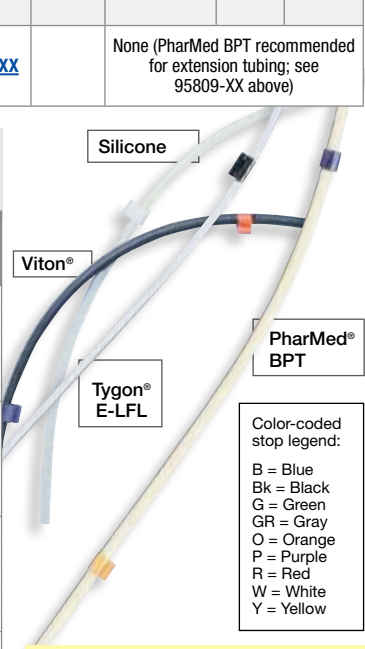
Connect stopped and extension tubing with barbed fittings or splicing.

Material	Description	Suffixes for the available sizes	Tubes/ pk (length)	2-Stop Tubing		3-Stop Tubing		Extension Tubing		
				Cat. no. prefix	Price/ pk*	Cat. no. prefix	Price/ pk*	Cat. no. prefix	Length/ pk	Price/ pk*
Tygon® E-LFL	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, EU food, REACH, RoHS, ADFC</li> <li>Longest life of all Tygon formulations</li> <li>Broad chemical resistance</li> </ul>	10, 12, 14, 18, 22, 24, 26, 28, 30, 31, 33, 34, 36, 37, 40, 42, 43, 47, 48	12 (16")	<a href="#">JT-96449-XX</a>		<a href="#">JT-96450-XX</a>		<a href="#">JT-06449-XX</a>	100 ft	
Tygon® E-Food	<ul style="list-style-type: none"> <li>Complies with FDA, EU Food, NSF, 2A, REACH, RoHS, ADFC</li> <li>Smooth inner surface; nontoxic</li> </ul>	10, 12, 18, 26, 30, 34, 42, 48	12 (16")	<a href="#">JT-96457-XX</a>		<a href="#">JT-96458-XX</a>		<a href="#">JT-06457-XX</a>	100 ft	
Tygon® E-Lab	<ul style="list-style-type: none"> <li>Complies with USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADFC</li> <li>Ideal for general transfer applications</li> <li>Nonaging/nonoxidizing, low gas permeability</li> </ul>	09, 10, 12, 14, 16, 18, 19, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 36, 38, 39, 40, 42, 44, 46, 48, 49	12 (16")	<a href="#">JT-96460-XX</a>		<a href="#">JT-96461-XX</a>		<a href="#">JT-06460-XX</a>	100 ft	
Silicone (peroxide cured)	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC</li> <li>Greater physical compression capability</li> <li>Economical, long tubing life</li> </ul>	18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")	<a href="#">JT-07616-XX</a>		<a href="#">JT-07624-XX</a>		<a href="#">JT-07625-XX</a>	50 ft	
Silicone (platinum cured)	<ul style="list-style-type: none"> <li>Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC</li> <li>Low protein binding, fungus-resistant, phthalate and latex free</li> </ul>	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")	<a href="#">JT-95602-XX</a>		<a href="#">JT-95603-XX</a>		<a href="#">JT-95612-XX</a>	50 ft	
Viton®	<ul style="list-style-type: none"> <li>Complies with FDA, ADFC</li> <li>Resists corrosives, solvents, and oils at elevated temperatures</li> </ul>	18, 22, 24, 26, 30, 34, 38, 42, 46, 48	12 (12")	<a href="#">JT-97628-XX</a>		<a href="#">JT-97629-XX</a>		<a href="#">JT-97632-XX</a>	50 ft	
PharMed® BPT	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, NSF, REACH, RoHS</li> <li>Over 10,000 hours of tubing life, sealable, weldable</li> </ul>	10, 12, 14, 18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	12 (16")	<a href="#">JT-95723-XX</a>		<a href="#">JT-95714-XX</a>		<a href="#">JT-95809-XX</a>	100 ft	
Autoclavable PharMed® BPT	<ul style="list-style-type: none"> <li>Ideal for tissue and cell culture work</li> </ul>	12, 32, 48	6 (16")	<a href="#">JT-95692-XX</a>		<a href="#">JT-95693-XX</a>				
PVC Solvent/ hydrocarbon	<ul style="list-style-type: none"> <li>Resistant to ozone and UV light</li> <li>Resists to cracking, swelling, hardening</li> <li>Ideal for fuels, distillates, lubricants, and glycol-based coolants</li> </ul>	10, 12, 14, 18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	12 (16")	<a href="#">JT-95606-XX</a>		<a href="#">JT-95605-XX</a>		<a href="#">JT-95712-XX</a>	50 ft	
Chem-Durance® Bio	<ul style="list-style-type: none"> <li>Suitable for acetone, MEK, and other highly aggressive chemicals</li> <li>Long life and outstanding fatigue resistance</li> </ul>	14, 18, 24, 26, 30, 34, 36, 42, 48	6 (16")	<a href="#">JT-96327-XX</a>		<a href="#">JT-96328-XX</a>		None (PharMed BPT recommended for extension tubing; see 95809-XX above)		

**STEP 2:**

Find your desired flow rate and select the catalog number suffix. See page 41 for more.

Flow rate* (mL/min) with Fixed-Speed Pumps (order online)								Catalog number suffix	ID (mm)	Color-coded stops
78012-00, 78012-05	78012-20, 78012-25	78012-30, 78012-35	78012-40, 78012-45	78012-50, 78012-55	78012-60, 78012-65	78012-80, 78012-85	78012-90, 78012-95			
0.047	0.14	0.047	0.093	0.056	0.11	0.17	0.056	-10	0.19	O/R
0.081	0.24	0.08	0.16	0.1	0.19	0.29	0.1	-12	0.25	O/B
0.19	0.56	0.19	0.37	0.22	0.43	0.65	0.22	-14	0.38	O/G
0.25	0.75	0.25	0.5	0.29	0.58	0.86	0.29	-16	0.44	G/Y
0.34	1	0.34	0.67	0.38	0.77	1.2	0.38	-18	0.51	O/Y
0.52	1.6	0.52	1	0.6	1.2	1.8	0.6	-22	0.64	O/W
0.73	2.2	0.73	1.5	0.84	1.7	2.5	0.84	-24	0.76	Bk/Bk
1	2.9	1	2	1.1	2.3	3.4	1.1	-26	0.89	O/O
1.3	3.8	1.3	2.5	1.5	2.9	4.4	1.5	-28	1.02	W/W
1.6	4.7	1.6	3.1	1.8	3.6	5.4	1.8	-30	1.14	R/R
2	5.9	2	3.9	2.3	4.6	6.9	2.3	-32	1.3	GR/GR
2.3	6.8	2.3	4.6	2.7	5.4	8	2.7	-34	1.42	Y/Y
2.6	7.7	2.6	5.1	3	6	9.1	3	-36	1.52	Y/B
2.9	8.8	2.9	5.8	3.5	6.9	10	3.5	-38	1.65	B/B
3.5	10	3.5	7	4.2	8.4	13	4.2	-40	1.85	G/G
4.1	12	4.1	8.2	5	10	15	5	-42	2.06	P/P
4.8	14	4.8	9.5	5.8	12	17	5.8	-44	2.29	P/Bk
5.5	16	5.5	11	6.6	13	20	6.6	-46	2.54	P/O
6.2	19	6.2	12	7.4	15	22	7.4	-48	2.79	P/W



**\*Save 10% on 20-49 packs; 15% on 50-99 packs; 20% on 100+ packs in any combination of tubing (except Chem-Durance Bio and Autoclavable PharMed® BPT) from pages 40-41.**

**STEP 2 (continued):** Find your desired flow rate and select the catalog number suffix.

Flow ranges† (mL/min) with indicated pump system (page 37 and online)													Catalog number suffix	ID (mm)	Color-coded stops
78016-00, 78016-02	78016-10, 78016-12	78016-30, 78016-32	78016-42	78017-02	78017-10, 78017-12	78017-20, 78017-22	78017-25, 78017-27	78017-30, 78017-32	78017-35, 78017-37	78017-45, 78017-47	78022-40, 78022-42	78022-60, 78022-62			
0.009-0.45	0.008-0.37	0.005-0.23	0.005-0.45	0.004-0.37	0.003-0.23	0.003-0.21	0.007-0.34	0.006-0.28	0.005-0.21	0.004-0.34	0.01-0.98	0.0075-0.75	-10	0.19	O/R
0.015-0.76	0.013-0.65	0.009-0.41	0.008-0.76	0.007-0.65	0.005-0.41	0.004-0.38	0.012-0.61	0.01-0.48	0.008-0.38	0.007-0.61	0.017-1.7	0.013-1.3	-12	0.25	O/B
0.035-1.7	0.03-1.5	0.019-0.94	0.017-1.7	0.015-1.5	0.01-0.94	0.009-0.88	0.028-1.4	0.022-1.1	0.018-0.88	0.014-1.4	0.038-3.8	0.031-3.1	-14	0.38	O/G
0.046-2.3	0.04-2	0.025-1.3	0.023-2.3	0.02-2	0.013-1.3	0.012-1.2	0.038-1.9	0.029-1.4	0.024-1.2	0.019-1.9	0.05-5	0.041-4.1	-16	0.44	G/Y
0.061-3.1	0.054-2.7	0.034-1.7	0.031-3.1	0.027-2.7	0.017-1.7	0.016-1.6	0.05-2.5	0.038-1.9	0.031-1.6	0.025-2.5	0.067-6.7	0.055-5.5	-18	0.51	O/Y
0.096-4.8	0.084-4.2	0.052-2.6	0.048-4.8	0.042-4.2	0.026-2.6	0.024-2.4	0.077-3.9	0.06-3	0.048-2.4	0.039-3.9	0.1-10	0.085-8.5	-22	0.64	O/W
0.13-6.7	0.12-5.8	0.073-3.6	0.067-6.7	0.058-5.8	0.036-3.6	0.33-3.3	0.11-5.3	0.084-4.2	0.067-3.3	0.053-5.3	0.15-15	0.12-12	-24	0.76	Bk/Bk
0.18-9	0.16-7.9	0.098-4.9	0.09-9	0.079-7.9	0.049-4.9	0.044-4.4	0.14-7.1	0.11-5.7	0.088-4.4	0.071-7.1	0.2-20	0.15-15	-26	0.89	O/O
0.23-12	0.2-10	0.13-6.3	0.12-12	0.1-10	0.063-6.3	0.056-5.6	0.18-9	0.15-7.3	0.11-5.6	0.09-9	0.26-26	0.2-20	-28	1.02	W/W
0.29-14	0.25-12	0.16-7.8	0.14-14	0.12-12	0.078-7.8	0.067-6.7	0.22-11	0.18-9	0.13-6.7	0.11-11	0.32-32	0.24-24	-30	1.14	R/R
0.37-18	0.31-16	0.2-10	0.18-18	0.16-16	0.1-10	0.083-8.3	0.26-13	0.23-11	0.17-8.3	0.13-13	0.4-40	0.29-29	-32	1.3	GR/GR
0.43-21	0.37-18	0.23-11	0.21-21	0.18-18	0.11-11	0.094-9.4	0.3-15	0.27-13	0.19-9.4	0.15-15	0.47-47	0.33-33	-34	1.42	Y/Y
0.48-24	0.41-20	0.26-13	0.24-24	0.2-20	0.13-13	0.1-10	0.33-17	0.3-15	0.21-10	0.17-17	0.53-53	0.36-36	-36	1.52	Y/B
0.56-28	0.47-23	0.29-15	0.28-28	0.23-23	0.15-15	0.12-12	0.37-19	0.35-17	0.23-12	0.19-19	0.61-61	0.41-41	-38	1.65	B/B
0.67-34	0.56-28	0.35-17	0.34-34	0.28-28	0.17-17	0.13-13	0.43-21	0.42-21	0.27-13	0.21-21	0.73-73	0.47-47	-40	1.85	G/G
0.79-40	0.66-33	0.41-20	0.4-40	0.33-33	0.2-20	0.15-15	0.49-24	0.5-25	0.3-15	0.24-24	0.87-87	0.53-53	-42	2.06	P/P
0.92-46	0.76-38	0.48-24	0.46-46	0.38-38	0.24-24	0.17-17	0.55-27	0.58-29	0.34-17	0.27-27	1-100	0.6-60	-44	2.29	P/Bk
1.1-53	0.88-44	0.55-27	0.53-53	0.44-44	0.27-27	0.19-19	0.62-31	0.66-33	0.39-19	0.31-31	1.2-120	0.68-68	-46	2.54	P/O
1.2-59	0.99-50	0.62-31	0.59-59	0.5-50	0.31-31	0.21-21	0.69-34	0.74-37	0.43-21	0.34-34	1.3-130	0.75-75	-48	2.79	P/W

Flow ranges† (mL/min) with indicated pump system (pages 36, 39, and online)						Catalog number suffix	ID (mm)	Color-coded stops
IPC-N models	IPC models	78002-34	78002-36	78002-50	78002-90			
0.0007-0.066	0.003-0.26	0.004-0.94	0.004-0.94	0.003-0.67	0.003-0.51	-10	0.19	O/R
0.001-0.1	0.005-0.41	0.008-1.8	0.008-1.8	0.005-1.1	0.004-0.91	-12	0.25	O/B
0.003-0.22	0.009-0.86	0.019-4.5	0.019-4.5	0.011-2.6	0.009-2.1	-14	0.38	O/G
0.003-0.28	0.011-1.1	0.025-6.1	0.025-6.1	0.014-3.5	0.012-2.8	-16	0.44	G/Y
0.004-0.38	0.015-1.5	0.034-8.2	0.034-8.2	0.019-4.6	0.016-3.8	-18	0.51	O/Y
0.006-0.58	0.023-2.3	0.053-13	0.053-13	0.03-7.2	0.024-5.8	-22	0.64	O/W
0.009-0.81	0.032-3.2	0.074-18	0.074-18	0.042-10	0.033-8	-24	0.76	Bk/Bk
0.011-1.1	0.044-4.4	0.1-24	0.1-24	0.057-14	0.044-11	-26	0.89	O/O
0.014-1.4	0.057-5.7	0.13-31	0.13-31	0.073-18	0.056-13	-28	1.02	W/W
0.017-1.7	0.07-7	0.16-38	0.16-38	0.09-22	0.067-16	-30	1.14	R/R
0.022-2.2	0.089-8.9	0.2-47	0.2-47	0.11-27	0.083-20	-32	1.3	GR/GR
0.026-2.6	0.11-11	0.23-55	0.23-55	0.13-32	0.094-23	-34	1.42	Y/Y
0.03-3	0.12-12	0.26-62	0.26-62	0.15-36	0.1-25	-36	1.52	Y/B
0.035-3.5	0.14-14	0.3-71	0.3-71	0.17-42	0.12-28	-38	1.65	B/B
0.43-4.3	0.17-17	0.36-86	0.36-86	0.21-50	0.13-32	-40	1.85	G/G
0.52-5.2	0.21-21	0.43-100	0.43-100	0.25-59	0.15-37	-42	2.06	P/P
0.62-6.2	0.25-25	0.51-120	0.51-120	0.29-69	0.17-41	-44	2.29	P/Bk
0.075-7.5	0.3-30	0.63-150	0.62-150	0.33-79	0.19-46	-46	2.54	P/O
0.088-8.8	0.35-35	0.74-180	0.74-180	0.37-89	0.21-52	-48	2.79	P/W

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

### How to order 2- and 3-stop tubing

**Step 1:** Choose a tubing material and select the corresponding catalog number prefix from the table on page 40. Make sure to choose 2-stop or 3-stop tubing based on what your pump uses!

**Step 2:** Find your pump system and desired flow rate and select the catalog number suffix from the tables on pages 40-41.

**Step 3:** Complete your system with extension tubing from page 40. You can connect stopped tubing and extension tubing with hose barb fittings or by splicing together.

## Pump Tubing for Ismatec® Pumps

ID (mm)	OD (mm)	Wall (mm)	Tygon® E-Lab			Silicone (peroxide cured)			Silicone (platinum cured)			Norrprene®			Viton®		
			Cat.no.	Ft/pk	Price/pk*	Cat.no.	Ft/pk	Price/pk*	Cat.no.	Ft/pk	Price/pk*	Cat.no.	Ft/pk	Price/pk*	Cat.no.	Ft/pk	Price/pk*
0.8	4.0	1.6	<a href="#">JT-06509-13</a>	50	—	<a href="#">JT-96400-13</a>	25	—	<a href="#">JT-95802-01</a>	25	—	<a href="#">JT-06404-13</a>	50	—	<a href="#">JT-96412-13</a>	25	—
1.6	4.8	1.6	<a href="#">JT-06407-72</a>	50	—	<a href="#">JT-96400-14</a>	25	—	<a href="#">JT-96410-14</a>	25	—	<a href="#">JT-06410-01</a>	50	—	<a href="#">JT-96412-14</a>	25	—
3.2	6.4	1.6	<a href="#">JT-06407-76</a>	50	—	<a href="#">JT-06411-67</a>	25	—	<a href="#">JT-95802-05</a>	25	—	<a href="#">JT-06410-02</a>	50	—	—	—	—
4.8	8.0	1.6	<a href="#">JT-06407-78</a>	50	—	<a href="#">JT-06411-03</a>	25	—	<a href="#">JT-95802-09</a>	25	—	<a href="#">JT-06410-04</a>	50	—	<a href="#">JT-96412-25</a>	25	—
6.4	9.5	1.6	<a href="#">JT-06407-80</a>	50	—	<a href="#">JT-06411-71</a>	25	—	<a href="#">JT-95802-12</a>	25	—	<a href="#">JT-06410-05</a>	50	—	<a href="#">JT-96412-18</a>	25	—
6.4	11.1	2.4	<a href="#">JT-06509-24</a>	50	—	<a href="#">JT-06411-72</a>	25	—	<a href="#">JT-95802-13</a>	25	—	<a href="#">JT-06410-06</a>	50	—	<a href="#">JT-96412-24</a>	25	—
8.0	11.2	1.6	<a href="#">JT-06407-83</a>	50	—	<a href="#">JT-06411-75</a>	25	—	<a href="#">JT-95802-15</a>	25	—	<a href="#">JT-06410-08</a>	50	—	<a href="#">JT-06434-05</a>	25	—
9.5	12.7	1.6	<a href="#">JT-06407-86</a>	50	—	<a href="#">JT-06411-12</a>	25	—	<a href="#">JT-95802-18</a>	25	—	<a href="#">JT-06410-10</a>	50	—	<a href="#">JT-06434-06</a>	25	—
11.1	14.3	1.6	<a href="#">JT-06407-87</a>	50	—	—	—	—	—	—	—	<a href="#">JT-06410-13</a>	50	—	—	—	—
12.8	16.0	1.6	<a href="#">JT-06407-90</a>	25	—	<a href="#">JT-06411-80</a>	25	—	<a href="#">JT-95802-21</a>	25	—	<a href="#">JT-06410-14</a>	50	—	<a href="#">JT-06434-07</a>	25	—
16.0	22.4	3.2	—	—	—	<a href="#">JT-06411-58</a>	25	—	<a href="#">JT-95802-25</a>	25	—	<a href="#">JT-06410-17</a>	50	—	<a href="#">JT-06434-08</a>	25	—

ID (mm)	Flow ranges (mL/min) with indicated pump system†† (pages 37-39 and online)								
	78025-00, -05	78022-10, -12	78022-20, -22	78022-30, -32	07611-10†	07611-15†	78002-20†	78002-22†	78002-60†
0.8	—	—	—	0.25 to 25	—	0.22 to 22	—	0.072 to 17	—
1.6	—	1.7 to 170	1.6 to 160	0.9 to 90	—	0.63 to 63	0.44 to 100	0.026 to 62	0.41 to 99
3.2	—	6.6 to 660	5.9 to 590	3.5 to 350	2.6 to 260	2.4 to 240	1.7 to 400	1.0 to 240	1.5 to 370
4.8	—	15.0 to 1500	13.0 to 1300	7.7 to 770	5.5 to 550	5.3 to 530	3.6 to 860	2.2 to 530	3.4 to 830
6.4	37 to 3700	25.0 to 2500	23.0 to 2300	13.0 to 1300	8.9 to 890	—	6.0 to 1400	3.7 to 880	6.2 to 1500
8.0	—	37.0 to 3700	34.0 to 3400	—	11.1 to 1110	—	8.8 to 2100	—	9.5 to 2300
9.5	80 to 8000	48.0 to 4800	44.0 to 4400	—	—	—	12 to 2800	—	13 to 3000
11.1	—	54.0 to 5400	50.0 to 5000	—	—	—	—	—	15 to 3600
12.8	100 to 10000	—	—	—	—	—	—	—	—
16.0	130 to 13000	—	—	—	—	—	—	—	—

††Note: Lower flow rates achievable with digital drives. †Flow rate with Digital Drive 78002-10; lower flow rate achievable with Programmable Drive 78002-00.

# Plastic Hand-Operated Drum Pumps

## No need for electricity

– Ideal for most acid/base or ionic salt applications

Fluid Handling

Pumps, Drum & Hand



### 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

Description	Catalog number	Price
Fits Rieke Sr. covers	<a href="#">JT-06433-62</a>	
Fits Rieke Jr. covers	<a href="#">JT-06433-64</a>	
Fits 70-mm openings	<a href="#">JT-06433-66</a>	
Fits 2" IPS bung openings	<a href="#">JT-06433-68</a>	

### 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

Description	Catalog number	Price
Fits 2" IPS bung openings	<a href="#">JT-06425-09</a>	

### 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	Strokes/gal. (L)	Wetted materials	Container adapter	Inlet tube		Outlet hose		Dimensions		Catalog number	Price
				L in. (cm)	OD in. (cm)	L in. (cm)	OD in. (cm)	L in. (cm)	Dia in. (cm)		
A	32 (9)	PVC barrel/hose, urethane-buna valves/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)	<a href="#">JT-06437-00</a>	
B	26 (7)	PVC body/hose, Hypalon® valves/seals, LDPE tube	$\frac{3}{4}$ " NPT(M)†	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)	<a href="#">JT-06433-60</a>	
C	16 (5)	PVC body/hose, Hypalon valves/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)	<a href="#">JT-06437-10</a>	
D	26 (7)	PVC barre/hose, Viton® valves/seals, LDPE tube	$\frac{3}{4}$ " NPT(M)	12" (30.5)	$\frac{9}{16}$ " (1.4)	9" (22.9)	$\frac{9}{16}$ " (1.4)	12" (30.5)	$1\frac{1}{4}$ " (3.2)	<a href="#">JT-70607-20</a>	
		PVC barrel, Viton valves/seals, LDPE tube/spout				6" (15.2) spout	$\frac{9}{16}$ " (1.4)	12" (30.5)	$1\frac{1}{4}$ " (3.2)	<a href="#">JT-70607-22</a>	
E	32 (9)	PVC barrel, shaft, and hose	—	—	—	60" (152.4)	$\frac{9}{16}$ " (1.4)	9" (22.9)	$1\frac{1}{4}$ " (3.2)	<a href="#">JT-70607-00</a>	
	26 (7)	PVC barrel/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)	<a href="#">JT-70607-10</a>	
	12 (4)	PVC barrel/hose, PVC tube		—	—	48" (121.9)	$\frac{9}{16}$ " (1.4)	36" (91.4)	$1\frac{1}{4}$ " (3.2)	<a href="#">JT-70607-12</a>	
F	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)	$1\frac{3}{16}$ " (4.6)	<a href="#">JT-06425-05</a>	
G	6 (2)	Solvent-welded PVC body and shaft, Viton valves and seals	Glass carboy	—	—	36" (91.4)	$1\frac{1}{4}$ " (3.2)	38" (96.5)	$1\frac{1}{2}$ " (3.8)	<a href="#">JT-06433-00</a>	
			—							<a href="#">JT-06433-10</a>	
			2" IPS							<a href="#">JT-06433-20</a>	
			Buttress Dell drum (M)							<a href="#">JT-06433-30</a>	
83-mm buttress (F)	<a href="#">JT-06433-40</a>										

†Optional adapter available—order separately above.



## Cole-Parmer® Console Drive

### Optimize performance of long-term applications

- 100:1 speed-control range controls flow over a wide range
- Separate on-off switch maintains speed (flow) setting when drive is powered down
- Maximum continuous-duty flow rates possible with Micropump® A-mount pump heads
- Gradual, one-second acceleration for smooth flow rate changes

Simple variable speed control provides flow control for many fluid handling applications from filtration to chemical injection.

**What's included:** a 6-ft (1.8-m) modular line power cord; the 115 VAC model has a US standard plug and the 230 VAC model has an IEC 320/CEE 22 connector (specify country to obtain correct plug).



#### Specifications

**Duty cycle:** continuous **Remote control (output):** none  
**Remote control (input):** none **Max system temperature:** 104°F (40°C)

Motor			Power		Catalog number	Price
rpm	hp	Type	VAC	Hz		
50 to 5000	0.07	PMDC	115	50/60	JT-75211-10	
			230	50/60	JT-75211-15	

## Ismatec® Compact Programmable Digital Drive

### Dispense by flow rate, volume, time, or number of cycles

- No more dripping—program pump to draw back fluid
- Control via a PC with RS-232 interface
- Get more accuracy with calibration of flow rate and dispensing volume

IP44-rated housing protects internal components from damage. Multiple operating modes allow for continuous pumping by drive speed, flow rate, volume, time, volume within a pre-set time or interval dispensing by volume with a pause or time with a pause. The number of dispensing cycles may also be into the pump. Pump is capable of reversible rotation (only with cavity style pump heads that indicate reversible operation). Both dispensing and pause time settings are from 0.1 seconds up to 999 hours.

**What's included:** an adapter plate for mounting Micropump® A pump heads (except 07003-02, 07003-04, 73004-00, 73004-02, and 73004-04), a driving magnet and a 6-ft (1.8-m) power cord with plug.



#### Specifications

**Duty cycle:** continuous from 50 to 5000 rpm **Remote control (output):** RS-232 (DB9M) for cascading of up to 8 pumps  
**Remote control (input):** Speed control: RS-232 (DB9F) for pump control via PC. 9600 baud, 8 bit, 1 stopbit, no parity  
**Max temperature:** 104°F (40°C)  
 On/off control: TTL contact (for footswitch)  
 0 to 10 kHz for speed monitoring

Motor rpm	Power		Catalog number	Price
	VAC	Hz		
50 to 5000	90 to 264	47 to 63	JT-78008-15	

**JT-70738-94 Replacement adapter plate:** for mounting Micropump A-mount pump heads (except models 07003-02, 07003-04, 73004-00, 73004-02, 73004-04)



## Micropump® A-Mount Gear Pump Heads

- Achieve leak-free, pulseless flow
- Magnetic drive and static seals keep fluids securely inside and potential contaminants out



Flow rates (mL/min) <sup>†</sup>		Wetted parts		Catalog number	Price
at 50 rpm	at 5000 rpm	Body	Gears		
0.85	85	316 SS	Graphite	JT-07002-25	
4.60	460	316 SS	PEEK	JT-73003-14	
			PPS	JT-07002-14	
13.05	1305	316 SS	PEEK	JT-73004-00	
			PPS	JT-73004-02	
29.00	2900	316 SS	PEEK	JT-07003-02	
			PPS	JT-73004-04	
58.50	5850	316 SS	PEEK	JT-73004-04	
			PPS	JT-07003-04	

<sup>†</sup>Flow rates based on water at room temperature and no back pressure.



Programmable digital drive 78008-15 with Micropump pump head 07002-14 (pump head not included)

# Magnetic Drive Pumps with Enclosed Motors

## Easily handle thrust loads

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

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

**B. High-Head Polypropylene Pumps** (not shown) have a closed impeller design to significantly increase the output pressure. Polypropylene construction provides excellent chemical resistance in applications, such as filtration, where a high-head is needed.

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



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



**C**  
Fluoroplastic pump  
72011-00

### A-B. Polypropylene Pumps



115 V only 220 V only

#### 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

Max flow		Max head		Max pressure		Max temp		Connections		Motor		Power		Dimensions (L x W x H)		Catalog number	Price
GPM	LPM	ft	m	psi	bar	°F	°C	Hose barb	NPT (M)	hp	rpm	VAC	Amps	in.	cm		
<b>A. Moderate-Flow Polypropylene Pumps</b>																	
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	<a href="#">JT-72010-10</a>	
																<a href="#">JT-72010-15</a>	
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	<a href="#">JT-72010-20</a>	
																<a href="#">JT-72010-25</a>	
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	<a href="#">JT-72010-40</a>	
																<a href="#">JT-72010-45</a>	
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	<a href="#">JT-72010-80</a>	
																<a href="#">JT-72010-85</a>	
<b>B. High-Head Polypropylene Pumps</b>																	
2.9	11.0	22.6	6.9	14.2	1.0	176	80	5/8"	—	1/38	3400	115 230	0.53 0.27	8 3/8 x 4 1/4 x 5	21.3 x 10.8 x 12.7	<a href="#">JT-72012-00</a>	
																<a href="#">JT-72012-05</a>	
4.6	17.4	36.1	11.0	24.2	1.7	176	80	5/8"	—	1/16	3400	115 230	1.00 0.50	9 5/8 x 4 3/4 x 5 1/8	24.4 x 12.1 x 13.0	<a href="#">JT-72012-10</a>	
																<a href="#">JT-72012-15</a>	
11.4	43.2	66.6	20.3	42.7	2.9	176	80	—	3/4"	1/4	3400	115 230	3.80 1.90	9 3/4 x 5 3/4 x 6 1/2	24.8 x 14.6 x 16.5	<a href="#">JT-72012-20</a>	
																<a href="#">JT-72012-25</a>	

### C. Fluoroplastic Pumps



230 V only

#### 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

## Questions?

Trust our **expert**  
Application Specialists to help  
you find the right product.

Bob, 7 years of experience

Call: **1-800-323-4340**

E-mail: **sales@coleparmer.com**

Max flow		Max head		Max pressure		Max temp		Connections		Motor		Power		Dimensions (L x W x H)		Catalog number	Price
GPM	LPM	ft	m	psi	bar	°F	°C	NPT(M)	hp	rpm	VAC	Amps	in.	cm			
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	<a href="#">JT-72011-00</a>		
															<a href="#">JT-72011-05</a>		



## Air-Powered Double-Diaphragm Pumps

### Move high-viscosity fluids easily—even sludge!

- High flow rates—up to 106 GPM
- No need to worry about electrical sparking
- Won't lose seal even after repeated servicing
- Easy pump head access for maintenance needs
- No lubrication of valve required

Safely handles abrasive fluids and slurries—ideal for high-viscosity and shear-sensitive materials. Encapsulated muffler provides excellent sound dampening.



#### Specifications

**Suction lift:** 10 ft (3 m) H<sub>2</sub>O  
**Viscosity:** up to 11,000 cp  
**Max temperature:**  
 PP models: 150°F (66°C)  
 PVDF models: 200°F (93°C)  
 SS models: 212°F (100°C)  
**Duty cycle:** continuous  
**Run dry:** yes

#### Polypropylene (PP) Pumps



Max GPM (LPM)	Max psi (bar)	Port size	Max particle size	Diaphragm material	Air inlet requirements			Catalog number	Price
					Connection	Max psi (bar)	scfm (m <sup>3</sup> /h)		
4 (15.1)	100 (6.9)	¼" NPT(F)	½"	Santoprene®	¼" NPT(F)	100 (6.9)	1 to 6 (1.7 to 10.2)	JT-74000-70	
				PTFE				JT-74000-72	
14 (53)	100 (6.9)	½" NPT(F)	⅛"	Santoprene	¼" NPT(F)	100 (6.9)	2 to 16 (3.4 to 27.2)	JT-74000-00	
				PTFE				JT-74000-42	
23 (87.1)	100 (6.9)	¾" NPT(F)	⅛"	Santoprene	¼" NPT(F)	100 (6.9)	4 to 25 (6.8 to 42.5)	JT-74000-11	
				PTFE				JT-74000-13	

#### PVDF Pumps

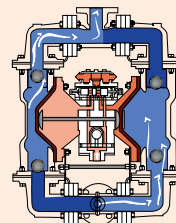
Max GPM (LPM)	Max psi (bar)	Port size	Max particle size	Diaphragm material	Air inlet requirements			Catalog number	Price
					Connection	Max psi (bar)	scfm (m <sup>3</sup> /h)		
4 (15.1)	100 (6.9)	¼" NPT(F)	½"	Santoprene	¼" NPT(F)	100 (6.9)	1 to 6 (1.7 to 10.2)	JT-74000-80	
				PTFE				JT-74000-82	
14 (53)	100 (6.9)	½" NPT(F)	⅛"	PTFE	¼" NPT(F)	100 (6.9)	2 to 16 (3.4 to 27.2)	JT-74000-46	
				Santoprene				JT-74000-21	
45 (170.3)	100 (6.9)	1" flange	¼"	Santoprene	½" NPT(F)	100 (6.9)	5 to 45 (8.5 to 76.5)	JT-74000-22	

#### Stainless Steel Pump

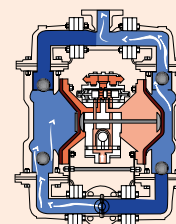
Max GPM (LPM)	Max psi (bar)	Port size	Max particle size	Diaphragm material	Air inlet requirements			Catalog number	Price
					Connection	Max psi (bar)	scfm (m <sup>3</sup> /h)		
4.4 (16.7)	125 (8.6)	¼" NPT(F)	⅛"	PTFE	¼" NPT(F)	125 (8.6)	1 to 8 (1.7 to 13.6)	JT-74007-00	

### How Double-Diaphragm Pumps Work

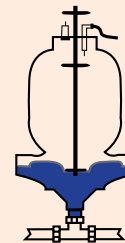
**Discharge Stroke**—Pressurized air is directed to the left diaphragm, pushing it outward. Liquid is forced from the left outer chamber, through the chamber, an open discharge check valve, and exits the pump at the discharge manifold.



**Suction Stroke**—As the left diaphragm is pushed out, a connecting rod pulls the right diaphragm inward, filling the right chamber with fluid. Liquid enters the pump at the suction manifold, moves through an open suction check valve, and fills the chamber.



**Surge Suppressor**—Liquid pressure pushes the diaphragm upward, and a balancing air cushion keeps the diaphragm centered at midstroke. The diaphragm flexes within the mid-range position, absorbing and equalizing discharge pulsation.



## Abaque™ Peristaltic Hose Pumps

### Built for your toughest projects

- Produce flow rates to 339 GPM and pressures as high as 217 psi (15 bar)
- Eliminate leaks and product contamination with sealless design
- Handle even your most abrasive, aggressive, viscous, and solid-laden fluids
- Use in demanding applications such as water and wastewater, mining, energy, ceramic, and chemical process

Rugged, low-maintenance Abaque pumps have none of the seats, valves, or mechanical seals that create problems on other pumps—the hose is the only component that needs to be replaced. Order a ready-to-use system below or customize a pump to suit your needs. If your application is moving a more viscous fluid or needs to lift product greater than 29 ft, a vacuum assist kit option is highly recommended.

**What's included:** flat pack (liquid end), gear box, motor, and natural rubber hose.

**NEW**



#### Specifications

**Fluid temperature:** 32 to 158°F (0 to 70°C) for natural rubber hose  
**Suction lift:** up to 29 ft (8.8m)  
**Duty cycle:** continuous  
**Run dry:** yes  
**Construction:** ductile iron and steel  
**Power:** 208–230/460 VAC, 60 Hz

#### Configure an Abaque pump with numerous options:

- Vacuum assist kit for highly viscous fluids
- Leak detector
- Pulsation dampener
- Nonmetallic hose inserts: PPH, PVDF
- Hose materials: natural rubber, Buna N, EPDM, CSM

Max flow rate, continuous		Discharge pressure		Max viscosity		Max solid particulate		Max soft particulate		Motor		Catalog number	Price
GPM	L/min	psi	bar	cSt	SSU	in.	mm	in.	mm	hp	rpm		
0.25	0.95	109	7.5	13,000	60,000	0.06	1.5	0.1	2.5	0.33	37	JT-75810-01	
0.44	1.67	109	7.5	13,000	60,000	0.06	1.5	0.1	2.5	0.5	66	JT-75810-02	
0.81	3.07	116	8	30,000	139,000	0.12	3	0.2	5	0.5	37	JT-75810-03	
1.35	5.11	116	8	30,000	139,000	0.12	3	0.2	5	0.5	37	JT-75810-05	
1.61	6.09	116	8	30,000	139,000	0.12	3	0.2	5	1	66	JT-75810-04	
2.42	9.16	116	8	30,000	139,000	0.12	3	0.2	5	1	66	JT-75810-06	
2.79	10.56	217	15	22,000	102,000	0.14	3.7	0.23	6	1	38	JT-75810-07	
4.99	18.89	217	15	22,000	102,000	0.14	3.7	0.23	6	1.5	68	JT-75810-08	
5.88	22.26	217	15	28,000	165,000	0.22	5.7	0.37	9.5	1.5	26	JT-75810-09	
8.4	31.79	217	15	25,000	115,000	0.23	6	0.39	10	2	24	JT-75810-12	
9.73	36.83	217	15	28,000	165,000	0.22	5.7	0.37	9.5	2	43	JT-75810-14	
10.81	40.92	217	15	28,000	165,000	0.22	5.7	0.37	9.5	2	47	JT-75810-11	
19.47	73.69	217	15	28,000	165,000	0.22	5.7	0.37	9.5	3	86	JT-75810-15	
19.6	74.19	217	15	25,000	115,000	0.23	6	0.39	10	3	56	JT-75810-13	
25.43	96.25	217	15	40,000	185,000	0.35	9	0.63	16	10	34	JT-75810-16	
37.4	141.56	217	15	40,000	185,000	0.35	9	0.63	16	10	42	JT-75810-18	
38.14	144.36	217	15	40,000	185,000	0.35	9	0.63	16	10	51	JT-75810-17	
50.74	192.05	217	15	40,000	185,000	0.35	9	0.63	16	10	57	JT-75810-19	

## Almatec® Air-Operated Double-Diaphragm Pumps

### Maintenance- and lubrication-free air control

**E Series Pumps** are designed for liquid and slurry transfer in chemical process applications and are available in both PE and PTFE models as well as conductive PTFE (ATEX) versions. **Futur Series Pumps** are designed for more aggressive fluids with versions machined from solid blocks of PTFE (cleaned, assembled, and tested in a cleanroom line). Use the Futur H models for your higher temperature applications up to 390°F (200°C). Numerous pump configurations are available; please call our Application Specialists for assistance.



**NEW**

75980-02

Model	Max flow GPM (L/min)	Max temp °F (°C)	Max air pressure psi (bar)	Max suction lift ft (m)		Max particle size	Connections	Wetted parts	Catalog number	Price
				Dry	Wet					
E08	4 (15)	212 (100)	100 (7)	3.3 (1)	29.5 (9)	3/32"	1/4" NPT(F)	PTFE housing, diaphragm, and valve balls	JT-75980-00	
								Conductive PTFE housing, diaphragm, and valve balls	JT-75980-02	
E10	6 (23)	212 (100)	100 (7)	6.6 (2)	29.5 (9)	1/8"	3/8" NPT(F)	PTFE housing, diaphragm, and valve balls	JT-75980-04	
								Conductive PTFE housing; PTFE diaphragm and valve balls	JT-75980-06	
E15	15 (55)	158 (70)	100 (7)	9.8 (3)	31.2 (9.5)	5/32"	1/2" NPT(F)	PE housing; EPDM diaphragm and valve balls	JT-75980-08	
								PE housing; PTFE diaphragm and valve balls	JT-75980-10	
Futur10T	2.6 (10)	266 (130)	87 (6)	3.3 (1)	26 (8)	—	3/8" NPT(F)	PTFE-TFM center housing; PE side housing, diaphragm, and valve balls	JT-76980-00	
Futur20T	5.3 (20)			8.2 (2.5)	29.5 (9)				1/2" NPT(F)	JT-76980-02
Futur10H	2.6 (10)	390 (200)	87 (6)	3.3 (1)	26 (8)	—	3/8" NPT(F)	PTFE center housing; conductive PTFE side housing, diaphragm, and valve balls	JT-76980-06	
Futur20H	5.3 (20)			8.2 (2.5)	29.5 (9)				1/2" NPT(F)	JT-76980-08





## Cole-Parmer® Syringe Pumps

### Ideal for low-flow, low-pressure applications

- Backlit alphanumeric LCD guides you through setup and operating procedures
- Don't lose your settings—nonvolatile memory retains settings even after pump is turned off



Pump continuously and automatically delivers exact quantities of liquid.

#### A. Single-Syringe Infusion Pump

automatically selects display units based on syringe used, obtaining precise flow rates down to 0.2 µL/hr. A wide dynamic range (6000:1) provides excellent flexibility.

**B. Multi-Syringe Pumps** achieve flow rates down to 0.001 µL/hr. Easy programming via keypad—infusion/withdrawal pumps sequence operations. Control from a computer with RS-232 interface.†

**C. Multi-Step Multi-Syringe Pumps** allow flow rates to vary from a slow trickle to a steady stream down to 0.001 µL/hr. Program up to 8 commands and repeat up to 10 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. Operate your pump from a computer—great for daisy-chaining pumps!

#### Specifications

**Accuracy:** ±<1%  
**Reproducibility:** ±0.1%



Description	Number of syringes accepted	Flow rate per syringe	Syringe size accepted	Linear force	Power (VAC, Hz)	Catalog number	Price
<b>A. Single-syringe pump</b>							
Infusion	1	0.2 µL/hr to 500 mL/hr	10 µL to 60 mL	20 lb (9.1 kg)	115, 50/60	JT-74900-00	
					230, 50/60	JT-74900-05	
<b>B. Multi-syringe pumps</b>							
Infusion	2	0.001 µL/hr to 147 mL/min	10 µL to 140 mL	40 lb (18.1 kg)	115, 50/60	JT-74900-10	
					230, 50/60	JT-74900-15	
	10				115, 50/60	JT-74900-30	
					230, 50/60	JT-74900-35	
Infusion/withdrawal	2	115, 50/60	JT-74900-20				
	10	230, 50/60	JT-74900-25				
		115, 50/60	JT-74900-40				
<b>C. Multi-step multi-syringe pumps</b>							
Infusion	2	0.001 µL/hr to 147 mL/min	10 µL to 140 mL	40 lb (18.1 kg)	115, 50/60	JT-74900-60	
					230, 50/60	JT-74900-65	
	10				115, 50/60	JT-74900-80	
					230, 50/60	JT-74900-85	
Infusion/withdrawal	2	115, 50/60	JT-74901-00				
	10	230, 50/60	JT-74901-05				
		115, 50/60	JT-74901-10				
		230, 50/60	JT-74901-15				

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

Fluid Handling

Pumps, Metering

## Cole-Parmer® Entry-Level Touch-Screen Syringe Pumps

### Get more done simultaneously

- Accommodate two syringes for infusion and two syringes for withdrawal at the same time
- Control flow rates from 0.58 pL/min to 88.28 mL/min via full-color touch screen
- Daisy chain up to 99 pumps together with the built-in RS-485 connectivity
- Accept syringes from 0.5 µL to 60 mL

These pumps feature a continuous push and pull (infusion/withdrawal) pump. When used with check valves, the pump will draw fluid from a reservoir while opposite side is dispensing fluid. After dispensing the user-settable volume, the pump automatically switches direction and dispenses from the other side while the just-consumed side is being refilled.

Pump can be placed on its side to provide a smaller footprint with the display automatically rotating.



“Great product!”



#### Specifications

**Accuracy:** ±0.5%  
**Reproducibility:** ±0.05%  
**Linear force:** 75 lb (34 kg)

**Output:** RS-232, RS-485, USB, 15 pin D-sub connector  
**Power:** 100 to 240 VAC, 50/60 Hz



Number of syringes	Syringe sizes accepted	Flow rate per syringe	Catalog number	Price
<b>Infusion only pumps</b>				
1	0.5 µL to 60 mL	1.28 pL/min to 88.28 mL/min	JT-74905-02	
2	0.5 µL to 10 mL		JT-74905-06	
<b>Infusion/withdrawal programmable pumps</b>				
1	0.5 µL to 60 mL	1.28 pL/min to 88.28 mL/min	JT-74905-04	
2	0.5 µL to 10 mL	1.28 pL/min to 88.28 mL/min	JT-74905-08	
2	0.5 µL to 10 mL	0.58 pL/min to 11.70 mL/min	JT-74905-12	
1	0.5 µL to 1000 µL	3.66 pL/min to 363 µL/min	JT-74905-34	

## Low-Flow Piston Pump Systems

### Remote flow rate control via analog signal or RS-232

- Flow down to 0.002 mL/min; pressure up to 6000 psi (414 bar)
- Smooth fluid delivery from intra RPM stepper motor control
- Integrated piston wash to rinse away crystallized chemicals

Software control of refill rates and compressibility compensation add to the versatility of the pumps and enhance pump performance. Precise metering is attained by a positive-displacement reciprocating piston assembly. The high-resolution stepper motor is used to maximize flow output and minimize pulsation.

Choose pumps with an integrated pulse damper to further reduce pulsation. Pumps also feature the ability to monitor pressure and set high and low limits.



