

BioPharma Processing



1-800-323-4340

Expert product assistance

Felesha, Application Specialist



Cole-Parmer: delivering accurate, precise fluid handling for biopharmaceutical/pharmaceutical customers for more than 30 years

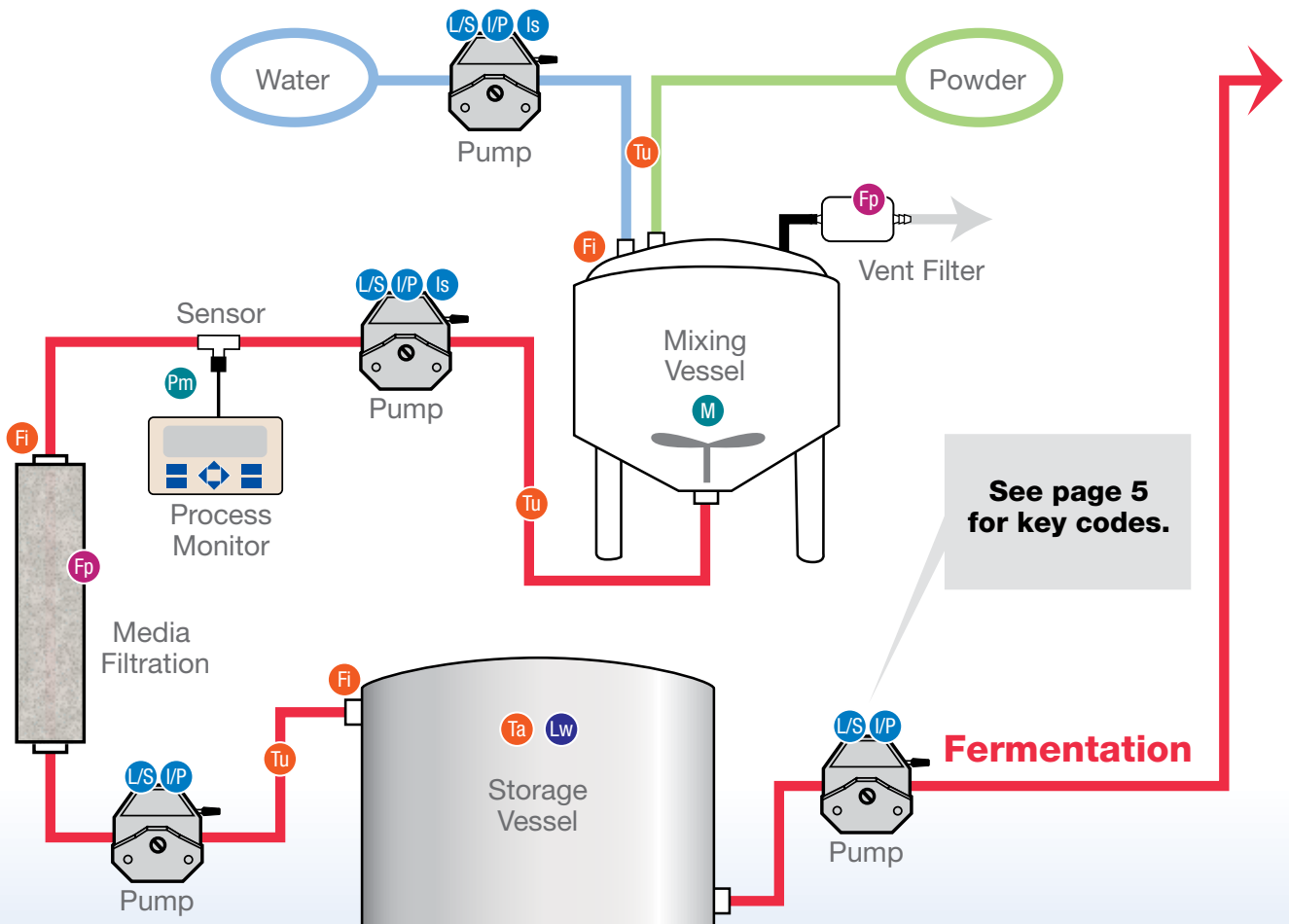
Within the last year, 100% of the largest biopharmaceutical companies and more than 90% of the biggest pharmaceutical companies have purchased Masterflex® pump system components from Cole-Parmer. And that's just the beginning! With more than 100,000 products to optimize your research, scale-up, or full production system needs, we've worked with multiple customers to guarantee results in their operations.

- **100% compliance rate** with customer quality audits
- **99.7% accuracy** on recommended products for customer needs
- **93% satisfaction** rating among biopharmaceutical customers when doing business with Cole-Parmer
- **Certificates of material compliance** available on more than 2,000 products. In addition, we offer product lot control, product documentation, animal-derived ingredient documentation, change control notifications, and more to keep you compliant with industry standards and your own validated processes

We know your needs. We supply the products you need.
We look forward to helping you succeed.

Media Preparation

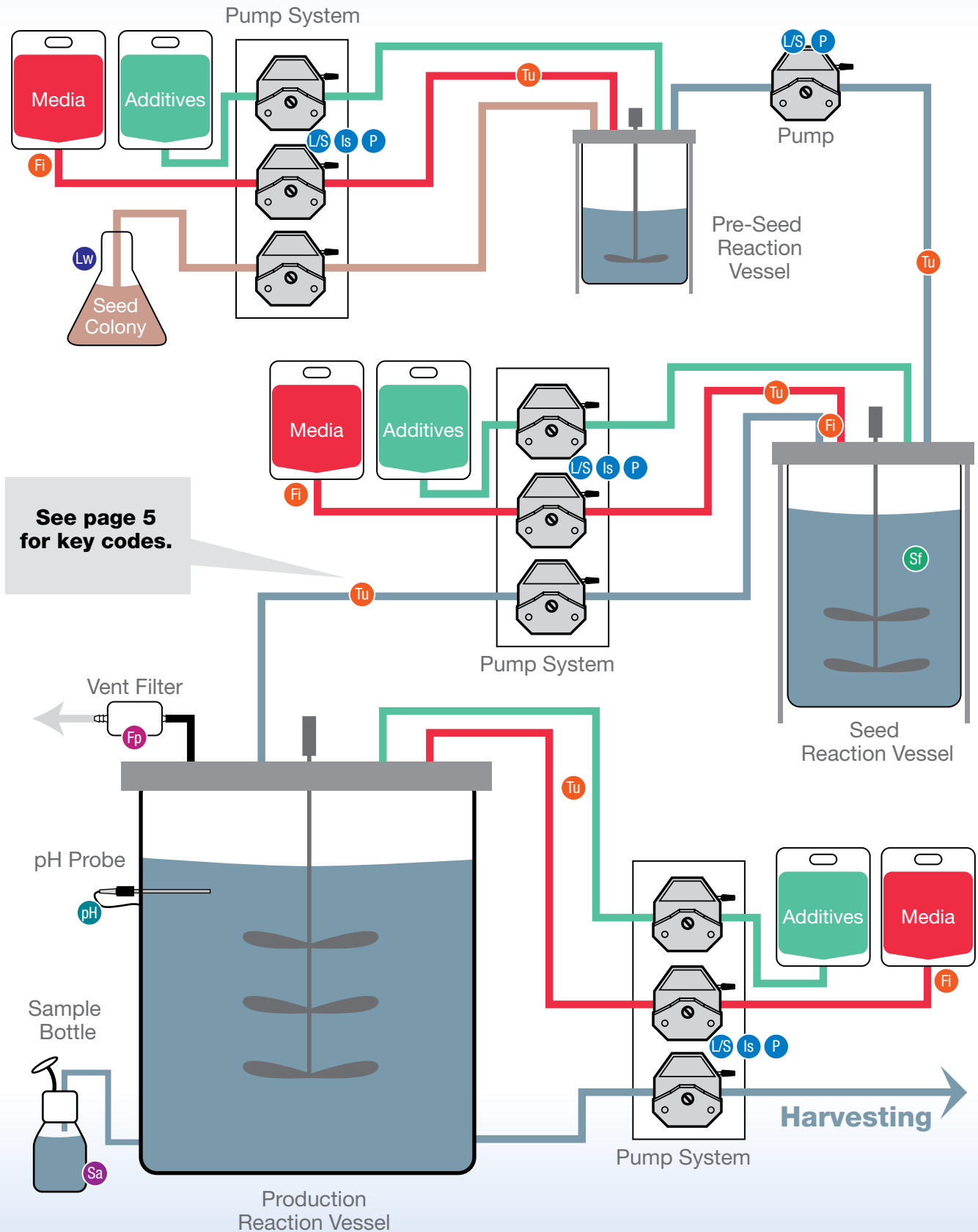
A critical support process in bioprocessing, sometimes this process relies on prepackaged standardized media. Preparing custom media blends in-house from purchased ground powders requires filtration to sterilize it before use in cell cultures. Count on our products for optimal control and performance of your production system.