#### Specifications

**Viscosity:** 500 cp max      **Duty cycle:** continuous      **Power:** 110 to 220 VAC, 50/60 Hz  
**Repeatability:** typically ±0.3%      **Maximum fluid temperature:** 248°F (120°C)

Flow rate (mL/min)		Max pressure psi (bar)	Wetted parts		Connection		Standard		Integrated pulse damper		
Min	Max		Body	Piston	Inlet	Outlet	Catalog number	Price	Catalog number	Price	
0.002	2.5	6000 (413)	316 SS	PE	1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	<a href="#">JT-73150-00</a>		<a href="#">JT-73150-02</a>		
0.003	5	6000 (413)					<a href="#">JT-73150-10</a>		<a href="#">JT-73150-12</a>		
0.01	20	3000 (206)					<a href="#">JT-73150-20</a>		—		—
0.003	5	6000 (413)	316 SS	PE	1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	<a href="#">JT-73150-30</a>		<a href="#">JT-73150-32</a>		
0.01	10	6000 (413)					<a href="#">JT-73150-40</a>		<a href="#">JT-73150-42</a>		
0.02	40	1500 (103)					<a href="#">JT-73150-50</a>		—		—
0.01	10	3000 (206)	316 SS	PE	1/4" fitting for 1/8" tubing	Ferrule for 1/16" tubing	<a href="#">JT-73150-60</a>		—		
0.01	20	1500 (103)					<a href="#">JT-73150-70</a>		—		—
0.04	80	750 (52)					<a href="#">JT-73150-80</a>		—		—

## Cole-Parmer® High-Pressure Piston Pumps

### Precision pumping for your HPLC application



- Digital stepper motor ensures accuracy at low flow rates
- Self-flush feature washes piston with every stroke
- Interactive keypad controls make programming at the pump easy
- Pressure and leak sensors (except single-head pumps) alert you to malfunctions
- Remotely control pump with a PC via RS-232 and micro USB



#### Specifications

**Wetted parts:** synthetic ruby, sapphire, UHMWPE, PTFE      **Duty cycle:** continuous  
**Maximum temperature (fluid):** 212°F (100°C)      **Self-priming:** no  
**Power:** 100 to 240 VAC, 50/60 Hz

**Single-Head Pumps** precisely meter and dispense chemicals, perfect for small-scale laboratory fluid transfers and HPLC applications. Small footprint saves bench and fume hood space. **High-Flow Dual-Head Pumps** are ideally suited to preparative and simulated moving bed chromatography applications and other high throughput processes. **High-Performance Isocratic Pumps** are best suited to semi-prep and other small-scale HPLC separations, and general metering and dispensing applications. **Low-Pulsation Dual-Head Pump** provides virtually pulse-free operation with a low dead-volume pulse dampener, automatic pressure compensation, and advanced linear cam technology.

Description	Single-head pumps			High-flow dual-head pumps			High-performance isocratic pumps		Low-pulsation dual-head pump
<b>Catalog number</b>	<a href="#">JT-74931-00</a>	<a href="#">JT-74931-01</a>	<a href="#">JT-74931-20</a>	<a href="#">JT-74931-10</a>	<a href="#">JT-74931-11</a>	<a href="#">JT-74931-12</a>	<a href="#">JT-74931-25</a>	<a href="#">JT-74931-45</a>	<a href="#">JT-74931-30</a>
Pump head material	PEEK	316 SS	316 SS	PEEK	316 SS	316 SS	316 SS	316 SS	316 SS
Flow	Range (mL/min)	0 to 10			0 to 100		0 to 300		0 to 12
	Accuracy	±2% of set point			±3% of set point		±3% of set point		±2% of set point
	Repeatability	±1%		±0.2%	±0.5%			±0.5%	±0.2%
Pressure range (psi)	0 to 2000		0 to 6000	0 to 4000		0 to 1000	0 to 4000	0 to 5000	0 to 6000
Pulse dampener	No		Yes	Yes	No	No	Yes		Yes
Output	RS-232, micro USB, run/stop		RS-232, micro USB, voltage flow control, run/stop	RS-232, micro USB, voltage flow control, run/stop			RS-232, micro USB, voltage flow control, run/stop		RS-232, micro USB, voltage flow control, run/stop
<b>Price</b>									

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

## Get better results with minimal dead space

- Minimizes dead space and air entrapment with unique cavity configuration
- No maintenance needed—AC motors are brushless with sealed ball bearings
- Worry-free pumping with reduced stress, wear, and heat buildup



UL US CE SF 115 VAC model only

Convenient on/off power switch

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

- Handle tough applications easily
- Increase your capacity with dual-head models independently pumping or connected in series
- Easy shut-off with power switch on all models except 07532-65

**What's included:** PTFE thread tape and polyethylene 3/8" NPT(M) x 3/8" hose barb adapters.

### C. Vacuum/Pressure Stations

- Increase productivity—evacuate or pressurize two systems simultaneously with auxiliary port
- Get control with built-in bronze and brass gauge and stainless steel regulator

**What's included:** PTFE thread tape, two polyethylene 3/8" NPT(M) x 3/8" hose barb adapters, and one polyethylene 1/4" NPT(M) x 3/8" hose barb adapter (for auxiliary port).

### D. OEM Vacuum/Pressure Pumps

- Get long, reliable operation—continuous operation up to 18 psi for 4000 service hours
- Provides pumping with minimal stress and heat buildup

ISO 9001:2008 CERTIFIED SUPPLIER



Free-air capacity cfm (LPM)	Max vacuum " Hg (Torr)	Max pressure psi (bar)	Wetted parts	Noise rating	Port size	Power	Catalog number	Price
<b>A. Single-head pumps</b>								
0.54 (15.5)	20 (508)	18 (1.24)	Noryl® pump head, FKM diaphragm, PTFE valves, and polyethylene (PE) adapters	72 dB(A)	3/8" hose barb	115 VAC, 60 Hz	JT-07532-40	
0.45 (13)						230 VAC, 50 Hz	JT-07532-45	
<b>B. Dual-head pumps</b>								
1.1 (31)†	20 (508)	18 (1.24)	Noryl pump head, FKM diaphragm, PTFE valves, and PE adapters	76 dB(A)	3/8" hose barb	115 VAC, 60 Hz	JT-07532-60	
0.91 (26)†						230 VAC, 50 Hz	JT-07532-65*	
<b>C. Vacuum/pressure stations</b>								
0.5 (14.1)	20 (508)	18 (1.24)	FKM diaphragm, SS regulator, bronze/brass gauge, and PE adapters	73 dB(A)	3/8" hose barb	115 VAC, 60 Hz	JT-07532-80	
0.4 (11.3)						230 VAC, 50 Hz	JT-07532-85	
<b>D. OEM vacuum/pressure pumps</b>								
0.6 (17)	20 (508)	18 (1.24)	Noryl pump head, FKM diaphragm, PTFE valves	72 dB(A)	3/8" NPT(F)	115 VAC	JT-07530-85	
	18 (457.2)	15 (1.03)	Noryl pump head, FKM diaphragm, PTFE valves, and PE adapters			12 VDC	JT-07532-25	

† Total free-air capacity. Single-channel capacity is half this value. \*Power switch not available on this model. **Note:** Do not use metal fittings with any Air Cadet pump.

### Accessories

**JT-07395-20 Vacuum/pressure gauge connector kit**, brass. Contains two PE adapters and one each of bushing, pipe tee, and adapter for pipe mount

**JT-07530-06 Service kit**. Contains long-life nitrile diaphragm, Noryl pump head, two PTFE valves, and two Noryl retainers

### Replacement Parts

**JT-07530-77 Pump head assembly**, Valox®. Includes valves and retainers. For continuous pressures greater than 14 psi

**JT-07530-71 Diaphragm clamp assembly**; includes diaphragm clamp and shaft, and eccentric assembly

**JT-07530-79 Diaphragm shaft**

**JT-07530-75 Eccentric assembly**

**JT-08270-33 Thread sealer tape** of PTFE resin. Each roll measures 260"L x 1/2"W. Pack of 10 rolls

## Standard-Duty Dry Vacuum Piston Pumps

Great for filtering, aspirating, degassing, and desiccating

- Oil free for life science applications
- Water trap prevents liquid from being drawn into the pump
- Muffler provides quiet operation

Use the convenient gauge and control knob to adjust vacuum level. Single-head models also provide pressure. Avoid using pump with organic, acidic, or basic vapors.

**What's included:** gauge, control knob, water trap, carrying handle, suction cup feet, on/off switch, two 1/4" barbed fittings, and a 6-ft (1.8-m) cord (115 VAC models come with a standard US plug; 230 VAC models come with a European (Schuko) plug).

**Service kits include** all components commonly required for refurbishment.



CE  
230 VAC models only  
RUNS DRY

Free-air capacity cfm (L/min)	Ultimate <sup>†</sup> vacuum	Maximum pressure	Wetted parts	Motor hp	Noise rating	Port size (tube ID)	Power (VAC, Hz)	Catalog number	Price	Service kits	
										Catalog number	Price
<b>Single-head pumps</b>											
0.76 (22)	26.0" Hg (100 Torr)	100 psig (6.89 bar)	Aluminum (treated for corrosion resistance), SS, and PTFE	1/8	62 dB(A)	1/4"	115, 60	JT-79204-00		JT-79204-01	
0.67 (19)							230, 50	JT-79204-05			
1.20 (34)	27.2" Hg (70 Torr)	50 psig (3.45 bar)		1/8		1/4"	115, 60	JT-79204-10		JT-79204-11	
0.99 (28)							230, 50	JT-79204-15			
1.60 (45)	27.6" Hg (60 Torr)	100 psig (6.89 bar)		1/4		1/4"	115, 60	JT-79204-20		JT-79204-21	
1.34 (38)							230, 50	JT-79204-25			
<b>Dual-head pumps</b>											
2.1 (60)	29.8" Hg (5 Torr)	—	Aluminum (treated for corrosion resistance), SS, and PTFE	1/3	58 dB(A)	3/8"	115, 60	JT-79204-30		JT-79204-31	
1.8 (50)							230, 50	JT-79204-35			
7.1 (201)	27.6" Hg (60 Torr)	—		1/3		3/8"	115, 60	JT-79204-70		—	—
5.9 (168)							230, 50	JT-79204-75			

<sup>†</sup>Ultimate total vacuum

[JT-06414-20](#) Tygon® non-DEHP vacuum tubing, 1/4" ID x 5/8" OD. Pack of 10 ft (3.0 m)

## High-Capacity Vacuum/Pressure Pumps

Won't get overloaded

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

**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

ISO9001:2008  
CERTIFIED SUPPLIER

UL  
RUNS DRY

Pump head configuration	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Wetted parts	Motor hp	Port size	Noise rating	Power (VAC, Hz)	Catalog number	Price
<b>Pump without gauges or regulators</b> (order regulators separately below; order gauges with 1/4" NPT(M) connections online)										
Single	1.1 (31.2)	25.5" Hg	60 psi	Aluminum, stainless steel, Nordel®, and Nomex®	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	JT-07061-21	
	1.0 (28.3)	24.0" Hg	(4.14 bar)					220/240, 50	JT-07061-22	
<b>Pumps with gauges, regulators, and adjustable relief valve</b>										
Single	1.1 (31.2)	25.5" Hg	60 psi	Aluminum, stainless steel, Nordel, and Nomex	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	JT-07061-40	
	1.0 (28.3)	24.0" Hg	(4.14 bar)					220/240, 50	JT-07061-42	
Dual/parallel	2.2 (62.3)	25.5" Hg	60 psi		1/4			115, 60	JT-07061-60	
	1.8 (51.0)	24.0" Hg	(4.14 bar)					220, 50	JT-07061-05	
<b>Pump with vacuum gauge only</b>										
Dual/series	1.15 (32.5)	29.0" Hg	—	Aluminum, stainless steel, Nordel, and Nomex	1/4	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	JT-07061-11	
	0.85 (24.0)	28.0" Hg						220, 50	JT-07061-13	

[JT-07061-32](#) Pressure regulator assembly for pumps 07061-21 and -22

[JT-07061-30](#) Vacuum regulator assembly for pumps 07061-21 and -22

[JT-07061-01](#) Service kit for all pumps

[JT-07061-03](#) Service kit for dual-head pumps. Pumps 07061-60, -05, -11, and -13 also require kit 07061-01 above

[JT-07061-06](#) Diaphragm for all models, neoprene/nylon

[JT-07061-04](#) Replacement diaphragm for all models, Nordel/Nomex

# Custom-Engineered Pumps

## Designed for You

***When an off-the-shelf pump just won't cut it, you need a solution custom-built for your requirements.***

With more than 100 years combined experience, our design engineers will partner with you to create the exact pump you need.

## Product Development Process



### Concept

Complete product specifications developed according to your needs



### Design

Innovative solution created with our advanced systems



### Engineering

Product prototype and fabrication for your approval



### Testing

Tested under actual conditions; products comply with UL, ETL, and CE under ISO:9001 and ISO:13485 standards



### Service

After sale support, quality assurance audits, and additional services

**Get Started—contact us today!**

1-800-637-3739 [Masterflex.com/OEM](http://Masterflex.com/OEM) [FluidHandling@coleparmer.com](mailto:FluidHandling@coleparmer.com)

## Cole-Parmer® Silicone Tubing

No need to worry about the heat—  
use for applications up to 460°F

### 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) and meets USP Class VI. Tubing is manufactured according to GMP.

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

**Sterilize:** Autoclave or gamma irradiation.

Buy More...Save More!

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs



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	JT-06411-59		JT-95802-00	
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	30	JT-06411-60		JT-95802-01	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	15	JT-06411-62		JT-95802-02	
3/32 (2.4)	3/32 (4.0)	1/32 (0.8)	15	JT-06411-63		JT-95802-03	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	10	JT-06411-64		JT-95802-04	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	20	JT-06411-67		JT-95802-05	
1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	25	JT-06411-68		JT-95802-06	
5/32 (4.0)	5/32 (4.0)	1/32 (0.8)	10	JT-06411-65		JT-95802-07	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	9	JT-06411-66		JT-95802-08	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13	JT-06411-03		JT-95802-09	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	22	JT-06411-69		JT-95802-10	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	9	JT-06411-70		JT-95802-11	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10	JT-06411-71		JT-95802-12	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	17	JT-06411-72		JT-95802-13	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17	JT-06411-74		JT-95802-14	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	10	JT-06411-75		JT-95802-15	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	16	JT-06411-76		JT-95802-16	
5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	20	JT-06411-77		JT-95802-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	10	JT-06411-12		JT-95802-18	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	12	JT-06411-78		JT-95802-19	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	15	JT-06411-79		JT-95802-20	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	9	JT-06411-80		JT-95802-21	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	10	JT-06411-19		JT-95802-22	
1/2 (12.8)	3/4 (19.2)	1/8 (3.2)	12	JT-06411-55		JT-95802-23	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	10	JT-06411-82		JT-95802-24	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	12	JT-06411-58		JT-95802-25	
3/4 (19.2)	1 (25.4)	1/8 (3.2)	9	JT-06411-83		JT-95802-26	

## DON'T RISK IT!

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



## Tygon® BioPharm Silicone Tubing

Reduce particle entrapment with  
ultra-smooth inner surface



**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).

Buy More...Save More!

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

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

## Benchtop Tubing Cutter

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



Description	Catalog number	Price
Benchtop cutter	JT-06438-10	
Replacement blade	JT-06438-11	

## Free Certificate 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 blue "check" icon throughout this catalog to identify when a certificate of compliance is available.





## Dow Corning® Pharma-50 Tubing

No organic additives and low extractables



**Applications:** Pharmaceutical, biotechnology, and ultrapure fluid processing.  
**Characteristics:** 50 durometer, translucent platinum-cured silicone tubing with a very low extractable profile. 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.

**Buy More...Save More!**

20% off on 20+  
 15% off on 10 to 19  
 10% off on 4 to 9 packs

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

## Silastic® Laboratory Tubing

Resists bacteria and fungus growth



**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.

**Buy More...Save More!**

20% off on 20+  
 15% off on 10 to 19  
 10% off on 4 to 9 packs

Dimensions: in. (mm)			Catalog number	Price/50-ft pk
ID	OD	Wall		
0.012 (0.3)	0.025 (0.6)	0.0065 (0.2)	JT-96115-00	
0.02 (0.5)	0.037 (0.9)	0.0085 (0.22)	JT-96115-02	
0.025 (0.6)	0.047 (1.2)	0.0095 (0.2)	JT-96115-04	
0.03 (0.8)	0.065 (1.7)	0.0175 (0.4)	JT-96115-06	
0.04 (1)	0.085 (2.2)	0.0225 (0.6)	JT-96115-08	
0.058 (1.5)	0.077 (2.0)	0.0095 (0.2)	JT-96115-10	
0.062 (1.6)	0.095 (2.4)	0.0165 (0.4)	JT-96115-12	
0.062 (1.6)	0.125 (3.2)	0.0315 (0.8)	JT-96115-14	
0.078 (2)	0.125 (3.2)	0.0235 (0.6)	JT-96115-16	
0.104 (2.6)	0.192 (4.9)	0.044 (1.1)	JT-96115-18	
0.132 (3.4)	0.183 (4.6)	0.0255 (0.6)	JT-96115-20	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	JT-96115-22	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	JT-96115-24	
3/16 (4.8)	3/8 (9.5)	3/32 (2.4)	JT-96115-26	
1/4 (6.4)	3/8 (9.5)	1/16 (1.6)	JT-96115-28	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	JT-96115-30	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	JT-96115-32	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	JT-96115-34	
3/8 (9.5)	5/8 (15.9)	1/8 (3.2)	JT-96115-40	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	JT-96115-44	

## Cole-Parmer® Platinum-Cured Reinforced Silicone Tubing

Withstands pressures to 312 psi



**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.



**Buy More...Save More!**  
 20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Qty/pk	Catalog number	Price/pk
ID	OD	Wall				
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	312 (21.5)	50 ft	JT-95703-00	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	248 (17.1)	50 ft	JT-95703-01	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	180 (12.4)	50 ft	JT-95703-02	
1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	168 (11.6)	50 ft	JT-95703-03	
5/8 (16.0)	15/16 (24.0)	5/32 (4.0)	144 (9.9)	50 ft	JT-95703-04	
3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	144 (9.9)	50 ft	JT-95703-05	
1 1/4 (31.8)	1 5/8 (41.4)	3/16 (4.8)	96 (6.6)	25 ft	JT-95703-07	

Find even more online!  
 Go to [ColeParmer.com](http://ColeParmer.com) to see full product details.

## Cole-Parmer® Vinyl Tubing

Ideal for general-purpose applications



**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.



**Buy More...Save More!**  
 20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

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

## PharMed® BPT Tubing

### Protect your light-sensitive samples



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

**Characteristics:** Nontoxic; nonhemolytic; extremely low permeability; resists acids, alkalis, 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:** -60 to 275°F (-51 to 135°C)

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

**Buy More...Save More!**  
20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

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

### Microbore PharMed BPT Tubing

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

## Dow Corning® Pharma-65 Tubing

### Resilient for extended service life



**Characteristics:** 65 durometer, platinum-cured silicone tubing with a very low extractable profile; it contains no phthalates, plasticizers, latex, or other organic additives. Remains flexible and resilient for long service life. Dow Corning maintains complete traceability from silica to silicone tubing.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI requirements. Meets 3A Sanitary Standards and European Pharmacopoeia (EP) requirements. Tubing is manufactured according to Bulk Pharmaceutical (BP) and current GMP.

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

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

**Buy More...Save More!**  
20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	19 (1.3)	JT-96107-00	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	JT-96107-01	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	15 (1.0)	JT-96107-02	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	20 (1.4)	JT-96107-04	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	19 (1.3)	JT-96107-05	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	13 (0.9)	JT-96107-09	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	11 (0.8)	JT-96107-11	

**Custom Cut Tubing**  
For details, call 1-800-323-4340

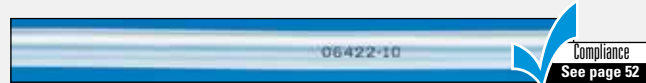
## C-Flex® Tubing

### Meets the demands of various industries

– Available in three formulations—standard, clear, and animal-derived component-free (ADCF)

**Applications:** General-purpose lab uses requiring high performance and long life.

**Characteristics:** Exceptional tensile and tear strength, good biocompatibility, excellent chemical resistance, low gas permeability, and a smooth surface. Standard C-Flex is opaque white; C-Flex Clear and C-Flex ADCF are clear.



**Certifications:** Meets USP Class VI. Tubing is manufactured according to GMP.

**Temperature range:** -50 to 275°F (-45 to 135°C)

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

**Buy More...Save More!**  
20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions in. (mm)			C-Flex		C-Flex Clear		C-Flex ADCF				
ID	OD	Wall	Catalog number	Max psi at 70°F (21°C)	Price/ 25-ft pk	Catalog number	Max psi at 70°F (21°C)	Price/ 25-ft pk	Catalog number	Max psi at 70°F (21°C)	Price/ 50-ft pk
1/50 (0.5)	1/2 (2.1)	1/32 (0.8)	JT-06424-59	30		JT-06422-00	50		—	—	—
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	JT-06424-60	31		JT-06422-01	51		—	—	—
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	JT-06424-62	15		JT-06422-02	25		—	—	—
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	JT-06424-63	14		JT-06422-03	23		—	—	—
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	JT-06424-64	10		JT-06422-04	17		—	—	—
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	JT-06424-67	21		JT-06422-05	35		JT-06432-50	35	—
3/32 (4.0)	7/32 (5.6)	1/32 (0.8)	JT-06424-65	10		JT-06422-06	17		—	—	—
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	JT-06424-66	9		JT-06422-07	15		—	—	—
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	JT-06424-03	13		JT-06422-08	22		JT-06432-51	22	—
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	JT-06424-69	22		JT-06422-09	36		—	—	—
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	JT-06424-71	12		JT-06422-10	20		JT-06432-53	20	—
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	JT-06424-72	17		JT-06422-11	28		JT-06432-54	28	—
1/4 (6.4)	1/2 (12.7)	1/8 (3.2)	JT-06424-74	17		JT-06422-12	28		JT-06432-55	28	—
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	JT-06424-75	10		JT-06422-13	17		—	—	—
5/16 (8.0)	1/2 (12.7)	3/32 (2.4)	JT-06424-76	16		JT-06422-14	27		JT-06432-56	27	—
3/8 (9.6)	1/2 (12.7)	1/16 (1.6)	JT-06424-12	10		JT-06422-15	17		JT-06432-57	17	—
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	JT-06424-79	14		JT-06422-16	23		JT-06432-59	23	—
1/2 (12.7)	1 1/16 (17.6)	3/32 (2.4)	JT-06424-19	10		JT-06422-17	17		JT-06432-60	17	—
1/2 (12.7)	3/4 (19.1)	1/8 (3.2)	JT-06424-81	10		JT-06422-18	17		JT-06432-61	17	—





## Tygon® Non-DEHP Lab Tubing

Pliable formulation for sharp radius bending



**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.

Buy More...Save More!

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	69 (4.8)	JT-06407-70	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	36 (2.5)	JT-06407-71	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	69 (4.8)	JT-06407-72	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	25 (1.7)	JT-06407-73	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	20 (1.4)	JT-06407-75	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	36 (2.5)	JT-06407-76	
5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	17 (1.2)	JT-06407-77	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	25 (1.7)	JT-06407-78	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	36 (2.5)	JT-06407-79	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	20 (1.4)	JT-06407-80	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	28 (1.9)	JT-06407-81	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	35 (2.5)	JT-06407-82	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	17 (1.2)	JT-06407-83	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	23 (1.6)	JT-06407-84	
5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	30 (2.1)	JT-06407-85	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	JT-06407-86	
3/8 (9.6)	5/8 (16.0)	3/32 (2.4)	20 (1.4)	JT-06407-87	
3/8 (9.6)	3/4 (19.1)	1/8 (3.2)	25 (1.7)	JT-06407-88	
7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	13 (0.9)	JT-06407-89	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	12 (0.8)	JT-06407-90	
1/2 (12.8)	11/16 (17.8)	3/32 (2.4)	15 (1.0)	JT-06407-91	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	20 (1.4)	JT-06407-92	
1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	24 (1.7)	JT-06407-93	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	13 (0.9)	JT-06407-94	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	17 (1.2)	JT-06407-95	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.0)	JT-06407-96	
3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	20 (1.4)	JT-06407-97	
1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	12 (0.8)	JT-06407-98	
1 (25.4)	1 1/2 (38.1)	1/4 (6.4)	20 (1.4)	JT-06407-99	

### Microbore/Autoanalysis Tubing

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

## 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.



Description	Catalog number	Price
Handheld tubing cutter	JT-06438-90	
Tubing cutter pouch	JT-06438-81	
Replacement blade	JT-06438-92	

## Cole-Parmer® Flexible PVC Tubing

Stop oxidation and bacteria problems



**Applications:** Food and beverage processing, pharmaceutical, biotech, and general lab applications.

**Characteristics:** Extremely flexible. Resistant to oxidation, chemicals and bacteria. Transparent.

**Certifications:** FDA-compliant (21 CFR 175.300) and meets USP Class VI and USDA requirements; meets 3A sanitary standards.

**Temperature range:** -41 to 165°F (-41 to 74°C)

**Sterilize:** Ethylene oxide or gamma irradiation.

Buy More...Save More!

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs



Dimensions: in. (mm)			Max psi at 68°F (bar at 20°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	68 (4.7)	JT-96605-01	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	55 (3.8)	JT-96605-02	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	55 (3.8)	JT-96605-03	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	70 (4.8)	JT-96605-05	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	50 (3.4)	JT-96605-06	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	40 (2.8)	JT-96605-08	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	65 (4.5)	JT-96605-10	
1/2 (12.8)	3/4 (19.1)	1/16 (1.6)	30 (2.1)	JT-96605-11	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	45 (3.1)	JT-96605-13	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	40 (2.8)	JT-96605-15	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	35 (2.4)	JT-96605-16	
1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	28 (1.9)	JT-96605-19	
1 1/4 (31.8)	1 3/4 (44.5)	1/4 (6.4)	45 (3.1)	JT-96605-25	

Wait!

There's More at  
ColeParmer.com

Find all the  
product specs  
you need!

## Dow Corning® Pharma-80 Tubing

Economical alternative to reinforced tubing



**Characteristics:** 80 durometer, semi-transparent platinum-cured silicone tubing with a very low extractable profile; it contains no phthalates, plasticisers, latex or other organic additives. Pharma tubing is hydrophobic, and 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; tubing itself meets or exceeds FDA (21 CFR 177.2600), 3A Sanitary Standards, and European Pharmacopoeia (EP) requirements. Pharma tubing is produced under Bulk Pharmaceutical (BP) current GMP principals.

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

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

Buy More...Save More!

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	249 (17.2)	JT-96109-00	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	249 (17.2)	JT-96109-01	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	249 (17.2)	JT-96109-03	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	260 (17.9)	JT-96109-05	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	231 (15.9)	JT-96109-09	

## Tygon® High-Purity Reinforced Tubing

### Keeps visual track of samples



**Formulation:** 2475 I.B.

**Applications:** Pharmaceutical and cosmetic processing, deionized water systems, cell harvest and media process systems, chemical transfer, preservative and sterile fill lines.

**Characteristics:** Plasticizer free, smooth inner surface (inhibits particulate buildup and bacterial growth), and nontoxic. Transparent.

**Certifications:** Resin is FDA-compliant (21 CFR 177.1550) and meets NSF criteria and European Pharmacopoeia.

**Temperature range:** -103 to 130°F (-75 to 54°C)

**Sterilize:** Ethylene oxide, gamma irradiation.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 73°F (bar at 23°C)	Catalog number	Ft/ pk	Price/ pk
ID	OD	Wall				
¼ (6.4)	½ (12.8)	⅛ (3.2)	150 (10.3)	JT-95360-50	50	
⅜ (9.6)	⅝ (16.0)	⅛ (3.2)	135 (9.3)	JT-95360-51	50	
½ (12.8)	¾ (19.1)	⅛ (3.2)	125 (8.6)	JT-95360-52	50	
⅝ (16.0)	⅞ (22.4)	⅛ (3.2)	120 (8.3)	JT-95360-53	50	
1 (25.4)	1⅜ (35.0)	⅜ (9.6)	112 (7.7)	JT-95360-55	25	

## Tygon® High-Purity Tubing

### Resists build-up and bacterial growth



**Formulation:** 2475

**Applications:** Sensitive fluid transfer applications requiring high purity.

**Characteristics:** Plasticizer free, smooth inner surface (inhibits particulate buildup and bacterial growth), safely dispose through incineration. Nontoxic. Transparent.

**Certifications:** Resin is FDA-compliant (21 CFR 177.1520) and meets USP 23 Class VI requirements. Tubing is manufactured according to GMP.

**Temperature range:** -94 to 125°F (-70 to 52°C)

**Sterilize:** Ethylene oxide or gamma irradiation.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Ft/ pk	Price/ pk
ID	OD	Wall				
¼ (6.4)	½ (12.8)	⅛ (3.2)	49 (3.4)	JT-95635-50	50	
⅜ (9.6)	⅝ (16.0)	⅛ (3.2)	27 (1.9)	JT-95635-51	50	
½ (12.8)	¾ (19.1)	⅛ (3.2)	19 (1.3)	JT-95635-52	50	
⅝ (16.0)	⅞ (22.4)	⅛ (3.2)	16 (1.1)	JT-95635-53	50	
1 (25.4)	1⅜ (35.0)	⅜ (9.6)	13 (0.9)	JT-95635-54	50	
¼ (6.4)	½ (12.8)	⅛ (3.2)	11 (0.8)	JT-95635-55	50	
⅜ (9.6)	⅝ (16.0)	⅛ (3.2)	15 (1.0)	JT-95635-56	50	
½ (12.8)	¾ (19.1)	⅛ (3.2)	13 (0.9)	JT-95635-57	50	
⅝ (16.0)	⅞ (22.4)	⅛ (3.2)	11 (0.8)	JT-95635-58	50	
1 (25.4)	1⅜ (35.0)	⅜ (9.6)	11 (0.8)	JT-95635-59	25	

## Ratchet Tubing Clamps

Durable Celcon® plastic tubing clamps are autoclavable; won't rust, corrode, or distort. Twelve-position ratchet control adjusts from full flow to complete closure. Mini-clamp is suitable for up to ⅛" (2.1 mm) OD tubing. Standard clamp accepts flexible tubing to ½" (12.7 mm) OD.



06833-00

**JT-06833-01** Mini tubing clamp. Pack of 25

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

## Tygon® Microbore Autoanalysis Tubing

### Clear to easily view sample

**Formulation:** ND-100-80

**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.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

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

**JT-06418-10 Tygon® microbore tubing assortment pack.** One 100-ft (30.4-m) roll of 06418-01, -02, -03, -04, and -05 (500-ft [152.4-m] total)

## Platinum-Cured Silicone Spools

### Cut tubing to your needs

Reduce unpacking time, save money on shipping, and ensure that you always have enough tubing on hand with bulk tubing.



Dimensions in. (mm)		Length per spool	Catalog number	Price
ID	OD			
½ (12.8)	¾ (19.1)	500 ft (152 m)	JT-98906-00	
⅝ (16.0)	⅞ (22.4)		JT-98906-02	
⅜ (9.6)	⅝ (16.0)	300 ft (91 m)	JT-98906-04	
½ (12.8)	¾ (19.1)		JT-98906-06	
⅝ (16.0)	⅞ (22.4)		JT-98906-08	
¾ (19.1)	1 (25.4)		JT-98906-10	
1 (25.4)	1⅜ (35.0)		JT-98906-12	

## Viton® Tubing

### Worry-free acid transfer

**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.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

ISO 9001:2008  
CERTIFIED SUPPLIER

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
¼ (6.4)	½ (12.8)	⅛ (3.2)	23 (1.6)	JT-06434-01	
⅜ (9.6)	⅝ (16.0)	⅛ (3.2)	21 (1.4)	JT-06434-02	
½ (12.8)	¾ (19.1)	⅛ (3.2)	19 (1.3)	JT-06434-03	
⅝ (16.0)	⅞ (22.4)	⅛ (3.2)	17 (1.2)	JT-06434-04	
¾ (19.1)	1 (25.4)	⅛ (3.2)	20 (1.4)	JT-06434-05	
1 (25.4)	1⅜ (35.0)	⅜ (9.6)	18 (1.2)	JT-06434-06	
¼ (6.4)	½ (12.8)	⅛ (3.2)	16 (1.1)	JT-06434-07	
⅜ (9.6)	⅝ (16.0)	⅛ (3.2)	17 (1.8)	JT-06434-08	
½ (12.8)	¾ (19.1)	⅛ (3.2)	15 (1.0)	JT-06434-09	



## Cole-Parmer® PFA Tubing

Withstands highly corrosive materials



**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.



**Buy More...Save More!**  
 20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	600 (41.4)	JT-06371-00	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	592 (40.8)	JT-06375-01	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	471 (32.5)	JT-06371-01	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	385 (26.5)	JT-06371-02	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	600 (41.4)	JT-06371-21	
5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	421 (29.0)	JT-06375-02	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	280 (19.3)	JT-06371-03	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	471 (32.5)	JT-06371-22	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	220 (15.2)	JT-06371-04	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	388 (26.8)	JT-06375-05	
19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	229 (15.8)	JT-06371-23	
5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	180 (12.4)	JT-06371-05	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	324 (22.3)	JT-06371-24	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	283 (19.5)	JT-06375-07	
3/8 (10.2)	1/2 (12.8)	1/20 (1.2)	220 (9.5)	JT-06371-25	
7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	133 (9.2)	JT-06371-07	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	220 (15.2)	JT-06371-26	
5/8 (16.0)	3/4 (19.0)	1/16 (1.6)	150 (10.3)	JT-06375-08	
11/16 (17.5)	3/4 (19.0)	1/32 (0.8)	87 (6.0)	JT-06371-28	
3/4 (19.0)	7/8 (22.2)	1/16 (1.6)	153 (10.5)	JT-06371-29	

## Cole-Parmer® PTFE Tubing

Won't crack under heat or pressure



**Applications:** Demanding lab, chemical, electrical, mechanical, and pharmaceutical applications. High-purity work. 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.



**Buy More...Save More!**  
 20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	370 (25.5)	JT-06407-41	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	370 (25.5)	JT-06605-27	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	294 (20.3)	JT-06605-28	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	240 (16.5)	JT-06605-29	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	375 (25.9)	JT-06605-30	
5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	274 (18.9)	JT-06605-31	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	175 (12.1)	JT-06605-32	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	294 (20.3)	JT-06605-33	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	137 (9.4)	JT-06605-34	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	240 (16.5)	JT-06605-35	
19/64 (7.5)	3/8 (9.6)	1/25 (1.0)	143 (9.9)	JT-06605-36	
5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	113 (7.8)	JT-06605-37	
3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	96 (6.6)	JT-06605-39	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	175 (12.1)	JT-06605-40	
3/8 (10.2)	1/2 (12.8)	1/20 (1.4)	137 (9.4)	JT-06605-41	
7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	83 (5.7)	JT-06605-42	
1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	73 (5.0)	JT-06605-44	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	137 (9.4)	JT-06605-45	
5/8 (14.3)	5/8 (16.0)	1/32 (0.8)	66 (4.6)	JT-06605-46	
5/8 (16.0)	11/16 (17.5)	1/32 (0.8)	59 (4.1)	JT-06605-48	
5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	113 (7.8)	JT-06605-49	
3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	96 (6.6)	JT-06605-51	

## Tygon® Ultra Chemical-Resistant Tubing

Won't allow particulate build-up



**Formulation:** Tygon 2375

**Applications:** For use with highly aggressive chemicals—acids, bases, ketones, salts, and alcohols.

**Characteristics:** Plasticizer free, smoother inner surface (inhibits particulate build-up), hydrophobic, minimal outgassing, safe disposal via incineration, and nontoxic. Transparent.

**Certification:** FDA-(21 CFR 177.1550) and REACH-compliant. Meets NSF 51 Standard.

**Temperature range:** -108 to 130°F (-78 to 54°C)

**Sterilize:** Ethylene oxide or gamma irradiation.

**Buy More...Save More!**  
 20% off on 20+  
 15% off on 10 to 19  
 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	33 (2.8)	JT-95630-10	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	55 (3.8)	JT-95630-11	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	22 (1.5)	JT-95630-12	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	33 (2.8)	JT-95630-13	
5/32 (4.0)	7/32 (5.5)	1/32 (0.8)	16 (1.1)	JT-95630-14	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	22 (1.5)	JT-95630-15	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	19 (1.3)	JT-95630-16	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	16 (1.1)	JT-95630-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	JT-95630-18	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	24 (1.6)	JT-95630-19	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	19 (1.3)	JT-95630-20	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	16 (1.1)	JT-95630-21	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.1)	JT-95630-22	
1 (25.4)	1 1/8 (35.0)	3/16 (4.8)	15 (1.0)	JT-95630-23	

## Tygon® Non-DEHP Tubing

Drains completely



**Formulation:** Tygon ND-100-65

**Characteristics:** Non-DEHP, phthalate free. Non-wetted surface permits complete drainage. Bondable, weldable. Clear.

**Certifications:** USP Class VI, REACH, ISO 10993

**Temperature range:** -44 to 165°F (-42 to 74°C)

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

**Buy More...Save More!**  
 20% off on 20+  
 15% off on 10 to 19  
 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 73°F (bar at 23°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	100 (6.9)	JT-95666-00	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	55 (3.8)	JT-95666-01	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	40 (2.8)	JT-95666-03	
3/32 (2.4)	7/32 (5.6)	1/16 (1.6)	70 (4.8)	JT-95666-04	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	30 (2.1)	JT-95666-05	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	55 (3.8)	JT-95666-06	
5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	25 (1.7)	JT-95666-07	
5/32 (4.0)	9/32 (7.1)	1/16 (1.6)	45 (4.3)	JT-95666-08	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	20 (1.4)	JT-95666-09	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	40 (2.8)	JT-95666-10	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	55 (3.8)	JT-95666-11	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	30 (2.1)	JT-95666-14	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	45 (1.7)	JT-95666-15	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	55 (3.8)	JT-95666-16	
3/8 (9.6)	9/16 (14.3)	3/32 (2.4)	30 (2.1)	JT-95666-21	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	40 (2.8)	JT-95666-22	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	25 (1.7)	JT-95666-27	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	30 (2.1)	JT-95666-28	

## Cole-Parmer® PTFE Microbore Tubing

Minimize friction, maximize chemical resistance

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.



**Buy More...Save More!**  
20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs



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

**JT-06417-60 Microbore tubing assortment pack.** One 100-ft (30.4-m) roll each of 06417-11, -21, -31, -41, and -51 (500-ft [152.4-m] total)

## Cole-Parmer® Corrugated FEP Tubing

No kinks or distortion



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.

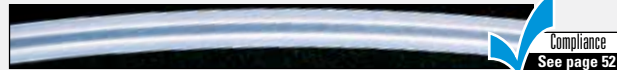


Cuff ID	Cuff OD	Wall	Max psi at 70°F (bar at 21°C)	Catalog number	Price/5-ft length*
<b>Tubing compatible with barbed fittings</b>					
1/4"	9/32"	1/64"	250 (17.2)	<a href="#">JT-06407-50</a>	
3/8"	13/32"	1/32"	200 (13.8)	<a href="#">JT-06407-52</a>	
<b>Tubing compatible with compression fittings</b>					
7/32"	1/4"	1/64"	250 (17.2)	<a href="#">JT-06407-60</a>	
21/64"	3/8"	1/32"	200 (13.8)	<a href="#">JT-06407-62</a>	
29/64"	1/2"	1/32"	170 (11.7)	<a href="#">JT-06407-64</a>	
11/16"	3/4"	1/32"	120 (8.3)	<a href="#">JT-06407-66</a>	

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

## Cole-Parmer® FEP Tubing

Does not deteriorate with age



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

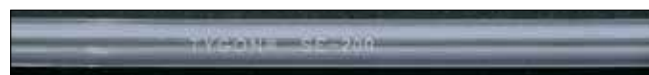
**Buy More...Save More!**  
20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs



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

## Tygon® FEP-Lined Tubing

Keep samples free of odors and taste



**Formulation:** Tygon SE-200

**Applications:** Chemical and pharmaceutical processing, beverage dispensing, paint and solvent production, semiconductor processing.

**Characteristics:** Bio-based, phthalate-free. Flexible, chemically resistant, inert, non-contaminating. Odorless, nontoxic, and taste free. Clear.

**Certifications:** FDA-compliant (21 CFR 177.1550) for contact food products.

**Temperature range:** -49 to 165°F (-45 to 74°C)

**Sterilize:** Ethylene oxide.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 73°F (bar at 23°C)	Catalog number	Price/50-ft pk
ID	OD	Wall			
1/16 (1.5)	1/8 (3.2)	1/32 (0.7)	100 (6.9)	<a href="#">JT-95713-50</a>	
1/8 (3.2)	1/4 (6.4)	1/16 (1.5)	85 (5.9)	<a href="#">JT-95713-00</a>	
3/16 (4.8)	5/16 (8.0)	1/16 (1.5)	75 (5.2)	<a href="#">JT-95713-10</a>	
1/4 (6.4)	3/8 (9.6)	1/16 (1.5)	55 (3.8)	<a href="#">JT-95713-20</a>	
3/8 (9.6)	9/16 (14.4)	3/32 (2.3)	50 (3.4)	<a href="#">JT-95713-30</a>	
1/2 (12.8)	3/4 (19.1)	1/8 (3.1)	45 (3.1)	<a href="#">JT-95713-41</a>	
3/4 (19.0)	1 (25.4)	1/8 (3.1)	30 (2.1)	<a href="#">JT-95713-60</a>	

## Tubing Accessories

### 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.



**JT-06438-90** Handheld tubing cutter

**JT-06438-81** Tubing cutter pouch

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

### Benchtop Tubing Cutter

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



**JT-06438-10** Benchtop cutter

**JT-06438-11** Replacement blade

### Cole-Parmer® Plastic Hose Clamps and Kits

Reusable white acetal copolymer clamps will not rust or corrode. Recommended for continuous use from ambient temperature to 200°F (93°C). Clamps are nonconducting and stable in a wide variety of chemicals.

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 a handy kit.



Inside diameter				Catalog number	Qty/pk	Price/pk**
Decimal inches		Millimeters				
Min	Max	Min	Max			
0.228	0.256	5.8	6.5	<a href="#">JT-06832-01</a>	100	
0.269	0.291	6.8	7.4	<a href="#">JT-95614-00</a>	100	
0.307	0.342	7.8	8.7	<a href="#">JT-06832-03</a>	100	
0.351	0.394	8.9	10.0	<a href="#">JT-06832-02</a>	100	
0.387	0.440	9.8	11.2	<a href="#">JT-95614-01</a>	100	
0.404	0.452	10.3	11.5	<a href="#">JT-06832-04</a>	100	
0.449	0.511	11.4	13.0	<a href="#">JT-06832-06</a>	100	
0.513	0.586	13.0	14.9	<a href="#">JT-06832-08</a>	100	
0.569	0.650	14.5	16.5	<a href="#">JT-06832-10</a>	100	
0.616	0.707	15.7	18.0	<a href="#">JT-06832-12</a>	100	
0.702	0.801	17.8	20.4	<a href="#">JT-06832-14</a>	100	
0.759	0.848	19.3	21.5	<a href="#">JT-06832-16</a>	100	
0.779	0.899	19.8	22.8	<a href="#">JT-06832-18</a>	100	
0.859	0.989	21.8	25.1	<a href="#">JT-06832-20</a>	100	
0.928	1.072	23.6	27.2	<a href="#">JT-06832-22</a>	100	
0.985	1.135	25.0	28.8	<a href="#">JT-06832-24</a>	100	
1.123	1.296	28.5	32.9	<a href="#">JT-06832-28</a>	50	
1.218	1.405	30.9	35.7	<a href="#">JT-06832-32</a>	50	

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

**JT-06832-99** White acetal copolymer hose-clamp kit includes 170 assorted clamps from 0.228" to 1.405" ID.

### Stainless Steel Hose Clamps

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



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

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

### 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.

**JT-95615-00** Clamp ties, white. 100/pk

**JT-95615-10** Clamp ties, black. 100/pk

# Your Complete Source for Fluid Handling Products



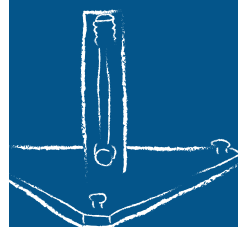
**Get Pumping:**  
>2300 Pumps



**See it Through:**  
>170 Tubing Formulations plus Custom Cut Sizes



**The Right Fit:**  
4500+ Fitting Options



**In the Flow:**  
More than 3200 Flowmeter Options



**Pressure Relief:**  
Select from 3000+ Pressure Gauges



**Control your Flow:**  
More than 1000 Valves

**MORE ONLINE** ▶ ColeParmer.com

# 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.**

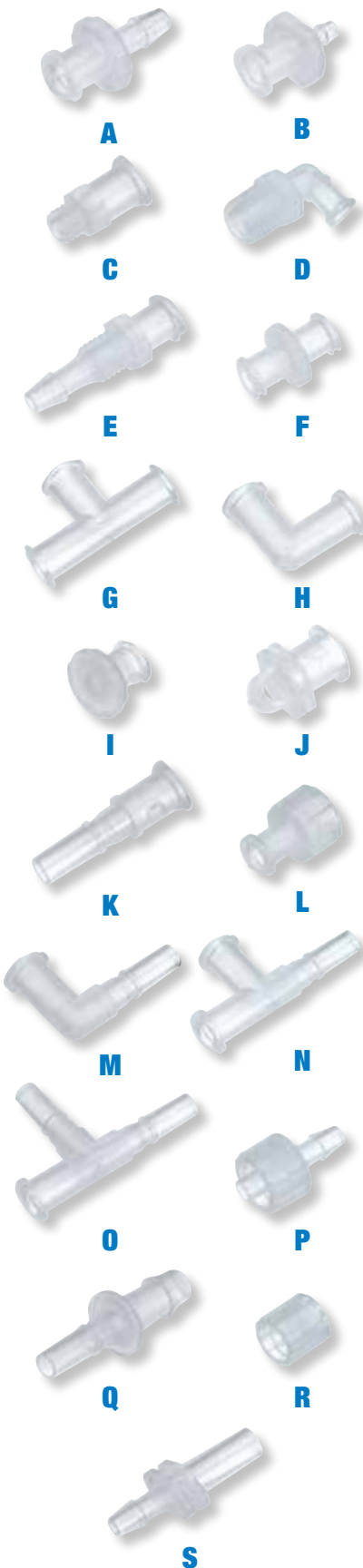


**Search**

For our complete line of luer fittings, go to...  
[ColeParmer.com/Fittings](http://ColeParmer.com/Fittings)

**Buy More...Save More!**

20% off on 100+  
15% off on 50 to 99  
10% off on 10 to 49 packs



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



# Cole-Parmer® Barbed Fittings

## No tools needed for assembly

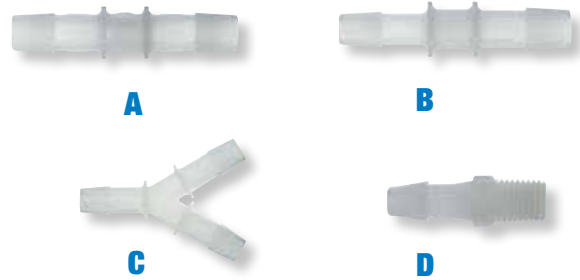
Combine these fittings with our flexible tubing for use in your low-pressure applications (less than 30 psi).

**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.



Buy More... Save More!

20% off on 100+  
15% off on 50 to 99  
10% off on 10 to 49 packs



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>A. Straight connectors</b>												
1/16"	JT-40622-47	10		JT-40622-48	10		JT-50622-49	10		JT-40703-00	10	
3/32"	JT-40622-44	10		JT-40622-45	10		JT-50622-46	10		JT-40703-01	10	
1/8"	JT-40622-53	10		JT-40622-54	10		JT-51518-05	10		JT-40703-02	10	
3/16"	JT-30622-55	10		JT-30622-56	10		JT-40622-57	10		JT-30703-04	10	
1/4"	JT-30621-85	10		JT-30621-86	10		JT-40610-00	10		JT-30703-05	10	
3/8"	JT-30621-89	10		JT-30621-90	10		JT-40610-02	10		JT-30703-07	10	
1/2"	JT-30621-92	10		JT-30621-93	10		JT-40610-03	10		JT-30703-08	10	
5/8"	JT-30621-79	10		JT-30621-80	10		JT-40610-04	10		JT-30703-09	10	
3/4"	JT-30621-81	10		JT-30621-82	10		JT-40610-05	5		JT-30703-10	5	
1"	JT-30621-83	10		JT-30621-84	10		JT-40610-06	5		JT-30703-11	5	
<b>B. Reducing connectors</b>												
1/8" x 1/16"	JT-41518-29	10		JT-40622-22	25		JT-50622-23	25		JT-40703-41	10	
1/4" x 1/8"	JT-30622-27	10		JT-30622-28	10		JT-41518-36	10		JT-30703-50	10	
1/4" x 3/16"	JT-30622-29	10		JT-30622-30	10		JT-40622-32	10		JT-30703-52	10	
3/8" x 1/4"	JT-30622-35	10		JT-30703-99	10		JT-40610-08	10		JT-30703-54	10	
1/2" x 1/4"	JT-30622-38	10		JT-30622-39	10		JT-40610-10	10		JT-30703-56	10	
1/2" x 3/8"	JT-30622-42	10		JT-30622-43	10		JT-40610-12	10		JT-30703-58	10	
5/8" x 1/4"	JT-30621-96	10		JT-30621-97	10		JT-40610-13	10		JT-30703-59	10	
5/8" x 1/2"	JT-30622-03	10		JT-30622-04	10		JT-40610-16	10		JT-30703-62	10	
3/4" x 1/2"	JT-30622-09	5		JT-30622-10	5		JT-40610-18	5		JT-30703-64	5	
1" x 1/2"	JT-30622-15	5		JT-30622-16	5		JT-40610-20	5		JT-30703-66	5	
1" x 3/4"	JT-30622-13	5		JT-30622-14	5		JT-40610-22	5		JT-30703-68	5	
<b>C. Y connectors</b>												
1/16"	JT-30726-01	10		JT-30726-21	10		JT-40726-41	10		JT-30703-90	10	
3/32"	JT-30726-02	10		JT-30726-22	10		JT-40726-42	10		JT-30703-91	10	
1/8"	JT-30726-03	10		JT-30726-23	10		JT-40726-43	10		JT-30703-92	10	
3/16"	JT-30726-04	10		JT-30726-24	10		JT-40726-44	10		JT-30726-64	10	
1/4"	JT-30726-05	10		JT-30726-25	10		JT-40726-45	10		JT-30726-65	10	
3/8"	JT-30726-06	10		JT-30726-26	10		JT-40726-46	10		JT-30703-93	10	
1/2"	JT-30726-07	10		JT-30726-27	10		JT-40726-47	10		JT-30703-94	10	
5/8"	JT-30726-08	10		JT-30726-28	10		JT-40726-48	10		JT-30726-68	10	
<b>D. NPT male threaded adapters, NPT(M) x tubing ID</b>												
1/8" x 1/8"	JT-30621-26	10		JT-30621-27	10		JT-40621-28	25		JT-30704-07	10	
1/8" x 1/4"	JT-30621-31	10		JT-30621-32	10		JT-40610-36	10		JT-30704-09	10	
1/4" x 1/8"	JT-30621-42	10		JT-30621-44	10		JT-40621-45	10		JT-30621-43	10	
1/4" x 1/4"	JT-30621-46	10		JT-30621-47	10		JT-40610-38	10		JT-30704-11	10	
3/8" x 1/4"	JT-30621-56	10		JT-30621-57	10		JT-40610-41	10		JT-30704-14	10	
3/8" x 3/8"	JT-30621-62	10		JT-30621-63	10		JT-40610-42	10		JT-30704-15	10	
1/2" x 1/4"	JT-30621-73	10		JT-30621-74	10		JT-40610-44	10		JT-30704-17	10	
1/2" x 3/8"	JT-30621-75	10		JT-30621-76	10		JT-40610-45	10		JT-30704-18	10	
1/2" x 1/2"	JT-30621-77	10		JT-30621-78	10		JT-40610-46	10		JT-30704-19	10	
3/4" x 1/2"	JT-30621-20	10		JT-30621-21	10		JT-40610-50	5		JT-30704-23	5	
3/4" x 3/4"	JT-30621-12	10		JT-30621-13	10		JT-40610-51	5		JT-30704-24	5	
1" x 1"	JT-31517-18	10		JT-30401-34	10		JT-40610-53	5		JT-30704-26	5	



## Free Certificate 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 blue "check" icon throughout this catalog to identify when a certificate of compliance is available.

# CPC™ Quick-Disconnect Couplings

## No more struggling—just press thumb latch

– Choose from four styles—hose barb, compression, push-to-connect, and NPT pipe adapter—  
for either standard in-line or panel-mount configurations

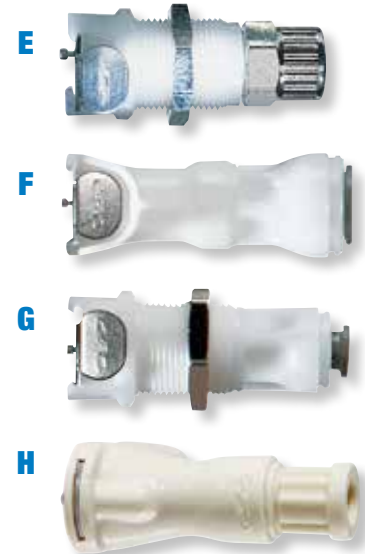
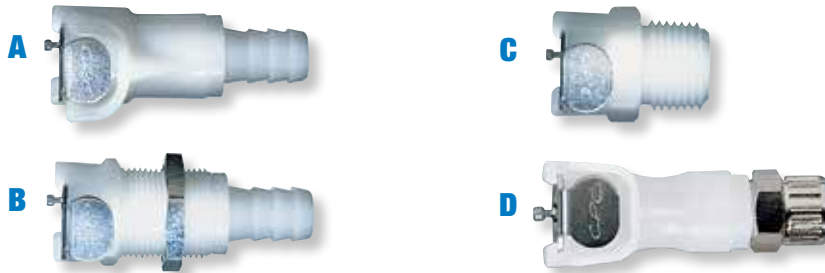
For each complete quick-disconnect fitting, order one body (below) and one insert (page 63) with the same flow size. Plug insert into body to connect fitting—fitting halves lock in place immediately. To disconnect fitting halves, simply press the thumb latch on the coupling body; a spring-operated valve 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.

Buy More... Save More!

20% off on 100+  
15% off on 50 to 99  
10% off on 10 to 49 packs

Fluid Handling

Fittings



### Quick-Disconnect Bodies (Female Coupling Halves)

#### A. Hose Barb Bodies

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

#### B. Panel-Mount Hose Barb Bodies

Tubing ID	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/16"	1/8"	1/2-24	Acetal	<a href="#">JT-06360-09</a>	
1/8"	1/8"	1/2-24	Acetal	<a href="#">JT-06360-10</a>	
3/16"	1/8"	1/2-24	Acetal	<a href="#">JT-06360-12</a>	
1/4"	1/8"	1/2-24	Acetal	<a href="#">JT-06360-15</a>	
1/4"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06360-55</a>	
3/16"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06360-57</a>	
3/8"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06360-60</a>	
1/16"	1/8"	1/2-24	PP	<a href="#">JT-06364-09</a>	
1/8"	1/8"	1/2-24	PP	<a href="#">JT-06364-10</a>	
1/4"	1/8"	1/2-24	PP	<a href="#">JT-06364-15</a>	
1/4"	1/4"	1 1/16-24	PP	<a href="#">JT-06364-55</a>	
3/8"	1/4"	1 1/16-24	PP	<a href="#">JT-06364-60</a>	
<b>Straight-through fittings</b>					
1/16"	1/8"	1/2-24	Acetal	<a href="#">JT-06361-03</a>	
1/8"	1/8"	1/2-24	Acetal	<a href="#">JT-06361-04</a>	
3/16"	1/8"	1/2-24	Acetal	<a href="#">JT-06361-05</a>	
1/4"	1/8"	1/2-24	Acetal	<a href="#">JT-06361-06</a>	
1/4"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06361-46</a>	
3/16"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06361-47</a>	
3/8"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06361-48</a>	

#### C. NPT(M) Pipe Adapter Bodies

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

#### D. Compression Bodies

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

#### E. Panel-Mount Compression Bodies

Tubing OD	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/4"	1/8"	1/2-24	Acetal	<a href="#">JT-06360-05</a>	
1/4"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06360-49</a>	
3/8"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06360-50</a>	
1/4"	1/8"	1/2-24	PP	<a href="#">JT-06364-05</a>	
3/8"	1/4"	1 1/16-24	PP	<a href="#">JT-06364-50</a>	
<b>Straight-through fittings</b>					
1/4"	1/8"	1/2-24	Acetal	<a href="#">JT-06361-02</a>	
1/4"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06361-44</a>	
3/8"	1/4"	1 1/16-24	Acetal	<a href="#">JT-06361-45</a>	

### Specifications

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

#### F. Push-to-Connect Bodies

Tubing OD	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/4"	1/4"	1.95"	Acetal	<a href="#">JT-31304-00</a>	
3/8"	1/4"	2.08"	Acetal	<a href="#">JT-31304-02</a>	
<b>Straight-through fittings</b>					
1/4"	1/4"	1.95"	Acetal	<a href="#">JT-31304-10</a>	
3/8"	1/4"	2.08"	Acetal	<a href="#">JT-31304-12</a>	

#### G. Panel-Mount Push-to-Connect Bodies

Tubing OD	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fitting</b>					
1/4"	1/4"	1.95"	Acetal	<a href="#">JT-31304-50</a>	
<b>Straight-through fitting</b>					
1/4"	1/4"	1.95"	Acetal	<a href="#">JT-31304-40</a>	

#### H. 1/4-28 Flat-Bottom Port Valved Bodies

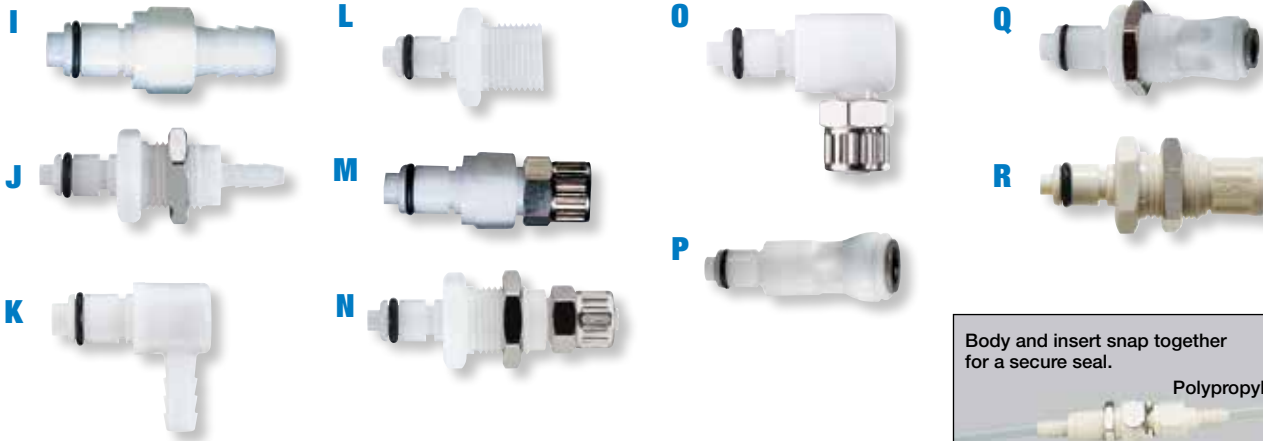
UNF (F)	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>In-line body</b>					
1/4-28	1/8"	1.57"	PP	<a href="#">JT-06368-69</a>	
<b>Panel-mount body</b>					
1/4-28	1/8"	1.57"	PP	<a href="#">JT-06368-70</a>	

**Wait! Don't Forget...**

Flexible and Rigid Tubing,  
see pages 52–59.







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

**I. Hose Barb Inserts**

Tubing ID	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/16"	1/8"	1.35"	Acetal	<a href="#">JT-06360-36</a>	
1/8"	1/8"	1.55"	Acetal	<a href="#">JT-06360-40</a>	
3/16"	1/8"	1.75"	Acetal	<a href="#">JT-06360-43</a>	
1/4"	1/8"	1.58"	Acetal	<a href="#">JT-06360-45</a>	
1/4"	1/4"	1.86"	Acetal	<a href="#">JT-06360-80</a>	
5/16"	1/4"	1.86"	Acetal	<a href="#">JT-06360-83</a>	
3/8"	1/4"	1.86"	Acetal	<a href="#">JT-06360-85</a>	
1/2"	1/8"	1.35"	PP	<a href="#">JT-06364-38</a>	
1/8"	1/8"	1.55"	PP	<a href="#">JT-06364-40</a>	
1/4"	1/8"	1.58"	PP	<a href="#">JT-06364-45</a>	
1/4"	1/4"	1.86"	PP	<a href="#">JT-06364-80</a>	
3/8"	1/4"	1.67"	PP	<a href="#">JT-06364-85</a>	
<b>Straight-through fittings</b>					
1/16"	1/8"	0.80"	Acetal	<a href="#">JT-06360-38</a>	
1/8"	1/8"	1.05"	Acetal	<a href="#">JT-06360-42</a>	
3/16"	1/8"	1.25"	Acetal	<a href="#">JT-06360-44</a>	
1/4"	1/8"	1.25"	Acetal	<a href="#">JT-06360-47</a>	
1/4"	1/4"	1.35"	Acetal	<a href="#">JT-06360-82</a>	
5/16"	1/4"	1.35"	Acetal	<a href="#">JT-06360-84</a>	
3/8"	1/4"	1.35"	Acetal	<a href="#">JT-06360-87</a>	
1/2"	1/8"	0.80"	PP	<a href="#">JT-06364-39</a>	
1/8"	1/8"	1.05"	PP	<a href="#">JT-06364-42</a>	
1/4"	1/8"	1.25"	PP	<a href="#">JT-06364-47</a>	
1/4"	1/4"	1.35"	PP	<a href="#">JT-06364-82</a>	
3/8"	1/4"	1.35"	PP	<a href="#">JT-06364-87</a>	

**J. Panel-Mount Hose Barb Inserts**

Tubing ID	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/16"	1/8"	1.38"	Acetal	<a href="#">JT-06361-33</a>	
1/8"	1/8"	1.63"	Acetal	<a href="#">JT-06361-34</a>	
3/16"	1/8"	1.83"	Acetal	<a href="#">JT-06361-35</a>	
1/4"	1/8"	1.83"	Acetal	<a href="#">JT-06361-36</a>	
1/4"	1/4"	1.91"	Acetal	<a href="#">JT-06361-71</a>	
5/16"	1/4"	1.91"	Acetal	<a href="#">JT-06361-72</a>	
3/8"	1/4"	1.91"	Acetal	<a href="#">JT-06361-73</a>	
1/4"	1/4"	1.91"	PP	<a href="#">JT-06361-92</a>	
3/8"	1/4"	1.91"	PP	<a href="#">JT-06361-93</a>	
<b>Straight-through fittings</b>					
1/16"	1/8"	1.38"	Acetal	<a href="#">JT-06361-21</a>	
1/8"	1/8"	1.63"	Acetal	<a href="#">JT-06361-22</a>	
3/16"	1/8"	1.83"	Acetal	<a href="#">JT-06361-23</a>	
1/4"	1/8"	1.83"	Acetal	<a href="#">JT-06361-24</a>	
1/4"	1/4"	1.91"	Acetal	<a href="#">JT-06361-58</a>	
5/16"	1/4"	1.91"	Acetal	<a href="#">JT-06361-59</a>	
3/8"	1/4"	1.91"	Acetal	<a href="#">JT-06361-61</a>	
1/4"	1/4"	1.91"	PP	<a href="#">JT-06361-82</a>	
3/8"	1/4"	1.91"	PP	<a href="#">JT-06361-83</a>	

**K. Hose Barb Elbow Inserts**

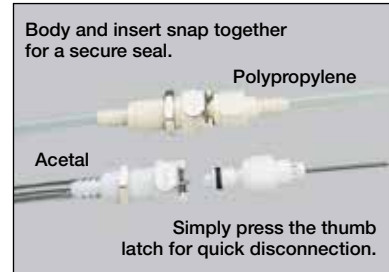
Tubing ID	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/8"	1/8"	1.09"	Acetal	<a href="#">JT-06361-39</a>	
1/4"	1/8"	1.09"	Acetal	<a href="#">JT-06361-41</a>	
1/4"	1/4"	1.22"	Acetal	<a href="#">JT-06361-75</a>	
3/8"	1/4"	1.22"	Acetal	<a href="#">JT-06361-76</a>	
1/8"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

**L. NPT(M) Pipe Adapter Inserts**

NPT(M)	Flow size	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>				
1/8"	1/8"	Acetal	<a href="#">JT-06361-29</a>	
1/4"	1/8"	Acetal	<a href="#">JT-06361-31</a>	
1/4"	1/4"	Acetal	<a href="#">JT-06361-65</a>	
3/8"	1/4"	Acetal	<a href="#">JT-06361-66</a>	
1/2"	1/8"	PP	<a href="#">JT-06361-89</a>	
1/4"	1/4"	PP	<a href="#">JT-06361-91</a>	
<b>Straight-through fittings</b>				
1/8"	1/8"	Acetal	<a href="#">JT-06361-17</a>	
1/4"	1/8"	Acetal	<a href="#">JT-06361-18</a>	
1/4"	1/4"	Acetal	<a href="#">JT-06361-54</a>	
3/8"	1/4"	Acetal	<a href="#">JT-06361-55</a>	
1/2"	1/8"	PP	<a href="#">JT-06361-79</a>	
1/4"	1/4"	PP	<a href="#">JT-06361-81</a>	

**M. Compression Inserts**

Tubing OD	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/4"	1/8"	1.45"	Acetal	<a href="#">JT-06360-30</a>	
3/8"	1/8"	1.40"	Acetal	<a href="#">JT-06360-35</a>	
1/4"	1/4"	1.75"	Acetal	<a href="#">JT-06360-74</a>	
3/8"	1/4"	1.68"	Acetal	<a href="#">JT-06360-75</a>	
1/2"	1/8"	1.45"	PP	<a href="#">JT-06364-30</a>	
3/8"	1/4"	1.68"	PP	<a href="#">JT-06364-75</a>	
<b>Straight-through fittings</b>					
1/4"	1/8"	1.15"	Acetal	<a href="#">JT-06360-32</a>	
3/8"	1/8"	1.30"	Acetal	<a href="#">JT-06360-37</a>	
1/4"	1/4"	1.25"	Acetal	<a href="#">JT-06360-76</a>	
3/8"	1/4"	1.38"	Acetal	<a href="#">JT-06360-77</a>	
1/4"	1/8"	1.15"	PP	<a href="#">JT-06364-32</a>	
3/8"	1/4"	1.38"	PP	<a href="#">JT-06364-77</a>	



**N. Panel-Mount Compression Inserts**

Tubing OD	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/4"	1/8"	1.70"	Acetal	<a href="#">JT-06361-32</a>	
1/4"	1/4"	1.78"	Acetal	<a href="#">JT-06361-68</a>	
3/8"	1/4"	1.91"	Acetal	<a href="#">JT-06361-69</a>	
<b>Straight-through fittings</b>					
1/4"	1/8"	1.70"	Acetal	<a href="#">JT-06361-19</a>	
1/4"	1/4"	1.78"	Acetal	<a href="#">JT-06361-56</a>	
3/8"	1/4"	1.91"	Acetal	<a href="#">JT-06361-57</a>	

**O. Compression Elbow Inserts**

Tubing OD	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/4"	1/8"	1.20"	Acetal	<a href="#">JT-06361-38</a>	
3/8"	1/4"	1.22"	Acetal	<a href="#">JT-06361-74</a>	
1/4"	1/8"	1.09"	PP	<a href="#">JT-06361-96</a>	
3/8"	1/4"	1.22"	PP	<a href="#">JT-06361-97</a>	
<b>Straight-through fittings</b>					
1/4"	1/8"	1.17"	Acetal	<a href="#">JT-06361-26</a>	
3/8"	1/4"	1.22"	Acetal	<a href="#">JT-06361-62</a>	
3/8"	1/4"	1.29"	PP	<a href="#">JT-06361-84</a>	

**P. Standard Push-to-Connect Inserts**

Tubing OD	Flow size	Length	Resin	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
1/4"	1/8"	1.81"	Acetal	<a href="#">JT-31304-30</a>	
3/8"	1/4"	1.96"	Acetal	<a href="#">JT-31304-32</a>	
<b>Straight-through fittings</b>					
1/4"	1/4"	1.35"	Acetal	<a href="#">JT-31304-20</a>	
3/8"	1/4"	1.48"	Acetal	<a href="#">JT-31304-22</a>	

**Q. Panel-Mount Push-to-Connect Inserts**

Tubing OD	Flow size	Thread	Resin	Catalog number	Price/pk of 1
<b>Valved fitting</b>					
1/4"	1/4"	1 1/16-24	Acetal	<a href="#">JT-31304-70</a>	
<b>Straight-through fitting</b>					
1/4"	1/4"	1 1/16-24	Acetal	<a href="#">JT-31304-60</a>	

**R. 1/4-28 Flat-Bottom Port Panel-Mount Valved Insert**

UNF (F)	Flow size	Length	Resin	Catalog number	Price/pk of 1
1/4-28	1/8"	1.55"	PP	<a href="#">JT-06368-71</a>	

# Cole-Parmer® Polypropylene (PP) and PVDF Sanitary Clamp Fittings

## Maintain sanitary conditions in your processes

- Meet USP Class VI for pharmaceutical use and FDA, USDA, and 3A standards for food contact
- All fittings are compatible with Tri-Clamp® fittings
- Excellent chemical resistance; low leachable characteristics

**Note:** Though both materials may be autoclaved, PVDF tolerates high temperatures better than PP does and will perform more consistently after repeated autoclaving.



Fluid Handling

Fittings

Clamp size	PP		PVDF	
	Cat. no.	Price	Cat. no.	Price
<b>A. Eccentric reducers</b>				
1½" x ¾" mini	<a href="#">JT-31805-01</a>		<a href="#">JT-31808-01</a>	
<b>B. Concentric reducers</b>				
1" ladish x ¾" mini	<a href="#">JT-31805-05</a>		<a href="#">JT-31808-05</a>	
1½" x ¾" mini	<a href="#">JT-31805-06</a>		<a href="#">JT-31808-06</a>	
1½" x 1" ladish	<a href="#">JT-31805-10</a>		<a href="#">JT-31808-10</a>	
2" x 1" ladish	<a href="#">JT-31805-11</a>		<a href="#">JT-31808-11</a>	
2" x 1½"	<a href="#">JT-31805-14</a>		<a href="#">JT-31808-14</a>	
<b>C. Barbed adapters, clamp x tubing ID</b>				
¾" mini x ⅛"	<a href="#">JT-31805-24</a>		<a href="#">JT-31808-24</a>	
¾" mini x ¼"	<a href="#">JT-31805-25</a>		<a href="#">JT-31808-25</a>	
¾" mini x ⅜"	<a href="#">JT-31805-26</a>		<a href="#">JT-31808-26</a>	
¾" mini x ½"	<a href="#">JT-31805-27</a>		<a href="#">JT-31808-27</a>	
¾" mini x ⅝"	<a href="#">JT-31805-28</a>		<a href="#">JT-31808-28</a>	
¾" mini x ¾"	<a href="#">JT-31805-29</a>		<a href="#">JT-31808-29</a>	
1" ladish x ⅛"	<a href="#">JT-31805-30</a>		<a href="#">JT-31808-30</a>	
1" ladish x ¼"	<a href="#">JT-31805-31</a>		<a href="#">JT-31808-31</a>	
1" ladish x ⅜"	<a href="#">JT-31805-32</a>		<a href="#">JT-31808-32</a>	
1" ladish x ½"	<a href="#">JT-31805-33</a>		<a href="#">JT-31808-33</a>	
1" ladish x ¾"	<a href="#">JT-31805-34</a>		<a href="#">JT-31808-34</a>	
1" ladish x 1"	<a href="#">JT-31805-35</a>		<a href="#">JT-31808-35</a>	
1½" x 1"	<a href="#">JT-31805-41</a>		<a href="#">JT-31808-41</a>	
2" x 1"	<a href="#">JT-31805-47</a>		<a href="#">JT-31808-47</a>	
<b>D. Pipe thread adapters, clamp x NPT(M)</b>				
1" ladish x ⅛"	<a href="#">JT-31805-56</a>			
1" ladish x ¼"	<a href="#">JT-31805-57</a>		<a href="#">JT-31808-57</a>	
1" ladish x ⅜"	<a href="#">JT-31805-58</a>		<a href="#">JT-31808-58</a>	
1" ladish x ½"	<a href="#">JT-31805-59</a>		<a href="#">JT-31808-59</a>	
1" ladish x ¾"	<a href="#">JT-31805-60</a>		<a href="#">JT-31808-60</a>	
1" ladish x 1"	<a href="#">JT-31805-61</a>		<a href="#">JT-31808-61</a>	
1" ladish x 1¼"	<a href="#">JT-31805-62</a>		<a href="#">JT-31808-62</a>	
1" ladish x 1½"	<a href="#">JT-31805-63</a>		<a href="#">JT-31808-63</a>	
1½" x ¾"	<a href="#">JT-31805-68</a>		<a href="#">JT-31808-68</a>	
1½" x 1"	<a href="#">JT-31805-69</a>		<a href="#">JT-31808-69</a>	
1½" x 1¼"	<a href="#">JT-31805-70</a>		<a href="#">JT-31808-70</a>	
1½" x 1½"	<a href="#">JT-31805-71</a>		<a href="#">JT-31808-71</a>	
2" x 1"	<a href="#">JT-31805-77</a>		<a href="#">JT-31808-77</a>	
2" x 1¼"	<a href="#">JT-31805-78</a>		<a href="#">JT-31808-78</a>	
2" x 1½"	<a href="#">JT-31805-79</a>		<a href="#">JT-31808-79</a>	
2" x 2"	<a href="#">JT-31805-80</a>		<a href="#">JT-31808-80</a>	
<b>E. Pipe thread adapters, clamp x NPT(F)</b>				
1" ladish x ¾"	<a href="#">JT-31806-04</a>		<a href="#">JT-31809-04</a>	
1" ladish x 1"	<a href="#">JT-31806-05</a>		<a href="#">JT-31809-05</a>	
1½" x 1½"	<a href="#">JT-31806-15</a>		<a href="#">JT-31809-15</a>	
<b>F. 90° elbows</b>				
¾" mini	<a href="#">JT-31806-41</a>		<a href="#">JT-31809-41</a>	
1" ladish	<a href="#">JT-31806-42</a>		<a href="#">JT-31809-42</a>	
1½"	<a href="#">JT-31806-43</a>		<a href="#">JT-31809-43</a>	
2"	<a href="#">JT-31806-44</a>		<a href="#">JT-31809-44</a>	
<b>G. 45° elbows</b>				
¾" mini	<a href="#">JT-31806-51</a>		<a href="#">JT-31809-51</a>	
1" ladish	<a href="#">JT-31806-52</a>		<a href="#">JT-31809-52</a>	
1½"	<a href="#">JT-31806-53</a>		<a href="#">JT-31809-53</a>	
2"	<a href="#">JT-31806-54</a>		<a href="#">JT-31809-54</a>	
<b>H. Standard tees</b>				
¾" mini	<a href="#">JT-31806-61</a>		<a href="#">JT-31809-61</a>	
1" ladish	<a href="#">JT-31806-62</a>		<a href="#">JT-31809-62</a>	
1½"	<a href="#">JT-31806-63</a>		<a href="#">JT-31809-63</a>	
2"	<a href="#">JT-31806-64</a>		<a href="#">JT-31809-64</a>	
<b>I. Clamps</b>				
¾" mini			<a href="#">JT-31811-00</a>	
1" and 1½"			<a href="#">JT-31811-01</a>	
2"			<a href="#">JT-31811-02</a>	
2½"			<a href="#">JT-31811-03</a>	

### Specifications

Clamp size	Inner dimension (based on SS tube ID)
¾" mini	⅞"
1" maxi	⅞"
1" ladish†	⅞"
1½"	1⅜"
2"	1⅞"
2½"	2⅜"
3"	2⅞"

†Choose 1" ladish fittings for a direct match with 1" stainless steel sanitary connections.

### Chemical resistance

PP: very good PVDF: excellent

### Temperature range

PP: 15 to 180°F (-9 to 82°C)  
PVDF: -40 to 280°F (-40 to 138°C)

### Max pressure

In ambient conditions, using plastic true union style clamp  
PP: 125 psi PVDF: 150 psi

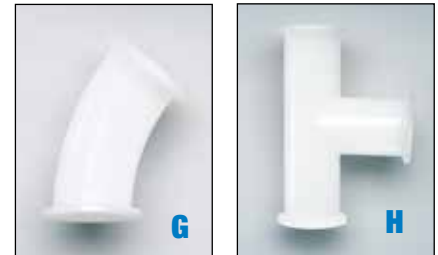
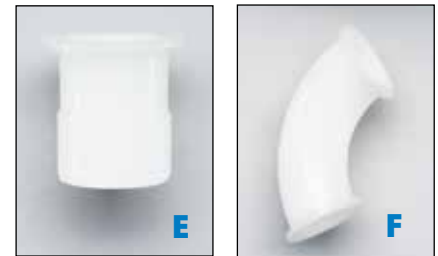
Sterilization: EtO or autoclave

### J. Nylon Clamps

Clamp size	Catalog number	Price
½" to ¾"	<a href="#">JT-30508-21</a>	
1" to 1½"	<a href="#">JT-30508-23</a>	
2"	<a href="#">JT-30508-25</a>	
3"	<a href="#">JT-30508-27</a>	
4"	<a href="#">JT-30508-29</a>	

### Gaskets (not shown)

Gasket size	Catalog number	Price
<b>Platinum-cured silicone</b>		
¾" mini	<a href="#">JT-30548-00</a>	
1" ladish	<a href="#">JT-30548-02</a>	
1½"	<a href="#">JT-30548-04</a>	
2"	<a href="#">JT-30548-06</a>	
2½"	<a href="#">JT-30548-08</a>	
<b>Viton®</b>		
¾" mini	<a href="#">JT-30548-20</a>	
1" ladish	<a href="#">JT-30548-22</a>	
1½"	<a href="#">JT-30548-24</a>	
2"	<a href="#">JT-30548-26</a>	
2½"	<a href="#">JT-30548-28</a>	
<b>Buna N</b>		
¾" mini	<a href="#">JT-30548-40</a>	
1" ladish	<a href="#">JT-30548-42</a>	
1½"	<a href="#">JT-30548-44</a>	
2"	<a href="#">JT-30548-46</a>	
2½"	<a href="#">JT-30548-48</a>	
<b>EPDM</b>		
¾" mini	<a href="#">JT-30548-60</a>	
1" ladish	<a href="#">JT-30548-62</a>	
1½"	<a href="#">JT-30548-64</a>	
2"	<a href="#">JT-30548-66</a>	
2½"	<a href="#">JT-30548-68</a>	
<b>PTFE</b>		
¾" mini	<a href="#">JT-30548-80</a>	
1" ladish	<a href="#">JT-30548-82</a>	
1½"	<a href="#">JT-30548-84</a>	
2"	<a href="#">JT-30548-86</a>	
2½"	<a href="#">JT-30548-88</a>	





# Cole-Parmer® 316L and 304 Stainless Steel Sanitary Clamp Couplings

Meet FDA requirements and 3A Sanitary Standards



All couplings are compatible with standard 304L fittings clamps.

**316L Stainless Steel Couplings** are ideal for the pharmaceutical industry; they offer great chemical compatibility for use with corrosive acids and bases.

**304 Stainless Steel Couplings** are ideal for the food, beverage, and dairy industries; they offer good chemical compatibility and are cost effective.



Key	Clamp size	316L stainless steel		304 stainless steel	
		Catalog number	Price	Catalog number	Price
<b>Concentric reducers</b>					
A	1" x ¾"	<a href="#">JT-30700-50</a>		—	—
	1½" x 1"	<a href="#">JT-30700-51</a>		<a href="#">JT-30700-95</a>	—
	2" x 1"	<a href="#">JT-30700-52</a>		<a href="#">JT-30700-96</a>	—
	2" x 1½"	<a href="#">JT-30700-53</a>		<a href="#">JT-30700-97</a>	—
<b>Eccentric reducers</b>					
B	1" x ¾"	<a href="#">JT-30700-54</a>		—	—
	1½" x 1"	<a href="#">JT-30700-55</a>		<a href="#">JT-30700-98</a>	—
	2" x 1"	<a href="#">JT-30700-56</a>		<a href="#">JT-30700-99</a>	—
	2" x 1½"	<a href="#">JT-30700-57</a>		<a href="#">JT-30701-00</a>	—
<b>Barbed adapters</b>					
C	¾" x 1/8"	<a href="#">JT-30700-58</a>		—	—
	¾" x 1/4"	<a href="#">JT-30700-59</a>		—	—
	¾" x 3/8"	<a href="#">JT-30700-60</a>		—	—
	¾" x 1/2"	<a href="#">JT-30700-61</a>		—	—
	¾" x ¾"	<a href="#">JT-30700-62</a>		—	—
	1" x 1"	<a href="#">JT-30700-63</a>		<a href="#">JT-30800-50</a>	—
	1½" x 1½"	<a href="#">JT-30700-64</a>		<a href="#">JT-30800-51</a>	—
	2" x 2"	<a href="#">JT-30700-65</a>		<a href="#">JT-30800-52</a>	—
	<b>Threaded adapters, clamp x NPT(M)</b>				
D	¾" x 1/8"	<a href="#">JT-30700-66</a>		—	—
	¾" x 1/4"	<a href="#">JT-30700-67</a>		—	—
	¾" x 3/8"	<a href="#">JT-30700-68</a>		—	—
	¾" x 1/2"	<a href="#">JT-30700-69</a>		—	—
	¾" x ¾"	<a href="#">JT-30700-70</a>		—	—
	1" x ¾"	<a href="#">JT-30700-71</a>		<a href="#">JT-30800-53</a>	—
	1" x 1"	<a href="#">JT-30700-72</a>		<a href="#">JT-30800-54</a>	—
	1" x 1½"	<a href="#">JT-30700-74</a>		<a href="#">JT-30800-55</a>	—
	1" x 2"	<a href="#">JT-30700-75</a>		<a href="#">JT-30800-56</a>	—
	1½" x ¾"	<a href="#">JT-30700-76</a>		<a href="#">JT-30800-57</a>	—
	1½" x 1"	<a href="#">JT-30700-77</a>		<a href="#">JT-30800-58</a>	—
	1½" x 1¼"	<a href="#">JT-30700-78</a>		<a href="#">JT-30800-59</a>	—
	1½" x 1½"	<a href="#">JT-30700-79</a>		<a href="#">JT-30800-60</a>	—
	1½" x 2"	—	—	<a href="#">JT-30800-61</a>	—
	<b>90° elbows</b>				
E	¾"	<a href="#">JT-30700-80</a>		—	—
	1"	<a href="#">JT-30700-81</a>		<a href="#">JT-30800-62</a>	—
	1½"	<a href="#">JT-30700-82</a>		<a href="#">JT-30800-63</a>	—
	2"	<a href="#">JT-30700-83</a>		<a href="#">JT-30800-64</a>	—
<b>45° elbows</b>					
F	¾"	<a href="#">JT-30700-84</a>		—	—
	1"	<a href="#">JT-30700-85</a>		<a href="#">JT-30800-65</a>	—
	1½"	<a href="#">JT-30700-86</a>		<a href="#">JT-30800-66</a>	—
	2"	<a href="#">JT-30700-87</a>		<a href="#">JT-30800-67</a>	—
<b>Tees</b>					
G	¾"	<a href="#">JT-30700-88</a>		—	—
	1"	<a href="#">JT-30700-89</a>		<a href="#">JT-30800-68</a>	—
	1½"	<a href="#">JT-30700-90</a>		<a href="#">JT-30800-69</a>	—
	2"	<a href="#">JT-30700-91</a>		<a href="#">JT-30800-70</a>	—
<b>Crosses</b>					
H	1"	<a href="#">JT-30700-92</a>		<a href="#">JT-30800-71</a>	—
	1½"	<a href="#">JT-30700-93</a>		<a href="#">JT-30800-72</a>	—
	2"	<a href="#">JT-30700-94</a>		<a href="#">JT-30800-73</a>	—
<b>Clamps</b>					
I	½" to ¾"	—	—	<a href="#">JT-30800-74</a>	—
	1" to 1½"	—	—	<a href="#">JT-30800-75</a>	—
	2"	—	—	<a href="#">JT-30800-76</a>	—
	2½"	—	—	<a href="#">JT-30800-77</a>	—
	3"	—	—	<a href="#">JT-30800-78</a>	—
	4"	—	—	<a href="#">JT-30800-80</a>	—



A



B



C



D



F



E



G



H



I

## Cole-Parmer® Syringe Filters

Get easy, reliable filtration—just slip on and twist

- Easy identification—membrane type and pore size printed on each filter
- Filter more confidently—filters are 100% integrity tested and manufactured in accordance with ISO 9002 standards
- Get a secure fit—bidirectional membrane support and luer lock inlet/outlet
- Sterile filters are sterilized by gamma irradiation and certified nonpyrogenic, noncytotoxic, and blister packed

### Glass Prefilters with Final Filter

- Save time—borosilicate glass fiber prefilter and cellulose filter in one
- Prefilter extends life of final filter by removing particulates from sample
- Reduces retention volume and sample loss



Membrane Type	Dia	Pore size	Housing	Retention volume	Qty/ bx	Catalog number	Price/ bx
<b>Nonsterile filters</b>							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	100	<a href="#">JT-02915-90</a>	
		0.45 µm				<a href="#">JT-02915-92</a>	
		0.80 µm				<a href="#">JT-02915-94</a>	
<b>Sterile filter</b>							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	50	<a href="#">JT-02915-40</a>	

### Cellulose Acetate Filters

- Low protein binding—ideal for biological solutions
- Use for sterilization and clarification of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
<b>Nonsterile filters</b>						
0.22 µm	26 mm	Acrylic	Blue	100	<a href="#">JT-02915-60</a>	
0.45 µm			Clear		<a href="#">JT-02915-58</a>	
0.80 µm			Green		<a href="#">JT-02915-62</a>	
<b>Sterile filters</b>						
0.22 µm	26 mm	Acrylic	Blue	50	<a href="#">JT-02915-12</a>	
0.45 µm			Clear		<a href="#">JT-02915-00</a>	
0.80 µm			Green		<a href="#">JT-02915-10</a>	

### Nylon Filters

- Low levels of extractables with no wetting agents
- Hydrophilic nylon for good chemical resistance—ideal for aqueous and most organics



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
<b>Nonsterile filters</b>						
0.22 µm	25 mm	PP	Natural	100	<a href="#">JT-02915-16</a>	
0.45 µm					<a href="#">JT-02915-14</a>	
<b>Sterile filters</b>						
0.20 µm	25 mm	PP	Red	50	<a href="#">JT-02915-04</a>	
0.45 µm			Natural		<a href="#">JT-02915-02</a>	



### Choose the Right Filter!

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, alkalis, and organic solvents; venting purposes. For aggressive chemicals.
Nitrocellulose	High protein retention; microbiological analysis, waste water treatment; sterilization of aqueous solutions.

### 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 at left.

### PTFE Filters

- Ideal for aggressive chemicals—organic solvents, concentrated acids and bases, propellants and more
- Use for gas/air filtration
- 50-mm membranes have stepped hose barb connectors for ¼" to ½" ID tubing



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
<b>Nonsterile filters</b>						
0.20 µm	15 mm	PP	Natural	100	<a href="#">JT-29550-08</a>	
0.45 µm					<a href="#">JT-29550-10</a>	
0.20 µm	25 mm	PP	Natural	100	<a href="#">JT-02915-20</a>	
0.45 µm					<a href="#">JT-02915-22</a>	
0.20 µm	50 mm	PP	Natural	20	<a href="#">JT-02915-28</a>	
0.45 µm					<a href="#">JT-02915-30</a>	
<b>Sterile filters</b>						
0.20 µm	25 mm	PP	Natural	50	<a href="#">JT-02915-08</a>	
0.50 µm					<a href="#">JT-02915-06</a>	

### Nitrocellulose Filters

- Good for macromolecules—highest protein retention
- Get fast flow rates with aqueous solutions
- Ideal for microbiological analysis, waste water treatment, and sterilization of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
<b>Nonsterile filter</b>						
0.20 µm	26 mm	Acrylic	Blue	100	<a href="#">JT-02915-56</a>	
<b>Sterile filters</b>						
0.20 µm	26 mm	Acrylic	Blue	50	<a href="#">JT-02915-52</a>	
0.45 µm					<a href="#">JT-02915-53</a>	



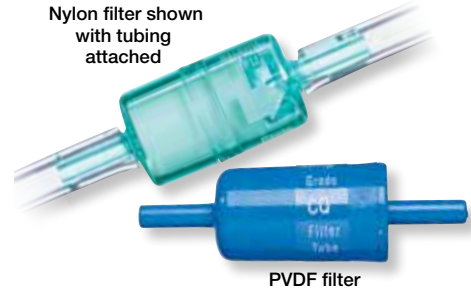
## Disposable In-Line Gas/Liquid Filters

Choose opaque PVDF for the best chemical compatibility or transparent nylon for lower cost

Filter gases or liquids with these microfiber filters. All models have a borosilicate glass filter membrane. Liquid efficiency ratings are 98% retention of particles of noted size; gas efficiency ratings are percentage retention of 0.01 µm particles.

Nylon and PVDF filters with 1/4" OD and 1/2" OD ports accept flexible tubing for low-pressure applications; use compression fittings for higher-pressure applications. Max pressure is 125 psi (8.5 bar); max differential pressure is 40 psi (60 psi for 0.01 µm units).

Nylon filter shown with tubing attached



PVDF filter

Application	Material	Gas efficiency	Liquid efficiency	Air flow at 2 psi drop at indicated pressure (scfm)			Water flow at indicated pressure drop (GPH)		Max temp (at 0 psi)	Ports	Catalog number	Qty/ pk	Price/ pk
				2 psi	60 psi	100 psi	1 psi	5 psi					
High-purity compressed gas; absolute filtration to 0.01 µm	Nylon	100% at 0.01 µm	—	0.3	1.7	2	—	—	230°F (110°C)	1/4" OD	<a href="#">JT-02917-60</a>	5	
Gas/air filtration—general-purpose use. Liquid filtration—remove most visible particles.	Nylon	93%	25 µm	1.2	5.4	8.3	12	30	230°F (110°C)	1/4" OD	<a href="#">JT-02909-10</a>	5	
	Nylon	98%	8 µm	1.0	125	6.9	10	25	230°F (110°C)	1/4" OD	<a href="#">JT-02909-20</a>	5	
	PVDF	93%	25 µm	1.2	5.4	8.3	12	30	275°F (135°C)	1/4" OD	<a href="#">JT-02908-40</a>	5	
	PVDF	98%	8 µm	1.0	125	6.9	10	25	275°F (135°C)	1/4" OD	<a href="#">JT-02908-50</a>	5	
Gas/air filtration—complete oil and water droplet removal. Liquid filtration—remove all visible particles and most colloidal haze.	Nylon	99.99%	2 µm	0.8	3.6	5.4	3	15	230°F (110°C)	1/4" OD	<a href="#">JT-02909-30</a>	5	
	Nylon		2 µm	0.8	3.6	5.4	—	—	230°F (110°C)	1/4" OD	<a href="#">JT-02909-40#</a>	5	
	PVDF		2 µm	0.8	3.6	5.4	3	15	275°F (135°C)	1/4" OD	<a href="#">JT-02908-60</a>	5	
Gas/air filtration—with carbon granules for removal of trace oil vapors	Nylon	99%	—	0.5	2.6	4.0	—	—	180°F (82°C)	1/4" OD	<a href="#">JT-02908-62</a>	10	
Gas/air filtration—with silica gel for removal of water vapor	Nylon	99%	—	0.5	2.6	4.0	—	—	180°F (82°C)	1/4" OD	<a href="#">JT-02908-64#</a>	10	
Gas/air filtration—with mixed sodium and calcium hydroxides for removal of acidic gases	Nylon	99%	—	0.5	2.6	4.0	—	—	180°F (82°C)	1/4" OD	<a href="#">JT-02908-66</a>	10	
Gas/air sterilizing. Liquid filtration—remove most bacteria.	Nylon	99.9999+%	0.9 µm	0.4	1.8	2.7	1.5	7.3	230°F (110°C)	1/4" OD	<a href="#">JT-02909-50</a>	5	
	Nylon	99.9999+%	0.3 µm	0.1	0.45	0.68	0.4	1.9	230°F (110°C)	1/4" OD	<a href="#">JT-02909-60</a>	5	
	PVDF	99.9999+%	0.9 µm	0.4	1.8	2.7	1.5	7.3	275°F (135°C)	1/4" OD	<a href="#">JT-02908-80</a>	5	
	PVDF	99.9999+%	0.3 µm	0.1	0.45	0.68	0.4	1.9	275°F (135°C)	1/4" OD	<a href="#">JT-02908-90</a>	5	

#Turns red when saturated.