See page 5
for key codes.

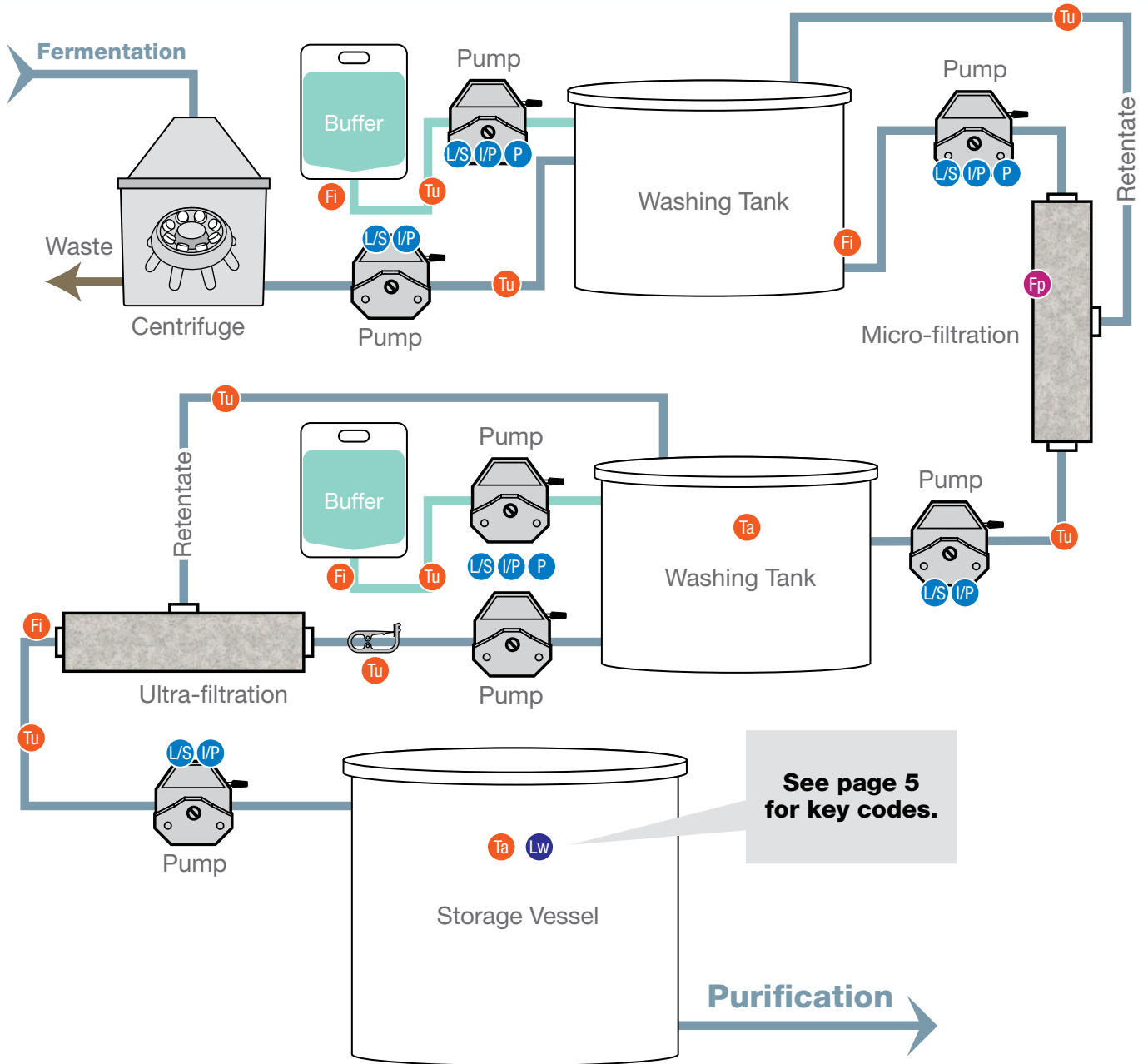
Fermentation

At the heart of your process, fermentation creates the proteins for your therapies. Careful monitoring and precise addition of media and other additives are essential for effective growth. Cole-Parmer has what you need for optimal output.



Harvesting

From washing to buffer injection to filtering, the steps in harvesting begin to separate the protein from the cells. Look to our pumps for fluid transfer capabilities as well as single-use lines between filters and vessels. Depending on your production scale, our filtration products may also provide critical performance in your process.



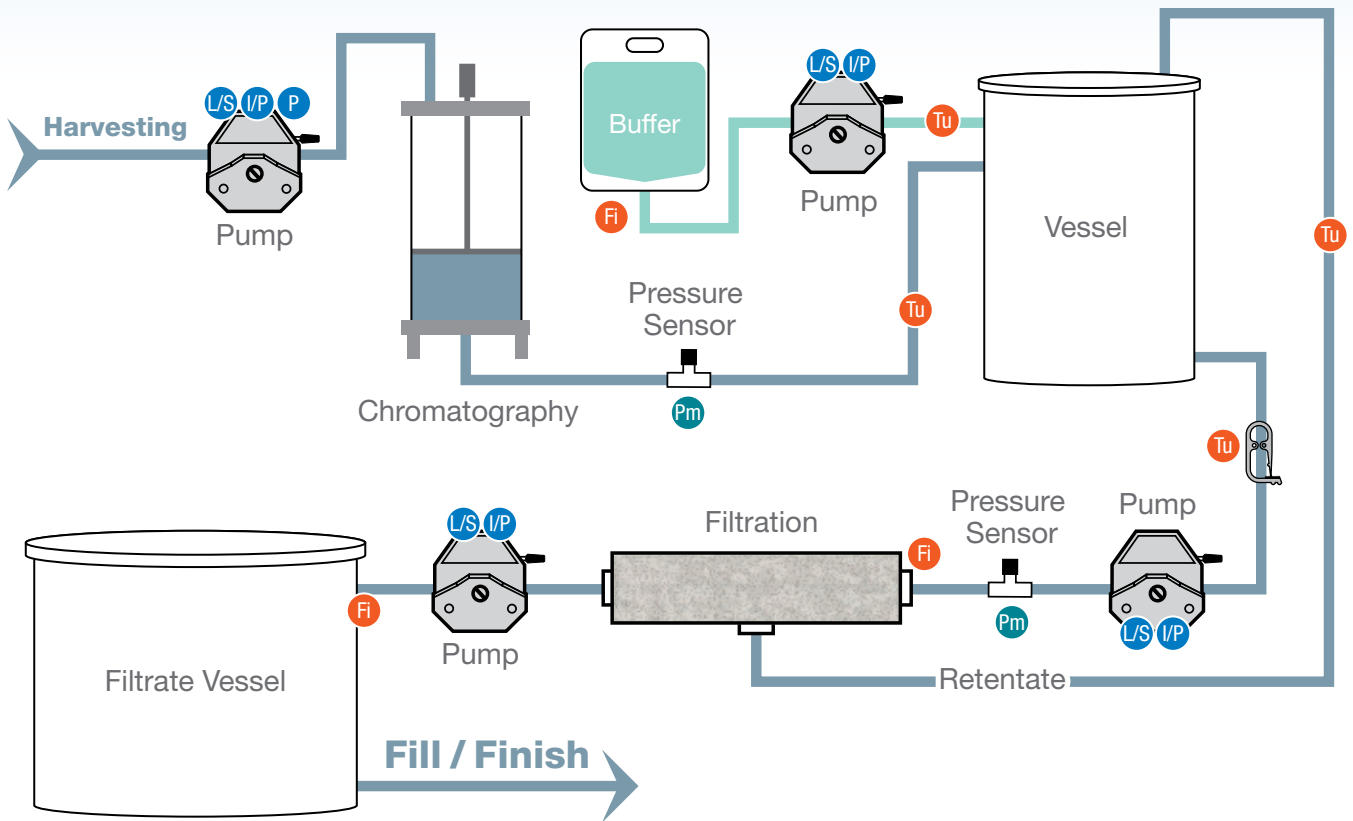
"Gone are the days when upstream scientists could modify their process and ignore the repercussions in manufacturing."