## Advantec® Mixed Cellulose Ester Membranes

High quality at low prices

— Made from over 90% cellulose nitrate for strength and thermostability

These MCE membranes can be exposed to temperatures up to 266°F (130°C). Ideal for filter sterilizing biological fluids, microbiology, contamination analysis, and air monitoring.



Pore size (µm)	Bubble point (psi)	Flow (L/min/cm²)		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
0.10	35.3	0.027	0.67	<a href="#">JT-06639-25</a>		<a href="#">JT-06639-28</a>		<a href="#">JT-06639-31</a>		<a href="#">JT-06639-34</a>		<a href="#">JT-06639-41</a>		<a href="#">JT-36230-81</a>	
0.20	54.5	0.018	2.4	<a href="#">JT-06639-01</a>		<a href="#">JT-06639-05</a>		<a href="#">JT-06639-13</a>		<a href="#">JT-06639-35</a>		<a href="#">JT-06639-17</a>		<a href="#">JT-36230-82</a>	
0.45	35.0	0.045	3.7	<a href="#">JT-06639-02</a>		<a href="#">JT-06639-06</a>		<a href="#">JT-06639-14</a>		<a href="#">JT-06639-36</a>		<a href="#">JT-06639-18</a>		<a href="#">JT-36230-83</a>	
0.80	16.4	0.165	15.0	<a href="#">JT-06645-30</a>		<a href="#">JT-06645-32</a>		<a href="#">JT-06645-34</a>		<a href="#">JT-06645-36</a>		<a href="#">JT-06645-38</a>		<a href="#">JT-36230-84</a>	
1.00	13.9	0.220	20.4	<a href="#">JT-06639-47</a>		<a href="#">JT-06639-49</a>		<a href="#">JT-06639-51</a>		<a href="#">JT-06639-55</a>		<a href="#">JT-06639-53</a>		<a href="#">JT-36230-85</a>	
3.00	10.2	0.300	28.3	<a href="#">JT-06639-26</a>		<a href="#">JT-06639-29</a>		<a href="#">JT-06639-32</a>		<a href="#">JT-06639-39</a>		<a href="#">JT-06639-42</a>		<a href="#">JT-36230-86</a>	
5.00	8.5	0.400	40.9	<a href="#">JT-06639-27</a>		<a href="#">JT-06639-30</a>		<a href="#">JT-06639-33</a>		<a href="#">JT-06639-40</a>		<a href="#">JT-06639-43</a>		<a href="#">JT-36230-87</a>	

†Using water prefiltered to 0.1 µm at 10 psi.

## Advantec® Filter Holders

Easy assembly

Polypropylene (PP) holders are ideal for ultracleaning and sterilizing liquids under pressure, or for aseptic sampling of liquids and gases. Holders feature PP dual support screens and silicone O-rings. Dual support screens allow for flow in both directions. Assemble holders quickly and efficiently without membrane tears with specially designed inlet cap and exterior lock.

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

Type of holder	Diameter	Catalog number	Qty/ pk	Price/ pk
Syringe	25 mm	<a href="#">JT-06623-32</a>	6	
In-line	47 mm	<a href="#">JT-06623-22</a>	1	

[JT-02930-95](#) Support screen, 25 mm. Pack of 8

[JT-06645-90](#) Support screen, 47 mm. Pack of 4

## Cole-Parmer® Gaskets for Tri-Clamp® Sanitary Fittings

### Ensure a tight seal

- Meet FDA CFR Title 21 CFR 177.2600, USDA, 3A, and cGMP criteria
- Silicone, EPDM, FKM, and PTFE gaskets are free of animal-derived ingredients and meet USP Class VI, EP 3.1.9, and cytotoxicity criteria

**Platinum-Cured Silicone** is ideal for most pharmaceutical, food, and beverage processing applications. Odorless and tasteless to ensure media purity. Usable from -58 to 446°F (-50 to 230°C). Maybe undergo SIP.

**EPDM** offers good chemical resistance. An economical choice for water, acetone, or ketone applications. Usable from -65 to 212°F (-54 to 100°C).

**Buna N** offers good chemical resistance, particularly for petroleum-based products or cold water. Usable over a range from -65 to 275°F (-54 to 135°C).

**FKM** offers excellent chemical resistance, especially to many acids and alkalis. Best choice for many pharmaceutical, chemical, automotive, or fuel applications. Usable from -25 to 400°F (-32 to 204°C). Sterilization is not recommended.

**PTFE** offers excellent chemical compatibility. Highly resistant to stress cracking and corrosion. Usable from -450 to 550°F (-268 to 288°C).



Cole-Parmer®



ANIMAL DERIVED INGREDIENT FREE

Size	Platinum-cured silicone		EPDM		Buna N		FKM		PTFE	
	Catalog number	Price/pk of 10	Catalog number	Price/pk of 10	Catalog number	Price/pk of 10	Catalog number	Price/pk of 10	Catalog number	Price/pk of 10
3/4"	<a href="#">JT-30548-00</a>		<a href="#">JT-30548-60</a>		<a href="#">JT-30548-40</a>		<a href="#">JT-30548-20</a>		<a href="#">JT-30548-80</a>	
1"	<a href="#">JT-30548-02</a>		<a href="#">JT-30548-62</a>		<a href="#">JT-30548-42</a>		<a href="#">JT-30548-22</a>		<a href="#">JT-30548-82</a>	
1 1/2"	<a href="#">JT-30548-04</a>		<a href="#">JT-30548-64</a>		<a href="#">JT-30548-44</a>		<a href="#">JT-30548-24</a>		<a href="#">JT-30548-84</a>	
2"	<a href="#">JT-30548-06</a>		<a href="#">JT-30548-66</a>		<a href="#">JT-30548-46</a>		<a href="#">JT-30548-26</a>		<a href="#">JT-30548-86</a>	
2 1/2"	<a href="#">JT-30548-08</a>		<a href="#">JT-30548-68</a>		<a href="#">JT-30548-48</a>		<a href="#">JT-30548-28</a>		<a href="#">JT-30548-88</a>	

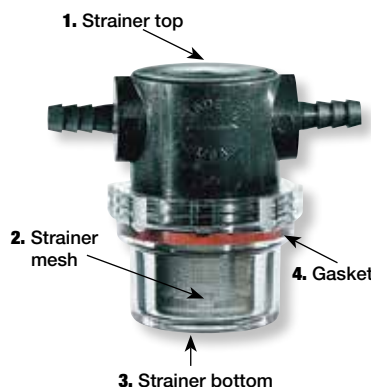
## Cole-Parmer® Low-Cost In-Line Strainer Systems

### Easily modify to suit your application

**Low-Profile Strainers** are ideal for small-scale low-volume filtration. Use in research applications, cleaning equipment, and laboratory equipment.

**Intermediate Strainers** feature a large filtering area in a compact size. Perfect for commercial and industrial pumps and agricultural and marine applications.

**Large Strainers** are primarily used in industrial and commercial industries. They feature increased flow rate and large filtration area.



### 1. Polypropylene Strainer Tops

Connection type	Filter area	Catalog number	Price
<b>Low-profile strainers</b>			
1/8" NPT(F)	3.95 in <sup>2</sup> (25.5 cm <sup>2</sup> )	<a href="#">JT-29595-01</a>	
1/4" NPT(F)		<a href="#">JT-29595-03</a>	
3/8" NPT(F)		<a href="#">JT-29595-05</a>	
1/4" hose barb		<a href="#">JT-29595-07</a>	
<b>Intermediate strainers</b>			
1/2" NPT(F)	17.33 in <sup>2</sup> (111.8 cm <sup>2</sup> )	<a href="#">JT-29595-13</a>	
3/4" NPT(F)		<a href="#">JT-29595-15</a>	
<b>Large strainer</b>			
1" NPT(F)	29.73 in <sup>2</sup> (191.8 cm <sup>2</sup> )	<a href="#">JT-29595-17</a>	

<sup>†</sup>Dimensions are for reference only.

### 2. 304 SS Strainer Mesh

Description		Low-profile		Intermediate		Large	
Mesh size	Micron nominal	Catalog number	Price	Catalog number	Price	Catalog number	Price
20 x 20	915	<a href="#">JT-29595-31</a>		<a href="#">JT-29595-43</a>		<a href="#">JT-29595-49</a>	
40 x 35	480	—	—	<a href="#">JT-29595-45</a>		—	—
40 x 36	480	<a href="#">JT-29595-33</a>		—	—	<a href="#">JT-29595-51</a>	
80 x 80	178	<a href="#">JT-29595-35</a>		<a href="#">JT-29595-47</a>		<a href="#">JT-29595-53</a>	
24 x 110	80	—	—	—	—	<a href="#">JT-29595-55</a>	
50 x 250	60	<a href="#">JT-29595-39</a>		—	—	<a href="#">JT-29595-57</a>	
165 x 800	15	<a href="#">JT-29595-41</a>		—	—	—	—

### 3. Strainer Bottoms

Material	Low-profile		Intermediate		Large	
	Catalog number	Price	Catalog number	Price	Catalog number	Price
Black polypropylene	<a href="#">JT-29595-61</a>		<a href="#">JT-29595-67</a>		<a href="#">JT-29595-73</a>	
Clear nylon	<a href="#">JT-29595-63</a>		<a href="#">JT-29595-71</a>		<a href="#">JT-29595-79</a>	

### 4. Gaskets seal strainer housing top to strainer housing bottom

Material	Low-profile		Intermediate		Large	
	Catalog number	Price	Catalog number	Price	Catalog number	Price
EPDM	<a href="#">JT-29595-81</a>		<a href="#">JT-29595-85</a>		<a href="#">JT-29595-89</a>	
Viton®	<a href="#">JT-29595-83</a>		<a href="#">JT-29595-87</a>		<a href="#">JT-29595-91</a>	

Cole-Parmer®



### REQUIRED System Components

Select one of each of the following from the same class.

- 1) Select the correct **strainer top** for your application.
- 2) Pick the **strainer mesh** based on your mesh size requirements
- 3) Choose the appropriate **strainer bottom**, either in polypropylene or nylon.
- 4) Pick the appropriate **gasket**, either EPDM or Viton®



## 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).

µm rating, nominal	Flow rate†	Length	Catalog number	Price
1	2 GPM at <2 psid	10" (25.4 cm)	JT-01512-00	
5			JT-01512-08	
10			JT-01512-18	
25			JT-01512-28	
50			JT-01512-38	
1	5 GPM at <2 psid	20" (50.8 cm)	JT-01512-02	
5			JT-01512-12	
10			JT-01512-22	
25			JT-01512-32	
50			JT-01512-42	

**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).

µm rating, nominal	Flow rate†	Length	Catalog number	Price
5	10 GPM at <1 psid	10" (25.4 cm)	JT-01513-00	
30			JT-01513-02	
50			JT-01513-04	

**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).

µm rating, nominal	Flow rate†	Length	Cat. no.	Price
1	5 GPM at 0.6 psid	10" (25.4 cm)	JT-01509-14	/ea
5	5 GPM at 0.2 psid		JT-01509-15	/pk of 2
1	10 GPM at 0.6 psid	20" (50.8 cm)	JT-01509-37	/ea
5	10 GPM at 0.6 psid		JT-01509-40	/ea
25	10 GPM at 0.2 psid		JT-01509-41	/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 meet 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).

µm rating, nominal	Flow rate†	Length	Catalog number	Price
0.2	2 GPM at 1 psid	10" (25.4 cm)	JT-29830-00	
	2 GPM at <1 psid	20" (50.8 cm)	JT-29830-01	

†psid refers to pounds per square inch pressure drop through the filter system.

For optimal performance, change cartridges at 25 psid.

‡To use with aqueous solutions, prewet with methanol, then rinse with water before use.

†††Pore sizes for polypropylene cartridges are nominal.

††††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).

µm rating, nominal	Flow rate†	Length	Catalog number	Price
1	15 GPM at <1 psid	10" (25.4 cm)	JT-01509-11	
5			JT-01509-09	

**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 U.S. 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-acceptable. Hydrophobic; prewet before liquid filtration.‡

**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.‡

**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.

Cartridge type	µm rating††	Length	Catalog number	Price
Serial nylon	0.2	10" (25.4 cm)	JT-06479-16	
	0.45		JT-06479-20	
Glass fiber	3.0	10" (25.4 cm)	JT-06479-24	
Polypropylene	1.0	10" (25.4 cm)	JT-06479-32	
	3.0		JT-06479-36	
Polypropylene	5	10" (25.4 cm)	JT-06479-40	
	10		JT-06479-44	
PTFE	0.1	10" (25.4 cm)	JT-06479-48	
	0.2		JT-06479-52	
Semiconductor	0.2	10" (25.4 cm)	JT-06479-60	

**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†††. The 10" cartridge meets NSF Standard 42 for materials. Suitable to 125°F (52°C).

µm rating, nominal	Flow rate††	Length	Catalog number	Price
5	5 GPM at 4.0 psid	10" (25.4 cm)	JT-01509-25	
	5 GPM at 1.0 psid	20" (50.8 cm)	JT-01509-27	

# Cole-Parmer® Acrylic Variable-Area Flowmeters for Bench or Panel Mount

## Don't sacrifice durability for precision

- Easily and precisely control flow of your application via manual valve
- Durable acrylic bodies with integral metering tubes for accurate readings
- Stand up to even aggressive plant environments
- Versatile—easy panel installation or move from bench to bench with optional tripod base 32462-50 (order separately at [ColeParmer.com](http://ColeParmer.com))



### Specifications

**Accuracy:**  
2" and 50-mm models: ±5% FS  
4" and 100-mm models: ±3% FS  
5" and 127-mm models: ±2% FS

**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 models: 1/8" NPT(F)<sup>†</sup>  
5" and 127-mm models: 1" NPT(F)

### Materials of construction

Part	2" and 50 mm	4" and 100 mm	5" and 127 mm
Body	Acrylic		
Fittings	Brass		PVC
O-rings	Buna N		
Float	Black glass (BG), Aluminum (AL)	316 Stainless steel (SS)	

### Flowmeters with Valves; English-Unit Scale

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range	Cat. no.	Price	Flow range	Cat. no.	Price
<b>Flowmeters with 2" scale</b>						
BG	0.2–2 GPH	<a href="#">JT-32460-00</a>	—	0.1–1 scfh	<a href="#">JT-32460-10</a>	—
SS	0.4–5 GPH	<a href="#">JT-32460-02</a>	—	0.2–2 scfh	<a href="#">JT-32460-12</a>	—
BG	1–10 GPH	<a href="#">JT-32460-04</a>	—	0.4–5 scfh	<a href="#">JT-32460-14</a>	—
SS	2–20 GPH	<a href="#">JT-32460-06</a>	—	0.5–10 scfh	<a href="#">JT-32460-16</a>	—
BG	—	—	—	4–50 scfh	<a href="#">JT-32460-22</a>	—
SS	4–40 GPH	<a href="#">JT-32460-08</a>	—	10–100 scfh	<a href="#">JT-32460-24</a>	—
<b>Flowmeters with 4" scale</b>						
SS	1–10 GPH	<a href="#">JT-32461-00</a>	—	0.4–5 scfh	<a href="#">JT-32461-10</a>	—
SS	2–25 GPH	<a href="#">JT-32461-02</a>	—	1–10 scfh	<a href="#">JT-32461-12</a>	—
SS	6–60 GPH	<a href="#">JT-32461-06</a>	—	4–40 scfh	<a href="#">JT-32461-16</a>	—
SS	0.2–2.5 GPM	<a href="#">JT-32461-07<sup>†</sup></a>	—	10–100 scfh	<a href="#">JT-32461-18</a>	—
SS	0.4–5 GPM	<a href="#">JT-32461-08<sup>†</sup></a>	—	20–200 scfh	<a href="#">JT-32461-22</a>	—
AL	—	—	—	0.5–5 scfm	<a href="#">JT-32461-24<sup>†</sup></a>	—
SS	—	—	—	1–10 scfm	<a href="#">JT-32461-26<sup>†</sup></a>	—
<b>Flowmeters with 5" scale</b>						
SS	1–10 GPM	<a href="#">JT-32466-50</a>	—	3–25 scfm	<a href="#">JT-32466-60</a>	—
SS	2–20 GPM	<a href="#">JT-32466-52</a>	—	4–50 scfm	<a href="#">JT-32466-62</a>	—

<sup>†</sup>These models have dual scale: GPM/GPH, scfm/scfh, LPM/LPH; they also have 1/4" NPT(F) connections and use optional tripod base 32462-60 sold separately online.  
<sup>‡</sup>Float material key: BG = black glass, SS = stainless steel, AL = aluminum.

### Flowmeters without Valves; English-Unit Scales

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range	Cat. no.	Price	Flow range	Cat. no.	Price
<b>Flowmeters with 4" scale</b>						
SS	1–10 GPH	<a href="#">JT-32458-00</a>	—	0.4–5 scfh	<a href="#">JT-32458-10</a>	—
SS	—	—	—	0.5–5 scfm	<a href="#">JT-32458-24<sup>†</sup></a>	—
SS	—	—	—	1–10 scfm	<a href="#">JT-32458-26<sup>†</sup></a>	—
<b>Flowmeters with 5" scale</b>						
SS	0.4–5 GPM	<a href="#">JT-32462-00</a>	—	3–25 scfm	<a href="#">JT-32458-10</a>	—
SS	2–20 GPM	<a href="#">JT-32462-04</a>	—	—	—	—

### Flowmeters with Valves; Metric-Unit Scales

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range (mL/min)	Catalog number	Price	Flow range (LPM)	Catalog number	Price
<b>Flowmeters with 50-mm scale</b>						
BG	—	—	—	0.04 to 0.5	<a href="#">JT-32460-40</a>	—
SS	10 to 100	<a href="#">JT-32460-32</a>	—	0.1 to 1	<a href="#">JT-32460-42</a>	—
SS	20 to 240	<a href="#">JT-32460-34</a>	—	0.4 to 5	<a href="#">JT-32460-44</a>	—
SS	—	—	—	1 to 10	<a href="#">JT-32460-46</a>	—
AL	—	—	—	2 to 25	<a href="#">JT-32460-48</a>	—
SS	—	—	—	4 to 50	<a href="#">JT-32460-50</a>	—
SS	—	—	—	10 to 100	<a href="#">JT-32460-52</a>	—
<b>Flowmeters with 100-mm scale</b>						
SS	4 to 50	<a href="#">JT-32461-30</a>	—	0.4 to 5	<a href="#">JT-32461-50</a>	—
SS	10 to 120	<a href="#">JT-32461-32</a>	—	1 to 10	<a href="#">JT-32461-52</a>	—
BG	25 to 225	<a href="#">JT-32461-34</a>	—	2 to 20	<a href="#">JT-32461-54</a>	—
SS	40 to 400	<a href="#">JT-32461-36</a>	—	3 to 30	<a href="#">JT-32461-56</a>	—
SS	40 to 660	<a href="#">JT-32461-38</a>	—	4 to 50	<a href="#">JT-32461-58</a>	—
SS	100 to 1500	<a href="#">JT-32461-40</a>	—	10 to 100	<a href="#">JT-32461-60</a>	—
SS	200 to 3000	<a href="#">JT-32461-42</a>	—	14 to 140	<a href="#">JT-32461-62<sup>†</sup></a>	—
SS	0.8 to 9 LPM	<a href="#">JT-32461-44<sup>†</sup></a>	—	30 to 280	<a href="#">JT-32461-64<sup>†</sup></a>	—
SS	1.5 to 20 LPM	<a href="#">JT-32461-46<sup>†</sup></a>	—	—	—	—
<b>Flowmeters with 127-mm scale</b>						
SS	4 to 36 LPM	<a href="#">JT-32466-54</a>	—	100 to 700	<a href="#">JT-32466-66</a>	—
SS	—	—	—	400 to 3400	<a href="#">JT-32466-70</a>	—

### Flowmeters without Valves; Metric-Unit Scales

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range (mL/min)	Catalog number	Price	Flow range (LPM)	Catalog number	Price
<b>Flowmeters with 50-mm scale</b>						
BG	—	—	—	0.04 to 0.5	<a href="#">JT-32457-40</a>	—
BG	10 to 100	<a href="#">JT-32457-32</a>	—	0.1 to 1	<a href="#">JT-32457-42</a>	—
SS	20 to 240	<a href="#">JT-32457-34</a>	—	0.4 to 5	<a href="#">JT-32457-44</a>	—
SS	—	—	—	1 to 10	<a href="#">JT-32457-46</a>	—
<b>Flowmeters with 100-mm scale</b>						
BG	4 to 50	<a href="#">JT-32458-30</a>	—	0.4 to 5	<a href="#">JT-32458-50</a>	—
SS	10 to 120	<a href="#">JT-32458-32</a>	—	1 to 10	<a href="#">JT-32458-52</a>	—
BG	25 to 225	<a href="#">JT-32458-34</a>	—	2 to 20	<a href="#">JT-32458-54</a>	—
SS	40 to 400	<a href="#">JT-32458-36</a>	—	3 to 30	<a href="#">JT-32458-56</a>	—
SS	40 to 660	<a href="#">JT-32458-38</a>	—	4 to 50	<a href="#">JT-32458-58</a>	—
SS	100 to 1500	<a href="#">JT-32458-40</a>	—	10 to 100	<a href="#">JT-32458-60</a>	—
SS	200 to 3000	<a href="#">JT-32458-42</a>	—	14 to 140	<a href="#">JT-32458-62<sup>†</sup></a>	—
SS	0.8 to 9 LPM	<a href="#">JT-32458-44<sup>†</sup></a>	—	30 to 280	<a href="#">JT-32458-64<sup>†</sup></a>	—
SS	1.5 to 20 LPM	<a href="#">JT-32458-46<sup>†</sup></a>	—	80 to 560	<a href="#">JT-32458-65<sup>†</sup></a>	—
<b>Flowmeters with 127-mm scale</b>						
SS	1 to 15 LPM	<a href="#">JT-32462-20</a>	—	100 to 700	<a href="#">JT-32462-30</a>	—
SS	4 to 36 LPM	<a href="#">JT-32462-22</a>	—	100 to 1400	<a href="#">JT-32462-32</a>	—
SS	5 to 75 LPM	<a href="#">JT-32462-24</a>	—	400 to 3000	<a href="#">JT-32462-34</a>	—





# Cole-Parmer® 150-mm Flowmeters

## Be more accurate with longer 150-mm scale

- Ceramic millimeter scale is fused directly to flowtube
- A vertical tangential locator line ensures hairline accuracy in reading float position
- More accurately set your desired flow point with 16-turn high-precision valve features a "nonrising stem"

Each flowmeter consists of a heavy-walled glass flowtube mounted in a frame with white acrylic back plate (1/8" thick). Aluminum flowmeters are economical and good for general use with noncorrosive gases and liquids. Brass flowmeters are economical and good for use with water. The 316 stainless steel flowmeters feature excellent chemical compatibility. Select a flowmeter with a high-precision valve for superior flow rate control—ideal for low-flow applications, for metering samples, and calibration gases for gas analyzers.

All flowmeters come with correlation data sheets for water and air at standard temperature and pressure (STP). We can also supply calibration data for oxygen, nitrogen, hydrogen, helium, CO<sub>2</sub>, argon, other liquids and gases, and for conditions other than STP—call our Application Specialists for more information.



### Specifications

**Accuracy:** ±5% full-scale for meters with rate of 0.19 and 0.94 mL/min H<sub>2</sub>O  
±2% full-scale for remaining

**Repeatability:** ±0.25% full-scale

**Max pressure:** 200 psi (13.7 bar)

**Operating temperature:** -15 to 250°F (-26 to 121°C)

**Connections:** 1/8" NPT(F)

#### Materials of Construction

Part	Aluminum	Brass	SS
Flowtube	Borosilicate glass		
Fittings, valves	Aluminum	Chrome-plated brass	316 SS
O-rings	Buna N		Viton®
Float	Glass, 316 SS, or carboly		
Shield	Polycarbonate		
Frame	Aluminum/acrylic		

03229-01



Maximum flow rate (mL/min) <sup>†</sup>								Float <sup>††</sup>	Correlated meters with valves			Correlated meters with high-resolution valves		
H <sub>2</sub> O <sup>†</sup>	Air <sup>†</sup>	O <sub>2</sub>	N <sub>2</sub>	H <sub>2</sub>	He	CO <sub>2</sub>	Ar		Aluminum	Brass	316 SS	Aluminum	Brass	316 SS
									Cat. no.	Cat. no.	Cat. no.	Cat. no.	Cat. no.	Cat. no.
0.19	18.7	17	20	37	16	23.6	15.4	G	<a href="#">JT-03217-00</a>	<a href="#">JT-03294-00</a>	<a href="#">JT-03219-01</a>	<a href="#">JT-03227-00</a>	<a href="#">JT-03295-00</a>	<a href="#">JT-03229-01</a>
0.49	49.1	42	48	94	46.2	56.4	43.5	G	<a href="#">JT-03217-04</a>	<a href="#">JT-03294-04</a>	<a href="#">JT-03219-05</a>	<a href="#">JT-03227-04</a>	<a href="#">JT-03295-04</a>	<a href="#">JT-03229-05</a>
0.85	92	81	92	208	90.1	103.1	75.6	G	<a href="#">JT-03217-08</a>	<a href="#">JT-03294-08</a>	<a href="#">JT-03219-09</a>	<a href="#">JT-03227-08</a>	<a href="#">JT-03295-08</a>	<a href="#">JT-03229-09</a>
0.94	60.5	54	62	123	53	72	49	SS	<a href="#">JT-03217-02</a>	<a href="#">JT-03294-02</a>	<a href="#">JT-03219-03</a>	<a href="#">JT-03227-02</a>	<a href="#">JT-03295-02</a>	<a href="#">JT-03229-03</a>
2.45	137	131	143	301	133	150	113	SS	<a href="#">JT-03217-06</a>	<a href="#">JT-03294-06</a>	<a href="#">JT-03219-07</a>	<a href="#">JT-03227-06</a>	<a href="#">JT-03295-06</a>	<a href="#">JT-03229-07</a>
4.74	264	233	271	627	283	281	218	SS	<a href="#">JT-03217-10</a>	<a href="#">JT-03294-10</a>	<a href="#">JT-03219-11</a>	<a href="#">JT-03227-10</a>	<a href="#">JT-03295-10</a>	<a href="#">JT-03229-11</a>
5.5	374	340	382	1021	450	355	305	G	<a href="#">JT-03217-12</a>	<a href="#">JT-03294-12</a>	<a href="#">JT-03219-13</a>	<a href="#">JT-03227-12</a>	<a href="#">JT-03295-12</a>	<a href="#">JT-03229-13</a>
16.5	844	772	827	2620	1490	725	687	G	<a href="#">JT-03217-16</a>	<a href="#">JT-03294-16</a>	<a href="#">JT-03219-17</a>	<a href="#">JT-03227-16</a>	<a href="#">JT-03295-16</a>	<a href="#">JT-03229-17</a>
20.4	814	753	824	2496	1290	728	676	SS	<a href="#">JT-03217-14</a>	<a href="#">JT-03294-14</a>	<a href="#">JT-03219-15</a>	<a href="#">JT-03227-14</a>	<a href="#">JT-03295-14</a>	<a href="#">JT-03229-15</a>
46	1682	1545	1662	5547	3397	1420	1380	SS	<a href="#">JT-03217-18</a>	<a href="#">JT-03294-18</a>	<a href="#">JT-03219-19</a>	<a href="#">JT-03227-18</a>	<a href="#">JT-03295-18</a>	<a href="#">JT-03229-19</a>
53.5	2313	2169	2395	7817	4880	2048	1949	G	<a href="#">JT-03217-20</a>	<a href="#">JT-03294-20</a>	<a href="#">JT-03219-21</a>	<a href="#">JT-03227-20</a>	<a href="#">JT-03295-20</a>	<a href="#">JT-03229-21</a>
84	3807	3485	3868	13,105	7803	3374	3151	G	<a href="#">JT-03217-24</a>	<a href="#">JT-03294-24</a>	<a href="#">JT-03219-25</a>	<a href="#">JT-03227-24</a>	<a href="#">JT-03295-24</a>	<a href="#">JT-03229-25</a>
134	4562	4341	4685	15,855	9770	3990	3903	SS	<a href="#">JT-03217-22</a>	<a href="#">JT-03294-22</a>	<a href="#">JT-03219-23</a>	<a href="#">JT-03227-22</a>	<a href="#">JT-03295-22</a>	<a href="#">JT-03229-23</a>
210	8678	8269	8916	29,840	19,426	7485	7366	G	<a href="#">JT-03217-28</a>	<a href="#">JT-03294-28</a>	<a href="#">JT-03219-29</a>	<a href="#">JT-03227-28</a>	<a href="#">JT-03295-28</a>	<a href="#">JT-03229-29</a>
217	7825	6992	7722	27,804	15,960	6308	6384	SS	<a href="#">JT-03217-26</a>	<a href="#">JT-03294-26</a>	<a href="#">JT-03219-27</a>	<a href="#">JT-03227-26</a>	<a href="#">JT-03295-26</a>	<a href="#">JT-03229-27</a>
506	16,737	15,710	17,021	59,996	38,576	14,051	14,131	SS	<a href="#">JT-03217-30</a>	<a href="#">JT-03294-30</a>	<a href="#">JT-03219-31</a>	<a href="#">JT-03227-30</a>	<a href="#">JT-03295-30</a>	<a href="#">JT-03229-31</a>
								Price						
<b>High-flow flowmeters</b>														
541	23,742	21,350	23,512	85,812	53,100	18,989	19,761	G	<a href="#">JT-03217-32</a>	<a href="#">JT-03294-32</a>	<a href="#">JT-03219-33</a>	<a href="#">JT-03227-32</a>	<a href="#">JT-03295-32</a>	<a href="#">JT-03229-33</a>
1288	45,227	39,567	43,000	159,699	103,647	34,287	45,227	SS	<a href="#">JT-03217-34</a>	<a href="#">JT-03294-34</a>	<a href="#">JT-03219-35</a>	<a href="#">JT-03227-34</a>	<a href="#">JT-03295-34</a>	<a href="#">JT-03229-35</a>
1881	66,346	54,902	59,580	221,872	146,500	46,311	47,890	C	<a href="#">JT-03217-36</a>	<a href="#">JT-03294-36</a>	<a href="#">JT-03219-37</a>	<a href="#">JT-03227-36</a>	<a href="#">JT-03295-36</a>	<a href="#">JT-03229-37</a>
								Price						

<sup>†</sup>Correlation data sheets for water and air are included with flowmeters.

<sup>‡</sup>Flow rates are at standard temperature and pressure (70°F and 14.7 psi). Minimum flow rate is approx 10% of the maximum flow rate.

<sup>††</sup>Float material key: G = glass, SS = 316 stainless steel, C = carboly

### Accessories

[JT-03226-10](#) Tripod base holds one flowmeter, clear acrylic

[JT-03226-30](#) Tripod base holds up to three flowmeters, clear acrylic

[JT-30904-01](#) Fitting; NPT(M) to barbed adapter, brass, 1/8" x 1/4"

[JT-31412-34](#) Fitting; NPT(M) to compression adapter, brass, 1/8" x 1/8"

[JT-31406-34](#) Fitting; NPT(M) to compression adapter, SS, 1/8" x 1/8"

[JT-30621-30](#) Fitting; NPT(M) to barbed adapter, SS, 1/8" x 1/8"

[JT-17080-00](#) NIST-traceable calibration with data for air/gas flowmeter

[JT-17080-12](#) NIST-traceable calibration with data for liquid flowmeter

## Cole-Parmer® Flowmeters and Proportional Controllers for Gases

### Measure 130 standard gases—user selectable from display

- Accuracy of  $\pm 0.8\%$  of reading  $+0.2\%$  full-scale; repeatability of  $\pm 0.2\%$
- 100 to 1 turndown with ranges of 1 SCCM full-scale up to 1000 SLPM
- Models with 4 to 20 mA output or totalizer are available

These meters measure flow via pressure drop across a laminar flow element (LFE). Because the flow element makes the flow stream laminar, placement in the process does not require straight pipe runs upstream or downstream of the meter, greatly simplifying installation. As compared to thermal mass technologies, the LFE design provides an ultrafast response within 10 milliseconds and offers “instant on” with no warm-up time.

An integrated keypad around the display is all that is required to program the unit for service. The 0 to 5 VDC output allows transmission of the flow value to a remote display, recorder, or controller regulating a valve or pump.

Flow controllers feature an integrated PID to direct the unit's response to process changes. Flow set point is established with keypad, the optional set point control module, a 0 to 5 V signal, or an RS-232 input signal. Order set point control modules separately from the table. For portable flow metering applications, order the battery pack listed below table.

**What's included:** 120/230 VAC power adapter with communications cable 32929-89 and NIST-traceable calibration report supplied by the manufacturer.



Flow controller  
32907-51



Mass flowmeter 32908-59  
shown with optional  
battery pack 32929-50



Meters and controllers feature a dynamic display that simultaneously shows flow rate, line pressure, fluid temperature, and (for controllers) the set point. For the units shown, both power and input/output signals are transmitted through a single multi-pin connector.



#### Specifications

**Max particulate size:**

Up to 1 LPM: 20  $\mu\text{m}$   
>1 LPM to 1000 LPM: 50  $\mu\text{m}$

**Accuracy:**  $\pm 0.8\%$  of reading,  $+0.2\%$  full-scale

**Repeatability:**  $\pm 0.2\%$

**Response time:**

Flowmeters: 10 msec  
Flow controllers: 50 msec

**Operating temperature:**

14 to 122°F (–10 to 50°C)

**Max pressure:** 145 psig (9.9 bar)

**Pressure drop:** 0.8 to 3.2 psig (flowmeter)

**Output signal:** 0 to 5 VDC, RS-232

**Input signal:** 0 to 5 VDC and RS-232

**Wetted materials:**

Flowmeters: 302 and 303 SS, Viton®, silicone RTV, and glass-reinforced nylon, aluminum

Flow controllers: 302, 303; Viton, silicone RTV, glass-reinforced nylon, aluminum, brass, 410 SS, silicon, glass

**Power:**

Flowmeters: 7 to 30 VDC at 30 mA  
Flow controllers  
Models  $\leq 10$  LPM: 12 to 30 VDC at 250 mA  
Models  $\leq 50$  LPM: 24 to 30 VDC at 750 mA

**Display type:** four-digit, seven-line LCD; 1/4" H flow display

**Connections:**

$\leq 10$  mL/min: 10-32 UNF  
50 mL/min to 10 LPM: 1/8" NPT(F)  
50 to 100 LPM: 1/4" NPT(F)  
100 and 250 LPM: 1/2" NPT(F)  
500 and 1000 LPM: 3/4" NPT(F)

Flow range	Mass flowmeters		Mass flow controllers		Set point modules†	
	Catalog number	Price	Catalog number	Price	Catalog number	Price
0.01 to 1 mL/min	<a href="#">JT-32908-51</a>		<a href="#">JT-32907-51</a>		<a href="#">JT-32907-83</a>	
0.05 to 5 mL/min	<a href="#">JT-32908-53</a>		<a href="#">JT-32907-53</a>		<a href="#">JT-32907-85</a>	
0.1 to 10 mL/min	<a href="#">JT-32908-55</a>		<a href="#">JT-32907-55</a>		<a href="#">JT-32907-87</a>	
0.5 to 50 mL/min	<a href="#">JT-32908-57</a>		<a href="#">JT-32907-57</a>		<a href="#">JT-32907-89</a>	
1 to 100 mL/min	<a href="#">JT-32908-59</a>		<a href="#">JT-32907-59</a>		<a href="#">JT-32907-91</a>	
2 to 200 mL/min	<a href="#">JT-32908-61</a>		<a href="#">JT-32907-61</a>		<a href="#">JT-32907-93</a>	
5 to 500 mL/min	<a href="#">JT-32908-63</a>		<a href="#">JT-32907-63</a>		<a href="#">JT-32907-97</a>	
0.01 to 1 LPM	<a href="#">JT-32908-67</a>		<a href="#">JT-32907-67</a>		<a href="#">JT-32907-83</a>	
0.05 to 5 LPM	<a href="#">JT-32908-69</a>		<a href="#">JT-32907-69</a>		<a href="#">JT-32907-85</a>	
0.1 to 10 LPM	<a href="#">JT-32908-71</a>		<a href="#">JT-32907-71</a>		<a href="#">JT-32907-87</a>	
0.5 to 50 LPM	<a href="#">JT-32908-73</a>		<a href="#">JT-32907-73</a>		<a href="#">JT-32907-89</a>	
1 to 100 LPM	<a href="#">JT-32908-75</a>		<a href="#">JT-32907-75</a>		<a href="#">JT-32907-91</a>	
2.5 to 250 LPM	<a href="#">JT-32908-77</a>		<a href="#">JT-32907-77</a>		<a href="#">JT-32907-95</a>	
5 to 500 LPM	<a href="#">JT-32908-79</a>		<a href="#">JT-32907-79</a>		<a href="#">JT-32907-97</a>	
10 to 1000 LPM	<a href="#">JT-32908-81</a>		<a href="#">JT-32907-81</a>		<a href="#">JT-32907-99</a>	

†May be ordered as an option.

[JT-17080-10](#) NIST-traceable recalibration

[JT-32929-50](#) Battery pack, for portable operation of mass or volumetric flowmeter only

[JT-32929-89](#) Replacement communication cable, 8-DIN to stripped ends



## Cole-Parmer® Heavy-Duty Flowmeters/Totalizers

### Eliminate the need for expensive wiring with battery power

- Two totalizers allow for process or period-specific volume monitoring
- Measure linearly across a range and record a cumulative volume

These heavy-duty in-line flowmeters/totalizers display flow rate and accumulated flow in GPM or LPM. The compact yet robust design makes them ideal for use in manufacturing, pilot-plant, or quality control areas. 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.



#### Specifications

- Fluid types:** Low-viscosity liquids
- Accuracy:** Models up to 20 GPM (76 LPM) : ±2% of reading; remaining models: ±1.5% of reading
- Repeatability:** ±0.1% of reading
- Display:** 6-digit LCD, ½"H (with floating decimal)
- Operating temperature:** 14 to 140°F (-10 to 60°C)
- Maximum particulate size:**  
Models with ≤50 GPM max flow rate: 125 µm  
Models with >50 GPM max flow rate: 500 µm
- Power:** Two 3 V lithium batteries (included)
- Battery life:** 9000 hours nominal

Find even more online! Go to [ColeParmer.com](http://ColeParmer.com) to search more than 100,000 products.



Flow range	Connections	Body material	Catalog number	Price
1 to 10 GPM (3.8 to 37.9 LPM)	½" NPT(F)	Aluminum	<a href="#">JT-05609-01</a>	
	½" NPT(F)	316 SS	<a href="#">JT-05609-03</a>	
	¾" Sanitary†	316 SS	<a href="#">JT-05609-05</a>	
2 to 20 GPM (7.6 to 75.7 LPM)	¾" NPT(F)	Aluminum	<a href="#">JT-05609-07</a>	
	¾" NPT(F)	316 SS	<a href="#">JT-05609-09</a>	
	1" Sanitary†	316 SS	<a href="#">JT-05609-11</a>	
5 to 50 GPM (18.9 to 190 LPM)	1" NPT(F)	Aluminum	<a href="#">JT-05609-13</a>	
	1" NPT(F)	316 SS	<a href="#">JT-05609-15</a>	
	1½" Sanitary†	316 SS	<a href="#">JT-05609-17</a>	
	1" ANSI‡	316 SS	<a href="#">JT-05609-19</a>	
10 to 100 GPM (38 to 380 LPM)	1½" NPT(F)	Aluminum	<a href="#">JT-05609-21</a>	
	1½" NPT(F)	316 SS	<a href="#">JT-05609-23</a>	
	2" Sanitary†	316 SS	<a href="#">JT-05609-25</a>	
	1½" ANSI‡	316 SS	<a href="#">JT-05609-27</a>	
20 to 200 GPM (6 to 760 LPM)	2" NPT(F)	Aluminum	<a href="#">JT-05609-29</a>	
	2" NPT(F)	316 SS	<a href="#">JT-05609-31</a>	
	2½" Sanitary†	316 SS	<a href="#">JT-05609-33</a>	
	2" ANSI‡	316 SS	<a href="#">JT-05609-35</a>	

†Sanitary flange ‡150# ANSI flange

## Cole-Parmer® Handheld Doppler Flowmeter

### Diagnose flow profiles throughout a process easily

- Unit uses advanced signal processing to measure flow in pipe sized 1" to 60" (2.5 to 152.4 cm) in diameter

This noninvasive design is uniquely suited for measuring slurries and dirty fluids—ideal for chemical industry, construction, mining, food processing, and sewage/water treatment plants.

Install sensor on dense-material pipes (not typically transit/clay, concrete or fiberglass). View flow velocity in ft/sec or m/sec (switch selectable) on a large character 4-digit LCD; also displayed is signal strength and low-battery condition. The unit's power management capabilities extend battery life to 30 continuous hours.

**What's included:** case, sensor with 6-ft (1.8-m) cable, tube of transducer couplant, and four AA batteries.



#### Specifications

- Liquid type:** fluids with particulates or bubbles; 100 ppm, 100 microns, or larger
- Display:** single-line 4-digit LCD
- Power:** four alkaline AA batteries (included)
- Operating temperature:** -28 to 140°F (-20 to 60°C)



Range	Accuracy	Repeatability	Catalog number	Price
0.30 to 30 ft/sec (0.1 to 9 m/sec)	±2% full-scale	±1% full-scale	<a href="#">JT-32986-00</a>	

#### Accessories

[JT-09376-01](#) Replacement batteries, AA. Pack of four

## LEVIFLOW® Single-Use Precision Ultrasonic Flowmeters

Be ultraclean with your high-purity fluids

**NEW**

- Avoid contamination—no moving or obtrusive parts
- Nonintrusive design won't affect the working fluid
- Easily configure flow sensor parameters via software
- Integrated sanitary clamp fittings for one-time use



These noninvasive ultrasonic flowmeter systems are designed for use in applications where cleanliness and precision are a necessity! The starter kit includes components to get a system in place, then just choose a flow sensor at your desired flow range and sterility.

Starter kit includes a single-channel flow converter with DSP for processing the sensor's signals, connection cables for meter to PC and meter to flow sensor, power supply and cord, and configuration software on a USB stick. Converter also features a 4-digit LED display indicating the flow value.



### REQUIRED System Components

- 1) Starter kit
- 2) Flow sensor

Flow sensors feature integral sanitary Tri-Clamp® connections and polypropylene (FDA, USP VI, ADI-free) wetted material; sterile models are gamma irradiated. Sensors are IP65 rated and have a watertight connection box. Accuracy is ±1%.

### 1. Starter Kit



Model	Fluid temperature	Power	Catalog number	Price
LFC-1C-PC-SK	50 to 140°F (10 to 60°C)	24 VDC ±10%	<a href="#">JT-24500-07</a>	

### 2. Single-Use Flow Sensors

Model	±1% accuracy at flow range	Connection size	Sterile	Catalog number	Price
LFS-03SU-Z	35 to 800 mL/min	3/8" Tri-Clamp	—	<a href="#">JT-24500-08</a>	
LFS-03SU-Z-G25			Yes	<a href="#">JT-24500-09</a>	
LFS-06SU-Z	1.7 to 8 L/min	3/8" Tri-Clamp	—	<a href="#">JT-24500-10</a>	
LFS-06SU-Z-G25			Yes	<a href="#">JT-24500-11</a>	
LFS-06SU-Z-SC1	0.08 to 8 L/min	3/8" Tri-Clamp	—	<a href="#">JT-24500-12</a>	
LFS-06SU-Z-SC1-G25			Yes	<a href="#">JT-24500-13</a>	
LFS-10SU-Z	4.7 to 20 L/min	1/2" Tri-Clamp	—	<a href="#">JT-24500-14</a>	
LFS-10SU-Z-G25			Yes	<a href="#">JT-24500-15</a>	
LFS-20SU-Z	18.8 to 80 L/min	1" Tri-Clamp	—	<a href="#">JT-24500-16</a>	
LFS-20SU-Z-G25			Yes	<a href="#">JT-24500-17</a>	

## LEVIFLOW® Integrated Ultrasonic Flowmeter

Simple, compact design reduces cabling and setup time

- Noninvasive flow measurement eliminates contamination
- Requires no special maintenance due to lack of moving parts
- Easily configure flow sensor parameters with PC software
- No corner or dead zones with straight-through flow path



This integrated ultrasonic flowmeter is designed for noninvasive flow measurement of high-purity fluids found in the semiconductor and chemical industries. Flow is sensed by two piezoelectric transducers mounted at both ends of the measuring path of the fluid stream, generating and receiving an ultrasonic wave. The wave going in direction of the flow (with-stream wave) is accelerated and the wave going against (against-stream wave) the flow direction is slowed down. The two waves are processed by a signal converter. The difference of the transmit time of both waves is proportional to the velocity of the fluid.

The flowmeter consists of a 3/8" (9.5 mm) PFA tube (9.52 mm OD, 6.38 mm ID), a flow sensor, and an integrated converter with a digital signal processor (DSP) containing special algorithms, which increase the robustness of the measurement against bubbles. Simple, compact design features one connection cable, an analog and digital output, a two-wire RS-485 bus to communicate with a computer, high/low LED alarm indicators, LED flow indicator, and zero adjustment activation button.