—Cell Culture World, Congress 2016 Conference Overview

An integrated approach to research and production planning that utilizes products of like materials can ensure efficient and rapid scale-up, with no concerns of revalidation or other regulatory paperwork. You can rely on Cole-Parmer to meet these needs. We offer equipment and consumables that handle small volumes on the laboratory benchtop, to medium volumes during scale-up, to full production.

Purification

Separate your final product from all remaining contaminants and effluvia. Concentrate and refine the proteins to prepare them for final product fill/finish.



Key Codes

L/S Masterflex® L/S® Pumps
 I/P Masterflex® I/P® Pumps
 B/T Masterflex® B/T® Pumps
 Is Ismatec® Pumps
 P Pumps

Tu Tubing
 Fi Fittings
 Ta Tanks
 Sf Fermentation
 Fp Filtration & Purification

Pm Pressure
 M Mixers
 pH pH Laboratory Electrodes
 Sa Sampling Assemblies
 Lw Labware & Supplies

Interested in **single-use** products? **Find them here!**



Filler nozzles, page 11
 Masterflex® ultrasonic flow sensors, page 15
 Masterflex Gamma-Irradiated tubing, page 20
 Transfer tubing, pages 28–31
 Barbed fittings, page 32
 Sanitary adapters, pages 37–38



Flowmeters, page 39
 Filters, page 40
 Pressure sensors, page 41
 Sterilized sampling bottles, page 44
 Tanks & liners, page 45
 Sampling bags, page 46

Pharmaceutical & Biotech



Application Examples

- Harvesting cell media
- Manufacturing IV bag dispensing
- Spiral ultrafiltration
- Fermentation control
- Dissolution testers
- Cosmetic dispensing

Features	Benefits
Wide range of tubing materials	Compatible with many laboratory chemicals.
Noncontaminating	Fluid media only contacts inside of tubing.
Easy cleanup	Just change the tubing to clean the pump
Multichannel capability	Use up to 32 channels simultaneously on one drive.
Sanitary connections on tubing	Quick tubing connections within sanitary systems.
Handles viscous materials	Dispense agars and suspensions.
Runs dry	Use as a low-flow aspirator or air/vacuum pump.
Modular design	Mix and match pump heads, tubing, and drives.
OEM packages	Design into your lab dispensers or analytical equipment.



Bioprocess Pump

- Accurately pump nutrient media from a bulk source into bio-bag sterile containers
- Silicone tubing for easy flow monitoring and biocompatibility; can be sterilized by gamma irradiation
- Flow rates: 0.28 to 1700 mL/min with L/S® 24 tubing
- Monitor flow rate, volume, batch count, cumulative volume, copy number, and rpm
- Easy calibration—store one value per tubing size
- Easy-Load® II pump head for fast tubing changes
- Drive is IP66 and NEMA 4X rated—easily cleaned or washed down after use

Pump products shown

- [GV-77200-62 L/S® Easy-Load® II Pump Head](#)
- [GV-96410-24 L/S 24 Platinum-Cured Silicone Tubing](#)
- [GV-07575-30 L/S Digital Process Drive](#)



Fermentation Pump

- Pump media into or out of fermenters
- Meter additives, antifoam agents, and acid/base for pH control
- Noncontaminating; easy sterilization and cleanup
- Remote control of speed, direction, and start/stop
- Quick, easy tubing changes between samples
- Platinum-cured silicone tubing ensures excellent biocompatibility

Pump products shown

- [GV-77202-60 L/S Easy-Load II Pump Head](#)
- [GV-96410-16 L/S 16 Platinum-Cured Silicone Tubing](#)
- [GV-07522-20 L/S Digital Standard Drive](#)



Process Filtration Pump

- Pump media and other fluids through sanitary process filters
- Noncontaminating; facilitates application of single-use tubing and assemblies
- Remote control of speed, direction, and start/stop
- Quick, easy tubing changes between applications
- I/P 88 pump tubing offers flow up to 17 LPM and pressure up to 2.5 bar (35 psi)
- Sanitary tube set with premolded ends simplifies connections
- Drive is IP66 and NEMA 4X rated—easily cleaned or washed down after use

Pump products shown

- [GV-77600-62 I/P® High-Performance Pump Head](#)
- [GV-96102-88 I/P 88 PharMed® BPT Tubing](#)
- [GV-77420-10 I/P Digital Process Drive](#)



Bulk Media Transfer Pump

- Modular format for convenient component placement; controller can be wall mounted
- IP56 rated controller and drive are protected from water spray in washdown environments
- Program dispense volume for repetitive filling protocols
- Flow rates up to 17.7 LPM with B/T 87 PerfectPosition™ PumpTubing
- Rapid-Load® pump head makes tubing changes quick and easy
- PharmaPure® tubing offers excellent pump life and meets EP, FDA, and USP classifications

Pump products shown

- [GV-06437-91 B/T® 91 PharmaPure® Pump Tubing](#)
- [GV-77111-70 B/T Digital Variable-Speed Modular Pump](#)

Research & Development



Application Examples

- Acid/base dispensing
- Aspiration of tissue culture media
- Circulation of cell suspension in fermentation
- Chromatography
- Coolant circulation in low temp baths
- Desiccator air circulation
- Distilled water transfer
- Dispensing agar into petri dishes
- Electrophoresis
- Elutriation
- Filtration pumps
- Flow injection analysis
- Gas sampling system
- Gel column pump
- Injection metering pump
- Liquid-phase chemiluminescence
- Magnetic particle separation
- Nutrient supply for cultures
- pH acid/base metering
- Spectrophotometer pump
- Sterilized media dispensing
- Transfer pump-circulating baths
- Toxicology assays (salt solutions)



Analyzer Feed Pump

- Perfect for low-flow analytical applications
- Connects easily to flow cells in spectrophotometers, refractometers, and other instruments
- Highly accurate—multiple rollers, continuous circulation, and reduced pulsation
- Compact size permits flexible placement on benchtop
- Silicone tubing offers clarity for visually monitoring fluid flow and excellent biocompatibility.

Pump products shown

- [GV-95590-42](#) 2.06 mm ID Platinum-Cured Silicone Microbore Pump Tubing
- [GV-77122-14](#) C/L® Single-Channel Pump

Features	Benefits
Modular design	Mix/match pump heads, tubing, and drives for many applications.
Noncontaminating	Fluid media only contacts inside of tubing.
Adjustable occlusion	Over-occlude for priming and pressure; reduce for longer tubing life.
Reversible	Operate in both directions without disconnecting tubing.
Wide range of tubing materials	Compatible with numerous laboratory chemicals.
Multichannel capability	Use up to 32 channels simultaneously on one drive.
Easy cleanup	Simply change the tubing to clean the pump.
Runs dry	Use as a low-flow aspirator or air/vacuum pump.
Easily sterilized	Sterilize tubing via ethylene oxide, gamma radiation, or autoclave.
High-accuracy dispenser	Calibrate digital drives for accuracies up to $\pm 0.5\%$.
Low cell disruption	Circulate cell tissue with minimal damage (low shear).
Remote control	Interface with PC or other analytical instruments.
Self-priming	Generates vacuum up to 660 mm Hg (26" Hg).
Handles viscous materials	Dispense agars and suspensions.
OEM packages	Design into your lab dispensers or analytical equipment.



Electrophoresis Circulation/Cooling Pump

- Modular format permits convenient placement of components; drive can be placed in a hood or safety cabinet with controller outside
- Simple drive controls with separate speed control and on/off/reverse switch; turn pump on or off while maintaining speed settings
- Reversible motor for pumping in either direction
- Dual-channel head lets you pump two channels simultaneously
- Silicone tubing lets you make low-pressure connections in seconds
- Drive and L/S 16 tubing deliver a flow range of 4.8 to 480 mL/min

Pump products shown

- [GV-77202-50](#) L/S® Easy-Load® II Dual-Channel Pump Head
- [GV-96400-16](#) L/S 16 Peroxide-Cured Silicone Pump Tubing
- [GV-07557-00](#) L/S Precision Modular Drive

Acid-Base Dispensing Pump

- Remote programming and control via PC work station or mobile device
- Highly accurate; easy to program and calibrate
- View and download operational history of pump
- Tygon® E-LFL tubing is clear for visually monitoring fluid flow



Pump products shown

- [GV-77200-30](#) L/S Easy-Load II Pump Head with Open-Head Sensor
- [GV-06440-16](#) L/S 16 Tygon® E-LFL Pump Tubing
- [GV-07551-60](#) L/S Cloud-Enabled Digital Drive with MasterflexLive™

WARNING: Cancer and reproductive harm - www.P65Warnings.ca.gov



Masterflex® Cloud-Enabled Systems Featuring MasterflexLive™

Real-time remote pump control and monitoring

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



Pump Drives

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
L/S cloud-enabled digital drive									
0.02 to 100	0.001 to 588	±0.1%	Yes	4	1/10 hp (75 W)	IP33	90 to 260 VAC	GV-07551-60	
0.1 to 600	0.006 to 3400			2				GV-07551-50	
L/S cloud-enabled digital process drive with 316 stainless steel housing									
0.1 to 600	0.006 to 3400	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	GV-07575-70	
L/S cloud-enabled digital process drive with powder-coat steel housing									
0.1 to 600	0.006 to 3400	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	GV-07575-72	
I/P cloud-enabled digital process drive with 316 stainless steel housing									
0.1 to 650	0.6 to 26,000	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	GV-77420-50	
I/P cloud-enabled digital process drive with powder-coat steel housing									
0.1 to 650	0.6 to 26,000	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	GV-77420-60	

Pump Systems

WARNING: Cancer and reproductive harm - www.P65Warnings.ca.gov

System	Flow range (mL/min)	What's included			Power (50/60 Hz)	Catalog number	Price
		Pump head	Tubing	Drive			
L/S cloud-enabled digital pump systems							
	0.08 to 480	Easy-Load II 77200-30	C-Flex® ULTRA L/S 16 tubing 06434-16, 10 ft (3 m)	Digital console drive 07551-50 0.1 to 600 rpm	90 to 260 VAC	GV-77924-75	
	0.28 to 1700	Easy-Load II 77200-32	C-Flex ULTRA L/S 24 tubing 06434-24, 10 ft (3 m)			GV-77924-77	
L/S cloud-enabled digital process pump systems with 316 stainless steel housing							
	0.08 to 480	Easy-Load II 77200-30	C-Flex ULTRA L/S 16 tubing 06434-16, 10 ft (3 m)	Digital process drive 07575-70 0.1 to 600 rpm	90 to 260 VAC	GV-77975-80	
	0.28 to 1700	Easy-Load II 77200-32	C-Flex ULTRA L/S 24 tubing 06434-24, 10 ft (3 m)			GV-77975-82	
I/P cloud-enabled digital process pump system with 316 stainless steel housing							
	1 to 8000	Easy-Load 77602-30	C-Flex ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive 77420-50 0.1 to 650 rpm	90 to 260 VAC	GV-77964-60	

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.

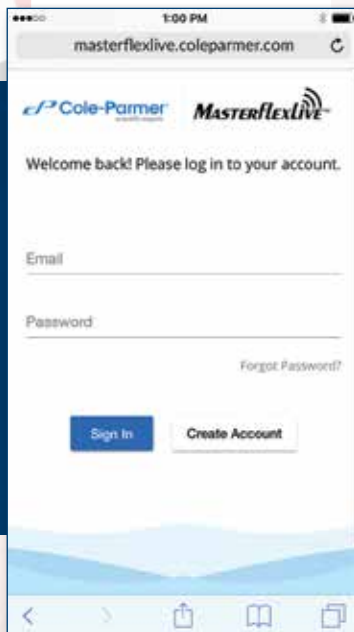
Basic (free) account: Get the latest cloud-based technology with secure pump connectivity for remote control and monitoring.

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 21 CFR compliance.**

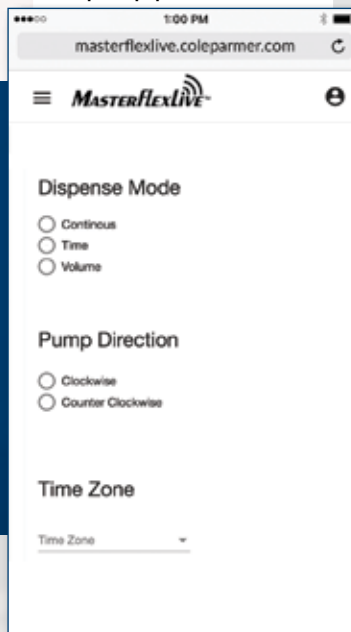
Features	Basic	Premium*
Unlimited pumps per account	✓	✓
Multiple user levels with password security	✓	✓
Monitor pump operational status	✓	✓
Receive status notification (SMS text, push, and/or e-mail)	✓	✓
Emergency Start/Stop	✓	✓
Front sensor warning (open head and leak detection)	✓	✓
Control and adjust all parameters (tube size, flow rate, dispense volume, etc).	✓	✓
Set up, save, and recall dispense programs	✓	✓
Group and sync multiple pumps on a single account	✓	✓
Program multiple pumps simultaneously	✓	✓
21 CFR Part 11 & EU Annex 11 Compliance		✓
Digital recordkeeping (complete pump operational history at account and user level)		✓
Secure cloud data storage		✓
Timestamped, filterable, and exportable pump operational data		✓

*Requires a monthly subscription.

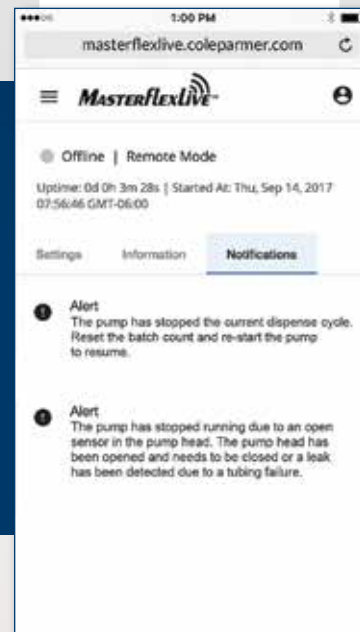
Create an account



Manage & control pump parameters



Get alerts & notifications



For more information, go to [ColeParmer.com/MasterflexLive](https://www.coleparmer.com/masterflexlive)



Masterflex® L/S® Variable-Speed Digital Pumps

Versatile, worry-free operation

- Brushless, maintenance-free motor provides $\pm 0.1\%$ speed control accuracy with 6000:1 turndown ratio
- Bright graphical LCD offers easy programming and four operating modes
- Ensure dispensing accuracy with antidrip function
- Get more accurate dispensing with preprogrammed calibration
- Change based on your needs—drives accept all L/S pump heads for more pumping versatility
- Programmable, reversible motor accepts up to four pump heads
- Choose how you want to dispense: volume, copy cycles, or time
- Hands-free dispensing via time interval dispense cycles
- Operate remotely via DB25 female connector

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



APPLICATIONS

- ✓ Acid/base pH control
- ✓ Media dispensing
- ✓ Automated fermentation

MASTERFLEX®

Flow Rates in mL/min (flow rates in parentheses attained with High-Performance pump head—at ColeParmer.com)

rpm	Precision pump tubing						High-performance precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
	Standard†, Easy-Load, Easy-Load II, Easy-Load 3						Multichannel‡, Standard, Easy-Load II, Easy-Load 3, High-Performance			
	Cartridge, Multichannel			Cartridge			Easy-Load			
0.1 to 600	0.006 to 36	0.021 to 130	0.08 to 480	0.17 to 1000	0.28 to 1700	0.38 to 2300	0.17 to 1000 (0.18 to 1100)	0.28 to 1700 (0.30 to 1800)	0.38 to 2300 (0.43 to 2600)	0.48 to 2900 (0.57 to 3400)
0.02 to 100	0.001 to 6	0.004 to 21	0.016 to 80	0.033 to 170	0.057 to 280	0.077 to 380	0.033 to 170 (0.036 to 183)	0.057 to 280 (0.057 to 300)	0.077 to 380 (0.086 to 433)	0.096 to 480 (0.113 to 566)

†The Standard pump head is not available for L/S® 25.