**What's included:** 16.4-ft (5-m) PVC extension cable.



### Specifications

**Operating temperature:** 32 to 122°F (0 to 50°C)  
**Fluid temperature:** 50 to 176°F (10 to 80°C)  
**Max pressure:** 5 bar (72.5 psi)  
**Wetted materials:** PFA  
**Housing material:** PPS (body), FKM (sealing gaskets), PEEK™ (screws), and PET (label)  
**Output:** MODBUS®, RS-485, and 0 to 20 mA  
**Dimensions (L x W x H):** 1 1/4" x 7/8" x 2 1/4" (30 x 2.1 x 5.7 cm)  
**Power:** 24 VDC

Flow range (LPM)	Accuracy of reading at 68°F (20°C) water	Kinematic viscosity	Catalog number	Price
0 to 10	>1.7 L/min: ±2%; <1.7 L/min: ±34 mL/min	0.36 to 1.3 cSt	<a href="#">JT-24500-21</a>	

### Accessories

[JT-24500-22](#) USB to RS-485 adapter for computer communications

**Wait!**

There's More at **ColeParmer.com**

Browse **100,000+** products plus find **Technical Resources** to help you choose



## Cole-Parmer® Two- and Three-Way Direct Lift Solenoid Valves

Ideal with high-purity or corrosive fluids—made of inert PTFE

- Minimize trapped liquids with minimal dead volume
- Mount almost anywhere—lightweight and compact

Models with a 1/16" orifice have mounting holes at the bottom only and models with a 5/32" orifice have mounting holes at the top and bottom. Optional mounting clip 01540-50 can be used to mount valves with a 1/16" orifice in any position.



Mounting clip 01540-50



Mounting flange 01540-55



### Specifications

**Vacuum rating:** 26" Hg    **Maximum fluid temperature:** 158°F (70°C)    **Lead wire length:** 15" (38 cm)

Ports NPT(F)	Orifice	Max psi	Response time	Watts	12 VDC		24 VDC	
					Catalog number	Price	Catalog number	Price
<b>Two-way solenoid valves; normally closed</b>								
1/4-28	1/16"	30	20 ms	4.0	<a href="#">JT-01540-01</a>		<a href="#">JT-01540-02</a>	
1/4-28	1/16"	60	25 ms	8.0	<a href="#">JT-01540-03</a>		<a href="#">JT-01540-04</a>	
1/8	5/32"	18	30 ms	8.0	<a href="#">JT-01540-07</a>		<a href="#">JT-01540-08</a>	
<b>Two-way solenoid valves; normally open</b>								
1/4-28	1/16"	30	20 ms	4.0	<a href="#">JT-01540-09</a>		<a href="#">JT-01540-10</a>	
<b>Three-way solenoid valves</b>								
1/4-28	1/16"	30	20 ms	4.0	<a href="#">JT-01540-11</a>		<a href="#">JT-01540-12</a>	
1/4-28	1/16"	60	25 ms	8.0	<a href="#">JT-01540-13</a>		<a href="#">JT-01540-14</a>	
1/8	5/32"	18	30 ms	8.0	<a href="#">JT-01540-17</a>		<a href="#">JT-01540-18</a>	

[JT-01540-50](#) Mounting clip for two- and three-way valves

[JT-01540-55](#) Mounting flange for two- and three-way valves



**Can't choose?**

Trust our **expert** Application Specialists to help you find the right product.

**Katie**, 5 years of experience

Call: 1-800-323-4340    E-mail: [sales@coleparmer.com](mailto:sales@coleparmer.com)

## Miniature Check Valves

Install in any position—use with liquids and gases



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."

**Note:** Valves require 1 psi back pressure for a tight seal.

Tubing ID	C <sub>v</sub>	Working pressure	Catalog number	Price
<b>A. Nylon body and fluorosilicone diaphragm</b>				
1/8"	0.12	3 to 5 psi (0.2 to 0.3 bar)	<a href="#">JT-98553-00</a>	
3/16"	0.13		<a href="#">JT-98553-01</a>	
1/4"	0.13		<a href="#">JT-98553-02</a>	
<b>B. PP body and Viton® diaphragm</b>				
1/8"	0.11	3 to 5 psi (0.2 to 0.3 bar)	<a href="#">JT-98553-10</a>	
3/16"	0.12		<a href="#">JT-98553-11</a>	
1/4"	0.12		<a href="#">JT-98553-12</a>	
5/16"	0.13		<a href="#">JT-98553-13</a>	
<b>C. PVDF body and Viton diaphragm</b>				
3/16"	0.12	3 to 5 psi (0.2 to 0.3 bar)	<a href="#">JT-98553-21</a>	
1/4"	0.12		<a href="#">JT-98553-22</a>	
3/8"	0.12		<a href="#">JT-98553-24</a>	

## Cole-Parmer® Solenoid-Operated 2- and 3-Way Pinch Valves

No contamination of valve

- Control flow in your tubing without direct contact between the fluid and the valve
- Fast response time
- Low-power consumption and high-cycle life
- Excellent for sanitary and pharmaceutical applications



**What's included:** 15" 26-gauge PTFE-coated lead wires. Two-way valves include a 12" length of silicone tubing; three-way valves include two 6" (15.2 cm) lengths of tubing with a "Y" connector.



Tubing size (ID x OD)	Max pressure	Watts	12 VDC		24 VDC	
			Cat. no.	Price	Cat. no.	Price
<b>Two-way pinch valves; normally closed</b>						
1/32" x 3/32"	15 psi (1 bar)	2.6	<a href="#">JT-98302-00</a>		<a href="#">JT-98302-10</a>	
1/16" x 1/8"	15 psi (1 bar)	2.6	<a href="#">JT-98302-02</a>		<a href="#">JT-98302-12</a>	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	<a href="#">JT-98302-06</a>		<a href="#">JT-98302-16</a>	
<b>Two-way pinch valves; normally open</b>						
1/32" x 3/32"	15 psi (1 bar)	2.6	<a href="#">JT-98302-20</a>		<a href="#">JT-98302-30</a>	
1/16" x 1/8"	15 psi (1 bar)	2.6	<a href="#">JT-98302-22</a>		<a href="#">JT-98302-32</a>	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	<a href="#">JT-98302-26</a>		<a href="#">JT-98302-36</a>	
<b>Three-way pinch valves; one normally open, one normally closed</b>						
1/32" x 3/32"	15 psi (1 bar)	2.6	<a href="#">JT-98302-40</a>		<a href="#">JT-98302-48</a>	
1/16" x 1/8"	15 psi (1 bar)	2.6	<a href="#">JT-98302-42</a>		<a href="#">JT-98302-50</a>	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	<a href="#">JT-98302-46</a>		<a href="#">JT-98302-54</a>	

[JT-01540-50](#) Mounting clip for 2- and 3-way valves

[JT-01540-55](#) Mounting flange for 2- and 3-way valves

## Cole-Parmer® Barbed Check Valves

### Prevent backflow to protect your sensitive equipment

**NEW**

- Corrosion- and chemical-resistant PVDF and Viton® construction
- Install in any position

Miniature hose barb check valves fit securely onto flexible tubing lines to prevent backflow. Autoclavable.



#### Specifications

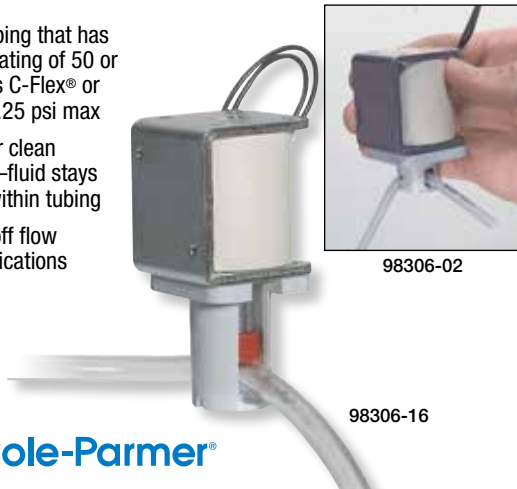
**Operating temperature:** -40 to 259°F (-40 to 126°C)  
**Operating pressure:** 0 to 50 psi

Tubing ID	Catalog number	Price/pk of 6
1/8"	<a href="#">JT-98766-49</a>	
3/16"	<a href="#">JT-98766-50</a>	
1/4"	<a href="#">JT-98766-51</a>	
3/8"	<a href="#">JT-98766-52</a>	

## Cole-Parmer® Solenoid Two-Way Pinch Valves

### Specifically designed for Masterflex® pump tubing

- Use with tubing that has durometer rating of 50 or less such as C-Flex® or silicone—7.25 psi max
- Excellent for clean processes—fluid stays contained within tubing
- Use for on/off flow control applications

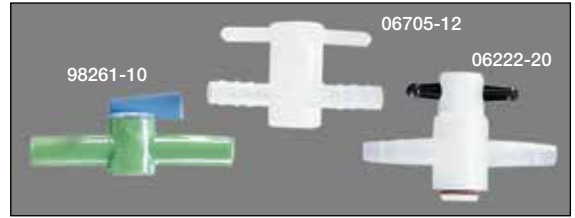


Tube size	Response time	Watts	12 VDC valves		24 VDC valves	
			Catalog number	Price	Catalog number	Price
<b>Normally closed</b>						
L/S® 14	30 to 50 msec	10	<a href="#">JT-98306-00</a>		<a href="#">JT-98306-02</a>	
L/S 16			<a href="#">JT-98306-08</a>		<a href="#">JT-98306-10</a>	
L/S 25			<a href="#">JT-98306-16</a>		<a href="#">JT-98306-18</a>	
L/S 17			<a href="#">JT-98306-24</a>		<a href="#">JT-98306-26</a>	
<b>Normally open</b>						
L/S 14	30 to 50 msec	10	<a href="#">JT-98306-04</a>		<a href="#">JT-98306-06</a>	
L/S 16			<a href="#">JT-98306-12</a>		<a href="#">JT-98306-14</a>	
L/S 25			<a href="#">JT-98306-20</a>		<a href="#">JT-98306-22</a>	
L/S 17			<a href="#">JT-98306-28</a>		<a href="#">JT-98306-30</a>	

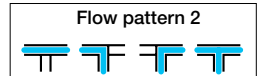
Find even more online! Go to ColeParmer.com to search more than 100,000 products.

## 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. **HDPE stopcocks** are rated for 203°F (95°C); maximum pressure is 7 psi. **PVDF stopcocks** are rated for 464°F (240°C); maximum pressure is 5 psi.

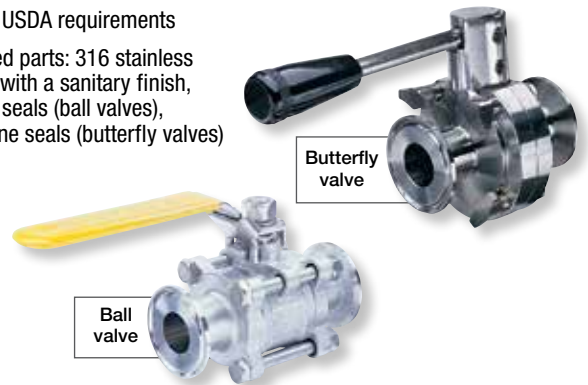


Tube ID	Orifice	Material	Catalog number	Price
<b>Two-way stopcocks</b>				
1/4" to 5/16"	2 mm	PP	<a href="#">JT-06222-20</a>	
1/4" to 5/16"	4 mm		<a href="#">JT-06222-40</a>	
10 mm	6.8 mm	HDPE	<a href="#">JT-98261-10</a>	
14 mm	10.7 mm		<a href="#">JT-98261-20</a>	
16 mm	12.7 mm		<a href="#">JT-98261-30</a>	
<b>Three-way stopcocks; follow flow pattern 2</b>				
1/4" to 5/16"	2 mm	PP	<a href="#">JT-06225-20</a>	
1/4" to 5/16"	4 mm		<a href="#">JT-06225-40</a>	
6 mm	4 mm	PVDF	<a href="#">JT-06705-10</a>	
8 mm	6 mm		<a href="#">JT-06705-12</a>	
10 mm	8 mm		<a href="#">JT-06705-14</a>	

## 316 SS Sanitary Ball and Butterfly Valves

### Install in any position

- Compatible with Tri-Clamp® fittings
- Meet USDA requirements
- Wetted parts: 316 stainless steel with a sanitary finish, PTFE seals (ball valves), silicone seals (butterfly valves)



Clamp size	Cv	Max pressure	Max temperature	Catalog number	Price
<b>Ball valves</b>					
3/4"	40	1000 psi at 70°F (21°C)	400°F (204°C)	<a href="#">JT-30530-00</a>	
1"	70			<a href="#">JT-30530-01</a>	
1 1/2"	120			<a href="#">JT-30530-02</a>	
2"	340			<a href="#">JT-30530-03</a>	
<b>Butterfly valves</b>					
1"	—	145 psi at 68°F (20°C)	200°F (93°C)	<a href="#">JT-30531-01</a>	
1 1/2"	—			<a href="#">JT-30531-02</a>	
3"	—			<a href="#">JT-30531-05</a>	
4"	—			<a href="#">JT-30531-07</a>	



# Cole-Parmer® Symmetry® LT Precision Toploading and LA Analytical Balances

## Quality and precision at an affordable price

- Large, backlit LCD provides clear visibility of weighing results
- Get secure data connections via USB, RS-232, Ethernet, and Wi-Fi interfaces
- Easily adjust filter settings depending on your working environment
- Multiple working modes handle a variety of weighing functions
- Fast stabilization and response time
- Quickly diagnose weighing errors with autotest GLP function
- Industry-leading 5-year warranty

**NEW**

Easy to operate, these rugged balances feature a large, backlit LCD providing a clear presentation of the weighing results. Choose from internal calibration for quick and easy accuracy checks or external calibration with the use of a calibration weight.

To achieve the best possible weighing conditions, the balances feature a filter level setting that can be adjusted to a fast or slow mode depending on the working environment.

Working modes include weighing, parts counting, check weighing, dosing, percent weighing, density of solids, density of liquids, animal weighing, statistics, totalizing, and peak hold. Other features include quick access keys, balance taring, balance zeroing, auto switch-off, and backlight turn-off time.

Several built-in databases allow you to record users, products, weighings, and tares. Only users with appropriate access can adjust balance settings, export data, import data, and delete records. Use the simple external connections to a computer or printer for GLP/GMP-compliant output. The autotest GLP function provides an enhanced balance summary to aid in assessing operation and diagnosing reasons for occurrence of errors in weighing.



### Specifications

**Weighing units:** g, mg, kg, ct, lb, oz, ozt, dwt, tlh, tls, tlt, tlc, mom, gr, N, ti, baht, tola, msg, u1, u2

**Stability indicator:** yes

**Output:** RS-232 (2), USB-A, USB-B, Ethernet, and Wi-Fi (internal cal only)

**Power:** 100/240 VAC, 50/60 Hz

NTEP-approved models are available online.



10102-23

Symmetry®



10102-27

Capacity	Readability	Repeatability	Linearity	Pan size	Internal calibration and Wi-Fi interface		External calibration	
					Catalog number	Price	Catalog number	Price
<b>LT toploading balances</b>								
360 g	0.001 g	±0.002 g	±0.002 g	5" x 5" (12.8 x 12.8 cm)	<a href="#">JT-10102-27†</a>	—	<a href="#">JT-10102-37†</a>	—
600 g		±0.003 g	±0.003 g		<a href="#">JT-10102-28†</a>	—	<a href="#">JT-10102-38†</a>	—
1200 g	0.01 g	±0.02 g	±0.02 g	7 <sup>11</sup> / <sub>16</sub> " x 7 <sup>11</sup> / <sub>16</sub> " (19.5 x 19.5 cm)	<a href="#">JT-10102-29</a>	—	<a href="#">JT-10102-39</a>	—
2100 g		±0.02 g	±0.02 g		<a href="#">JT-10102-30</a>	—	<a href="#">JT-10102-40</a>	—
4500 g		±0.02 g	±0.02 g		<a href="#">JT-10102-31</a>	—	<a href="#">JT-10102-41</a>	—
6000 g		±0.03 g	±0.03 g		<a href="#">JT-10102-32</a>	—	<a href="#">JT-10102-42</a>	—
<b>LA analytical balances</b>								
62 g	0.0001 g	±0.00003 g	±0.00006 g	3 <sup>3</sup> / <sub>8</sub> " (9 cm)	—	—	<a href="#">JT-10102-33‡</a>	—
82/220 g	0.00001/0.0001 g	±0.0001 g	±0.0002 g		<a href="#">JT-10102-23‡</a>	—	<a href="#">JT-10102-34‡</a>	—
160 g	0.0001 g	±0.0001 g	±0.0002 g	4" (10 cm)	<a href="#">JT-10102-24‡</a>	—	<a href="#">JT-10102-35‡</a>	—
220 g					<a href="#">JT-10102-25‡</a>	—	<a href="#">JT-10102-36‡</a>	—
310 g					<a href="#">JT-10102-26‡</a>	—	<a href="#">JT-10102-36‡</a>	—

†Includes short open-air draft shield.

‡Includes tall enclosed glass draft shield with three doors.

[JT-10100-83](#) Cable, RS-232 to USB

[JT-10100-84](#) Cable, RS-232 to printer

[JT-10100-85](#) Printer

[JT-10100-86](#) Printer paper. Pack of 3

[JT-10100-88](#) Density determination kit for 5" x 5" (12.8 x 12.8 cm) weighing pan

[JT-10100-87](#) Density determination kit for analytical models

[JT-10100-90](#) Lock-down cable, 36"L x 3/32" dia (91.4 x 0.3 cm)

[JT-10100-93](#) Draft shield for 5" x 5" (12.8 x 12.8 cm) weighing pan

[JT-01017-04](#) Square weigh boats, white polystyrene, 20 mL. Pack of 100

[JT-17101-52](#) NIST-traceable calibration with data for balances

## Cole-Parmer® StableTemp® Digital Utility Water Baths

Digital accuracy at an analog price

- Recall settings at the touch of a button
- Know when process is complete with built-in timer

Dual thermostat baths provide ±0.1°C precision and overtemperature safety feature prevents overheating. Seamless tank eliminates rusting and is easy to clean.



**StableTemp**



### Specifications

**Temperature range:** 5°C above ambient to 100°C  
**Temperature stability:** ±0.1°C  
**Wetted materials:** 304 SS  
**Temperature uniformity:** ±0.2°C  
**High-temperature cutoff:** yes

Bath capacity	Opening (L x W)	Working depth	120 VAC, 60 Hz		240 VAC, 50 Hz	
			Cat. no.	Price	Cat. no.	Price
2 L	3 7/8" x 4 5/16"	5 1/2"	JT-14576-00		JT-14576-02	
5 L	5" x 10 13/16"	5 1/2"	JT-14576-04		JT-14576-06	
10 L	10 5/8" x 11 5/8"	5 1/2"	JT-14576-08		JT-14576-10	
20 L	9 1/2" x 17 1/2"	5"	JT-14576-12		JT-14576-14	
28 L	9 1/2" x 17 1/2"	7"	JT-14576-16		JT-14576-18	

## Bath Fluids

Get more out of your bath!

Use these bath fluids to maintain desired bath temperatures. Refer to the table below to select the appropriate bath fluid for your application. For operator safety, set the overtemperature cutoff of your bath/circulator below the flash point of the bath fluid you use.



Fluid type	Silicone 210	Dynalene® HK-50	Silicone 200 20 (hot)	Silicone 710 (hot)
<b>Catalog number</b>	<a href="#">JT-01294-60</a>	<a href="#">JT-01297-00</a>	<a href="#">JT-01294-40</a>	<a href="#">JT-01294-00</a>
Specific gravity	0.98	0.85	0.95	1.11
Temperature range	-65 to 280°C	-50 to 58°C	10 to 149°C	150 to 250°C
Freezing point	—	-60°C	-84°C	-22°C
Flash point	288°C	65°C	246°C	302°C
Viscosity	98 cp at 26°C	2.35 cp at 25°C	18.98 cp at 25°C	33 cp at 99°C
Quantity	1 gal. (3.8 L)	1 gal. (3.8 L)	1 gal. (3.8 L)	1 gal. (3.8 L)
<b>Price</b>				

**Note:** Do not use automotive antifreeze with circulating baths—additives can be harmful to the circulating pump. Silicone fluids are not compatible with silicone tubing.

## Cole-Parmer® Polystat® Cooling/Heating Circulating Baths

Excellent cooling across range of temperatures

- Two-speed pump with up to 21 L/min flow
- Maximize bench space with compact size
- Protect samples and bath with high-temperature and low-level cut offs

**Standard Digital Controller Baths** feature five programmable set points, adjustable high-temperature cutoff, user-settable Min/Max temperature limits, and an adjustable pump nozzle. **Advanced Digital Controller Baths** offer all the features of the Standard Digital models (except adjustable pump nozzle) plus five programmable set points, a two-stage (force/suction) pump for greater circulation capacity, and a USB port.

**What's included:** lid, 6-ft (1.8-m) power cord with plug, M16 x 1 pump connection and 8- and 12-mm hose barb fittings for external circulation.



### Specifications

**Wetted materials:** stainless steel, polymers  
**Low-level cutoff:** yes



Bath capacity	Temperature range	Stability	Cooling capacity at 20°C	Pump type	Max pump pressure psi (mbar)	Max pump flow (L/min)	Working area (W x L x D)	Power (VAC, Hz)	Catalog number	Price
<b>Standard digital controller baths</b>										
6.5 L	-20 to 100°C	±0.05°C	250 W	Force	4.4 (310)	17	5 5/16" x 4 13/16" x 5 5/8" (13.5 x 12.2 x 15 cm)	115, 60 230, 50	<a href="#">JT-12122-02</a> <a href="#">JT-12122-04</a>	
8.6 L	-28 to 100°C	±0.05°C	500 W	Force	4.4 (310)	17	6 13/16" x 7 7/16" x 5 5/8" (17.3 x 18.3 x 15 cm)	115, 60 230, 50	<a href="#">JT-12122-32</a> <a href="#">JT-12122-34</a>	
8.6 L	-28 to 150°C	±0.05°C	500 W	Force	4.4 (310)	17	6 13/16" x 7 7/16" x 5 5/8" (17.3 x 18.3 x 15 cm)	115, 60 230, 50	<a href="#">JT-12122-36</a> <a href="#">JT-12122-38</a>	
<b>Advanced digital controller baths</b>										
6.5 L	-20 to 100°C	±0.025°C	250 W	Force/suction	11.7 (750)	21	5 5/16" x 4 13/16" x 5 5/8" (13.5 x 12.2 x 15 cm)	115, 60 230, 50	<a href="#">JT-12122-12</a> <a href="#">JT-12122-14</a>	
6.5 L	-20 to 100°C	±0.025°C	250 W	Force/suction	11.7 (750)	21	5 5/16" x 4 13/16" x 5 5/8" (13.5 x 12.2 x 15 cm)	115, 60 230, 50	<a href="#">JT-12122-26</a> <a href="#">JT-12122-28</a>	
8.6 L	-28 to 200°C	±0.025°C	500 W	Force/suction	11.7 (750)	21	6 13/16" x 7 7/16" x 5 5/8" (17.3 x 18.3 x 15 cm)	115, 60 230, 50	<a href="#">JT-12122-42</a> <a href="#">JT-12122-44</a>	
8.6 L	-35 to 200°C	±0.025°C	800 W	Force/suction	11.7 (750)	21	6 13/16" x 7 7/16" x 5 5/8" (17.3 x 18.3 x 15 cm)	115, 60† 230, 50†	<a href="#">JT-12122-56</a> <a href="#">JT-12122-58</a>	

†Requires 20 amp current.





## Cole-Parmer® Ultra-Quiet Mini Lab Compressors

### Get compressed air anywhere you need it

- Quick-connect port provides simple plug-and-play use of hoses and tools
- Control outlet pressure with the turn of a dial—up to 70 psi (4.8 bar)
- Easy maintenance—filters have long service lives

**NEW**



These versatile lab compressors are designed for point-of-use applications—move station with the integrated handle or optional transport cart. The built-in sound enclosure allows for ultra-quiet operation, and the compact design and low-vibration performance allow placement anywhere needed.

Quick-release coupling port comes with a 3/8" (9.5 mm) ID hose barb insert for easy tubing connection. Quickly see outlet pressure on the analog pressure gauge and use the control knob for adjustment up to 70 psi (4.8 bar)—ideal for cleaning dust off sensitive equipment and components.

**Cole-Parmer®**

#### Specifications

**Maximum pressure:** 101.5 psi (7 bar) operating;  
70 psi (5 bar) outlet  
**Tank capacity:** 0.52 gal. (2 L)

**Inlet port:** 10 mm OD compression  
**Duty cycle:** continuous

Max flow at 0 psi (0 bar)		Port size	hp	Noise level	Dimensions (L x W x H)		Power			Catalog number	Price
cfm	L/min				in.	cm	VAC	Hz	Amps		
1.48	42	7.2 mm	0.5	53 dB	15 1/2 x 12 3/4 x 11 1/2	39.6 x 32.1 x 29.5	115	60	3.2	<a href="#">JT-22222-22</a>	
2.71	77		0.75	54 dB			115	60	4.8	<a href="#">JT-22222-23</a>	

[JT-22222-24](#) Air gun with hose, for cleaning

[JT-22222-27](#) Collapsible transport cart

[JT-22222-25](#) Nozzle kit with eight nozzles

## Cole-Parmer® Ultra-Quiet Lab Compressors

### Quiet enough for benchtop use

- Run up to two air tools at once—quick-connect ports provide simple plug-and-play use
- Proprietary internally coated air tank and built-in membrane dryer deliver clean air for your lab needs
- Control outlet pressure with the turn of a dial—up to 116 psi (8 bar)
- Easy maintenance—filters are easy to replace and have long service lives

**NEW**



**Cole-Parmer®**

These convenient compressors are designed for point-of-use applications—take it wherever needed! Compact design and low-vibration performance allow placement on top of or under a lab bench. The built-in sound enclosure and swivel wheels allow for ultra-quiet, portable operation.

Quick-release coupling ports come with a 1/4" (6.4 mm) ID hose barb insert for easy tubing connection. An additional port can be found on the rear of the unit for attachment of a second tool.

View outlet pressure on the analog pressure gauge and use the control knob for adjustment up to 87 psi (6 bar). The anti-corrosion, anti-bacterial coated air tank works with the membrane dryer (2 µm pore filter) to provide odor-free, clean air to your application.

#### Specifications

**Maximum pressure:** 116 psi (8 bar) operating; 87 psi (6 bar) outlet  
**Tank capacity:** 6.6 gal. (25 L)  
**Inlet port:** 10 mm OD compression  
**Duty cycle:** continuous

Max flow	Port size	hp	Noise level	Dimensions (L x W x H)		Power			Catalog number	Price
				in.	cm	VAC	Hz	Amps		
2.5 cfm (73 L/min) at 0 psi (0 bar), 1.27 cfm (36 L/min) at 72 psi (5 bar), 1.06 cfm (30 L/min) at 101 psi (7 bar)	7.2 mm Quick Connect	0.75	49 dB	20 1/16 x 22 13/16 x 25 23/32	51 x 58 x 65.3	115	60	5.6	<a href="#">JT-22222-29</a>	
3.7 cfm (105 L/min) at 0 psi (0 bar), 2.37 cfm (67 L/min) at 72 psi (5 bar), 1.91 cfm (54 L/min) at 101 psi (7 bar)		1.54	53 dB			115	60	11.8	<a href="#">JT-22222-30</a>	

[JT-22222-31](#) Air gun with hose, for cleaning

[JT-22222-32](#) Nozzle kit with eight nozzles

## Cole-Parmer® Digital Reversing Mixer

### Time your cycles for more efficient mixing

- Won't lose speed—brushless, 142 in-oz torque motor maintains speed
- Minimize aeration and vortexing—reversing feature alters mixing pattern for better mixing
- No more moving mixer head to change impeller depth—through-shaft housing for easier positioning
- No more motor burn out—overload protection if torque exceeds ratings
- See what you're mixing—integrated sample light illuminates sample area

Mix samples up to 20,000 cps or up to 6.6 gallons (25 liters) easily and effectively. Repeat mixing conditions accurately with LED display, with control to  $\pm 1$  rpm or 3% of reading. Set timer from 1 to 2000 minutes, with audible alert when complete.

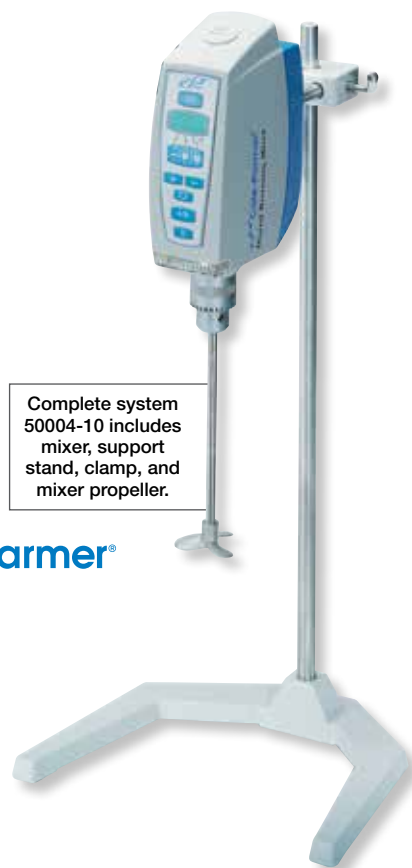
**Mixer includes:** mixer head, adjustable chuck (accepts rod up to  $\frac{3}{8}$ " [9.5 mm] dia), chuck key, mounting support rod, external power supply, and grounded power cord with plug assembly.

**Complete system adds:** propeller/shaft, support stand, and clamp.



Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
Mixer only	40 to 2010	$\frac{1}{10}$	142	100 to 230, 50/60	<a href="#">JT-50004-00</a>	
Complete system					<a href="#">JT-50004-10</a>	

[JT-17050-03](#) NIST-traceable calibration for mixers



Complete system 50004-10 includes mixer, support stand, clamp, and mixer propeller.

## Cole-Parmer® Digital Batch Mixer

### Tackle volumes up to 55 gallons (200 L)

- User-friendly operation—PLC/PC programmability, data logging, and intuitive graphic touch-screen interface
- Two-speed transmission provides smooth, quiet operation
- Through-shaft design allows for easy impeller adjustment, less downtime

This portable batch mixer has enough power to mix up to 55 gallons (200 L) and viscosity up to 180,000 cps. Enclosed fan-cooled brushless DC motor maintains a constant power transfer to the shaft at speeds up to 1500 rpm. Adjustable chuck accommodates up to  $\frac{5}{8}$ " (15.8 mm) dia impeller shaft.

Ideal for both laboratory and industrial uses, the mixer features RS-232 and USB interfaces to record date, time, speed, and torque data. Easy-to-use resistive digital touch-screen control enables you to select time and speed with a gloved hand or pencil tip. Other functions include alarms, timers, torque zero, torque min/max setting, and clockwise and counterclockwise rotation.

Safety features include a shaft/chuck guard, chemical-resistant housing, and overload, overheat and vibration protection. A safety screen protects the display from splashes.

**What's included:** chuck (accepts up to  $\frac{5}{8}$ " dia shafts), chuck key, shaft guard, installed screen protector, memory stick, mounting bolts, and power cord.



Speed range (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
50 to 1500	$\frac{1}{2}$	4248	120, 60	<a href="#">JT-50009-00</a>	



#### Accessories

- [JT-50019-94](#) Stainless steel plate mount
- [JT-50019-95](#) Replacement screen protector kit
- [JT-50019-96](#) Stainless steel multiposition C-clamp set
- [JT-50019-97](#) Replacement stainless steel chuck with key, 16-mm shaft diameter
- [JT-50019-98](#) Replacement chuck shaft guard
- [JT-50019-99](#) Repl. stainless steel chuck key



## Stir-Pak® Heavy-Duty Mixer Systems

Easily customize to your needs

### 1. Speed Controller

- Simple controls—speed adjustment knob and separate “forward/off/reverse” switch
- Reduce gear failure with torque limiting protection

### 2. Mixer Heads

- Don't limit your mixing angle—adjustable tilt from 0 to 30° for proper propeller placement
- Maintenance-free, rugged motor
- For more viscous or larger samples, choose a high-torque, low-speed mixer head with keyless chuck
- For lower viscosity samples, use a high-speed low-torque mixer head with through shaft for easy shaft positioning



### REQUIRED System Components

- 1) Speed controller
  - 2) Mixer head
- or choose complete system



Stir-Pak high-speed, low-torque mixer system 50007-32



**Complete systems include:** speed controller, mixer head, shaft, propeller, clamp and stand.

1. Speed controller			2. Mixer heads					Complete systems			
Power (VAC, Hz)	Catalog number	Price	Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price	Catalog number	Price
115, 50/60	<a href="#">JT-50007-00</a>		High torque, low speed; with keyless chuck	2 to 180	1/15	340	115, 50/60	<a href="#">JT-50007-10</a>		<a href="#">JT-50007-12</a>	
230, 50/60	<a href="#">JT-50007-05</a>						230, 50/60	<a href="#">JT-50007-15</a>		—	—
115, 50/60	<a href="#">JT-50007-00</a>			High speed, low torque; with adjustable through-shaft collet	9 to 900	1/15	70	115, 50/60	<a href="#">JT-50007-20</a>		<a href="#">JT-50007-22</a>
230, 50/60	<a href="#">JT-50007-05</a>		230, 50/60					<a href="#">JT-50007-25</a>		<a href="#">JT-50007-27</a>	
115, 50/60	<a href="#">JT-50007-00</a>			23 to 2300	1/10	45	115, 50/60	<a href="#">JT-50007-30</a>		<a href="#">JT-50007-32</a>	
115, 50/60	<a href="#">JT-50007-00</a>						115, 50/60	<a href="#">JT-50007-40</a>		<a href="#">JT-50007-42</a>	
230, 50/60	<a href="#">JT-50007-05</a>			230, 50/60	<a href="#">JT-50007-45</a>		<a href="#">JT-50007-47</a>				

## IKA® RW 20 Digital Dual-Range Mixer

Two speed ranges for a variety of applications

- No difficult controls—easy-to-use knob and LED display for accurate setting
- No need to move mixer head to reposition propeller—through-shaft design allows for easy movement
- Maintenance-free motor 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.

**Complete system includes:** mixer, chuck (accepts up to 3/8" [10 mm] dia shafts), 6 1/4" L x 1/2" dia (159 mm L x 10 mm dia) mounting rod, four-blade propeller mixer stand, and clamp.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
60 to 500/ 240 to 2000	1/25	259	115, 50/60	<a href="#">JT-50705-00</a>	
			230, 50/60	<a href="#">JT-50705-10</a>	

**Wait!**

There's More at [ColeParmer.com](http://ColeParmer.com)

Browse 100,000+ products plus find **Technical Resources** to help you choose

## Real-Torque Digital™ Brushless Mixers

Get precise speeds with user-friendly keypad

- Won't let speed change even as viscosity changes
- Maintenance-free, nonventilated motor for continuous use
- Set torque reading at zero via torque tare function
- Easily alter shaft length with through-shaft design

These mixers feature overload protection that automatically shuts off the mixer if maximum torque is exceeded—an LED light signals overload conditions.

**What's included:** calibration certificate, stainless steel chuck and key (accepts up to 3/8" [9.5 mm] dia shafts), chuck guard, 5"L x 1/2" dia (127 mm L x 13 mm dia) mounting rod, and 6-ft (1.8-m) cord with three-prong plug.



Speed range (torque)		Motor	Power (50/60 Hz)	Catalog number	Price
Low speed	High speed				
12 to 360 rpm (800 in-oz)	360 to 1800 rpm (160 in-oz)	1/2 hp	115 VAC	JT-50800-00	
			230 VAC	JT-50800-05	
20 to 600 rpm (480 in-oz)	600 to 3000 rpm (96 in-oz)	1/2 hp	115 VAC	JT-50800-10	
			230 VAC	JT-50800-15	
40 to 1200 rpm (240 in-oz)	1200 to 6000 rpm (48 in-oz)	1/2 hp	115 VAC	JT-50800-20	
			230 VAC	JT-50800-25	



## IKA® EUROSTAR Digital Constant-Speed Mixers

Speed won't change even as viscosity does

- Automatic adjustment to desired speed with unique continuous speed comparison
- No need to move mixer head to remove samples—through-shaft design for impeller adjustments
- Worry-free operation—maintenance-free motor with overload protection
- Handle even large samples—up to 26.4 gallons (100 liters)

**EUROSTAR 60 Digital Mixer** (50704-20 and -25) handles volumes up to 10.6 gallons (40 liters) and viscosities up to 50,000 cps.

**EUROSTAR 100 Digital Mixer** (50704-30 and -35) will mix volumes up to 26.4 gallons (100 liters) and viscosities up to 70,000 cps.

**What's included:** chuck (accepts up to 3/8" [10 mm] dia shaft) and 6 1/4"L x 1/2" dia (159 mm x 13 mm) mounting rod.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
<b>Eurostar 60 digital mixer</b>					
30 to 2000	3/16	85	115, 50/60	JT-50704-20	
			230, 50/60	JT-50704-25	
<b>Eurostar 100 digital mixer</b>					
30 to 1300	1/8	142	115, 50/60	JT-50704-30	
			230, 50/60	JT-50704-35	

## IKA® EUROSTAR Digital Mixers

Mix viscous samples up to 30,000 cps

- Speed won't change even as viscosity changes
- Won't overheat—thermal overload shut-off for safety
- Maintenance-free design for continuous duty

**EUROSTAR 20 Digital Mixer** handles volumes up to 4 gallons (15 liters) and viscosities up to 10,000 cps.

**EUROSTAR 40 Digital Mixer** 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) and 6 1/4"L x 1/2" dia (159 mm x 13 mm) mounting rod.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
<b>Eurostar 20 digital mixer</b>					
30 to 2000	1/16	28.3	115, 50/60	JT-50702-30	
			230, 50/60	JT-50702-35	
<b>Eurostar 40 digital mixer</b>					
30 to 2000	1/8	56.6	115, 50/60	JT-50702-40	
			230, 50/60	JT-50702-45	



## ServoDyne™ Electronic Mixers

### Get more precise mixing

– Monitor and control speed, torque, and batch time through digital controller or a computer interface

#### 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

- Maintenance-free—permanent-magnet DC motor with permanently lubricated ball-bearing construction
- Rotate mixer head from 0° to 30° for proper positioning of shaft and propeller
- Optical shaft encoder relays the exact motor rotation speed data to the electronic mixer controller

**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.



1. Controller		2. Mixer heads					Complete systems			
Catalog number	Price	Description	Speed (rpm)	hp	Max torque (in-oz)		Catalog number	Price	Catalog number	Price
					Continuous	Intermittent				
JT-50008-00		High torque, low speed; with keyless chuck	3 to 180	1/15	340	510	JT-50008-10		JT-50008-12	
			20 to 900	1/15	70	105	JT-50008-20		JT-50008-22	
		High speed, low torque; with adjustable through-shaft collet	60 to 2300	1/10	45	65	JT-50008-30		JT-50008-32	
			150 to 6000	1/10	17	25	JT-50008-40		JT-50008-42	

## IKA® EUROSTAR Control Mixers with Wireless Remote

### Control and monitor mixer wirelessly

- Measure viscosity changes with torque trend function
- Monitor fluid temperature with integrated temperature sensor
- Automatic adjustment to desired speed for maintaining consistent mixing

**EUROSTAR 60 Control Mixer** (50705-30 and -35) handles volumes up to 10.6 gallons (40 liters) and viscosities up to 50,000 cps.

**EUROSTAR 100 Control Mixer** (50705-40 and -45) will mix volumes up to 26.4 gallons (100 liters) and viscosities up to 70,000 cps.

**EUROSTAR 200 Control Dual-Range Mixer** (50705-50 and -55) will mix up to 26.4 gallons (100 liters) and viscosities up to 100,000 cps. Two selectable speed ranges give you the option of high viscosity or high-speed mixing.

**EUROSTAR 200 Control P4 Dual-Range/High-Torque Mixer** (50705-60 and -65) will mix up to 26.4 gallons (100 liters) and viscosities up to 150,000 cps. A high-torque rating and two selectable speed ranges give you the option of high viscosity or high-speed mixing.

**What's included:** stainless steel Pt RTD temperature probe; 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.



#### FEATURES

- ✓ Ultra-clear, high-contrast TFT LCD controller screen displays all process parameters
- ✓ RS-232 and USB interfaces for easy documentation of processes and firmware updates

Detachable wireless controller—lets you monitor and control all functions remotely



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
<b>Eurostar 60 control mixer</b>					
30 to 2000	3/16	85	115, 50/60	JT-50705-30	
			230, 50/60	JT-50705-35	
<b>Eurostar 100 control mixer</b>					
30 to 1300	1/8	142	115, 50/60	JT-50705-40	
			230, 50/60	JT-50705-45	
<b>Eurostar 200 control dual-range mixer</b>					
6 to 400/30 to 2000	1/8	283	115, 50/60	JT-50705-50	
			230, 50/60	JT-50705-55	
<b>Eurostar 200 control P4 dual-range/high-torque mixer</b>					
4 to 108/16 to 530	1/8	935	115, 50/60	JT-50705-60	
			230, 50/60	JT-50705-65	

**JT-50705-80** Replacement temperature probe, stainless steel

**JT-50705-82** Temperature probe, glass-coated stainless steel for acid and alkaline fluids



## Accessories for Laboratory Mixers

**A. Shafts.** All  $\frac{3}{16}$ " (10 mm) dia shafts are machined on one end to accept a  $\frac{5}{16}$ " (8 mm) bore dia propeller.

Key	Shaft dimensions, dia x L, in. (mm)	Catalog number	Price
A	$\frac{5}{16}$ x 12 (8 x 305)	<a href="#">JT-04552-20</a>	
	$\frac{5}{16}$ x 18 (8 x 457)	<a href="#">JT-04552-30</a>	
	$\frac{3}{8}$ x 12 (10 x 305)	<a href="#">JT-04552-25</a>	
	$\frac{3}{8}$ x 18 (10 x 457)	<a href="#">JT-04552-35</a>	
	$\frac{3}{8}$ x 24 (10 x 610)	<a href="#">JT-04552-00</a>	
	$\frac{3}{8}$ x 30 (10 x 762)	<a href="#">JT-04552-05</a>	

**B. Turbine Propellers** are for airless mixing in deep containers.

**C. Marine-Style Propellers** are for general-purpose mixing. Use alone or mount several on a single shaft for thorough agitation.

**D. Folding Propeller** is for use in narrow-mouth vessels. Folded diameter is  $1\frac{1}{16}$ " (18 mm).

Key	Description	Bore dia in. (mm)	Overall dia in. (mm)	Catalog number	Price
B	Turbine style	$\frac{3}{8}$ (9.5)	2 (51)	<a href="#">JT-04552-15</a>	
		$\frac{5}{16}$ (8)	2 (51)	<a href="#">JT-04552-10</a>	
		$\frac{5}{16}$ (8)	1 (25)	<a href="#">JT-04552-40</a>	
C	Marine style	$\frac{5}{16}$ (8)	$1\frac{1}{2}$ (38)	<a href="#">JT-04552-45</a>	
		$\frac{5}{16}$ (8)	2 (51)	<a href="#">JT-04552-50</a>	
		$\frac{3}{8}$ (9.5)	2 (51)	<a href="#">JT-04552-55</a>	
		$\frac{5}{16}$ (8)	3 (76)	<a href="#">JT-04552-60</a>	
		$\frac{5}{16}$ (8)	2 (51) open	<a href="#">JT-04543-00</a>	
D	Folding style	$\frac{5}{16}$ (8)	2 (51) open	<a href="#">JT-04543-00</a>	

**E-G. Clamps** ensure a sturdy connection between mixer and stands.

Key	Catalog number	Price
E	<a href="#">JT-08041-22</a>	
F	<a href="#">JT-04340-50</a>	
G	<a href="#">JT-04560-24</a>	

**H. Stand.** Corrosion resistant, electropolished cast steel base; 303 SS support rod. Both legs accept an extra support rod.

**I. Mixer Stand** has a cast-iron base and a stainless steel rod.

**J. 316 SS Mixer Stand** accepts extra screw-in support rods in both legs.

Key	Dimensions H x dia, in. (mm)	Stand		Extra support rod	
		Cat. no.	Price	Cat. no.	Price
H	29 x $\frac{5}{8}$ (737 x 16)	<a href="#">JT-04552-80</a>		<a href="#">JT-04552-85</a>	
I	24 x $\frac{5}{8}$ (610 x 16)	<a href="#">JT-04546-00</a>		—	—
J	29 x $\frac{5}{8}$ (737 x 16)	<a href="#">JT-04344-00</a>		<a href="#">JT-04344-10</a>	

### K-P. Plastic Mixing Paddle Assemblies

Use these plastic paddle assemblies for mixing most acids and corrosive solutions. Plastic-coated steel assemblies provide better chemical resistance than stainless steel alone.