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



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	GV-77921-65	
	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			GV-77921-75	

WARNING: This product can expose you to chemicals including BPA, lead, phthalates, which are known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

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

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

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

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

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

Masterflex® Advantage

Masterflex vs Gear Pumps

Application

A pharmaceutical engineer needs to draw a constant volume of 800 mL/min of water with particulates. The engineer needs variable speed and is drawing the fluid through a particle sensor.

Masterflex Advantages

- Handles particulates
- Easy to change out tubing and clean pump
- Runs dry
- Maintains sterility of fluid (fluid only contacts the tubing)

Gear Pump Disadvantages

- Does not handle particulates
- Difficult to clean
- Can't run dry
- Does not provide sterility conditions (fluid contacts internal pump parts)

Masterflex Products Applied

- 77800-62 L/S Easy-Load® 3 pump head
- 06424-36 C-Flex® L/S 36 High-performance precision tubing
- 07522-20 L/S digital console drive
- 07596-20 Pulse dampener

Masterflex® L/S® Digital Console Process Pumps

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.
- Models are equipped with open-head sensor that will stop drive motor when pump head is opened
- Programmable, reversible motor accepts up to two pump heads and offers remote functionality
- Flow rate: 0.006 to 3400 mL/min with L/S tubing
- Graphical LCD shows six different parameters: motor rpm, flow rate, dispense volume, cumulative volume, dispense interval time, and copy number.
- Brushless, maintenance-free motor with $\pm 0.1\%$ speed control accuracy and a 6000:1 turndown
- Dispense by: volume—in milliliters (0.001 to 99,999), liters, and gallons; copy—1 to 99,999 dispense cycles. Set time interval of on/off cycles; 1 sec to 99 hr, 59 min, 59 sec.
- Remote control capabilities via 31-pin circular waterproof connection

APPLICATIONS

- ✓ Pumping buffer solution
- ✓ Filling/emptying media bags
- ✓ Sterile filtration; sterile fluid transfer
- ✓ Filtration



MASTERFLEX®

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.

WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which are known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

ISO9001:2008
CERTIFIED SUPPLIER



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.28 to 1700 mL/min	Easy-Load® II with open-head sensor 77200-32	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital console process drive with 316 SS housing 07575-38 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	GV-77975-29	
	0.28 to 1700 mL/min	Easy-Load II with open-head sensor 77200-32	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital console process drive with powder-coat steel housing 07575-48 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	GV-77975-49	

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

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

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

Overlook Filler/Dispensing Nozzles

- Maximize the speed, precision, and accuracy of dispensing and filling applications
- Dimensional tolerances of $\pm 0.05\%$ 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"	GV-30619-06	
1/16"	GV-30619-01	
1/8"	GV-30619-07	
3/16"	GV-30619-02	
1/4"	GV-30619-08	
5/16"	GV-30619-03	
3/8"	GV-30619-09	
1/2"	GV-30619-04	
5/8"	GV-30619-10	
3/4"	GV-30619-05	

Masterflex® L/S® Digital Miniflex® Media Dispensing Pump Systems

Faster and more reliable than pouring media by hand

- Accurately dispense culture media, buffer solutions, diluents, nutrients, additives, and other fluids
- Minimize risk of human error and contamination—copy dispense function lets you easily set repeat dispense volumes, and programmable delay interval pauses pump between cycles
- Extremely flexible—dispense volumes from 0.1 to 9999 mL at flow rates from 0.11 to 315 mL/min
- BioPharm Plus silicone pump tubing offers low spallation, long pumping life, and exceptional flow stability over time

Boost efficiency and ergonomics in your lab's dispensing and filling regimens—these systems offer better accuracy and greater reliability than hand pouring, manual pipetting, or bottle-top dispensers. These complete media dispensing systems will have you filling plates, flasks, vials, and bottles right out of the box.

MASTERFLEX®

ISO9001:2008
CERTIFIED SUPPLIER

Power supplies are:



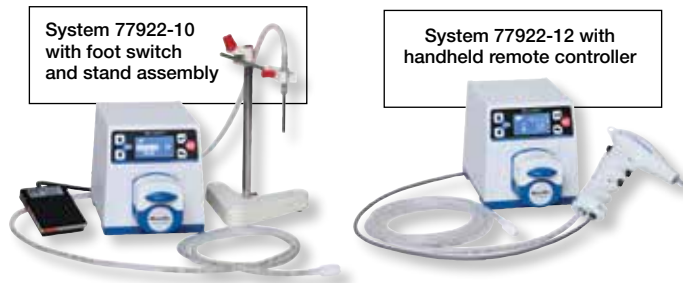
Description	Power	Catalog number	Price
System with hands-free foot switch, lab stand, support rod, frame clamp, nozzle clamp, and stainless steel nozzle	90 to 260 VAC, 50/60 Hz	GV-77922-10	
System with handheld remote controller		GV-77922-12	

[GV-96440-25](#) Additional Masterflex L/S 25 BioPharm Plus silicone pump tubing, 25 ft (7.6 m)



System 77922-10 with foot switch and stand assembly

System 77922-12 with handheld remote controller



Both systems include: L/S digital pump drive with single-channel Miniflex pump head, PTFE tube weight to hold tubing in source container, and 25 ft (7.6 m) of L/S 25 BioPharm Plus silicone tubing.

WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which is known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

Masterflex® Drives Powering Quattroflow™ Pumps

Specifically designed to move delicate biological fluids

- Safely and reliably pump plasma products, proteins, monoclonal antibodies, vaccines, and more
- 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
- Risk-free dry running, self priming, and high turn-down ratio

Quattroflow Pumps offer a unique four diaphragm (chamber) design, providing the constant low-pulsation, low-shear pumping needed for your biological fluids. These single-use pump head models have a disposable wetted chamber constructed of solid polypropylene 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 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.

WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which is known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

System shown with single-use pump head and stainless steel drive. Call for information on multiple-use heads.



Special Masterflex Drives were designed 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 $\pm 0.1\%$ speed control accuracy. 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. 90–260 VAC operation.

Choose a plastic-enclosed drive for benchtop lab applications or a sealed stainless steel drive for use in a washdown environment—simply hose down to clean.



Systems (Quattroflow pump + Masterflex drive)								Replacement pump heads		
Pump model	Flow range	Max pressure	Max fluid temp	Suction lift	Connection	Drive	Cat. no.	Price	Cat. no.	Price
QF150SU (single use)	1 to 180 L/h (0.26 to 48 GPH)	58 psi (4 bar)	140°F (60°C)	6.6 to 9.8 ft (2 to 3 m)	1/4" Tri-Clamp®	ABS plastic, IP33 rated, 3000 rpm	GV-74000-35		GV-76000-00	
QF1200SU (single use)	20 to 960 L/h (5.3 to 253 GPH)	58 psi (4 bar)	140°F (60°C)	13.1 to 14.7 ft (4 to 4.5 m)	3/4" Tri-Clamp	Stainless steel, IP66 and NEMA 4X rated, 1700 rpm	GV-74000-47		GV-76000-02	

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®

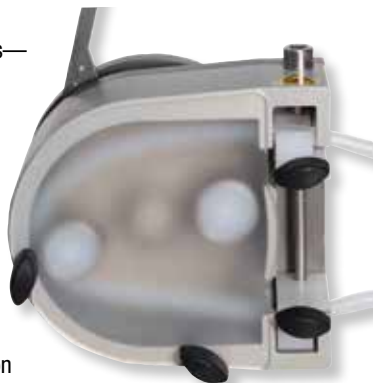
WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which are known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

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
L/S network-compatible digital drive										
0.1 to 600	±0.1%	Yes	2	1/10 hp (75 W)	IP33	90 to 260 VAC	GV-07551-40		GV-07551-42	
L/S network-compatible digital process drive with 316 stainless steel housing										
0.1 to 600	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	GV-07575-50		GV-07575-52	
L/S network-compatible digital process drive with powder-coat steel housing										
0.1 to 600	±0.1%	Yes	2	1/10 hp (75 W)	IP66	90 to 260 VAC	GV-07575-60		GV-07575-62	
I/P network-compatible digital process drive with 316 stainless steel housing										
0.1 to 650	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	GV-77420-30		GV-77420-32	
I/P network-compatible digital process drive with powder-coat steel housing										
0.1 to 650	±0.1%	Yes	2	3/8 hp (280 W)	IP66	90 to 260 VAC	GV-77420-40		GV-77420-42	

Masterflex® L/S® Cytoflow™ Pump Heads

Ensure maximum protection of live cells and shear-sensitive fluids

- 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



MASTERFLEX®

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.

WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which is known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

FEATURES

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



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			
2-roller pump heads for Precision pump tubing						
L/S 16	1.7	0.03 to 170	0.17 to 1000	22 (1.5)	GV-77253-00	
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)		
2-roller pump heads for High-Performance Precision pump tubing						
L/S 15	4.0	0.08 to 390	0.40 to 2300	22 (1.5)	GV-77253-02	
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)		
3-roller pump heads for Precision pump tubing						
L/S 16	1.6	0.03 to 160	0.16 to 980	22 (1.5)	GV-77253-10	
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)		
3-roller pump heads for High-Performance Precision pump tubing						
L/S 15	3.5	0.07 to 340	0.35 to 2000	22 (1.5)	GV-77253-12	
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)		

Masterflex® I/P® Cytoflow® Pump with MasterflexLive™

Cloud-enabled pump systems for secure, real-time monitoring and control of pump status and performance

- Cytoflow pump head offers the best option for pumping live cells and shear-sensitive fluids—validated by independent test data.
- MasterflexLive is a secure, cloud-enabled platform for control and monitoring of Masterflex 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.
- Flow range is 0.007 to 13.6 LPM (0.002 to 3.6 GPM).
- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense.
- Open-head sensor stops the drive when the pump head is opened.
- Housing is NEMA 4X (IP66) rated for washdown.
- Brushless, maintenance-free motor offers ±0.1% speed control accuracy.

What's included: stainless steel process drive, Cytoflow pump head, and 6-ft line cord with IEC 320/CEE22 socket. These models are shipped with country-specific plug/cord set; please specify destination when ordering.

WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which is known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

Flow rates in LPM

rpm	Precision pump tubing			
	I/P 26	I/P 73	I/P 82	I/P 84
1 to 500	0.007 to 3.9	0.014 to 8.0	0.022 to 10.0	0.023 to 13.6

FEATURES

- ✓ Operate pump using phone or tablet
- ✓ Maintain the consistency of shear-sensitive fluids
- ✓ Ensure the survival and vitality of live cells

MASTERFLEX®



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		
0.1 to 500	±0.25%	1	% hp (280 W)	IP66	16¾" x 11½" x 12¾" (42.3 x 28.3 x 32.8 cm)	90 to 260	4.5 at 115 VAC; 2.5 at 230 VAC	GV-77420-80	

GV-77097-86 Leak detector kit, basin-mount leak detector; 31-pin round connector and extension cable.....

Masterflex® L/S® Easy-Load® Pump Heads

Faster tubing changes and reduced maintenance

- **NEW design** and automatic tubing retention allow for multiple tubing sizes—change tubing without removing head from drive.
- Four rollers for reduced pulsation and smoother flow.
- Stainless steel (SS) rotor/roller for greater durability and chemical resistance.
- Models with integrated open-head sensor connect directly to sensor-equipped drives

What's included: single-channel mounting hardware.

⚠ WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which are known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov



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		Easy-Load pump head with open-head sensor	Easy-Load pump head
Easy-Load pump heads for Precision pump tubing						
L/S 13	0.06	0.001 to 6	0.006 to 36	40 (2.7)	GV-07514-30	GV-07514-10
L/S 14	0.21	0.004 to 21	0.02 to 130	40 (2.7)		
L/S 16	0.8	0.016 to 80	0.08 to 480	40 (2.7)		
L/S 25	1.7	0.034 to 170	0.17 to 1000	35 (2.4)		
L/S 17	2.8	0.056 to 280	0.28 to 1700	20 (1.4)		
L/S 18	3.8	0.076 to 380	0.38 to 2300	15 (1.0)		
Easy-Load pump heads for High-Performance Precision pump tubing						
L/S 15	1.7	0.034 to 170	0.17 to 1000	40 (2.7)	GV-07514-32	GV-07514-12
L/S 24	2.8	0.056 to 280	0.28 to 1700	40 (2.7)		
Price						

Mounting hardware

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

Heads to be mounted	Catalog number	Price/set
One	GV-07514-04	
Two	GV-07013-05	
Three	GV-07013-08	
Four	GV-07013-09	

Masterflex® Ultrasonic Flow Sensors

Maintain accurate flow rates

- Noninvasive design eliminates contact with working fluid
- 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—calibrated for use with Masterflex L/S® and I/P® platinum-cured silicone tubing



Clamp-on sensor design makes setup easy



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



For Masterflex tubing size	Max flow rate†		Min flow rate		Catalog number	Price
	GPH	mL/min	GPH	mL/min		
Engineered for L/S Precision tubing						
14	2.06	130	0.48	30	GV-33501-14	
16	7.61	480	0.48	30	GV-33501-16	
17	26.95	1700	0.48	30	GV-33501-17	
Engineered for L/S High-Performance Precision tubing						
15	14.4	1100	0.48	30	GV-33501-15	
24	28.53	1800	0.48	30	GV-33501-24	
35	41.21	2600	0.48	30	GV-33501-35	
Engineered for I/P Precision tubing						
73	126.8	8000	0.48	30	GV-33501-73	

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

GV-33501-96 Communications package includes software for data capture and calibration on USB drive and connector cable

Masterflex® Leak Detector Sensors

Minimize damage from fluid leaks or tubing failures



A. Leak Detector Sensor mounts directly to the underside of the pump head.

B. Leak Detector Sensor with Splitter Cable mounts directly to the underside of the pump head; splitter cable allows connection of an open-head sensor equipped pump head or a second leak detector sensor.

C. Leak Detector Sensor with Plastic Catch Basin; use where a larger sensing area is needed and for fluids with low conductivity.

D. Leak Detector Sensor with Plastic Catch Basin and Splitter Cable; use where a larger sensing area is needed and for fluids with low conductivity. Splitter cable allows connection of an open-head sensor equipped pump head or a second leak detector sensor.

⚠ WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which are known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

Key	Description	Catalog number	Price
A	Sensor	GV-77097-10	
B	Sensor with splitter cable	GV-77097-11	
C	Sensor with plastic catch basin	GV-77097-12	
D	Sensor with plastic catch basin and splitter cable	GV-77097-13	

Options available for mounting and connecting sensors to match your equipment and application.