Material	Shaft, dia x L, in. (mm)	Max paddle dia, in. (mm)	Catalog number	Price
<b>K. Fixed, dual-blade paddle assembly</b> —for mixing medium-viscosity liquids				
Polypropylene	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	1 $\frac{1}{2}$ (41)	<a href="#">JT-06367-10</a>	
<b>L. A-shaped, blade paddle assembly</b> —for mixing highly viscous liquids				
Polypropylene	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	2 $\frac{1}{2}$ (67)	<a href="#">JT-06367-20</a>	
<b>M. Swing-out, dual-blade paddle assembly</b> —for use in narrow-necked vessels				
Polypropylene	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	2 $\frac{3}{8}$ (60)	<a href="#">JT-06367-40</a>	
	$\frac{5}{16}$ x $13\frac{1}{16}$ (8 x 350)	4 (102)	<a href="#">JT-06367-60</a>	
<b>N. Three-blade paddle assembly</b> —for general-purpose mixing				
PTFE	$\frac{5}{16}$ x 12 (8 x 305)	2 (51)	<a href="#">JT-04449-06</a>	
PTFE	$\frac{5}{16}$ x 18 (8 x 457)	2 (51)	<a href="#">JT-04449-10</a>	
<b>O. Anchor-style paddle assembly</b> —for mixing medium- to high-viscosity liquids				
PTFE	$\frac{3}{8}$ x 22 (10 x 559)	4 (102)	<a href="#">JT-06367-70</a>	
<b>P. Four-blade paddle assembly</b> —for mixing low- to medium-viscosity liquids				
PTFE	$\frac{3}{8}$ x 22 $\frac{1}{2}$ (10 x 562)	2 $\frac{3}{8}$ (60)	<a href="#">JT-06367-80</a>	



## Ashcroft® Digital Pressure Gauges with Backlight

### Simple three-button programming

- Easy-to-read, 5-digit display with backlight and 20-segment bar graph
- Stainless steel sensor; IP67-rated case
- Features tare, min/max memory, and nine engineering plus one custom engineering units



#### Specifications

**Accuracy:** ±0.5% full-scale  
**Dial size:** 2½" (64 mm)  
**Operating temp:** -4 to 140°F (-20 to 60°C)  
**Units of measure:** psi, " Hg, cm Hg, mm Hg, kPa, mPa, bar, kg/cm², ft H₂O, and user-defined unit

**Wetted materials:** 17-4 ph and 316L stainless steel  
**Lens:** polycarbonate  
**Process connection:** ¼" NPT(M)  
**Power:** two AA batteries (included)

Range	Resolution	Catalog number	Price
0 to 30" Hg	0.01" Hg	<a href="#">JT-68334-01</a>	
30" Hg to 30 psi	0.01" Hg	<a href="#">JT-68334-03</a>	
30" Hg to 100 psi	0.01" Hg	<a href="#">JT-68334-07</a>	
0 to 15 psi	0.001 psi	<a href="#">JT-68334-09</a>	
0 to 30 psi	0.001 psi	<a href="#">JT-68334-11</a>	
0 to 60 psi	0.001 psi	<a href="#">JT-68334-13</a>	
0 to 100 psi	0.01 psi	<a href="#">JT-68334-15</a>	
0 to 200 psi	0.01 psi	<a href="#">JT-68334-17</a>	
0 to 300 psi	0.01 psi	<a href="#">JT-68334-19</a>	
0 to 500 psi	0.01 psi	<a href="#">JT-68334-21</a>	
0 to 1000 psi	0.1 psi	<a href="#">JT-68334-25</a>	
0 to 5000 psi	0.1 psi	<a href="#">JT-68334-27</a>	
0 to 10,000 psi	1 psi	<a href="#">JT-68334-31</a>	

[JT-09376-01](#) Batteries, AA. Pk of 4

[JT-17040-12](#) NIST-traceable calibration with data

## WIKA® 3A Sanitary Gauges

### Get better readings

- Glycerin fill reduces fluctuations
- Manufactured for clean-in-place (CIP) applications
- All-welded gauge assembly contains an external flush diaphragm
- Assembly meets the criteria set forth by 3A standards



#### Specifications

**Accuracy:** ±3-2-3% of span  
**Operating temp:** 50 to 257°F (10 to 125°C)

**Wetted materials:** 316L SS  
**Lens:** polycarbonate

**Process connection:** ¾" Tri-Clamp®  
**Casing:** 304 SS  
**Dial size:** 2½" (64 mm)

Range	Resolution	Catalog number	Price
30 psi	0.5 psi	<a href="#">JT-68056-72</a>	
60 psi	1 psi	<a href="#">JT-68056-74</a>	
100 psi	2 psi	<a href="#">JT-68056-76</a>	
160 psi	2 psi	<a href="#">JT-68056-78</a>	

[JT-17040-10](#) NIST-traceable calibration with data

## Handheld Differential Pressure Meters

### Intrinsically safe models for hazardous use

- Select one of nine units
- Feature zero, hold, maximum, minimum, and out-of-range, functions
- Smooth fluctuating pressure readings with filter function
- Displays average of last sixteen pressure readings



#### Specifications

**Accuracy:** ±0.2% full scale  
**Operating temperature:** 32 to 122°F (0 to 50°C)  
**Temperature range (compensated):** 68 to 86°F (20 to 30°C)  
**Media compatibility:** clean, noncorrosive, inert gases

**Process connections:** ⅛" BSP  
**Units of measure:** psi, " H₂O, cm H₂O, " Hg, mm Hg, mbar, torr, kPa, and kg/cm²  
**Power:** one 9 V battery (included)  
**Approval (intrinsically safe models):** EEx la IIC T4

Range	Resolution	Catalog number	Price
<b>Intrinsically safe differential pressure gauges</b>			
-5 to 5 psid	0.001 psi	<a href="#">JT-68600-06</a>	
-30 to 30 psid	0.01 psi	<a href="#">JT-68600-02</a>	
-100 to 100 psid	0.1 psi	<a href="#">JT-68600-04</a>	
<b>Non-intrinsically safe differential pressure gauges</b>			
-5 to 5 psid	0.001 psi	<a href="#">JT-68600-10</a>	
-30 to 30 psid	0.01 psi	<a href="#">JT-68600-12</a>	
-100 to 100 psid	0.1 psi	<a href="#">JT-68600-14</a>	

[JT-95616-00](#) PVC tubing, 4 mm ID x 6 mm OD. Pack of 25 ft.

[JT-17090-31](#) NIST-traceable calibration with data

## Cole-Parmer® Sealed SS Pressure Transducers

### No epoxies to cause signal instability or drift

- Stainless steel (SS) diaphragm and polysilicon strain gauge are bonded by vapor deposition



#### Specifications

**Temp range (compensated):** -4 to 176°F (-20 to 80°C)  
**Process connection:** ¼" NPT(M)  
**Power:** 9 to 30 VDC  
**Output:** 4 to 20 mA (call for models with 1 to 5 V output)  
**Wetted materials:** PH 17-4 SS  
**Dimensions (L x dia):** 2¾" x 1½" (7 x 3.8 cm)



Range	Catalog number	Price
<b>Vacuum and compound transducers; ±0.4% accuracy (BFSL)</b>		
30" Hg to 0 psi	<a href="#">JT-07356-10</a>	
30" Hg to 30 psi	<a href="#">JT-07356-11</a>	
<b>Pressure transducers; ±0.4% accuracy (BFSL)</b>		
0 to 30 psi	<a href="#">JT-07356-51</a>	
0 to 60 psi	<a href="#">JT-07356-52</a>	
0 to 100 psi	<a href="#">JT-07356-53</a>	
0 to 300 psi	<a href="#">JT-07356-54</a>	
0 to 750 psi	<a href="#">JT-07356-55</a>	
0 to 1000 psi	<a href="#">JT-07356-56</a>	
<b>Pressure transducers; ±0.25% accuracy (BFSL); with NIST-traceable calibration report</b>		
0 to 100 psi	<a href="#">JT-68001-04</a>	
0 to 200 psi	<a href="#">JT-68001-05</a>	

## Cole-Parmer® Low-Pressure Mechanical Gauges

Perfect for accurately measuring pressures below 10 psi

- Manufactured with a chrome-plated case, use these gauges to measure low pressure in filter systems, cleanrooms, or fluidic systems



### Specifications

<b>Accuracy:</b> ±1½% full scale	<b>Wetted materials:</b> brass
<b>Dial size:</b> 2½" (64 mm)	<b>Lens:</b> polycarbonate
<b>Operating temp:</b> 0 to 150°F (0 to 66°C)	<b>Process connection:</b> ¼" NPT(M)
	<b>Casing:</b> black steel

Range	Catalog number	Price
0 to 10" H <sub>2</sub> O	<a href="#">JT-68357-00</a>	
0 to 15" H <sub>2</sub> O	<a href="#">JT-68357-02</a>	
0 to 30" H <sub>2</sub> O	<a href="#">JT-68357-04</a>	
0 to 60" H <sub>2</sub> O	<a href="#">JT-68357-06</a>	
0 to 100" H <sub>2</sub> O	<a href="#">JT-68357-08</a>	
0 to 3 psi	<a href="#">JT-68357-14</a>	
0 to 5 psi	<a href="#">JT-68357-16</a>	
0 to 10 psi	<a href="#">JT-68357-18</a>	

[JT-17040-10](#) NIST-traceable calibration with data

## Ashcroft® Digital Sanitary Pressure Gauges

Get more flexibility

- Offer 3A rating with the functionality of a digital gauge
- Get readings how you need them—ten engineering units
- Unlimited deadband throughout its range



ISO 9001:2008  
CERTIFIED SUPPLIER



### Specifications

<b>Accuracy:</b> ±0.25% full-scale	<b>Display:</b> 5-digit LCD, 0.88"H
<b>Dial size:</b> 3½" (89 mm)	<b>Process connection:</b> 1½" sanitary Tri-Clamp®
<b>Operating temp:</b> 14 to 140°F (10 to 60°C)	<b>Wetted materials:</b> 316 stainless steel
<b>Units of measure:</b> psi, " H <sub>2</sub> O, ft H <sub>2</sub> O, mPa, mbar, kPa, kg/cm <sup>2</sup> , bar, " Hg, mm Hg	<b>Casing:</b> 300 stainless steel
	<b>Lens:</b> polyester
	<b>Power:</b> two C batteries

Range	Resolution	Catalog number	Price
30 to 0" Hg	0.0001" Hg	<a href="#">JT-68901-50</a>	
0 to 30 psi	0.0001 psi	<a href="#">JT-68901-51</a>	
0 to 60 psi	0.005 psi	<a href="#">JT-68901-52</a>	
0 to 100 psi	0.005 psi	<a href="#">JT-68901-53</a>	
0 to 200 psi	0.01 psi	<a href="#">JT-68901-54</a>	

[JT-17040-12](#) NIST-traceable calibration with data

## Cole-Parmer® High-Accuracy Pressure Transducers

Be more accurate, affordably

- SS sensor attached to SS electrode forms a variable capacitor



ISO 9001:2008  
CERTIFIED SUPPLIER



### Specifications

<b>Accuracy:</b> ±0.25% full-scale	<b>Power:</b> 9 to 30 VDC
<b>Temp range (compensated):</b> –4 to 176°F (–20 to 80°C)	<b>Wetted materials:</b> PH 17-4 SS
<b>Process connection:</b> ¼" NPT(M)	<b>Dimensions (L x dia):</b> 2¾" x 1½" (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="#">JT-68075-00</a>		<a href="#">JT-68075-30</a>	
–14.7 to 15 psi	<a href="#">JT-68075-02</a>		<a href="#">JT-68075-32</a>	
<b>Gauge pressure transmitters</b>				
0 to 5 psi	<a href="#">JT-68075-10</a>		<a href="#">JT-68075-40</a>	
0 to 10 psi	<a href="#">JT-68075-12</a>		<a href="#">JT-68075-42</a>	
0 to 25 psi	<a href="#">JT-68075-14</a>		<a href="#">JT-68075-44</a>	
0 to 50 psi	<a href="#">JT-68075-16</a>		<a href="#">JT-68075-46</a>	
0 to 100 psi	<a href="#">JT-68075-18</a>		<a href="#">JT-68075-48</a>	
0 to 250 psi	<a href="#">JT-68075-20</a>		<a href="#">JT-68075-50</a>	

## Cole-Parmer® Economical Pressure Transducers

Accuracy in a compact, durable package

- High-performance ASIC married to a very stable polysilicon thin-film pressure sensor
- Sensor is electron-beam welded to a SS pressure fitting for high overpressure capability and outstanding durability against shock and vibration
- Circuitry is held securely within an internal cage and housed in a reinforced nylon enclosure



ISO 9001:2008  
CERTIFIED SUPPLIER



### Specifications

<b>Accuracy:</b> ±1% span	<b>Power:</b> 9 to 36 VDC
<b>Temp range (compensated):</b> –40 to 257°F (–40 to 125°C)	<b>Wetted materials:</b> PH 17-4 SS
<b>Process connection:</b> ¼" NPT (M)	<b>Dimensions (dia x L):</b> 1" x 2½" (2.5 x 6.4 cm)

Range	4 to 20 mA output		1 to 5 VDC output	
	Catalog number	Price	Catalog number	Price
30" Hg to 30 psi	<a href="#">JT-68900-48</a>		<a href="#">JT-68900-62</a>	
0 to 30 psi	<a href="#">JT-68900-50</a>		<a href="#">JT-68900-64</a>	
0 to 100 psi	<a href="#">JT-68900-52</a>		<a href="#">JT-68900-66</a>	
0 to 200 psi	<a href="#">JT-68900-54</a>		<a href="#">JT-68900-68</a>	
0 to 500 psi	<a href="#">JT-68900-56</a>		<a href="#">JT-68900-70</a>	
0 to 1000 psi	<a href="#">JT-68900-58</a>		<a href="#">JT-68900-72</a>	
0 to 3000 psi	<a href="#">JT-68900-60</a>		<a href="#">JT-68900-74</a>	





## Cole-Parmer® StableTemp™ Stirrers and Stirring Hot Plates

### Precision control ensures accurate, repeatable results

- Stay safe—hot surface warning until plate cools below 50°C
- Don't worry about spills—raised display diverts liquids away from critical components
- Optional temperature probe maintains your sample at the set temperature
- Keep samples in place—optional rod and clamps secure containers to the top plate
- Optional splash guard protects you and your sample from mishaps

#### Advanced Stirrer and Stirring Hot Plate

- Greater accuracy and repeatability for advanced applications
- Set ramp/dwell programs and save settings for quick repeat
- Always know your status—view actual and set values simultaneously
- Protect you and your sample with overtemperature protection

**What's included:** PTFE-coated stir bar and detachable power cord with plug (EU plug for 230 VAC models). Advanced stirring hot plate also includes a temperature probe kit.



StableTemp



Top plate		Heating		Stirring		Power		Catalog number	Price
Dimensions	Material	Temperature range	Max load	Speed range	Max capacity	VAC	Hz		
<b>Stirrers</b>									
4 1/4" x 4 1/4" (10.8 x 10.8 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	1 L	100 to 120 230	50/60 50/60	<a href="#">JT-03406-01</a> <a href="#">JT-03406-06</a>	
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">JT-03406-11</a> <a href="#">JT-03406-16</a>	
10 1/4" x 10 1/4" (26 x 26 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	6 L	100 to 120 230	50/60 50/60	<a href="#">JT-03406-31</a> <a href="#">JT-03406-36</a>	
<b>Stirring hot plates</b>									
4 1/4" x 4 1/4" (10.8 x 10.8 cm)	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	50 to 1500 rpm	1 L	100 to 120 230	50/60 50/60	<a href="#">JT-03407-01</a> <a href="#">JT-03407-06</a>	
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">JT-03407-11</a> <a href="#">JT-03407-16</a>	
10 1/4" x 10 1/4" (26 x 26 cm)	Ceramic	86 to 752°F (30 to 400°C)	25 lb (11.4 kg)	50 to 1500 rpm	6 L	100 to 120 230	50/60 50/60	<a href="#">JT-03407-31</a> <a href="#">JT-03407-36</a>	
<b>Advanced stirrer and stirring hot plate</b>									
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">JT-03406-41</a> <a href="#">JT-03406-46</a>	
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	86 to 842°F (30 to 450°C)	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">JT-03407-41</a> <a href="#">JT-03407-46</a>	

<sup>†</sup>Based on water contained in a 20-L glass flat-bottom flask.

#### Accessories

- [JT-04600-88](#) Transparent splash shield for 4 1/4" x 4 1/4" units
- [JT-04600-89](#) Transparent splash shield for 7 1/4" x 7 1/4" units
- [JT-04600-90](#) Transparent splash shield for 10 1/4" x 10 1/4" units
- [JT-04600-91](#) External temperature probe, 100 Ω Pt, stainless steel, 32 to 752°F (0 to 400°C)
- [JT-04600-92](#) External temperature probe, 1000 Ω Pt, stainless steel, 32 to 752°F (0 to 400°C)
- [JT-04600-93](#) External temperature probe, 1000 Ω Pt, Hastelloy®, 32 to 752°F (0 to 400°C)
- [JT-04600-98](#) Support rod for securing sample containers
- [JT-04600-99](#) Clamp and holder for securing sample containers

## Cole-Parmer® Hot Plates and Multiposition Stirrers and Stirring Hot Plates

### Reach max temperature in two minutes

- Stir bar won't dance—unique U-shaped magnet holds 900 stir bar tightly
- Front-panel controls are positioned to prevent you from touching the hot plate
- Stepless speed control provides smooth stirring action to 1500 rpm



Number of stirring positions	Volume per position	Top plate		Heating		Speed range	Power		Catalog number	Price
		Dimensions	Material	Temp range	Max load		VAC	Hz		
<b>Hot plates</b>										
—	—	12" x 12" (30.5 x 30.5 cm)	Ceramic	120 to 842°F (49 to 450°C)	25 lb (11.4 kg)	—	115 230	60 50	<a href="#">JT-04801-14</a> <a href="#">JT-04801-16</a>	
<b>Multiposition stirrers</b>										
5	800 mL	12" x 12" (30.5 x 30.5 cm)	Ceramic	—	—	100 to 1500 rpm	120	60	<a href="#">JT-51450-21</a>	
							230	50	<a href="#">JT-51450-26</a>	
9	400 mL						120	60	<a href="#">JT-51450-23</a>	
							230	50	<a href="#">JT-51450-28</a>	
<b>Multiposition stirring hot plates</b>										
5	800 mL	12" x 12" (30.5 x 30.5 cm)	Ceramic	212 to 845°F (100 to 450°C)	40 lb (18.2 kg)	100 to 1500 rpm	120	60	<a href="#">JT-51450-71</a>	
							230	50	<a href="#">JT-51450-76</a>	
9	400 mL						120	60	<a href="#">JT-51450-73</a>	
							230	50	<a href="#">JT-51450-78</a>	



Mix multiple samples independently

#### Accessories

- [JT-17050-04](#) NIST-traceable calibration with data for stirrers

## Cole-Parmer® Stirrers, Hot Plates, and Stirring Hot Plates

Reduce clutter in your workspace with space-saving design

- Heat one large vessel or several small ones—easily accommodate four 250-mL beakers
- Be safe—flashing light warns when top plate is hot (above 50°C), even when unplugged
- Unique housing allows legs of a support stand to slide underneath
- Choose ceramic top for better chemical resistance and higher temperatures

**Analog Stirrers** feature powerful magnets and motor to support speeds up to 2000 rpm and large-volume mixing up to 15 L (4 gal.).

**Advanced Analog Hot Plates and Stirring Hot Plates** feature an innovative LED temperature indicator scale, which lights up in colored increments as the top plate heats up, and shows you when the plate has reached its temperature set point. Use with the optional digital temperature controller to accurately regulate sample temperature.

**Advanced Digital Stirring Hot Plates** feature an LED display of surface temperature, ensuring high repeatability and accuracy. Compatible with the optional controller for precise sample temperatures.

**Optional Digital Temperature Controller** can be used in two different modes: as a precise temperature controller from 20 to 200°C or as a digital thermometer from -4 to 325°C. With digital setting and display of temperature, the temperature controller is accurate to ±0.5°C.



04801-65



04801-64



Top plate		Temperature range	Stirring		Power		Catalog number	Price
Dimensions	Material		Speed range	Max capacity <sup>†</sup>	VAC	Hz		
<b>Analog stirrers</b>								
6" x 6" (15 x 15 cm)	Ceramic	—	100 to 2000 rpm	15 L	120	60	<a href="#">JT-04801-50</a>	
	Stainless steel	—			230	50	<a href="#">JT-04801-52</a>	
					120	60	<a href="#">JT-04801-54</a>	
					230	50	<a href="#">JT-04801-56</a>	
<b>Advanced analog hot plates</b>								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	—	—	120	60	<a href="#">JT-04801-20</a>	
	Coated aluminum	Ambient to 617°F (325°C)			230	50	<a href="#">JT-04801-22</a>	
					120	60	<a href="#">JT-04801-24</a>	
					230	50	<a href="#">JT-04801-26</a>	
<b>Advanced analog stirring hot plates</b>								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	100 to 2000 rpm	15 L	120	60	<a href="#">JT-04801-60</a>	
	Coated aluminum	Ambient to 617°F (325°C)			230	50	<a href="#">JT-04801-62</a>	
					120	60	<a href="#">JT-04801-65</a>	
					230	50	<a href="#">JT-04801-67</a>	
<b>Advanced digital stirring hot plates</b>								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	100 to 2000 rpm	15 L	120	60	<a href="#">JT-04801-64</a>	
	Coated aluminum	Ambient to 617°F (325°C)			230	50	<a href="#">JT-04801-66</a>	
					120	60	<a href="#">JT-04801-68</a>	
					230	50	<a href="#">JT-04801-70</a>	

<sup>†</sup>Based on water contained in a 20-L glass flat-bottom flask.

[JT-04801-80](#) Digital temperature controller for advanced models

## Cole-Parmer® Mono-Mold® and Slim-Line® 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
- Choose Slim-Line stir bars for slimmer profile and larger length-to-diameter ratio



Find even more online!  
Go to [ColeParmer.com](http://ColeParmer.com) to search more than 100,000 products.

04770-40

04775-65

Size		With spinning ring		Without spinning ring	
Length	Diameter <sup>†</sup>	Catalog number	Price	Catalog number	Price
<b>Mono-Mold stir bars</b>					
7/16" (11.1 mm)	3/16" (4.8 mm)	—	—	<a href="#">JT-04775-10</a>	
1/2" (12.7 mm)	5/16" (7.9 mm)	<a href="#">JT-08548-00</a>		<a href="#">JT-04770-20</a>	
5/8" (15.9 mm)	5/16" (7.9 mm)	<a href="#">JT-08549-00</a>		<a href="#">JT-04770-30</a>	
1" (25.4 mm)	3/8" (9.5 mm)	<a href="#">JT-08550-00</a>		<a href="#">JT-04770-40</a>	
1 1/2" (38.1 mm)	3/8" (9.5 mm)	<a href="#">JT-08551-00</a>		<a href="#">JT-04770-50</a>	
2" (50.8 mm)	3/8" (9.5 mm)	<a href="#">JT-08552-00</a>		<a href="#">JT-04770-60</a>	
2 1/2" (63.5 mm)	3/8" (9.5 mm)	<a href="#">JT-04775-75</a>		—	—
2 1/2" (63.5 mm)	1/2" (12.7 mm)	—	—	<a href="#">JT-04770-70</a>	
3" (76.2 mm)	1/2" (12.7 mm)	<a href="#">JT-04612-30</a>		<a href="#">JT-04612-40</a>	
<b>Slim-Line stir bars</b>					
1" (25.4 mm)	5/16" (7.9 mm)	<a href="#">JT-04775-45</a>		<a href="#">JT-04775-40</a>	
1 1/2" (38.1 mm)		<a href="#">JT-04775-55</a>		<a href="#">JT-04775-50</a>	
2" (50.8 mm)		<a href="#">JT-04775-65</a>		<a href="#">JT-04775-60</a>	

<sup>†</sup>Diameter given does not include the diameter of the spinning ring.



# Digi-Sense® General-Purpose Digital Pocket Thermometers

Don't risk accuracy—precalibrated

- 304 stainless steel penetration stem
- All include a protective case with pocket clip and battery



**A. Pen-Style Pocket Thermometer** offers fast response and laboratory accuracy. Features include probe guard, Min/Max/Hold, °F/°C switchable ranges and auto power-off to conserve battery life. Includes a NIST-traceable calibration report with data supplied by InnoCal.

**B. Large Head Pocket Thermometer** offers fast response and laboratory accuracy. The head of the thermometer is square allowing the unit not to roll when placed on a flat surface. Features include probe guard, °F/°C switchable ranges and auto power-off to conserve battery life. Includes a NIST-traceable calibration report with data supplied by InnoCal.

**C. Waterproof Thermometer** features a dishwasher-safe sealed case. Features °F/°C switchable ranges, a Min/Max button, and display updates every second. Use ON/OFF button to conserve battery life.

**D. Key-Chain "Mini" Thermometer** is pocket sized and perfect for carrying around anywhere. Clip onto a lab coat, jacket zipper, belt loop, backpack, or key ring. Features °F/°C switchable ranges and display updates every second. Use ON/OFF button to conserve battery life.

**E. Long-Stem Thermometer** has an 8" or 11½" long stem, °F/°C switchable ranges, and display updates every second. Use ON/OFF button to conserve battery life.

**F. Rotating-Display Thermometer** can be angled up to 180° for easy reading. Extra-long 8" stem is ideal for measuring reagents, water baths, air, liquids, and any semisolid. Features °F/°C selection. Use ON/OFF button to conserve battery life.

**G. T-Handle Thermometer** is designed for penetrating semisolids and features °F/°C switchable ranges. Display updates every second. Use ON/OFF button to conserve battery life or auto shutoff at one hour.

**H. Pen-Style Thermometer** has °F/°C switchable ranges and display updates every second. Data Hold button freezes readings. Use ON/OFF button to conserve battery life.

**I. NIST-Traceable Pen-Style Thermometer** has a unique, flat-profile design. Probe guard snaps into handle to extend the overall length to 10¾" making it ideal for hard-to-reach locations. Features °F/°C switchable ranges, Hold button, display that updates every second, and an ON/OFF button to conserve battery life.



Key letter	Range	Resolution	Accuracy†	Probe diameter	Catalog number	Price
<b>A</b>	-40 to 482°F (-40 to 250°C)	0.1°F (0.1°C)	1.5% ± 2° full scale	4.6" L x 0.16" dia	<a href="#">JT-20250-33</a>	
<b>B</b>	-40 to 482°F (-40 to 250°C)	0.1°F (0.1°C)	1.5% ± 2° full scale	5" L x 0.16" dia	<a href="#">JT-20250-32</a>	
<b>C</b>	14 to 392°F (-10 to 200°C)	0.1° up to 199.9°; 1° above 200°	±1.8°F (±1.0°C)	5" L x 0.14" dia	<a href="#">JT-90003-00*</a>	
				10" L x 0.14" dia	<a href="#">JT-90205-05</a>	
<b>D</b>	-58 to 302°F (-50 to 150°C)	0.1°F (0.1°C)	±1.8°F (1.0°C)	1" L x 0.14" dia	<a href="#">JT-90205-10</a>	
	-58 to 302°F (-50 to 150°C)	0.1° from -19 to 199.9°; 1° outside this range	±1.8°F (±1°C)	8" L x 0.14" dia	<a href="#">JT-90225-15</a>	
<b>E</b>	-58 to 302°F (-50 to 150°C)	0.1° from -19 to 199.9°; 1° outside this range	±0.5°F (±0.2°C)	8" L x 0.14" dia	<a href="#">JT-90205-01</a>	
	-58 to 572°F (-50 to 300°C)	0.1° from -19 to 199.9°; 1° outside this range	±1.8°F (±1°C)	11.5" L x 0.14" dia	<a href="#">JT-94460-40</a>	
	-58 to 302°F (-50 to 150°C)	0.1° from -19 to 199.9°; 1° outside this range	±0.5°F (±0.2°C)	11.5" L x 0.14" dia	<a href="#">JT-90205-02</a>	
<b>F</b>	-58 to 536°F (-50 to 280°C)	0.1° from -20 to 200°F; 1° outside this range	±1.8°F (1.0°C)	8" L x 0.14" dia	<a href="#">JT-90205-25</a>	
<b>G</b>	-58 to 302°F (-50 to 150°C)	0.1° from -19 to 199.9°; 1° outside this range	±1.8°F (±1.0°C)	5.3" L x 0.14" dia	<a href="#">JT-90051-00</a>	
<b>H</b>	-58 to 572°F (-50 to 300°C)	0.1° from -19 to 199.9°; 1° outside this range	±2°F (±1.5°C)	2.5" L x 0.16" dia	<a href="#">JT-90001-02</a>	
<b>I</b>	-58 to 572°F (-50 to 300°C)	0.1° from -20 to 200°F; 1° outside this range	±3°F (1.5°C)	3.5" L x 0.14" dia	<a href="#">JT-90205-15</a>	

\*90003-00 does not come precalibrated †Basic accuracy shown, full accuracy available online

[JT-17003-00](#) NIST-traceable recalibration with data for pocket thermometers

# Digi-Sense® Traceable® General-Purpose and Refrigerator/Freezer Thermometers

## Get multiple readings simultaneously

- Simultaneously view high, low, and current temperature
- Keep samples safe—programmable alarm alerts when temperature deviates from set point
- Monitor conditions—Min/Max feature stores the highest and lowest readings until cleared
- Get more done—monitor multiple applications with dual-probe units
- Versatile units are mountable on wall or benchtop

**Standard Refrigerator/Freezer Thermometers** provide accurate readings even when door is opened, as temperature sensor is enclosed within a glycol-filled bottle.

**Advanced Thermometers** feature high accuracy, one-button field calibration, and date/time stamp. Unit displays the exact time and date when thermometer alarms are triggered. RTD thermometers provide greater accuracy and a unique Min/Max feature that displays temperatures for previous 24 hours (each hour) or previous 31 days (for each day).

**Data Logging Thermometers** record up to 525,600 data points to be transferred to a computer using a USB flash drive. The alarm tracking feature stores up to 10 unique alarm events. “Memory lock” option does not allow the internal memory to be cleared, and logging capacity increases to 1 million data points.

**What's included:** one AA battery and NIST-traceable calibration certificate.



“Great thermometers.”  
★★★★★



Application	Sensor type	Range	Resolution	Accuracy	Power	Catalog number	Price
<b>A. Standard thermistor models</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	1°	±1°C	One AA battery (included)	JT-94460-72	
Refrigerator/freezer	One 5-mL bottle probe					JT-94460-71	
General purpose	One wire probe					JT-94460-70	
<b>B. Advanced thermistor models with improved accuracy (not shown)</b>							
Refrigerator/freezer	Two bottle probes	-58 to 158°F (-50 to 70°C)	0.01°	±0.30°C	One AA battery (included)	JT-94460-92	
General purpose	Two wire probes					JT-94460-91	
General purpose	One solid SS probe					JT-94460-98	
General purpose	Two solid SS probe					JT-94460-99	
<b>C. Advanced thermistor models with improved accuracy and data logging (not shown)</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.25°C	One AA battery (included)	JT-94460-07	
Refrigerator/freezer	Two bottle probes					JT-94460-09	
General purpose	One wire probe					JT-94460-11	
General purpose	Two wire probes					JT-94460-14	
General purpose and refrigerator/freezer	One wire and one bottle probe					JT-94460-18	
General purpose	One solid SS probe					JT-94460-16	
General purpose	Two solid SS probes					JT-94460-17	
<b>D. Advanced thermistor models with improved accuracy and “memory lock” data logging</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.25°C	One AA battery (included)	JT-94460-37	
Refrigerator/freezer	Two bottle probes					JT-94460-39	
General purpose	One wire probe					JT-94460-41	
General purpose	Two wire probes					JT-94460-43	
General purpose and refrigerator/freezer	One wire and one bottle probe					JT-94460-47	
General purpose	One solid SS probe					JT-94460-44	
General purpose	Two solid SS probes					JT-94460-46	
<b>E. Advanced RTD high-accuracy models</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.1°C	One AA battery (included)	JT-37803-88	
General purpose	One wire probe					JT-37804-03	
General purpose	One wire probe	-148 to 158°F (-100 to 70°C)				JT-37804-05	
General purpose	One solid SS probe	-148 to 199.99°F (-100 to 199.99°C)				JT-37804-04	



## Digi-Sense® Data Logging Refrigerator Thermometers with TraceableLIVE® Wireless Technology

Get alerts before you lose valuable samples

- Remotely monitor your critical environments 24/7 via Wi-Fi†
- View current conditions anywhere—cloud-based interface sends email, text, and push notifications
- Securely connect to data via smartphone, tablet, or PC
- No software required—web, Android™, Apple® iOS data visibility
- Models with bottle probes are temperature-buffered to protect sensor from rapid changes when refrigerator door is opened.
- Use included hook-and-loop fastener and magnetic strip for surface mounting, or use the built-in stand on a shelf



94460-00

Digi-Sense data loggers with TraceableLIVE wireless technology provide a simple, efficient, and reliable way to ensure your critical samples are not compromised due to parameter variations. This latest technology is ideal for monitoring a process in real time, any time. Plus you get the value, accuracy, and peace of mind of NIST-traceable calibration at a noncalibrated price.

TraceableLIVE allows you to view current conditions from anywhere with a cloud-based interface. Once setup is complete, you can view conditions in real time; set alarm parameters; view data logging history; generate data reports in real time; get email, text and push notifications; and receive alerts for temperature alarm, connectivity interruption and low battery.

†Requires a low-cost TraceableLIVE subscription.



### Specifications

**Display:** dual-line LCD  
**Sample rate:** 12 sec  
**Max storage:** 672 records (7 days if set to 15-minute intervals)

**Max stored alarms:** 100  
**Power:** four AAA alkaline batteries (included)

Sensor type	Range	Resolution	Accuracy	Catalog number	Price
2 Bottle probes	-58 to 140°F (-50 to 60°C)	0.01°	±0.45°F (±0.25°C)	JT-99460-00	
1 Bottle and 1 bullet probe				JT-99460-05	
2 Bullet probes				JT-99460-10	
2 Stainless steel probes				JT-99460-15	

## Digi-Sense® Traceable® Excursion-Trac™ Data Logging Thermometers

Rolling memory retains most recent 525,600 temperature observations

- Get accurate, reliable measurements with included NIST-traceable calibration
- Memory can be cleared after downloading data and alarm events
- Set limits for and store up to 10 unique alarm events
- Smart-Alarm™ with visual/audible alarm continues to alert even if conditions return to normal
- Triple-line display shows high, low, and current temperature simultaneously



94460-09

Easily monitor temperatures overnight or for any time period—minimum and maximum temperatures are stored until the memory is cleared. Set high and low alarms in 1° increments; alarm sounds when temperature rises above or falls below set points. The alarm tracking feature stores data for up to 10 different alarm events detailing when the alarm state occurred, as well as when the unit returned within range. Alarm state indicator includes visual LEDs, audio alerts, and flashing LCD segments.

**Bottle probes** contain nontoxic glycol solution which simulates the temperature of other stored liquids and eliminates the rapid temperature fluctuation caused by opening the refrigerator/freezer door. Use standard **Bullet probe** to measure air and liquid temperatures. Bullet probe sensor and cable may be completely immersed. Sensor measures 3/4" L x 0.187" dia. Durable **SS probes** withstand both low and high temperatures and are ideal for measuring temperatures of air, liquids, and semisolids. Sensor stem measures 6.25" L x 1/8" dia.



### Specifications

**Sampling rate:** 5 sec (10 sec for models 98768-53, 54, -57, and -58)  
**Logging interval:** user selectable from 1 min to 24 hrs  
**Memory†:** most recent 525,600 readings  
**Power:** two AAA 1.5 V batteries (included)

Temp. range	Accuracy	Included probe(s)	Cat. no.	Price
-58.00 to 158.00°F (-50.00 to 70.00°C)	±0.45°F (±0.25°C)	1 glass bottle probe	JT-94460-07	
		2 glass bottle probes	JT-94460-09	
		1 vaccine bottle probe	JT-98767-63	
		2 vaccine bottle probes	JT-98767-64	
		1 plastic bottle probe	JT-98767-67	
		2 plastic bottle probes	JT-98767-68	
		1 Bullet probe	JT-94460-11	
		2 Bullet probes	JT-94460-14	
		1 glass bottle, 1 bullet probe	JT-94460-18	
				1 SS probe
		2 SS probes	JT-94460-17	
-130.00 to 221.00°F (-90.00 to 105.00°C)	±0.36°F (±0.2°C)	1 SS probe	JT-98768-53	
		2 SS probes	JT-98768-54	
-328.00 to 221.00°F (-200.00 to 105.00°C)	±0.45°F (±0.25°C)	1 SS probe	JT-98768-57	
		2 SS probes	JT-98768-58	

†All data stored in Celsius (°C) and date format is MM/DD/YYYY.

# Don't Get Burned—Gain More Confidence in Your Readings

- ✓ **Save time and money—** precalibrated to NIST-traceable standards before you receive it
- ✓ **Don't let probe errors interfere with readings—** electronic offset compensates for errors
- ✓ **Choose your readout—** measures in °F, °C, or Kelvin (K) with 0.1 resolution
- ✓ **Features for your convenience:**
  - Min/Max/Avg
  - Hold
  - Relative time stamp
  - Auto-off to save battery life
- ✓ **Take measurements from a distance with optional infrared wand on Professional series**

Precalibration provided by  
**INNOCAL**®  
 Precalibration | Recalibration | Onsite  
 866-InnoCal (866-466-6225)  
 InnoCalSolutions.com

## Digi-Sense® Precalibrated Thermocouple Thermometers

- Compact, affordable units provide accurate and dependable readings
- No need to worry about reading measurements—large, backlit LCD makes readings easy

**General-Purpose Thermocouple Thermometers** accept both type K or J thermocouple probes with miniconnector. The two- and four-channel models provide data logging of up to 18,000 readings; USB interface lets you easily download data to a PC for analysis with included software.

**Professional Thermocouple Thermometers with IR Input** deliver accurate readings in an ergonomic design. Models accept type K probes and an optional infrared (IR) wand for noncontact measurements from a distance. Two- and four-channel models continually scan each channel for real-time measurements. Data logging models allow you to download and analyze data fully.



20250-01

20250-17

Description	General-purpose thermometers			Professional thermocouple thermometers with IR input			
	JT-20250-01	JT-20250-02	JT-20250-03	JT-20250-18	JT-20250-17	JT-20250-19	JT-20250-20
Catalog number	1 (type K or J)	2 (type K or J)	4 (type K or J)	1 (type K)	2 (type K)	2 (type K)	4 (type K)
Thermocouple (T/C) inputs	1 (type K or J)	2 (type K or J)	4 (type K or J)	1 (type K)	2 (type K)	2 (type K)	4 (type K)
T/C range	K: -328 to 2501°F (-200 to 1372°C) J: -346 to 2012°F (-210 to 1100°C)			K: -328 to 2501°F (-200 to 1372°C)			
IR range	—			-31 to 1022°F (-35 to 550°C), with optional IR wand 20250-24			
Resolution	0.1°F/C below 1000°, 1°F/C above 1000°			0.1°F/C below 1000°, 1°F/C above 1000°			
T/C accuracy	Above -148°F (-100°C): ±[0.5% rdg + 1.8°F (1°C)] Below -148°F (-100°C): ±[0.5% rdg + 3.6°F (2°C)] Differentials: ±[0.5% rdg + 3.6°F (2°C)]			Above -148°F (-100°C): ±[0.15% rdg + 1.8°F (1°C)] Below -148°F (-100°C): ±[0.5% rdg + 3.6°F (2°C)] Differentials: ±[0.5% rdg + 1.8°F (1°C)]			
IR accuracy	—			Above 14°F (-10°C): ±[2.0% rdg + 3.6°F (2°C)]; Below 14°F (-10°C): ±9°F (5°C); T/C-IR differentials: ±[2.0% rdg + 5.4°F (3°C)] above 14°F (-10°C); ±11°F (6°C) below 14°F (-10°C)			
Data logging	No	18,000 points		No	18,000 points		10,000 points
USB interface	No	Yes		No	Yes		Yes
Temp differential	No	Yes		Yes			
Scan function	No			No	Yes		
Price							

**JT-20250-24** Optional infrared wand for professional thermocouple thermometers only. Features 8:1 distance-to-spot ratio. Measures 6½" x 2" x 1½" (16.4 x 5 x 4 cm). Includes one 9 V battery

## Some of Our Most Popular Thermocouple Probes

All probes include a 5-ft 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. Rugged thermoset plastic miniconnector also included.



Probe Type	General-purpose probes (5"L)			Penetration probes (4"L)			Air/gas probes (8.5"L)			Surface probes (9.9"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)	JT-08517-55		1400°F (760°C)	JT-08517-65		1000°F (537°C)	JT-08517-75		1200°F (649°C)	JT-08517-60	
K	1652°F (900°C)	JT-08516-55		1652°F (900°C)	JT-08516-65		1000°F (537°C)	JT-08516-75		1200°F (649°C)	JT-08516-60	
T	752°F (400°C)	JT-08500-55		752°F (400°C)	JT-08500-65		1000°F (537°C)	JT-08500-75		650°F (343°C)	JT-08500-60	



## Digi-Sense® Precalibrated Thermometers

### Perfect for the lab to production floor

- Reliable measurements, guaranteed! Precalibrated to NIST-traceable standards
- Electronic offset function allows compensation of probe errors
- Robust, reliable handheld temperature meters work in tough environments

**Single-Input Thermometers** feature an easy-to-use control panel, Min/Max and Hold functions, offset adjustment, °F/°C selection, backlit display, low-battery indicator, and auto shutoff.

**Dual-Input Data Logging Thermometers** store up to 16,000 sets of readings in real time, and data can be downloaded to your PC via a USB port. Logging interval is selectable from 1 second to 60 minutes. Meters also feature Min/Max, Hold, and average functions; differential temperature; offset adjustment; °F/°C selection; time stamp/clock; out-of-range alarm with audible/visible indicator; backlit display; low-battery indicator; and auto shutoff.

**What's included:** protective rubber armor boot with built-in stand, one 9 V battery, and NIST-traceable calibration report with data. Data logging models 20250-92, -94, and -96 also include a USB cable and software.



#### Specifications

Input type	Range
J	-328 to 1832°F (-200 to 1000°C)
K	-418 to 2501°F (-250 to 1372°C)
T	-418 to 752°F (-250 to 400°C)
Thermistor	-40 to 257°F (-40 to 125°C)
RTD	-320 to 1562°F (-200 to 850°C)

**Power:** one 9 V battery (included)

**Models 20250-92, -94, -96:**  
Data logging: 16,000 sets of readings

Description	Resolution	Accuracy	Catalog no.	Price
<b>Thermocouple meters</b>				
Single input	0.1°F (0.1°C) from -148 to 1832°F (-99.9 to 999.9°C); 1°F (1°C) outside range	±1% of reading + 1.8°F (1°C) below -148°F (-99.9°C); ±1% of reading + 0.9°F (0.5°C) above -148°F (-99.9°C)	<a href="#">JT-20250-91</a>	
Dual input with data logging			<a href="#">JT-20250-92</a>	
<b>Thermistor meters</b>				
Single input			<a href="#">JT-20250-93</a>	
Dual input with data logging	0.1°F (0.1°C)	±0.9°F (±0.5°C) from 32 to 158°F (0 to 70°C); ±2°F (1°C) outside range	<a href="#">JT-20250-94</a>	
<b>RTD meters</b>				
Single input	0.1°F (0.1°C) from -148 to 1562°F (-99.9 to 850°C); 1°F (1°C) outside range	±1.5°F (0.8°C) from -148 to 392°F (-99.9 to 199.9°C); ±2°F (1°C) ±0.5% of reading outside range	<a href="#">JT-20250-95</a>	
Dual input with data logging			<a href="#">JT-20250-96</a>	

Find even more online! Go to [ColeParmer.com](http://ColeParmer.com) to search more than 100,000 products.

## Digi-Sense® Precalibrated Infrared Thermometers

### Save money and prevent breakdowns—easily locate hot and cold spots

- Reliable measurements—guaranteed! Precalibrated to NIST-traceable standards
- Get easy readings from a distance—just aim, pull trigger and read!
- Continuous scanning via trigger lock

**General-Purpose IR models** feature Min/Max and Hold functions, °F/°C units, single targeting laser, and large backlit LCD for easy reading. Models 20250-05 and -06 also offer adjustable emissivity and temperature alarm with indicator.

**Professional IR models** provide high distance-to-sight ratio and enhanced temperature range in a heavy-duty housing. Get a more precise measurement area with dual targeting lasers and external type K thermocouple (one included). Min/Max/Avg and Hold, temperature differential, high/low alarms, adjustable emissivity, data logging, and more!



Description	General-purpose infrared thermometers			Professional infrared thermometers		
	<a href="#">JT-20250-04</a>	<a href="#">JT-20250-05</a>	<a href="#">JT-20250-06</a>	<a href="#">JT-20250-07</a>	<a href="#">JT-20250-08</a>	
Range (IR)	-4 to 630°F (-20 to 332°C)	-31 to 1000°F (-35 to 537°C)	-31 to 1472°F (-35 to 800°C)	-58 to 3002°F (-50 to 1650°C)	-58 to 3362°F (-50 to 1850°C)	
Resolution	0.1°F/°C	0.1°F/°C below 1000°, 1°F/°C		0.1°F/°C below 1000°, 1°F/°C above 1000°		
Response time	Less than 1 sec	Less than 300 ms		Less than 150 ms		
Distance-to-sight ratio	10:1	12:1	20:1	30:1	50:1	
Emissivity	0.95 fixed	0.10 to 1.0 adjustable			0.10 to 1.0 adjustable	
Laser sighting		Single Class II laser			Dual Class II laser	
Temperature alarm	No	Yes			Yes	
USB interface		No			Yes (cable and software included)	
Data logging		No			Yes, 100 internal readings	
Power		One 9 V battery			One 9 V battery	
Price						

# Put the **SURE** back in your mea**SURE**ments

Specialists in NIST-Traceable Calibration for Certified Accuracy and Reliability



**Precalibration**—We will calibrate your new instrument before it ships so you can be sure it's ready when you get it.

**Recalibration**—Ship us your product and we'll clean, calibrate, and quickly return it with documentation.

**On-Site Services**—We come to you! Contact us today for pricing.

**Maintenance & Repair**—Keep your valuable equipment up and running with scheduled preventive maintenance and repair.

“Keep up the great service as long as you can”

Victor, Texas

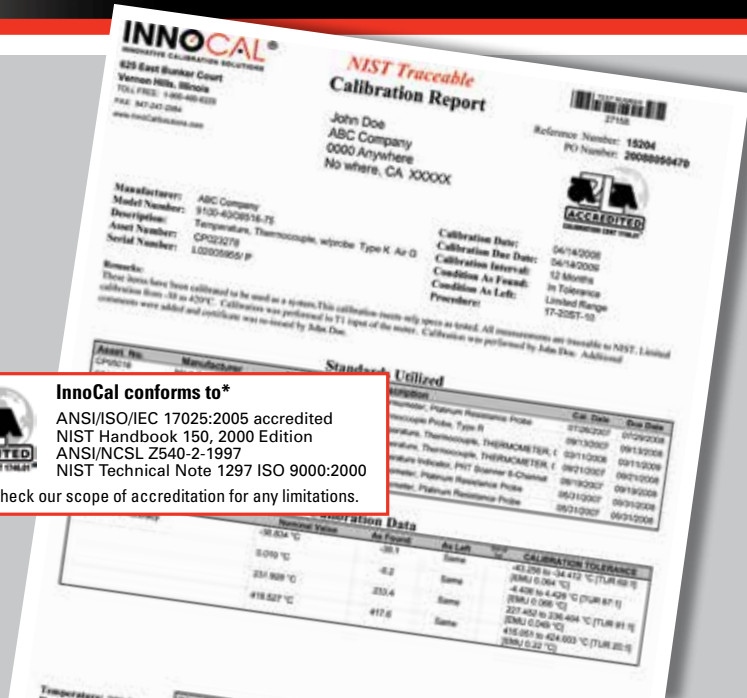
## Data-Rich Certificate Includes

- Description and identification of the item
- Condition of the item as received
- Identification of calibration procedure
- Calibration date
- As found/as left test data
- Electronic signature of technician
- Statement of measurement uncertainty
- Test uncertainties (TURs)
- List of standards used to perform calibration (including their calibration dates)

## Stay audit ready! Get calibration documentation 24/7

Go online anytime and view or print your calibration documents.

[InnoCalSolutions.com/INNOTRAK](http://InnoCalSolutions.com/INNOTRAK)







## Oakton® Waterproof EcoTestr™ CTS Pocket Meter

### Better results—easier and faster

- Conductivity, TDS, and salinity combined into one meter
- Large dual-line display shows parameter and temperature readings simultaneously
- Easier, more intuitive interface and indicators for battery life, readiness, and calibration
- Use redesigned cap as sample cup and as a stabilizing base to stand the meter upright
- Convenient—attach a lanyard to prevent losing or dropping in the field

“Easy to use.”



**NEW**



Description		EcoTestr (CTS) Con/TDS/Salinity
<b>Catalog number</b>		<b>JT-35462-11</b>
Range	Conductivity	0.00 to 20.00 mS/cm
	TDS	0.00 to 20.00 ppt (with TDS factor 1.0)
	Salinity	0.0 to 10.0 ppt
	Temperature	32.0 to 122.0°F (0.0 to 50.0°C)
Resolution	Conductivity	10 µS, 0.1 mS
	TDS	10 ppm, 0.1 ppt
	Salinity	0.1 ppt
	Temperature	0.1°F (0.1°C)
Accuracy	Conductivity	±2% full-scale ±1 LSD
	TDS	±2% full-scale ±1 LSD
	Salinity	±2% full-scale ±1 LSD
	Temperature	±0.9°F (0.5°C) + 1 LSD
Temperature compensation		Automatic
Calibration		Single point
Power		Four 1.5 V miniature batteries (included)
<b>Price</b>		

## Oakton® Waterproof EcoTestr™ Conductivity Pocket Testers

### Designed to be durable and easy to use

- View measurements clearly on large, dual-line LCD
- IP67-rated housing is waterproof, dustproof, and floats in water
- Leakproof cap with fill line functions as a sample/calibration and hydrating cup
- Secure—attach a lanyard to prevent losing or dropping in the field

**NEW**

35634-08



Model		EC1	TDS1	Salt1
<b>Catalog number</b>		<b>JT-35634-06</b>	<b>JT-35634-08</b>	<b>JT-35634-12</b>
Range	Conductivity	0.1 to 200.0 µS/cm, 0 to 2000 µS/cm, 0.00 to 20.00 mS/cm	—	—
	TDS	—	0.0 to 100.0 ppm, 0 to 1000 ppm, 0.00 to 10.00 ppt	—
	Salinity	—	—	0.00 to 10.00 ppt
	Temperature	32.0 to 122.0°F (0.0 to 50.0°C)		
Accuracy	Conductivity	±1% full-scale ±1 digit	—	—
	TDS	—	±1% full-scale	—
	Salinity	—	—	±1% full-scale
	Temperature	±0.9°F (0.5°C)	±0.9°F (0.5°C)	±0.9°F (0.5°C)
Temp. compensation		Automatic, 32 to 122°F (0 to 50°C)		
Calibration		1 or 2 points		
Power		Four AAA batteries (included), 400 hours of continuous use		
<b>Price</b>				

## Oakton® CTSTestr™ 50 Pocket Testers

### Get benchtop accuracy in the field

- Measure conductivity, TDS, and salinity with ±1% FS accuracy
- Save money—replaceable sensor lets you use tester body over and over again
- Set up and calibrate quickly with easy-to-navigate interface
- Selectable TDS factor adds versatility
- Leakproof, stabilizing cap—use to calibrate, stand upright, and store sensor
- Waterproof IP67 rated and factory calibrated

**NEW**



Model	CTSTestr 50P (pin-style sensor)	CTSTestr 50C (cup-style sensor)
<b>Catalog number</b>	<b>JT-35634-55</b>	<b>JT-35634-65</b>
Range	Conductivity	0.0 to 200.0 µS, 200 to 2000 µS; 2.00 to 20.00 mS
	TDS	0.0 to 100.0 ppm, 100 to 1000 ppm; 0.10 to 10.00 ppt (TDS factor 0.5)
	Salinity	0.00 to 10.00 ppt
	Temperature	32 to 140°F (0 to 60°C)
Accuracy	±1% full-scale (conductivity, TDS, and salinity)	
Calibration	Up to 3 points (conductivity and TDS); 1 point (salinity)	
TDS factor	0.40 to 1.00 (selectable)	
Temp. compensation	Automatic	
Power	Four AAA 1.5 V batteries (included)	
<b>Price</b>		

## Oakton® Waterproof CTSTestr™ 5 Pocket Tester

### Save money by replacing sensor, not tester!

- Replaceable sensor lets you use the tester body over and over again
- Two-color backlight indicates operating mode—blue for measurement, green for calibration
- Rugged IP67-rated housing is waterproof, dustproof, and floats in water when sensor cap is on
- Leakproof cap with fill line functions as a sample/calibration and hydrating cup

**NEW**



Model		CTS5
<b>Catalog number</b>		<b>JT-35634-42</b>
Range	Conductivity	0.1 to 200.0 µS/cm, 0 to 2000 µS/cm, 0.00 to 20.00 mS/cm
	TDS	0.0 to 100.0 ppm, 0 to 1000 ppm, 0.00 to 10.00 ppt
	Salinity	0.00 to 10.00 ppt
	Temperature	32.0 to 122.0°F (0.0 to 50.0°C)
Accuracy	Conductivity	±1% full-scale
	TDS	±1% full-scale
	Salinity	±1% full-scale
	Temperature	±0.9°F (±0.5°C)
Temp. compensation		Automatic, 32 to 122°F (0 to 50°C)
Calibration		1 to 3 points, automatic recognition of standards
Power		Four AAA batteries (included)
<b>Price</b>		

## Oakton® CON 6+ and TDS 6+ Meter Kits

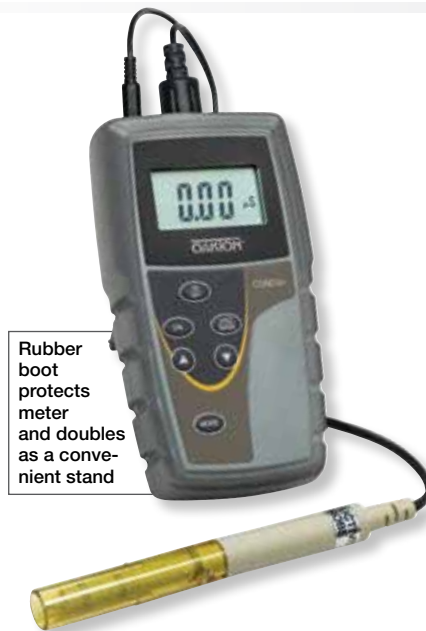
### Easy, push-button calibration

- High accuracy at an affordable price, ±1% across full scale
- Five auto-ranging measurement modes—up to 200.0 mS (200.0 ppt)
- Get more accurate calibration for all five ranges
- Get temperature readings at the touch of a button



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.

**What's included:** 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.



Rubber boot protects meter and doubles as a convenient stand



Description	CON 6+ kit	Precalibrated CON 6+ kit	TDS 6+ kit	Precalibrated TDS 6+ kit
<b>Catalog number</b>	<a href="#">JT-35604-04</a>	<a href="#">JT-35604-05</a>	<a href="#">JT-35604-24</a>	<a href="#">JT-35604-25</a>
Range	Conductivity	0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 200.0 mS	—	—
	TDS	—	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†	—
	Temperature	–10.0 to 110.0°C	—	–10.0 to 110.0°C
Accuracy	Conductivity	±1% full-scale	—	—
	Temperature	±0.5°C	—	±0.5°C
Temp. compensation	Automatic or manual from 0.0 to 50.0°C			
Cell constant (K)	Selectable, 0.1, 1, and 10			
Conductivity-to-TDS conversion factor	—	—	0.4 to 1.00 adjustable	
Calibration points	5 maximum, one per range			
Power	Four AAA batteries (included)			
<b>Price</b>				

†With K = 10 probe

Save time, save money!

**Choose Precalibrated**  
Includes a data-rich, ISO 17025-compliant certificate!

Precalibrated by **INNOCAL**  
INNOVATIVE CALIBRATION SOLUTIONS

#### Accessories

- [JT-35606-53](#) Conductivity probe, K = 0.1
- [JT-35606-55](#) Replacement conductivity probe, K = 1.0
- [JT-35606-57](#) Conductivity probe, K = 10
- [JT-09376-00](#) Replacement batteries, AAA. Pk of 12
- [JT-17090-30](#) NIST-traceable calibration with data for conductivity meters

## MYRON L Analog Conductivity, Resistivity, TDS, and Multiparameter Meters

### No maintenance required

- Maintenance-free, built-in electrodes do not require replatinizing
- Don't worry about fluctuations in temperature with automatic temperature compensation

Analyze your samples on-site with these portable meters. Optional conductivity range extender expands range by a factor of 10. Minimum sample volume is 25 mL.



Description	Conductivity meters			Conductivity/resistivity meter	Total dissolved solid meters		pH/conductivity meter
<b>Catalog number</b>	<a href="#">JT-01489-10</a>	<a href="#">JT-01489-20</a>	<a href="#">JT-01489-35</a>	<a href="#">JT-01489-30</a>	<a href="#">JT-01489-15</a>	<a href="#">JT-01489-25</a>	<a href="#">JT-01489-62</a>
Range	Conductivity	0 to 5000 µS	0 to 50 µS, 0 to 500 µS, 0 to 5000 µS	0 to 10 µS, 0 to 100 µS, 0 to 1000 µS, 0 to 10,000 µS	0 to 0.5 µS, 0 to 5 µS	0 to 50 µS, 0 to 500 µS, 0 to 5000 µS	0 to 10,000 µS
	Resistivity	—	—	—	2 to 30 MΩ	—	—
	TDS	—	—	—	—	0 to 5000 ppm	0 to 50 ppm, 0 to 500 ppm, 0 to 5000 ppm
	pH	—	—	—	—	—	—
Temperature compensation	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 32 to 120°F (0 to 49°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)
Power	One 9 V battery (included)		Two 9 V batteries (included)		One 9 V battery (included)		Two 9 V batteries (included)
<b>Price</b>							

#### Accessories

- [JT-01489-50](#) Range extender increases conductivity range by 10x (for example, 0 to 50,000 µS for model 01489-10)
- [JT-01489-48](#) Hard carrying case
- [JT-01489-51](#) Calibration kit for model 01489-62
- [JT-01489-63](#) Replacement pH sensor for model 01489-62



## Oakton® Waterproof CON 150 Meter

### Get more for your money

- Best value for an IP67-rated waterproof meter
- Know the status of your probe—intuitive, user-friendly icon displays cell constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Recall more data with expanded data logging for up to 150 data sets
- Versatile power supply—battery or AC

Rugged, waterproof housing is ideal for use in any environment. View more data simultaneously with large, three-line LCD providing conductivity or TDS measurement with temperature. Get faster calibration with auto-ranging and auto-cal functions for one calibration point per measurement range.

Features include adjustable conductivity-to-TDS factor, selectable temperature coefficient, ready (stability) indicator, smart averaging, hold function, calibration alarm (visible), battery life indicator, and probe status.

**Meter includes:** conductivity cell (K = 1.0), holder, and two batteries.  
**Kit adds:** two calibration standards and hard carrying case.



## Oakton® Waterproof CON 450 Meter

### Easy to read in any environment

- Intuitive, user-friendly icon displays cell constant
- Easily attach electrode to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- ATC—more accuracy even in fluctuating temperatures

Waterproof, IP67-rated meter is ideal for even the harshest environments. View the main measurement simultaneously with temperature on backlit display. Get faster calibration with auto-cal function, which permits one calibration point per measurement range.

Features include adjustable conductivity-to-TDS factor, selectable temperature coefficient, ready (stability) indicator, smart averaging, hold function, calibration alarm, battery life indicator, and electrode status.



Easy one-button data logging



**Meter includes:** conductivity cell (K = 1.0), holder, and batteries.  
**Kit adds:** calibration standards and hard carrying case.



Description	CON 150 meter with probe	CON 150 meter kit
<b>Catalog number</b>	<b>JT-35607-32</b>	<b>JT-35607-90</b>
<b>Precalibrated cat. no.</b>	<b>JT-35607-34</b>	<b>JT-35607-91</b>
Range	Conductivity	0 to 200 mS
	TDS	0 to 200 ppt
	Temperature	-17.0 to 230.0°F (-10.0 to 110.0°C)
Resolution	Conductivity	0.01 µS to 0.1 mS
	TDS	0.01 ppm to 0.1 ppt
	Temperature	0.1°F/°C
Accuracy	Conductivity	±1% full-scale
	TDS	±1% full-scale
	Temperature	±0.9°F (±0.5°C)
Calibration	Conductivity	Auto/manual; 1 point/range
	TDS	Auto/manual; 1 point/range
	Temperature	Offset 0.1 increments
Temperature compensation	Automatic or manual from -10 to 110°C	
Conductivity-to-TDS factor	0.4 to 1.0	
Data logging	Stores up to 150 data sets	
Power	Two AA batteries (included); universal power adapter (optional)	
<b>Price</b>		
<b>Precalibrated price</b>		

**JT-35608-55** Conductivity cell, K = 0.1

**JT-35608-50** Replacement conductivity cell, K = 1.0

**JT-35608-51** Conductivity cell, K = 10

**JT-35614-51** Hard carrying case

**JT-35420-72** Optional power adapter, 110/220 VAC

**JT-17090-30** NIST-traceable calibration with data for conductivity meter



Description	CON 450 meter with probe	CON 450 meter kit
<b>Catalog number</b>	<b>JT-35608-32</b>	<b>JT-35608-80</b>
<b>Precalibrated cat. number</b>	<b>JT-35608-34</b>	<b>JT-35608-81</b>
Range	Conductivity	0 to 200 mS
	TDS	0 to 200 ppt
	Salinity	0 to 50 ppt
	Temperature	-17.0 to 230.0°F (-10.0 to 110.0°C)
Resolution	Conductivity	0.01 µS to 0.1 mS
	TDS	0.01 ppm to 0.1 ppt
	Salinity	0.01
	Temperature	0.1°F/°C
Accuracy	Conductivity	±1% full-scale
	TDS	±1% full-scale
	Salinity	±1% full-scale
	Temperature	±0.9°F (±0.5°C)
Calibration	Conductivity	Auto/manual; 1 point/range
	TDS	Auto/manual; 1 point/range
	Salinity	Auto/manual; 1 point/range
	Temperature	±5.0° offset
Temperature compensation	Automatic or manual from -10 to 110°C	
Data logging	Stores up to 500 data sets	
Output	USB or RS-232	
Power	Two AA batteries (included); AC adapter (optional)	
<b>Price</b>		
<b>Precalibrated price</b>		

**JT-35608-55** Conductivity cell, K = 0.1

**JT-35608-50** Replacement conductivity cell, K = 1.0

**JT-35608-51** Conductivity cell, K = 10

**JT-35614-51** Hard carrying case

**JT-35630-53** Data cable for USB connectivity

**JT-35420-01** Data cable for RS-232 connectivity

**JT-35420-72** Optional power adapter, 110/220 VAC

## Oakton® Calibration Solutions

### Save money while calibrating

- KCl, NaCl, and 442 conversions printed right on the bottle
- Temperature corrections at hand—printed right on the bottle



Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price
	ppm KCl	ppm NaCl	ppm 442		
23	11.6	10.7	14.74	JT-00653-23	
84	40.38	38.04	50.5	JT-00653-16	
447	226	215	300	JT-00653-47	
1413	745	702	1000	JT-00653-18	
1500	757	737	1050	JT-00653-15	
2070	1045	1041	1500	JT-00653-27	
2764	1382	1414	2062	JT-00653-20	
8974	5101	4487	7608	JT-00653-89	
12,880	7447	7230	11,367	JT-00606-10	
15,000	8759	8532	13,455	JT-00653-50	
80,000	52,168	48,384	79,688	JT-00653-32	

## Conductivity Calibration Pouches

### Calibrate on the go!

- Single-use pouches for easy calibrations
- Quick-reference conversion table printed on each pack



Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price/pk of 20
	ppm KCl	ppm NaCl	ppm 442		
10	4.8	4.7	7.0	JT-35653-09	
447	226	216	300	JT-35653-10	
1413	745	702	1000	JT-35653-11	
2764	1382	1414	2062	JT-35653-12	
15,000	8759	8532	13,445	JT-35653-13	
Rinse solution	—	—	—	JT-35653-00	

## Cole-Parmer® Extended-Life Conductivity Standards

### Extend shelf life to 5 years!

- Sealed, metal-lined storage envelope eliminates transpiration—store standards up to 5 years before opening
- Open sealed envelope to begin the 1-year shelf life—bottle and Certificate of Analysis have a convenient marking area to write the new expiration date
- NIST-traceable calibration report from an ISO Guide 34 and ISO 17025 accredited laboratory included with each 17-oz (500-mL) bottle



Conductivity (µS)	Resistivity (MΩ)	Conductivity-to-TDS calibration values (ppm KCl)	Catalog number	Price
2	0.5	0.3	JT-00651-41	
10	0.1	4.4	JT-00651-42	
100	0.01	51	JT-00651-43	
147	0.007	73	JT-00651-44	
1000	0.001	524	JT-00651-45	
1413	0.00071	745	JT-00651-46	
10,000	0.0001	5695	JT-00651-47	
100,000	0.00001	65,611	JT-00651-48	

## Oakton® Traceable® Conductivity Solutions, NIST-Traceable Reference Materials

### Trust your standards—high accuracy

- Up to ±0.25% accuracy verified by an ISO Guide 34 and ISO 17025 accredited lab



#### A. Batch-Tested Bottles, 500 mL

- Easy calibration with included instructions and temperature compensation chart
- Includes NIST-traceable certificate and batch testing information

#### B. Individually Tested Bottles, 500 mL

- Each bottle individually calibrated—NIST-traceable certificate included with serial number and testing information
- Easy calibration with step-by-step instructions and included temperature compensation chart

#### C. One-Shot® Vials, pack of six 100 mL vials

- Fresh solution each time you calibrate—single-use vials eliminate contamination
- Grab it and go—convenient for field use; calibrate right in vial
- Includes NIST-traceable calibration report and temperature compensation chart



Conductivity (µS)	Resistivity (MΩ)	TDS (ppm)	Catalog number	Price
<b>A. Batch tested, one 500 mL bottle</b>				
1	1	0.66	JT-00652-20	
5	0.2	3.3	JT-00652-22	
10	0.1	6.6	JT-00652-24	
100	0.01	66	JT-00652-26	
1000	0.001	666	JT-00652-28	
1413	0.00071	933	JT-00652-30	
10,000	0.0001	6666	JT-00652-32	
100,000	0.00001	66,666	JT-00652-34	
150,000	0.0000066	100,000	JT-00652-53	
200,000	0.000005	133,333	JT-00652-55	
<b>B. Individually tested, one 500 mL bottle</b>				
1	1	0.66	JT-00652-40	
5	0.2	3.3	JT-00652-42	
10	0.1	6.6	JT-00652-44	
100	0.01	66	JT-00652-46	
1000	0.001	666	JT-00652-48	
1413	0.00071	933	JT-00652-50	
10,000	0.0001	6666	JT-00652-52	
100,000	0.00001	66,666	JT-00652-54	
150,000	0.0000066	100,000	JT-00652-56	
200,000	0.000005	133,333	JT-00652-58	
<b>C. One-Shot®, pack of six 100 mL vials</b>				
5	0.2	3.3	JT-00652-60	
10	0.1	6.6	JT-00652-62	
100	0.01	66	JT-00652-64	
1000	0.001	666	JT-00652-66	
1413	0.00071	933	JT-00652-68	
10,000	0.0001	6666	JT-00652-70	
100,000	0.00001	66,666	JT-00652-72	
150,000	0.0000066	100,000	JT-00652-76	
200,000	0.000005	133,333	JT-00652-78	
Assortment†	—	—	JT-00652-74	

†Assortment has one 100-mL vial each of 10, 100, 1000, 1413, 10,000, and 100,000 µS.

**You're Out? We're Not!**

Thousands of **highlighted** items



## Oakton® Waterproof EcoTestr™ pH1 Pocket Tester

Economical, easy to use

- Automatically recognizes pH buffer standards
- Rugged IP67-rated housing is waterproof, dustproof, and floats in water
- Leakproof cap with fill line functions as a sample/calibration and hydrating cup

**OAKTON®**



Model	EcoTestr pH1	
<b>Catalog number</b>	<b>JT-35634-05</b>	
Range	pH	0 to 14.0 pH
	Temperature	32 to 122°F (0 to 50°C)
Resolution	pH	0.1 pH
	Temperature	0.1°F/°C
Accuracy	pH	±0.1 pH
	Temperature	±0.9°F (0.5°C)
Temperature compensation	Automatic, 32 to 122°F (0 to 50°C)	
Calibration	1 to 3 points	
Buffer recognition	USA, NIST	
Power	Four AAA batteries (included), 400 hours of continuous use	
<b>Price</b>		

**NEW**



## Oakton® pHTestr® 50 Pocket Tester

Bring the performance of your lab instruments into the field

**NEW**

- High ±0.01 pH accuracy—suitable for most ASTM and EPA test procedures
- Clog-resistant, double-junction pH electrode sensor is dependable and long-lasting!
- Use with confidence—even with demanding samples containing sulfides, heavy metals, organics, Tris buffer, or protein solutions
- Save money—replaceable sensor module lets you use tester body over and over again
- Set up and calibrate quickly with easy-to-navigate interface
- Don't let temperature interfere—automatic temperature compensation minimizes impact
- Recessed, glass pH bulb protects against breakage
- Leakproof, stabilizing cap—use to calibrate, stand upright, and store sensor
- Waterproof, IP67-rated housing resists most chemicals



## Oakton® Waterproof pHTestr® 5 Pocket Testers

Save money by replacing sensor, not the tester

- Unique three-color backlight indicates operating mode
- Simple to calibrate with automatic standard recognition—USA and NIST
- Rugged IP67-rated housing is waterproof, dustproof, and floats in water with sensor cap on
- Leakproof cap with fill line functions as a sample/calibration and hydrating cup
- Choose model with flat probe for surface or micro-volume testing, or spear tip for testing semisolid and solid materials

**OAKTON®**



Model	pH5	pH5F	pH5S	ORP5
<b>Catalog number</b>	<b>JT-35634-16</b>	<b>JT-35634-46</b>	<b>JT-35634-52</b>	<b>JT-35634-54</b>
Sensor type	Glass bulb	Flat surface	Spear tip	Glass bulb
Range	pH	-2 to 16 pH		—
	ORP	±1000 mV		±1000 mV
	Temp	32 to 122°F (0 to 50°C)		
Resolution	pH	0.01 pH		—
	ORP	1 mV		1 mV
	Temp	0.1°F/°C		
Accuracy	pH	±0.01 pH ±1 digit		—
	ORP	±0.2% FS		±0.2% FS
	Temp	±0.9°F (0.5°C)		
Temp compensation	Automatic, 32 to 122°F (0 to 50°C)			
Calibration	1 to 3 points		1 point	
Power	Four AAA batteries (included), 400 hours continuous use			
<b>Price</b>				

**NEW**



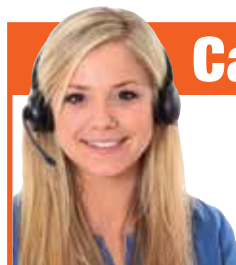
**OAKTON®**



Model	pHTestr 50	
<b>Catalog number</b>	<b>JT-35634-15</b>	
Range	pH	-1.00 to 15.00 pH
	Temperature	32 to 140°F (0 to 60°C)
Resolution	pH	0.01 pH
	Temperature	0.1°F/°C
Accuracy	pH	±0.01 pH
	Temperature	±0.9°F (0.5°C) + 1 LSD from 32 to 122°F (0 to 50°C); ±1.8°F (1.0°C) + 1 LSD from 122 to 140°F (50 to 60°C)
Temperature compensation	Automatic, 32 to 140°F (0 to 60°C)	
Calibration	Up to 3 points	
Buffer recognition	USA 4.01, 7.00, 10.01; NIST 4.01, 6.86, 9.18	
Power	Four AAA 1.5 V batteries (included)	
<b>Price</b>		

Accessories \_\_\_\_\_

**JT-35634-17** Replacement sensor for pH50



**Can't choose?**

Trust our **expert** Application Specialists to help you find the right product.

Katie, 5 years of experience

Call: 1-800-323-4340 E-mail: sales@coleparmer.com Chat live: ColeParmer.com

## Oakton® pH 5+ and pH 6+ Meters

### Get high accuracy at low prices

- Autobuffer recognition for up to five-point calibration provides  $\pm 0.01$  pH accuracy
- Take this compact unit anywhere
- Get pH and temperature readings at the push of a button
- Improve your accuracy with automatic temperature compensation (ATC) from 0 to 100°C
- Protect your unit with protective rubber boot that doubles as a stand
- Choose the pH 6+ meter to also read mV

**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.



## Oakton® Waterproof pH 150 Meter

### Get more for your money!

- Intuitive, user-friendly icons show electrode status as pH slope
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Recall more data with expanded data logging for up to 150 data sets
- mV offset for calibration of ORP standards, zeroing mV value, and pH diagnostics
- Use as a benchtop meter as well—built-in stand or wall-mount option

View more simultaneously with large, three-line LCD providing pH or mV measurement with temperature and calibration % slope. Get faster calibration with auto buffer recognition which identifies the correct pH buffer. Be more accurate with up to six calibration points from USA, NIST, and DIN pH buffer sets and automatic temperature compensation (ATC).



Additional features include ready (stability) indicator, smart averaging, hold function, calibration alarm (visible), battery-life indicator, and electrode status.

**Meter only includes:** Grip-Clip holder and two AA batteries.  
**Meter with probe adds:** "All-in-One" pH electrode (35808-71).  
**Meter kit further adds:** pH buffers, storage solution, rinse solution, and hard carrying case.

**Save time, save money!**

### Choose Precalibrated

Includes a data-rich, ISO 17025-compliant certificate!



Meter only

### Specifications

Mode	pH	mV (pH 6+ only)	Temperature
Range	0.00 to 14.00 pH	$\pm 1000$ mV or rel mV	0 to 100.0°C
Resolution	0.01 pH	1 mV	0.1°C
Accuracy	$\pm 0.01$ pH	$\pm 2$ mV	$\pm 0.5^\circ\text{C}$
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)	$\pm 20$ mV	Offset 0.1°C increments

**Temp compensation:** automatic with ATC probe, 0 to 100°C

**Power:** four AAA batteries (included)

Model	Description	Meter		Precalibrated	
		Catalog number	Price	Catalog number	Price
pH 5+	Meter only	JT-35613-50		JT-35613-51	
		JT-35613-20		JT-35613-41	
pH 5+	Meter with probe	JT-35613-52		JT-35613-53	
		JT-35613-22		JT-35613-42	
pH 5+	Meter kit	JT-35613-54		JT-35613-55	
		JT-35613-24		JT-35613-44	

### Accessories

**JT-59001-65 Replacement pH electrode;** single-junction, gel-filled. Epoxy body, BNC connector

**JT-35811-71 "All-in-one" combination pH probe** with built-in ATC; single-junction sealed, epoxy body, BNC connector

**JT-35811-72 "All-in-one" combination pH probe** with built-in ATC; double-junction sealed, epoxy body, BNC connector

**JT-35613-05 Replacement ATC probe,** stainless steel

**JT-09376-00 Replacement batteries,** AAA. Pack of 12



Meter only

Description	Meter only	Meter with probe	Meter kit
Model		pH 150	
Catalog number	JT-35614-32	JT-35614-30	JT-35614-90
Precalibrated cat. no.	JT-35614-34	JT-35614-33	JT-35614-91
Range	pH	-2.00 to 16.00	
	mV	$\pm 2000$ mV	
	Temperature	-17.0° to 230.0° F (-10.0° to 110.0°C)	
Resolution	pH	0.01	
	mV	0.1 mV $\pm 999.9$ mV; 1 mV beyond	
	Temperature	0.1°F/°C	
Accuracy	pH	$\pm 0.01$	
	mV	$\pm 0.2$ mV $\pm 2$ LSD or $\pm 0.5\%$ of reading; whichever is greater	
	Temperature	$\pm 0.9^\circ\text{F}$ ( $\pm 0.5^\circ\text{C}$ )	
Calibration	pH	Up to 6 points: USA, NIST, DIN	
	mV	$\pm 200$ mV	
	Temperature	Offset 0.1 increments	
Temperature compensation	Automatic or manual from -10 to 110°C		
Data logging	Stores up to 150 data sets		
Power	Two AA batteries (included); universal adapter (optional)		
Price			
Precalibrated price			

**JT-35808-71 Replacement "All-in-One" combination pH electrode** with built-in ATC; single-junction, epoxy body, BNC connector

**JT-35618-05 ATC probe.** Use with any standard pH electrode for temperature compensation

**JT-35614-50 Replacement Grip-Clip,** holder attaches probe to side of container for hands-free measurement

**JT-35614-51 Hard carrying case,** for 150/450 meters

**JT-35420-72 Optional power adapter,** 110/220 VAC

**JT-09376-01 Replacement batteries,** AA. Pack of 4

**JT-17106-20 NIST-traceable calibration** with data for pH meter



# Oakton® Benchtop pH 700 and Ion 700 Meters

## No more lost data—store and recall up to 100 data sets

- Takes up less bench space—40% smaller than comparable models
- Super-large dual-line display is easy to read
- Simple calibrations with 5-point automatic pH buffer recognition for USA and NIST buffers
- More accurate measurements with up to 5-point calibration for ion concentration on Ion 700 model
- Versatile—use with any pH, ORP, or ISE electrodes with BNC connector

pH 700 meter measures pH, mV, relative mV, and temperature. Ion 700 meter adds ion concentration measurement and reads directly in ppm for easy use. Automatic temperature compensation (ATC) maintains reading accuracy even with fluctuating temperatures.

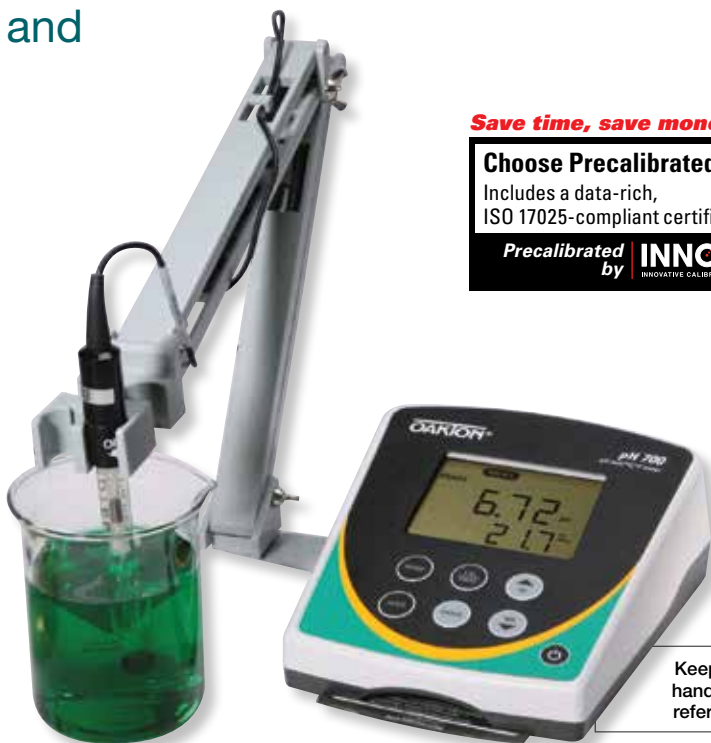
Meters feature Auto-Hold, selectable °F or °C measurement, and easy recall of electrode slope or offset.

Save time, save money!

Choose Precalibrated

Includes a data-rich, ISO 17025-compliant certificate!

Precalibrated by **INNOCAL**  
INNOVATIVE CALIBRATION SOLUTIONS



Keep procedures handy with quick-reference pull out

### Search

For our complete selection of pH/ion meters, go to...  
[ColeParmer.com/pHMeters](http://ColeParmer.com/pHMeters)



### Specifications

Model		pH 700	Ion 700
Range	pH	-2.00 to 16.00	-2.00 to 16.00
	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	0.01 pH
	mV/rel mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV
	ISE	—	0.01 to 2000 ppm
	Temperature	0.1°F or °C	0.1°F or °C
Accuracy	pH	±0.01 pH	±0.01 pH
	mV/rel mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV
	ISE	—	±0.5% of reading (monovalent); ±1% of reading (divalent)
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Calibration	pH	Up to 5 points with autobuffer recognition	Up to 5 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)
	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 or NIST buffer sets	
Data logging	100 data sets	100 data sets	
Power	100/240 VAC, 50/60 Hz	100/240 VAC, 50/60 Hz	

Model	Description	Meter		Precalibrated meter	
		Catalog number	Price	Catalog number	Price
pH 700	Meter only	<a href="#">JT-35419-00</a>		<a href="#">JT-35419-01</a>	
pH 700	Meter with "all-in-one" pH/ATC electrode	<a href="#">JT-35419-03</a>		<a href="#">JT-35419-05</a>	
Ion 700		<a href="#">JT-35419-23</a>		<a href="#">JT-35419-27</a>	
pH 700	Meter with double-junction pH electrode, ATC probe, and removable electrode holder	<a href="#">JT-35419-10</a>		<a href="#">JT-35419-11</a>	
Ion 700		<a href="#">JT-35419-20</a>		<a href="#">JT-35419-24</a>	
pH 700	Meter with removable electrode holder	<a href="#">JT-35419-12</a>		<a href="#">JT-35419-15</a>	
Ion 700		<a href="#">JT-35419-22</a>		<a href="#">JT-35419-26</a>	

[JT-59001-65](#) Combination pH electrode; single junction, gel-filled, epoxy body

[JT-59001-70](#) Combination pH electrode; double junction, gel-filled, epoxy body

[JT-35811-71](#) "All-in-one" combination pH electrode; single junction, gel-filled, epoxy body

[JT-35805-04](#) Replacement combination pH electrode; double junction, refillable, glass body

[JT-35613-13](#) Replacement ATC probe, SS

[JT-35420-54](#) Replacement electrode arm

[JT-17106-20](#) NIST-traceable calibration with data for pH/ion meter

# Cole-Parmer® Epoxy-Body Combination pH and ORP Electrodes

## Get fast, stable readings



- Impact resistant—epoxy-body housing for added strength
- Ideal for your general-purpose applications in the lab or field
- Compatible with most brands of pH meter

These electrodes are ideal for prolonged pH or ORP readings. Electrodes with sealed, gel-filled design require virtually no maintenance. Electrodes with PTFE reference-junction offer extended electrode life. All listed electrodes have Ag/AgCl reference cells.

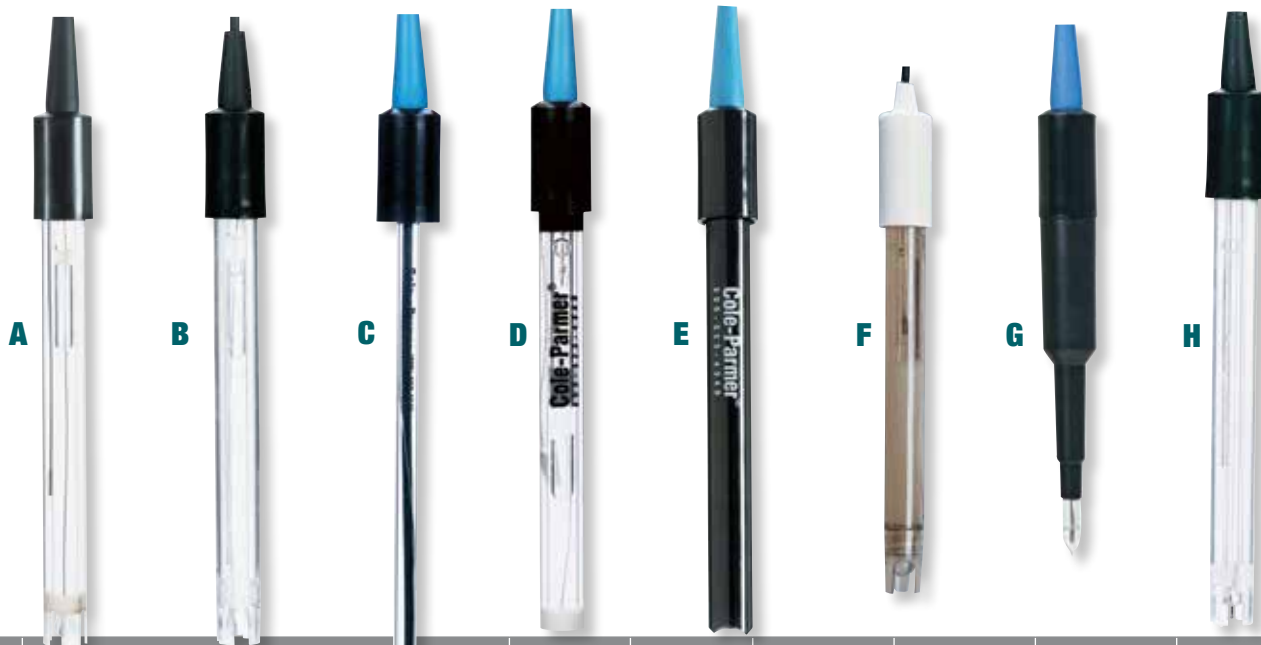
**What's included:** 3.3-ft (1-m) cable with BNC connector.

**See How to...**

**Maintain it!**  
ColeParmer.com/pHmaintain

Electrochemistry

pH Electrodes



Key	Description	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
<b>General-purpose pH electrodes</b>							
A	General purpose	Single	Sealed	176°F (80°C)	127 x 12	JT-59001-65	
	For dirty samples	Double					
B	General purpose, refillable	Single	Refillable†	176°F (80°C)	148 x 12	JT-05992-30	
	For dirty samples, refillable	Double					
C	Extra-long neck for test tube sampling	Single	Sealed	176°F (80°C)	220 x 6	JT-05990-45	
D	Flat tip for surface or low-volume sampling	Single	Sealed	176°F (80°C)	127 x 12	JT-05990-65	
<b>PTFE reference-junction pH electrodes (clog resistant)</b>							
E	General purpose	Single	Sealed	212°F (100°C)	110 x 12	JT-05992-00	
	For dirty samples	Double					
<b>Special-purpose pH electrodes</b>							
F	Coiled-cable for dirty samples	Double	Sealed	176°F (80°C)	140 x 12	JT-05993-28	
G	Spear-tip for dirty samples				110 x 10	JT-59002-24	
<b>ORP electrodes</b>							
A	General purpose	Single	Sealed	176°F (80°C)	127 x 12	JT-59001-75	
	For dirty samples	Double					
H	General purpose, refillable	Single	Refillable††	176°F (80°C)	155 x 12	JT-05990-55	

†Use fill solution 05992-48    ††Use fill solution 05992-47

**JT-05992-48 Reference fill solution,**  
4 M KCl. Two 125-mL bottles

**JT-05992-47 Reference fill solution,**  
3.8 M KCl with AgCl. Two 125-mL bottles

**JT-05983-25 Adapter,** BNC to US standard  
plug meter

## Oakton® Flexible Electrode Holder

### Keep electrodes in position

- Holds up to four standard-size electrodes and one ATC probe.
- Weighted base pivots 360° for added convenience

Description	Catalog number	Price
Electrode holder	JT-35617-50	







## Oakton® pH Buffer Solutions

Keep your readings accurate with these quality buffers

– Standardized against NIST-traceable pH references for meters with 0.01 resolution



Save by ordering larger sizes or by the case!

pH	500-mL bottles			1-L bottles		3.8-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	JT-00654-01		—	—	—	—	—	—	—	—
4.01	JT-00654-00		JT-05942-21		JT-05942-22		JT-05942-24		JT-05942-25	
6.86	JT-00654-03		—	—	—	—	—	—	—	—
7.00	JT-00654-04		JT-05942-41		JT-05942-42		JT-05942-44		JT-05942-45	
9.18	JT-00654-07		—	—	—	—	—	—	—	—
10.01	JT-00654-08		JT-05942-61		JT-05942-62		JT-05942-64		JT-05942-65	
12.45	JT-00654-12		—	—	—	—	—	—	—	—



## Oakton® Traceable® pH Buffers, NIST-Traceable Reference Materials

Feel more confident about accuracies

- Calibrated by ISO Guide 34 and ISO 17025 accredited laboratory—includes NIST-traceable certificate
- Easy calibrations—include instructions and temperature compensation chart

**NEW**



pH	500-mL bottles		1-L bottles		3.8-L bottles	
	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
<b>Colorless buffers</b>						
4.005	JT-00651-00		JT-00651-30		JT-00651-70	
7.000	JT-00651-02		JT-00651-32		JT-00651-72	
10.012	JT-00651-04		JT-00651-34		JT-00651-74	
<b>Color-coded buffers</b>						
4.005 (red)	JT-00651-06		JT-00651-36		JT-00651-76	
7.000 (yellow)	JT-00651-08		JT-00651-38		JT-00651-78	
10.012 (blue)	JT-00651-10		JT-00651-40		JT-00651-80	

## Oakton® pH Buffer and pH Solution Packs

Maintain accuracy and your budget

- Save money by purchasing buffer pack—includes 500-mL bottle of pH 4, 7, and 10 NIST-traceable buffers
- Keep electrodes clean and stored correctly—purchase solution pack which adds 500-mL bottles of cleaning and storage solutions



Description	Qty/pk	Catalog number	Price/pk
pH buffer pack	3 bottles	JT-05942-10	
pH solution pack	5 bottles	JT-05942-15	

## pH Buffer Capsules

No more wasted buffer

- Make only the buffer you need—empty one capsule into 100 mL of water and stir
- Accurate to ±0.02 pH

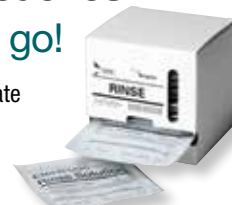
pH	Color	Catalog number	Price/vial of 10
4.0	Orange	JT-05977-12	
7.0	Green	JT-05977-14	
9.0	Yellow	JT-05977-16	
10.0	Blue	JT-05977-18	



## Oakton® pH Buffer Pouches

Accuracy even on the go!

- Single-use pouch—just tear, dip, calibrate
- Standardized to NIST-traceable pH references



pH	Catalog number	Price/pk of 20 pouches
4.01	JT-35653-01	
7.00	JT-35653-02	
10.00	JT-35653-03	
Rinse solution	JT-35653-00	

**JT-35653-04 Buffer pouch assortment pack**; contains five pouches each of pH 4, 7, and 10 buffers and rinse solution

## Oakton® Electrode Cleaning and Storage Solutions

Clean electrodes make clean measurements

- Easily remove grease, protein, and other deposits with cleaning solution
- Make electrode last longer—store in our storage solution
- Choose 500-mL bottle or case of 24 500-mL bottles



Solution type	Catalog number	Price/ea	Catalog number	Price/cs
Cleaning	JT-00653-06		—	—
Storage	JT-00653-04		JT-35655-04	

## WHIRL-PAK® Sterile Sampling Bags, LDPE

### Keep samples safe—easy-seal bags hold solids and liquids

- Quick and easy sealing—flip bag around wire/tape and bend to seal
- No more poking—puncture-proof tabs keep wire intact even after extensive use

**Sampling Bags** are available with or without a white labeling area.

**“Speci-Sponge” Bags** are designed to sample surfaces and equipment for *Listeria*, *Salmonella*, and other food-borne pathogens; contain a 1½" x 3" (3.8 x 7.6 cm) sponge that is free of bactericides and noninhibitory; with white labeling area.

**Sodium Thiosulfate Bags** are EPA-compliant for potable water collection; contain a nontoxic, nonnutritive 10-mg active ingredient tablet of sodium thiosulfate to neutralize the chlorine at the point of collection; with white labeling area.

**High-Temperature Bag** is for hot fill samples with a temperature up to 215°F (102°C). The FDA-compliant film is a blend of low-density polyethylene and nylon that will hold liquids, solids, sauces, gravies, and other samples having a high temperature. Bag is self standing and does not need a rack or special holder to keep it upright, making sample collection safe and easy. With white labeling area.

**Caution:** Do not put bag in boiling water.



**Buy More... Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

**STERILE**

Capacity oz (mL)	Size (W x L)	Thickness (mil)	Catalog number	Qty/pk	Price/pk
<b>Sampling bags without white labeling area</b>					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	<a href="#">JT-06499-10</a>	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">JT-06499-20</a>	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	<a href="#">JT-06499-30</a>	500	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	3.0	<a href="#">JT-06499-40</a>	500	
42 (1242)	6" x 15" (15.2 x 38.1 cm)	3.0	<a href="#">JT-06499-50</a>	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	<a href="#">JT-06499-54</a>	500	
<b>Standup sampling bags with white labeling area</b>					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.5	<a href="#">JT-06499-16</a>	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	3.0	<a href="#">JT-06499-21</a>	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	<a href="#">JT-06499-31</a>	500	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	4.0	<a href="#">JT-06499-33</a>	250	
42 (1242)	6" x 15" (15.2 x 38.1 cm)	4.0	<a href="#">JT-06499-34</a>	250	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	4.0	<a href="#">JT-06499-35</a>	250	
<b>Sampling bags with white labeling area</b>					
2 (58)	3" x 5" (7.6 x 12.7 cm)	2.5	<a href="#">JT-06499-60</a>	500	
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	<a href="#">JT-06499-70</a>	500	
7 (207)	3¾" x 7" (9.5 x 17.8 cm)	2.5	<a href="#">JT-06499-72</a>	500	
13 (384)	5¼" x 7½" (13.3 x 19.1 cm)	2.5	<a href="#">JT-06499-74</a>	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">JT-06499-80</a>	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	<a href="#">JT-06499-85</a>	500	
27 (798)	5" x 12" (12.7 x 30.5 cm)	3.0	<a href="#">JT-06499-87</a>	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	<a href="#">JT-06499-89</a>	500	
92 (2721)	10" x 15" (25.4 x 38.1 cm)	4.0	<a href="#">JT-06499-94</a>	250	
123 (3637)	10" x 20" (25.4 x 50.8 cm)	4.0	<a href="#">JT-06499-98</a>	250	
184 (5441)	15" x 20" (38.1 x 50.8 cm)	4.0	<a href="#">JT-06499-99</a>	100	
<b>"Speci-Sponge" bags for surface sampling with sponge</b>					
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">JT-06499-13</a>	100	
55 (1627)	7½" x 11¾" (19.1 x 29.8 cm)	4.0	<a href="#">JT-06499-14</a>	100	
18 (532)	4" x 9" (10.2 x 22.9 cm)	2.5	<a href="#">JT-06499-52†</a>	100	
<b>Sodium thiosulfate bags for water sampling with tablet</b>					
3¾ (100)	3" x 7¼" (7.6 x 18.4 cm)	2.5	<a href="#">JT-06499-90</a>	100	
10½ (300)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">JT-06499-95</a>	100	
<b>High-temperature bag</b>					
18 (532)	4½" x 9" (11.4 x 22.9 cm)	3.0	<a href="#">JT-06498-16</a>	500	

†Model 06499-52 has a sterile glove.