Masterflex® I/P® Process Pumps

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
- Model 77411-00 offers remote control of speed, direction, and start/stop
- Accept up to two pump heads

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



MASTERFLEX®

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APPLICATIONS

- ✓ Media transfer
- ✓ Purification/filtration/ media transfer
- ✓ Filling/emptying large carboys and bags
- ✓ Pumping antifoaming agents
- ✓ Pumping fermentation chemicals
- ✓ Production filtration

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	GV-77963-10	
				Brushless process drive with remote I/O 77411-00 33 to 650 rpm			
	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	GV-77963-20	
				Brushless process drive with remote I/O 77411-00 33 to 650 rpm			

Accessories

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

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



Media Preparation Pump



In the modern flexible production suite, minimizing setup time for any operation is critical to optimizing production output. The Masterflex I/P pump system 77963-10 meets your needs. Compared to other peristaltic pumps of similar flow range, the 77963-10 is lighter and therefore easier to carry or relocate. Simple pump controls make it easy to operate. Tubing changes are quick with the Easy-Load pump head design. Biocompatible C-Flex ULTRA tubing offers low leachables/extractables and low spallation to guard the purity of your media. Finally, when media preparation is finished and cleanup begins, the IP55 rating offers efficient and quick washdown.

System 77963-10 includes:



Easy-Load pump head 77602-10



C-Flex ULTRA I/P 73 Tubing 06434-73



I/P Brushless process drive 77410-10



Masterflex® I/P® Digital Console Process Pumps

Maintenance-free drives built for process applications

- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense
- Dispense by mL—volume in mL of each dispense, 0.001 to 9999 mL; Copy—1 to 9,999 dispense cycles; or SEC—time interval of on/off cycles (1 sec to 99 hr, 59 min, 59 sec per cycle)
- Models are equipped with open-head sensor that will stop drive motor when pump head is opened
- Accepts up to two pump heads
- NEMA 4X and IP66-rated for easy washdown

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

Drive 77420-28 features 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. These models are shipped with country-specific plug/cord set; please specify ultimate destination when ordering.





APPLICATIONS

- ✓ Automated process pump
- ✓ Dosing/metering additives
- ✓ Bulk media transfer and dispensing
- ✓ Large-volume buffer transfer
- ✓ Pilot scale fermentation

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System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.001 to 8.0 LPM	Easy-Load® with open-head sensor 77602-30	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive with stainless steel housing 77420-18 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	GV-77964-28	
	0.001 to 8.0 LPM	Easy-Load with open-head sensor 77602-30	C-Flex ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive with powder-coat steel housing 77420-28 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	GV-77964-38	

Pure-Fit® Tru Valve

Easy implementation in your system

- Reusable for multiple cycles and applications

The valve's butterfly design allows easy installation to existing lines; purity is maintained because the valve goes around the exterior of the tubing and never comes in contact with process fluid.

Simple threaded handle and calibrated scale ensure accurate control of flow and can also be written into validation protocols. The valve also features lockout positioning for use in steam-in-place (SIP) cycles. Withstands autoclaving or gamma irradiation. Accommodates any flexible tubing up to 17.8 mm (0.700") in outer diameter.



Fits Masterflex® tubing sizes	Material	Catalog number	Price
L/S® 13, 14, 15, 16, 17, 18, 24, 25, 35, 36; I/P® 26, 73	Glass-reinforced nylon	GV-20002-00	

Masterflex® 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 m³), 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



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



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)

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).

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77111-37, -67, -77, -80 Zone 2 77111-80 77111-30, -37 Except 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	GV-77111-30	
		271				220 (50)	6.3	GV-77111-37	
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 ³) 100 psi (6.9 bar) minimum		GV-77111-80	
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	GV-77111-60	
						230 (50/60)	3.3	GV-77111-67	
Variable-speed digital (±0.3%)	¾ hp (0.56 kW)	12 to 321	Controller: IP56 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	GV-77111-70	
						190 to 260 (50/60)	5.7	GV-77111-77	

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

GV-77111-90 Bracket for digital controller on models 77111-70 and -77

Choosing the Right Hose or Tubing

As easy as
S-T-A-M-P!

Size

Consider inner diameter (ID), outer diameter (OD), wall thickness, and cut lengths. ID, OD, and wall are significant factors in pressure and vacuum ratings. The tolerances are a concern for leak points and critical design dimensions.

Temperature

Operating temperature, cleaning temperature, ambient temperature, and the complete temperature fluctuation should figure into the selection of tubing. Sudden changes or extreme temperatures can negatively affect performance and cause premature failures.

Application

Knowing how the tubing will be used is critical. Regulatory concerns and required documentation is important. FDA, USDA, 3-A, ISO, EPA, USP and NSF all carry different compliance concerns which warrant different material selection. Proper supporting documentation and certificates should be reviewed before placing the order.

Media

Understanding the media being transported ensures zero extractables, adsorption/absorption, and particulate entrapment. Various chemicals attack materials at different rates. Often, cleaning agents are the most aggressive fluids used, but be aware of any chemical reactions which might be caused by changing fluids.

Pressure

Vacuum and positive pressure both create stress on tubing. Increased or decreased temperatures greatly reduce the pressure rating for materials. Changing the wall thickness can help increase pressure rating, as can reducing the overall OD/ID.



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 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.

Product name	Description	Page(s)
Pumpable tubing		
Platinum silicone	Low-protein binding, phthalate and latex-free, excellent all-around tubing	21
BioPharm Plus	Ultra-smooth, great for dispensing applications	21
Puri-Flex®	Heat sealable, weldable and capable of longer life at higher pressures when compared to silicone	21
C-Flex®	Heat-sealable, weldable, and better resistance to wider range of pH fluctuations	21
PharmaPure®	Long life with low spallation—even under pressure	21
Chem-Durance® Bio	Excellent chemical compatibility and biocompatibility	21
Transfer tubing		
Cole-Parmer silicone	Peroxide-cured silicone tubing for biopharmaceutical applications	28
Dow Corning® Pharma-50	No organic additives and low extractables	28
BioPharm/Tygon® 3350 sanitary silicone	Platinum cured with an ultra-smooth inner surface for sanitary transfer of sensitive fluids	29
C-Flex Biopharma	Thermoplastic elastomer meets the critical demands of biopharmaceutical use	29
Cole-Parmer PTFE	Effectively transfers abrasive and corrosive fluids	30
PharMed® BPT Biocompatible	Ideal for cell culture and light-sensitive applications	30
Tygon ND-100-65/E-3003	Non-DEHP and phthalate free	30

For a tubing selection guide and chemical resistance information, go to ColeParmer.com



Masterflex® 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
- USP Class V, EP, FDA, REACH, RoHS, ADFC

Silicone (peroxide-cured)

- Greater physical compression capability
- Economical, longer tubing life
- USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC

BioPharm Silicone (platinum-cured)

- Low absorption; excellent biocompatibility
- Very low extractable; weather, ozone, corona, radiation resistant
- USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC

BioPharm Plus Silicone (platinum-cured)

- Ultra-smooth—minimizes particle entrapment
- Very low extractable—ideal for lab, biotech, and pharmaceutical
- USP Class VI, EP, FDA, REACH, RoHS, ADFC

Puri-Flex™

- Heat sealable, weldable, and economical
- Long pump life when compared to silicone or many other TPE tubings
- USP Class VI, FDA, 3A, REACH, RoHS, ADFC

C-Flex®

- Heat sealable, weldable, economical
- Better resistance to pH fluctuations
- USP Class VI, EP, REACH, RoHS, ADFC

C-Flex® ULTRA

- Longest life of any C-Flex formulation
- Lowest spallation and reduced residue
- USP Class VI, EP, REACH, RoHS, ADFC

PharMed® BPT

- >10,000 hours of tubing life; sealable, weldable
- Ideal for tissue and cell culture work
- USP Class VI, EP, FDA, NSF, REACH, RoHS

PharmaPure®

- Nontoxic and nonhemolytic biocompatible
- Long life even under pressure with VERY low spallation
- USP Class VI, EP, FDA, REACH, RoHS

GORE® STA-PURE® Series PCS

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

GORE® STA-PURE® Series PFL

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

Chem-Durance® Bio

- Excellent chemical compatibility and biocompatibility
- Excellent life and durability under pressure
- USP Class VI, FDA, REACH, RoHS

Tygon® E-LFL

- Longest life of all Tygon formulations
- Broad chemical resistance
- USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADFC

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

- Smooth inner surface unaffected by commercial sanitizers
- Nontoxic; will not affect taste or odor
- FDA, EU Food, NSF, 3A, REACH, RoHS, ADFC

Tygon E-Lab (E-3603)