#### Accessories

**JT-66203-10 Carrying rack** for 2- and 4-oz bags. Double-grid design keeps bags upright and has 15 compartments. Vinyl coated, autoclavable

**JT-66203-00 Carrying rack** for 18-oz bags. Double-grid design keeps bags upright. Rack has 20 compartments. Vinyl coated, autoclavable

**JT-06498-12 Water scoop**, 18" (45.7 cm) L coated handle. Two alligator clips hold a variety of bag sizes



Standup bags stay upright



Water scoop holds bag open for easy filling



Rack



## PYREX® Brand 1000 Griffin Low-Form Beakers, Glass

### Stand up to thermal shock

- Uniform wall thickness offers optimal balance of thermal shock resistance and mechanical strength
- Know how much is left and how much is gone—double graduation scale indicates approximate content (on 250- to 400-mL sizes only)
- No mystery liquids—extra-large marking spot for easy identification
- Reference: ASTM E-960



**Buy More...Save More!**  
**15%** off on 10+ packs or cases **10%** off on 5 to 9 packs or cases

Capacity mL (oz)	Graduation range (mL)	Graduation interval (mL)	Catalog number	Qty/ pk	Price/ pk
10 (1/8)	—	—	<a href="#">JT-34502-01</a>	12	
20 (2/8)	5 to 15	5	<a href="#">JT-34502-02</a>		
30 (1)	5 to 25	10	<a href="#">JT-34502-03</a>		
50 (1 1/4)	10 to 40	10	<a href="#">JT-34502-04</a>		
100 (3)	20 to 80	10	<a href="#">JT-34502-05</a>	12	
150 (5)	20 to 140	10	<a href="#">JT-34502-06</a>		
250 (8)	25 to 200	25	<a href="#">JT-34502-07</a>		
400 (13)	25 to 325	25	<a href="#">JT-34502-08</a>		
600 (20)	50 to 500	50	<a href="#">JT-34502-09</a>	6	
800 (27)	50 to 750	50	<a href="#">JT-34502-10</a>		
1000 (32)	50 to 1000	50	<a href="#">JT-34502-11</a>	6	
2000 (64)	200 to 2000	100	<a href="#">JT-34502-13</a>	4	
3000 (96)	250 to 2500	125	<a href="#">JT-34502-14</a>	1	
4000 (128)	500 to 3500	250	<a href="#">JT-34502-15</a>	1	
10 (1/8)	—	—	<a href="#">JT-34502-21</a>	48	
20 (2/8)	5 to 15	5	<a href="#">JT-34502-22</a>		
30 (1)	5 to 25	10	<a href="#">JT-34502-23</a>		
50 (1 1/4)	10 to 40	10	<a href="#">JT-34502-24</a>		
100 (3)	20 to 80	10	<a href="#">JT-34502-25</a>	48	
150 (5)	20 to 140	10	<a href="#">JT-34502-26</a>		
250 (8)	25 to 200	25	<a href="#">JT-34502-27</a>		
400 (13)	25 to 325	25	<a href="#">JT-34502-28</a>		
600 (20)	50 to 500	50	<a href="#">JT-34502-29</a>	36	
800 (27)	50 to 750	50	<a href="#">JT-34502-30</a>		
1000 (32)	50 to 1000	50	<a href="#">JT-34502-31</a>	24	
2000 (64)	200 to 2000	100	<a href="#">JT-34502-33</a>	8	
3000 (96)	250 to 2500	125	<a href="#">JT-34502-34</a>	6	
4000 (128)	500 to 3500	250	<a href="#">JT-34502-35</a>	6	
Starter set contains one each of 50 mL, 100 mL, 250 mL, 600 mL, 1000 mL			<a href="#">JT-34502-90</a>	5	

## Cole-Parmer® Tri-Corner Beakers, PP

### Easy pouring from three sides

- Easily mix on stirrer—flat bottom keeps stir bars centered
- Accurate to ±5%; molded graduations
- Withstand temperatures to 250°F (121°C)
- Autoclavable



**Buy More...Save More!**  
**20%** off on 120+ **15%** off on 30 to 119 **10%** off on 6 to 29 packs or cases

Capacity mL (oz)	Graduations (mL)	Cat. no.	Qty/pk	Price/pk
50 (1.5)	10	<a href="#">JT-06020-01</a>	100	
100 (3.5)	10	<a href="#">JT-06020-03</a>		
250 (8)	20	<a href="#">JT-06020-05</a>		
400 (13)	40	<a href="#">JT-06020-07</a>	100	
800 (26)	50	<a href="#">JT-06020-09</a>		
1000 (32)	50	<a href="#">JT-06020-11</a>		
Five of each above	—	<a href="#">JT-06010-07</a>	30	

## Cole-Parmer® elements™ Griffin Low-Form Graduated Beakers, Glass

### Suitable for all lab procedures

- Easy-read graduations and marking area
- Withstands wide temperature range -50 to 550°C
- Graduated tolerances from ±0.02 to ±0.05 depending on size
- Autoclavable

**NEW**

Borosilicate 3.3 glass beakers with pour spout provide excellent general use at an economical price.



**Buy More...Save More!**  
**15%** off on 10+ packs or cases **10%** off on 5 to 9 packs or cases

Capacity mL (oz)	Graduation range (mL)	Graduation interval (mL)	Catalog number	Qty/ pk	Price/ pk
10 (1/8)	—	10	<a href="#">JT-34502-20</a>	12	
20 (2/8)	5 to 20	5	<a href="#">JT-34502-36</a>		
25 (7/8)	5 to 25	5	<a href="#">JT-34502-37</a>		
30 (1)	10 to 30	5	<a href="#">JT-34502-38</a>		
50 (1 1/4)	10 to 50	10	<a href="#">JT-34502-39</a>		
100 (3)	20 to 100	10	<a href="#">JT-34502-40</a>	12	
150 (5)	25 to 150	12.5	<a href="#">JT-34502-41</a>		
200 (6)	50 to 200	25	<a href="#">JT-34502-42</a>		
250 (8)	50 to 250	25	<a href="#">JT-34502-43</a>	8	
300 (10)	50 to 300	25	<a href="#">JT-34502-44</a>		
400 (13)	100 to 400	50	<a href="#">JT-34502-45</a>		
500 (16)	100 to 500	50	<a href="#">JT-34502-46</a>		
600 (20)	100 to 600	50	<a href="#">JT-34502-47</a>	6	
800 (27)	200 to 800	100	<a href="#">JT-34502-48</a>		
1000 (32)	200 to 1000	100	<a href="#">JT-34502-49</a>	2	
1500 (51)	300 to 1500	100	<a href="#">JT-34502-50</a>		
2000 (64)	400 to 2000	200	<a href="#">JT-34502-51</a>		
3000 (96)	500 to 2500	250	<a href="#">JT-34502-52</a>	1	
4000 (128)	500 to 3500	250	<a href="#">JT-34502-53</a>		
5000 (160)	500 to 4500	500	<a href="#">JT-34502-54</a>		

## Cole-Parmer® elements™ Graduated Beakers, PP

### Molded-in graduations will not wear off

- Graduated in mL and oz for easy conversion
- Stacking ribs provide easy separation so beakers will not stick together
- Accurate to ±2.5%
- Withstands temperatures from 5 to 248°F (-15 to 150°C)

**NEW**



**Buy More...Save More!**  
**15%** off on 10+ packs or cases **10%** off on 5 to 9 packs or cases

Capacity mL (oz)	Graduations (mL)	Cat. no.	Qty/pk	Price/pk
15 (1/2)	5	<a href="#">JT-06200-02</a>	100	
30 (1)	5	<a href="#">JT-06200-04</a>		
50 (1 1/4)	5	<a href="#">JT-06200-06</a>	50	
100 (3 1/2)	5	<a href="#">JT-06200-08</a>		
150 (5)	5	<a href="#">JT-06200-10</a>		
250 (8)	10	<a href="#">JT-06200-12</a>	25	
400 (13)	25	<a href="#">JT-06200-14</a>		
600 (20)	25	<a href="#">JT-06200-16</a>	25	

## Cole-Parmer® Wide-Mouth Bottles, LDPE, HDPE, PP

Wide-mouth opening provides easier filling and sampling

- Offered in pack quantities or bulk pack quantities to meet your specific requirements
- Reliable and sturdy
- Choose from three materials; all include a leakproof PP closure

**HDPE Bottles** are manufactured with FDA-compliant resin for noncontaminating storage of chemicals and food-grade products.

**LDPE Bottles** are translucent and ideal for food and general-use laboratory applications.

**PP Bottles** are rigid and offer superior chemical resistance; perfect for storage and sampling of liquids and solids. **Autoclavable.**



Buy More...Save More!

20% off on 120+  
15% off on 30 to 119  
10% off on 6 to 29 packs or cases



Capacity mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/cs	Price/cs
<b>HDPE</b>							
60 (2)	22 mm	JT-06045-18	12		JT-06045-23	72	
125 (4)	28 mm	JT-06045-24	12		JT-06045-25	72	
250 (8)	28 mm	JT-06045-26	12		JT-06045-27	72	
500 (16)	28 mm	JT-06045-28	12		JT-06045-29	48	
1000 (32)	28 mm	JT-06045-44	6		JT-06045-31	24	
2000 (64)	45 mm	JT-06045-46	1		JT-06045-33	6	
<b>LDPE</b>							
60 (2)	22 mm	JT-06045-02	12		JT-06045-03	72	
125 (4)	28 mm	JT-06045-04	12		JT-06045-05	72	
250 (8)	28 mm	JT-06045-06	12		JT-06045-07	72	
500 (16)	28 mm	JT-06045-08	12		JT-06045-09	48	
1000 (32)	28 mm	JT-06045-14	6		JT-06045-11	6	
<b>PP</b>							
30 (1)	22 mm	JT-06045-48	12		JT-06045-41	72	
60 (2)	22 mm	JT-06045-56	12		JT-06045-43	72	
125 (4)	28 mm	JT-06045-58	12		JT-06045-45	72	
250 (8)	28 mm	JT-06045-62	12		JT-06045-47	72	
500 (16)	28 mm	JT-06045-66	12		JT-06045-49	48	
1000 (32)	28 mm	JT-06045-68	6		JT-06045-51	24	
2000 (64)	45 mm	JT-06045-74	1		JT-06045-53	6	

## Thermo Scientific™ Nalgene™ Wide-Mouth Bottles, LDPE

Get better sample visibility

- Translucent material provides flexibility and impact resistance
- Ideal for shipping liquids—include leakproof polypropylene (PP) screw caps



Buy More...Save More!  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk
30 (1)	28 mm	JT-06043-10		
60 (2)	28 mm	JT-06043-20	12	
125 (4)	38 mm	JT-06043-30		
250 (8)	43 mm	JT-06043-40	12	
500 (16)	53 mm	JT-06043-50		
1000 (32)	63 mm	JT-06043-60	6	

## Thermo Scientific™ Nalgene™ Wide-Mouth Bottles, HDPE

Safely transport samples—leakproof lids for worry-free shipping

- Wide-mouth design for easier filling with dry or liquid samples
- Easy viewing of samples with translucent HDPE design
- Leakproof lids are made of polypropylene



Buy More...Save More!  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Cap size	Qty/pk	Catalog number	Price/pk
30 (1)	28 mm		JT-06047-10	
60 (2)	28 mm	12	JT-06047-20	
125 (4)	38 mm		JT-06047-30	
250 (8)	43 mm	12	JT-06047-40	
500 (16)	53 mm		JT-06047-50	
1000 (32)	63 mm	6	JT-06047-60	
1500 (50)	63 mm		JT-06047-65	

## Sample Bottles, HDPE

Store samples without breaking your budget

- Provide good chemical resistance for a wide range of uses
- Bottles are made of HDPE; included cap is made of polypropylene and lined with polyethylene foam
- Easy mailing with optional mailing tube (sold separately)



Buy More...Save More!  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Qty/pk	Catalog number	Price/pk
180 (6)	300	JT-06043-01	
250 (8)	329	JT-06049-01	
500 (16)	198	JT-06050-05	

JT-06049-30 Mailing tubes for bottle 06049-01. Carton of 240

## Cole-Parmer® Lab Markers

Fine-point fiber tip writes on cold, wet surfaces. Quick-drying ink permanently marks plastic; washes off glass, metal, or porcelain.

Color	Qty/pk	Catalog number	Price
Black		JT-09964-00	
Blue	10	JT-09964-10	
Green		JT-09964-15	
Red		JT-09964-20	



Find even more online! Go to ColeParmer.com to search more than 100,000 products.



## Thermo Scientific™ Nalgene™ Heavy-Duty Bottles, PP

Withstand repeated full vacuum applications

- Use under repeated full vacuum for 24 hours at 68°F (20°C)
- PP closure with thermoplastic elastomer (TPE) gasket
- Autoclavable



**Buy More...Save More!**

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Capacity, mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk
250 (8)	53B	<a href="#">JT-06257-05</a>	6	
1000 (32)		<a href="#">JT-06257-10</a>	6	
2000 (64)		<a href="#">JT-06257-20</a>	2	
4000 (128)	83B	<a href="#">JT-06257-00</a>	1	
5000 (160)		<a href="#">JT-06257-30</a>		

## Graduated Sample Containers, PP

Graduated for easier sampling

- Durable design—translucent, unbreakable, and chemical resistant
- Sterile containers are individually wrapped



**Buy More...Save More!**

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Description	Catalog number	Qty/pk	Price/pk
118 (4)	Sterile, no tab	<a href="#">JT-06049-40</a>	100	
118 (4)	Nonsterile with white tab	<a href="#">JT-06049-50</a>	500	



## Thermo Scientific™ Nalgene™ Economy Wide-Mouth Bottles, HDPE

Rugged design fits all your needs

- Leakproof, PP enclosure



**Buy More...Save More!**

- 20% off on 120+
- 15% off on 30 to 119
- 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/cs	Price/cs
30 (1)	28 mm	<a href="#">JT-06035-31</a>	12		<a href="#">JT-06035-33</a>	72	
60 (2)	28 mm	<a href="#">JT-06035-35</a>			<a href="#">JT-06035-37</a>		
125 (4)	38 mm	<a href="#">JT-06035-39</a>			<a href="#">JT-06035-41</a>		
250 (8)	43 mm	<a href="#">JT-06035-43</a>	12		<a href="#">JT-06035-45</a>	72	
500 (16)	53 mm	<a href="#">JT-06035-47</a>	6		<a href="#">JT-06035-49</a>	48	
1000 (32)	63 mm	<a href="#">JT-06035-51</a>	6		<a href="#">JT-06035-53</a>	24	

## Cole-Parmer® Precleaned EPA Sample Containers

No contaminants—precleaned and ready to use

- Include certificate of conformance to EPA specifications
- Identify samples easier with included labels (unattached)

**A-D. Glass Bottles, Jars, and Jugs** are processed and certified to meet the requirements of the current US EPA “Specifications and Guidance for Contaminant-Free Sample Containers” document for semi-volatile organics, pesticides, PCBs, metals, cyanide, fluoride, nitrate and nitrite analyses. Include PTFE-lined caps.



**E. Glass Septa Jars** are processed and certified to meet the requirements of the current US EPA “Specifications and Guidance for Contaminant-Free Sample Containers” document for purgeable volatile organic analysis. Include PTFE-lined silicone septa bonded to open-top caps.



Capacity mL (oz)	Neck size	Qty/cs	Catalog number	Price/cs
<b>A. Clear wide-mouth glass jars</b>				
60 (2)	53 mm	24	<a href="#">JT-99540-40</a>	
125 (4)	58 mm	24	<a href="#">JT-99540-41</a>	
250 (8)	70 mm	12	<a href="#">JT-99540-42</a>	
500 (16)	89 mm	12	<a href="#">JT-99540-43</a>	
950 (32)	89 mm	12	<a href="#">JT-99540-44</a>	
<b>B. Amber narrow-mouth glass bottles</b>				
125 (4)	22 mm	24	<a href="#">JT-99540-30</a>	
250 (8)	24-414	12	<a href="#">JT-99540-31</a>	
500 (16)	28 mm	12	<a href="#">JT-99540-32</a>	
1000 (34)	33-430	12	<a href="#">JT-99540-33</a>	
<b>C. Amber wide-mouth glass bottles</b>				
125 (4)	38 mm	12	<a href="#">JT-99540-51</a>	
250 (8)	45 mm	12	<a href="#">JT-99540-53</a>	
500 (16)	53 mm	12	<a href="#">JT-99540-55</a>	
950 (32)	53 mm	12	<a href="#">JT-99540-57</a>	
<b>D. Amber narrow-mouth glass jugs</b>				
2500 (80)	38-430	6	<a href="#">JT-99540-34</a>	
4000 (135)	38-430	4	<a href="#">JT-99540-35</a>	
<b>E. Clear wide-mouth glass septa jars</b>				
60 (2)	53 mm	24	<a href="#">JT-99540-20</a>	
125 (4)	58 mm	24	<a href="#">JT-99540-21</a>	

## DON'T RISK IT!

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



## Thermo Scientific™ Nalgene™ Round Carboys, LDPE

### No more leaks

- Leakproof, polypropylene cap for no worry transport
- Make transport easy with easy-grip handles
- Withstand corrosive materials
- Maintain adequate levels of solution—larger than 10-L carboys indicate 1-gallon and 5-liter increments
- Dispense easily with spigot models



**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
<b>Carboys with shoulder handles</b>				
10 (2½)	83B	<a href="#">JT-06031-32</a>	1	
15 (4)	83B	<a href="#">JT-06031-42</a>		
20 (5)	83B	<a href="#">JT-06031-52</a>		
25 (6½)	83B	<a href="#">JT-06031-62</a>		
50 (13)	83B	<a href="#">JT-06031-72</a>		
<b>Wide-mouth carboys with shoulder handles</b>				
10 (2½)	100 mm	<a href="#">JT-06056-22</a>	1	
15 (4)	100 mm	<a href="#">JT-06056-32</a>		
20 (5)	100 mm	<a href="#">JT-06056-52</a>		
<b>Carboy with spigot and shoulder handles</b>				
4 (1)	38-430	<a href="#">JT-06065-10</a>	1	
10 (2½)	83B	<a href="#">JT-06065-22</a>		
20 (5)	83B	<a href="#">JT-06065-32</a>		
25 (6½)	83B	<a href="#">JT-06065-52</a>		
50 (13)	83B	<a href="#">JT-06065-62</a>		
<b>Carboys with ½" OD tubulation and shoulder handles</b>				
10 (2½)	83B	<a href="#">JT-06080-42</a>	1	
20 (5¼)	83B	<a href="#">JT-06080-52</a>		

#### Accessories

- [JT-06258-30](#) Replacement cap, PP, 83B. Pack of 2
- [JT-63000-16](#) Replacement cap, PP, 100 mm. Pack of 12
- [JT-63000-18](#) Replacement cap, PP, 38-430. Pack of 12
- [JT-06070-22](#) Replacement spigot, PP

## Cole-Parmer® Economical Heavy-Duty Carboys with Shoulder Handle, PP

### Sturdy, octagonal design for added rigidity

- Easier filling and pouring with offset neck
- Leakproof spigot models have tube fitting for easier filling of containers
- Polypropylene closure reduces evaporation
- Autoclavable



**Cole-Parmer®**

**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
<b>Heavy-duty carboys with shoulder handle</b>				
5 (1¼)	45 mm	<a href="#">JT-62507-00</a>	1	
10 (2½)	90 mm	<a href="#">JT-62507-10</a>	1	
20 (5¼)	90 mm	<a href="#">JT-62507-20</a>	1	
<b>Heavy-duty carboys with shoulder handle and spigot</b>				
5 (1¼)	45 mm	<a href="#">JT-62507-05</a>	1	
10 (2½)	90 mm	<a href="#">JT-62507-15</a>	1	
20 (5¼)	90 mm	<a href="#">JT-62507-25</a>	1	

## Thermo Scientific™ Nalgene™ FDA-Compliant Carboys, PP

### Get a better grip with two-handle construction

- Dispense solutions more quickly with optional spigot models—accept ¼", ½", or 5/8" ID tubing
- Leakproof polypropylene (PP) cap
- Autoclavable



**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
<b>FDA-compliant carboys, USP Class VI</b>				
10 (2½)	83B	<a href="#">JT-06063-12</a>	1	
20 (5)	83B	<a href="#">JT-06063-22</a>		
50 (13)	83B	<a href="#">JT-06063-32</a>		
<b>FDA-compliant carboys with spigot, USP Class VI</b>				
10 (2½)	83B	<a href="#">JT-06064-50</a>	1	
20 (5)	83B	<a href="#">JT-06064-60</a>		
50 (13)	83B	<a href="#">JT-06064-70</a>		



# Cole-Parmer® Jiffy-Jack® Lab Jacks

## Safely position sample or equipment



- Easily position equipment or sample with a twist of the knob
- Rugged construction stands up to heavy loads
- Add optional support rod for probes, clamps, or other items



Model 08057-20 supports up to 132 lb (60 kg).

Top plate dimensions	Open height	Closed height	Max support static load	Catalog number	Price
<b>Plastic lab jack</b>					
8" x 8" (20.3 x 20.3 cm)	12" (30.5 cm)	3" (7.6 cm)	15 lb (6 kg)	<a href="#">JT-08055-50</a>	
<b>Aluminum lab jacks</b>					
4" x 4" (10.2 x 10.2 cm)	5" (12.7 cm)	2½" (6.4 cm)	66 lb (30 kg)	<a href="#">JT-08057-10</a>	
6" x 6" (15.2 x 15.2 cm)	9¾" (24.8 cm)	3" (7.6 cm)	132 lb (60 kg)	<a href="#">JT-08057-20</a>	
8" x 8" (20.3 x 20.3 cm)	13" (33.0 cm)	3½" (8.9 cm)	176 lb (80 kg)	<a href="#">JT-08057-30</a>	
10" x 10" (25.4 x 25.4 cm)	13" (33.0 cm)	3½" (8.9 cm)	198 lb (90 kg)	<a href="#">JT-08057-40</a>	
<b>Stainless steel heavy-duty lab jacks</b>					
3" x 3" (7.6 x 7.6 cm)	5" (12.7 cm)	2½" (6.4 cm)	20 lb (9.0 kg)	<a href="#">JT-08057-12</a>	
4" x 4" (10.2 x 10.2 cm)	5" (12.7 cm)	2½" (6.4 cm)	30 lb (13.6 kg)	<a href="#">JT-08057-14</a>	
6" x 6" (15.2 x 15.2 cm)	9¾" (24.8 cm)	3" (7.6 cm)	35 lb (15.8 kg)	<a href="#">JT-08057-16</a>	
8" x 8" (20.3 x 20.3 cm)	13" (33.0 cm)	3½" (8.9 cm)	55 lb (25.0 kg)	<a href="#">JT-08057-18</a>	
10" x 10" (25.4 x 25.4 cm)	13" (33.0 cm)	3½" (8.9 cm)	80 lb (36.3 kg)	<a href="#">JT-08057-22</a>	
12" x 12" (30.5 x 30.5 cm)	19½" (49.5 cm)	4" (10.2 cm)	150 lb (68.0 kg)	<a href="#">JT-08057-24</a>	
16" x 16" (40.6 x 40.6 cm)	19½" (49.5 cm)	4" (10.2 cm)	180 lb (81.6 kg)	<a href="#">JT-08057-26</a>	

[JT-08057-50](#) Ratchet tool adds extra leverage to models 08057-24 and -26

[JT-08057-52](#) Support rod kit allows you to mount a 17" (43.2 cm) L vertical support rod to models 08057-16, -18, -22, -24, and -26

# Keck® Connectors, Clamps, and Clips

## Keep connections together

### A. Keck Original Standard Taper Clips

Economical standard taper clips securely hold conical joints under pressure without damaging glass. The polyoxymethylene (POM) acetal resin clips are safe to 302°F (150°C). Resistant to concentrated alkalis and dilute acids (not resistant to halogen gases and concentrated acids).



Plastic taper clips are easy to attach and remove.

Joint size no.	Color	Qty/pk	Catalog number	Price/pk
10	Green	12	<a href="#">JT-06839-90</a>	
12	Violet		<a href="#">JT-06839-95</a>	
14	Yellow		<a href="#">JT-06840-05</a>	
19	Blue	12	<a href="#">JT-06840-10</a>	
24	Green		<a href="#">JT-06840-15</a>	
29	Red		<a href="#">JT-06840-20</a>	
34	Orange	12	<a href="#">JT-06840-25</a>	
40	Yellow		<a href="#">JT-06840-30</a>	
45	Brown		<a href="#">JT-06840-35</a>	

[JT-06840-00](#) Standard taper clip assortment pack.

Six each of sizes 14, 19, 24, and 29 (24 total)

[JT-06840-50](#) Standard taper clip assortment pack.

Three each of all nine sizes in table above (27 total)

### B. Keck Metal Standard Taper Clips

Durable nickel-plated steel taper clips securely hold conical joints under pressure. Clips offer superior chemical and temperature resistance—withstanding temperatures to 932°F (500°C).



Joint size no.	Qty/pk	Cat. no.	Price/pk
14	6	<a href="#">JT-06836-05</a>	
19		<a href="#">JT-06836-10</a>	
24		<a href="#">JT-06836-15</a>	
29		<a href="#">JT-06836-20</a>	

### C. Keck Ball-Joint Clips

Secure ball and socket joints—no locking screw required. Polyoxymethylene (POM) acetal resin clips are safe to 302°F (150°C). Resistant to concentrated alkalis and dilute acids (not resistant to halogen gases or concentrated acids).



Joint size no.	Color	Qty/pk	Catalog number	Price/pk
13	Violet	12	<a href="#">JT-06838-10</a>	
19	Blue		<a href="#">JT-06838-15</a>	
29	Red		<a href="#">JT-06838-20</a>	
35	Orange		<a href="#">JT-06838-25</a>	

**Wait!**

There's More at [ColeParmer.com](#)

Browse 100,000+ products plus find **Technical Resources** to help you choose

## Cole-Parmer® Cleaning Products

Easily clean glass, metal, plastic, rubber, and other hard materials

- Safe and effective cleaning products
- Highly concentrated, aqueous solutions are free-rinsing
- Meet USDA guidelines for incidental contact with food processing systems
- Do not contain CFCs, phosphates, silicates, halogens, or phenols



Cleaner	Type	Cleaning applications	Dilution	pH	Packaging	Cat. no.	Price/ea	Cat. no.	Qty/cs	Price/cs
Micro-90®	Ionic, nonionic, USDA authorized	Manual or ultrasonic; removes most biological materials; cleans glass, most metals, plastic, and rubber†	1:100 to 2:100	9.5	0.26 gal. (1 L)	<a href="#">JT-18100-05</a>	—	<a href="#">JT-18100-04</a>	12	—
					1 gal. (4 L)	—	<a href="#">JT-18100-11</a>	4	—	
					5 gal. (18.9 L)	—	<a href="#">JT-18100-20</a>	1	—	
					55-gal. drum (208 L)	<a href="#">JT-18100-30</a>	—	—	—	
Zymit®	Enzymatic, USDA authorized	Machine, manual, or ultrasonic; dissolves protein and starch-based soils; may use for delicate materials	1:100	7.5	0.26 gal. (1 L)	<a href="#">JT-18101-30</a>	—	<a href="#">JT-18101-20</a>	12	—
LF2100™	Low-sudsing, anionic, nonionic, amphoteric, USDA authorized	Automatic washers, high-pressure and high agitation applications†	1:100	9.7	0.26 gal. (1 L)	<a href="#">JT-18102-00</a>	—	<a href="#">JT-18102-10</a>	12	—
					5.3 gal. (20 L)	<a href="#">JT-18102-30</a>	—	—	—	
Surface-Cleanse/930®	Nonionic, USDA authorized	Cleans grease, petroleum, oils from glass, aluminum, lead, zinc, and plastic without surface damage	1:200	7.0	0.26 gal. (1 L)	<a href="#">JT-18103-00</a>	—	<a href="#">JT-18103-10</a>	12	—
					5.3 gal. (20 L)	<a href="#">JT-18103-30</a>	—	—	—	
Micro-A07®	Citric acid, nonionic, USDA authorized	Removes millstone, hard water scale, rust, mineral deposits, and other inorganic soils from filter membranes, labware, and industrial equipment	1:100 to 2:100	2.5	0.26 gal. (1 L)	<a href="#">JT-18104-00</a>	—	<a href="#">JT-18104-01</a>	12	—
					5.3 gal. (20 L)	<a href="#">JT-18104-30</a>	—	—	—	

†Do not use on zinc, magnesium, or aluminum.

### DisCide® ULTRA Disinfecting Towelettes and Sprays

No wasting time—works in just one minute!

- No mixing or measuring—solutions are ready to use
- Eliminate separate towel requirements with towelettes



Description	Packaging	Qty/cs	Catalog number	Price
Towelettes, 6" x 6¾" (15.2 x 17.1 cm)	Canister of 160	12	<a href="#">JT-86306-03</a>	
Towelettes, 10½" x 10½" (26.7 x 26.7 cm)	Canister of 60	12	<a href="#">JT-86306-05</a>	
Spray bottle	1 quart bottle	12	<a href="#">JT-86306-13</a>	
Refill bottle	1 gallon bottle	4	<a href="#">JT-86306-15</a>	

Need more cleaning products for your lab and personnel?  
See our full offering at [ColeParmer.com/cleaning](http://ColeParmer.com/cleaning).

### Bacdown® Hand Soap

Won't dry your skin

- Formulated specifically for those washing frequently to minimize dry, chapped skin
- Protects against gram-negative and gram-positive bacteria as well as yeast and fungi



Packaging	Catalog number	Price/ea	Catalog number	Qty/cs	Price/cs
16 oz (500 mL)	<a href="#">JT-86115-02</a>	—	<a href="#">JT-86115-00</a>	12	—
0.26 gal. (1 L)	<a href="#">JT-86115-06</a>	—	<a href="#">JT-86115-04</a>	12	—
1.32 gal. (5 L)	<a href="#">JT-86115-10</a>	—	—	—	—

### CONFLIKT® Detergent Disinfectant

No need to dilute—ready to use

- Don't worry about contaminants—easily and effectively decontaminates surfaces
- Ammonium-based detergent disinfects and cleans hard surfaces

This prediluted detergent is effective against a wide range of viruses, bacteria, pathogenic fungi, mold, and mildew. USDA approved and EPA registered. Comes in a 32-oz spray bottle and a 1-gal. refill.



Packaging	Catalog number	Price/ea	Catalog number	Qty/cs	Price/cs
32 oz (946 mL)	<a href="#">JT-86115-40</a>	—	<a href="#">JT-86115-38</a>	6	—
1 gal. (3.7 L)	<a href="#">JT-86115-44</a>	—	<a href="#">JT-86115-42</a>	4	—





## Ansell TNT™ Blue Disposable Nitrile Gloves

Durable and comfortable

- Static dissipative to eliminate static electricity
- Textured fingertips for better gripping
- Powder-free
- Ambidextrous

**Compliance:** FDA regulations for food contact.

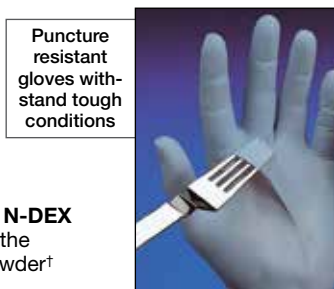


Size	Length	Thickness	Qty/ bx	Catalog number	Price per box	
					1 bx	10 bx
Small	9½" (24 cm)	5 mil	100	JT-81601-04		
Medium				JT-81601-05		
Large				JT-81601-06		
X-large				JT-81601-07		

## Showa® Best® N-DEX® Nitrile Gloves

Keep your cool—special formulation for comfort, less fatigue

- Nonlatex—made of soft 100% lightweight nitrile
- Fewer punctures—three times the resistance of rubber or vinyl
- Ambidextrous



**General and Laboratory Grade N-DEX Gloves** protect your hands from the environment. Available in low-powder† or powder-free versions.

**Industrial Grade N-DEX Plus Gloves** are thicker for greater puncture and tear resistance. Gloves provide good resistance to chemicals and abrasion. Ideal for tough lab conditions, assembly, or manufacturing. Available only in low-powder† version.



**Compliance:** FDA 21 CFR, parts 170-199, acceptable for food and pharmaceutical use.



Size	Length	Thickness	Qty/pk	Catalog number	Price per pack	
					1 pk	10 pk
<b>General and laboratory grade low-powder† N-DEX gloves</b>						
Small	9½" (24 cm)	4 mil	100	JT-86287-70		
Medium				JT-86287-71		
Large				JT-86287-72		
X-large				JT-86287-73		
<b>General and laboratory grade powder-free N-DEX gloves</b>						
Small	9½" (24 cm)	4 mil	100	JT-86287-80		
Medium				JT-86287-81		
Large				JT-86287-82		
X-large				JT-86287-83		
<b>Industrial grade N-DEX Plus low-powder† gloves</b>						
Small	9½" (24 cm)	8 mil	50	JT-86287-60		
Medium				JT-86287-61		
Large				JT-86287-62		
X-large				JT-86287-63		

†USP grade cornstarch

## Cole-Parmer® Nitrile Gloves

Don't lose your grip

- Soft feel with textured fingertips for better grip
- Powder-free
- Ambidextrous



Size	Length	Thickness	Qty	Catalog number	Price
Small	9½" (24 cm)	4.0 mil	1 box of 100	JT-15954-42	
Medium				JT-15954-43	
Large				JT-15954-44	
X-large				JT-15954-45	
Small	9½" (24 cm)	4.0 mil	10 boxes of 100 (1000 total)	JT-15954-24	
Medium				JT-15954-25	
Large				JT-15954-26	
X-large				JT-15954-46	

## Ansell Touch N Tuff™ Nitrile Gloves

Keep dexterity without sacrificing safety

- Thin formulation, yet resists punctures and tears
- No fillers—gloves are 100% nitrile
- Ambidextrous



**Compliance:** FDA regulations for food contact



Size	Length	Thickness	Qty/ bx	Catalog number	Price per box	
					1 bx	10 bx
<b>Powdered gloves</b>						
Small	9½" (24 cm)	4 mil	100	JT-81602-40		
Medium				JT-81602-50		
Large				JT-81602-60		
X-large				JT-81602-70		
<b>Powder-free gloves</b>						
Small	9½" (24 cm)	4 mil	100	JT-81602-45		
Medium				JT-81602-55		
Large				JT-81602-65		
X-large				JT-81602-75		

## Microflex® MidKnight™ Black Nitrile Gloves

Won't show stains

- Fully textured for consistently reliable gripping
- Power free
- Ambidextrous



Size	Length	Thickness	Qty/case	Catalog number	Price per case
Small	9½" (24 cm)	5.5 mil	1000	JT-86445-15	
Medium				JT-86445-16	
Large				JT-86445-17	
X-large				JT-86445-18	

## Cole-Parmer® Single-Channel Pipettors

### Don't sacrifice performance for price

– Ergonomic, lightweight design with soft plunger movement minimizes hand fatigue

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 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.



Cole-Parmer®

#### Specifications

**Tip ejector:** tip ejector with blow-out step

**Autoclavable:** autoclavable tip cone and lower section assembly

Volume	Increments	Accuracy	Reproducibility	Catalog number	Price
<b>Fixed-volume pipettors</b>					
100 µL				<a href="#">JT-21600-00</a>	
200 µL				<a href="#">JT-21600-02</a>	
500 µL	—	±0.3%	±0.2%	<a href="#">JT-21600-04</a>	
1000 µL				<a href="#">JT-21600-06</a>	
5000 µL				<a href="#">JT-21600-08</a>	
<b>Adjustable-volume pipettors</b>					
0.1 to 10 µL	0.1 µL	±2.5%	1.33%	<a href="#">JT-21600-10</a>	
5 to 50 µL	1.0 µL	±1.3%	0.7%	<a href="#">JT-21600-12</a>	
20 to 100 µL	1.0 µL	±1.1%	0.4%	<a href="#">JT-21600-14</a>	
40 to 200 µL	1.0 µL	±0.9%	0.3%	<a href="#">JT-21600-16</a>	
200 to 1000 µL	10.0 µL	±0.8%	0.2%	<a href="#">JT-21600-18</a>	
1 to 5 mL	100.0 µL	±0.6%	0.2%	<a href="#">JT-21600-20</a>	

#### Tips, Polypropylene

Volume (µL)	Qty/pk	Catalog number	Price/pk
0.2 to 10	Bag of 1000	<a href="#">JT-25711-06</a>	
0 to 200	Bag of 1000 10 racks of 96	<a href="#">JT-25711-12</a> <a href="#">JT-25711-14</a>	
50 to 1000	Bag of 1000	<a href="#">JT-18889-08</a>	
1000 to 5000	Bag of 1000 Bag of 500 Bag of 250	<a href="#">JT-25711-70</a> <a href="#">JT-25711-71</a> <a href="#">JT-25711-72</a>	

Find our full selection of pipettes, pipettors, and pipetting accessories at [ColeParmer.com/pipettes](http://ColeParmer.com/pipettes).

## Cole-Parmer® Transfer Pipettes

### No more breakage or cross-contamination

- Translucent, shatterproof LDPE is nontoxic and biologically inert
- Nonbinding for cells and proteins to prevent sample loss
- Heat sealable for liquid-tight transport and storage

**NEW**



Cole-Parmer®

Key	Description	Bulb type	Total capacity	Drops per mL (±1)	Graduations		Length in. (mm)	Sterile	Catalog number	Qty	Price
					Increments	Maximum					
<b>A</b>	Exact volume	Precision	0.25 mL	23	—	—	4 1/16 (102)	No	<a href="#">JT-06226-07</a>	500	
<b>B</b>	Mini	Standard	1.2 mL	25	—	—	2 1/2 (64)	No	<a href="#">JT-06226-30</a>	500	
			1.7 mL	25	—	—	3 1/16 (87)	No	<a href="#">JT-06226-21</a>	500	
<b>C</b>	General purpose	Standard	7.5 mL	20	—	—	6 1/8 (155)	No	<a href="#">JT-06226-11</a>	500	
		Large	8.0 mL	20	—	—	5 7/8 (152)	Yes†	<a href="#">JT-06226-31</a>	500	
<b>D</b>	Graduated	Small	1.5 mL	21	0.1 mL	0.3 mL	4 7/16 (113)	No	<a href="#">JT-06226-17</a>	400	
			3.0 mL	25	0.25 mL	1 mL	5 1/2 (140)	No	<a href="#">JT-06226-13</a>	500	
		Large	3.0 mL	25	0.25 mL	1 mL	5 7/16 (138)	No	<a href="#">JT-06226-29</a>	500	
			5.0 mL	25	0.25 mL	1 mL	6 1/8 (155)	No	<a href="#">JT-06226-23</a>	500	
			6.7 mL	25	1 mL	2 mL	5 7/8 (152)	No	<a href="#">JT-06226-12</a>	500	
<b>E</b>	Double graduated	Large	5.0 mL	25	0.5 mL	3 mL	6 1/8 (155)	No	<a href="#">JT-06226-15</a>	500	
<b>F</b>	Narrow stem	Standard	4.0 mL	25	—	—	3 3/8 (86)	No	<a href="#">JT-06226-26</a>	500	
			15.0 mL	19	—	—	6 1/8 (155)	No	<a href="#">JT-06226-01</a>	500	
<b>G</b>	Extra long	Large	6.0 mL	25	—	—	9 (230)	No	<a href="#">JT-06226-19</a>	500	
		Extra large	23.0 mL	20	—	—	12 (300)	No	<a href="#">JT-06226-27</a>	250	
<b>H</b>	Collection tubes	Standard	5.0 mL	25	—	—	6 1/8 (155)	No	<a href="#">JT-06226-22</a>	500	
			5.0 mL	25	0.5 mL	2 mL	6 1/8 (155)	No	<a href="#">JT-06226-24</a>	100	
									<a href="#">JT-06226-25</a>	500	
									<a href="#">JT-06226-03</a>	500	

†Sterile pipettes are packaged 20 per bag.

# Jenway® 74-Series Spectrophotometers

Day In, Day Out Spectroscopy Just Got Easier!

## Intuitive Touchscreen Interface

Large, 7" HD color display makes navigation easy. The touchscreen is fast and responsive, even with gloves.



## Versatile Sample Chamber

Large, domed lid provides easy access, even for tall multi-cell chambers or tubes.



## Memory & USB Ports

10 GB onboard storage lets you store methods and results, with easy-access USB ports to transfer data or connect a printer.

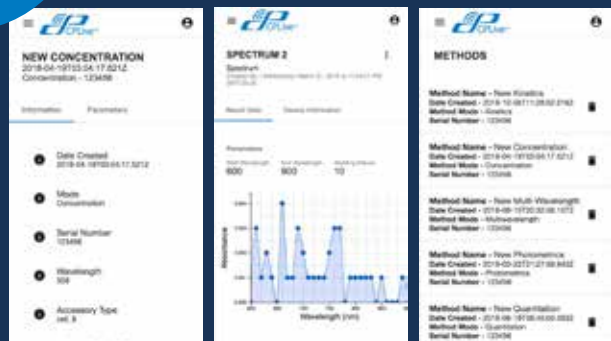


## CPLive™ Connectivity

Keep your data secure and easily accessible with CPLive connectivity—results are automatically uploaded and stored in the cloud.

Transfer and store all your spectrophotometry protocols and results to one place, and effortlessly share with colleagues. Simultaneously manage multiple devices through your free CPLive account, via tablet or computer. Or, use the CPLive app on your smartphone.

Learn more at [ColeParmer.com/CPLive](http://ColeParmer.com/CPLive)



Description	7410 Visible wavelength	7415 UV/visible wavelength	7415 Nano UV/visible wavelength
Catalog number	<a href="#">JT-83056-21</a>	<a href="#">JT-83056-22</a>	<a href="#">JT-83056-23</a>
Min sample size	3 mL	3 mL	0.5 µL (at 0.2 mm), 1.0 µL (at 0.5 mm)
Bandwidth	5 nm		5 nm
Wavelength range	320 to 1000 nm		198 to 1000 nm
Wavelength accuracy	±2 nm		±2 nm
Wavelength reproducibility	±0.5 nm		±0.5 nm
Photometric range		0 to 199.9%, -0.300 to 2.500 A	
Photometric accuracy		±1%T, ±0.01 Abs at 1.000 Absorbance	
Source lamp	Tungsten halogen lamp		Xenon lamp
Price			

## Specifications

- Quantitation range:** -300 to 9999
- Kinetics measurement time:** 2 to 9999 seconds
- Spectrum scan interval:** Selectable 1, 2, 5, or 10 nm
- Output:** USB Type A x 2, USB Type B x 1, Ethernet (RJ45) connection
- Internal memory:** 10GB for results and methods
- Power:** 100 to 240 VAC, 50/60 Hz

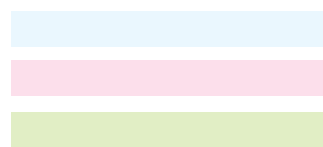


- ✓ Correct this address
- ✓ Unsubscribe from future mailings
- ✓ Remove name gone from organization

Simply go to [www.wastefreemail.com](http://www.wastefreemail.com) and enter code from green box below left or fax this cover to **571-970-6072**

Presorted Standard  
U.S. Postage  
**PAID**  
Cole-Parmer  
Instrument Company

Printed in U.S.A.



99999-12

4475

# Stay Connected: Live

## Real-time remote access—anytime, anywhere

- Cloud-enabled instruments offer convenience of remote access
- Secure account, easy activation
- Access from PC, tablet or smartphone (iOS and Android compatible)



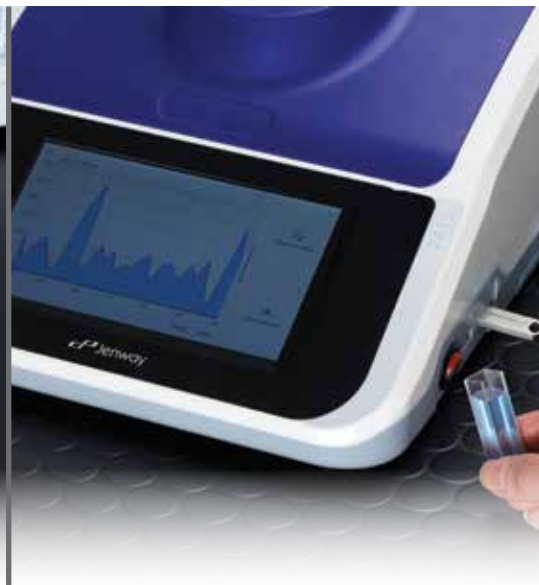
Control and monitor all pump parameters, receive push notifications

Masterflex® Drives pages 2–3



Monitor your critical applications, receive notifications and alerts to errors

Digi-Sense™ Data Loggers page 64



Easily and securely store and share methods and data

Jenway® Spectrophotometers page 113