- Ideal for general transfer use
- Nonaging, nonoxidizing, low gas permeability
- USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADFC

Tygon Fuel & Lubricant (F-4040-A)

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

Tygon Chemical (2001)

- Excellent chemical resistance
- Plasticizer-free with low gas permeability
- FDA 21 CFR 175.300, REACH, RoHS, ADFC

Norprene® (A-60 G)

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

Norprene Food (A 60 F)

- Ideal for high-temperature food applications
- Resists heat, ozone, acids, and alkalis
- FDA, 3A, NSF, REACH, RoHS

Viton®

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



Masterflex® Gamma-Irradiated Tubing

Reduce the risk of microbial contamination

- Save time—many sizes of packaged and pretreated tubing available for quick shipment!
- Tubing is double bagged prior to gamma irradiation
- Irradiation at 32.5 kGy offers optimal microbial control for the tubing's critical fluid pathway
- Gamma-sensitive labeling confirms treatment
- Select from popular biocompatible tubing formulations

Formulation	Qty/pk	L/S 16		L/S 15		L/S 24		I/P 73		I/P 82	
		Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
Silicone (platinum-cured)	7.6 m (25 ft)	GV-96119-16		GV-96119-15		GV-96119-24		GV-96119-73		GV-96119-82	
PharMed® BPT	7.6 m (25 ft)	GV-96122-16		GV-96122-15		GV-96122-24		GV-96122-73		GV-96122-82	
C-Flex®	7.6 m (25 ft)	GV-96123-16		GV-96123-15		GV-96123-24		GV-96123-73		GV-96123-82	

	Qty/pk	L/S® Precision Pump Tubing						L/S® High-Performance Precision Pump Tubing			
		L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
		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	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)	7.6 m (25 ft)	GV-96410-13	GV-96410-14	GV-96410-16	GV-96410-25	GV-96410-17	GV-96410-18	GV-96410-15	GV-96410-24	GV-96410-35	GV-96410-36
Silicone (peroxide-cured)	7.6 m (25 ft)	GV-96400-13	GV-96400-14	GV-96400-16	GV-96400-25	GV-96400-17	GV-96400-18	GV-96400-15	GV-96400-24	GV-96400-35	GV-96400-36
BioPharm Silicone (platinum-cured)	7.6 m (25 ft)	GV-96420-13	GV-96420-14	GV-96420-16	GV-96420-25	GV-96420-17	GV-96420-18	GV-96420-15	GV-96420-24	GV-96420-35	GV-96420-36
BioPharm Plus Silicone (platinum-cured)	7.6 m (25 ft)	GV-96440-13	GV-96440-14	GV-96440-16	GV-96440-25	GV-96440-17	GV-96440-18	GV-96440-15	GV-96440-24	GV-96440-35	GV-96440-36
Puri-Flex™	7.6 m (25 ft)	GV-96419-13	GV-96419-14	GV-96419-16	GV-96419-25	GV-96419-17	GV-96419-18	GV-96419-15	GV-96419-24	GV-96419-35	GV-96419-36
C-Flex®	7.6 m (25 ft)	GV-06424-13	GV-06424-14	GV-06424-16	GV-06424-25	GV-06424-17	GV-06424-18	GV-06424-15	GV-06424-24	GV-06424-35	GV-06424-36
C-Flex® ULTRA	7.6 m (25 ft)	—	GV-06434-14	GV-06434-16	GV-06434-25	GV-06434-17	GV-06434-18	GV-06434-15	GV-06434-24	GV-06434-35	GV-06434-36
PharMed® BPT	7.6 m (25 ft)	GV-06508-13	GV-06508-14	GV-06508-16	GV-06508-25	GV-06508-17	GV-06508-18	GV-06508-15	GV-06508-24	GV-06508-35	GV-06508-36
PharmaPure®	7.6 m (25 ft)	GV-06435-13	GV-06435-14	GV-06435-16	GV-06435-25	GV-06435-17	GV-06435-18	GV-06435-15	GV-06435-24	—	—
GORE® STA-PURE® Series PCS	35.6 cm (14")	—	GV-96241-14	GV-96241-16	GV-96241-25	GV-96241-17	GV-96241-18	GV-96241-15	GV-96241-24	GV-96241-35	GV-96241-36
GORE® STA-PURE® Series PFL	35.6 cm (14")	—	GV-96242-14	GV-96242-16	GV-96242-25	GV-96242-17	GV-96242-18	GV-96242-15	GV-96242-24	GV-96242-35	GV-96242-36
Chem-Durance® Bio	15.2 m (50 ft)	GV-06442-13	GV-06442-14	GV-06442-16	GV-06442-25	GV-06442-17	GV-06442-18	GV-06442-15	GV-06442-24	GV-06442-35	GV-06442-36
Tygon® E-LFL	7.6 m (25 ft)	GV-06440-13	GV-06440-14	GV-06440-16	GV-06440-25	GV-06440-17	GV-06440-18	GV-06440-15	GV-06440-24	GV-06440-35	GV-06440-36
Tygon E-Food (B-44-4X)	15.2 m (50 ft)	GV-06418-13	GV-06418-14	GV-06418-16	GV-06418-25	GV-06418-17	GV-06418-18	GV-06418-15	GV-06418-24	GV-06418-35	GV-06418-36
Tygon E-Lab (E-3603)	15.2 m (50 ft)	GV-06509-13	GV-06509-14	GV-06509-16	GV-06509-25	GV-06509-17	GV-06509-18	GV-06509-15	GV-06509-24	GV-06509-35	GV-06509-36
Tygon Fuel & Lubricant (F-4040-A)	15.2 m (50 ft)	GV-06401-13	GV-06401-14	GV-06401-16	GV-06401-25	GV-06401-17	GV-06401-18	GV-06401-15	GV-06401-24	GV-06401-35	GV-06401-36
Tygon Chemical (2001)	15.2 m (50 ft)	GV-06475-13	GV-06475-14	GV-06475-16	GV-06475-25	GV-06475-17	GV-06475-18	GV-06475-15	GV-06475-24	—	—
Norprene® (A-60 G)	15.2 m (50 ft)	GV-06404-13	GV-06404-14	GV-06404-16	GV-06404-25	GV-06404-17	GV-06404-18	GV-06404-15	GV-06404-24	GV-06404-35	GV-06404-36
Norprene Food (A 60 F)	15.2 m (50 ft)	GV-06402-13	GV-06402-14	GV-06402-16	GV-06402-25	GV-06402-17	GV-06402-18	GV-06402-15	GV-06402-24	GV-06402-35	GV-06402-36
Viton®	7.6 m (25 ft)	GV-96412-13	GV-96412-14	GV-96412-16	GV-96412-25	GV-96412-17	GV-96412-18	GV-96412-15	GV-96412-24	GV-96412-35	GV-96412-36

	Qty/pk	I/P® Precision Pump Tubing			Qty/pk	I/P® High-Performance Precision Pump Tubing			Qty/pk	B/T® PerfectPosition® Pump Tubing	
		I/P 26	I/P 73	I/P 82		I/P 70	I/P 88	I/P 89		B/T 87	B/T 91
		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		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		0.67 to 18.9 LPM 0.17 to 5.0 GPM	1.4 to 42 LPM 0.4 to 11.1 GPM
Silicone (platinum-cured)	7.6 m (25 ft)	GV-96410-26	GV-96410-73	GV-96410-82	3 m (10 ft)	GV-96510-70	GV-96510-88	GV-96510-89	3 m (10 ft)	GV-96400-87	GV-96400-91
Silicone (peroxide-cured)	7.6 m (25 ft)	GV-96400-26	GV-96400-73	GV-96400-82	—	—	—	—	3 m (10 ft)	GV-96400-87	GV-96400-91
BioPharm Silicone (platinum-cured)	7.6 m (25 ft)	GV-96420-26	GV-96420-73	GV-96420-82	3 m (10 ft)	GV-96421-70	GV-96421-88	GV-96421-89	—	—	—
BioPharm Plus Silicone (platinum-cured)	7.6 m (25 ft)	GV-96440-26	GV-96440-73	GV-96440-82	3 m (10 ft)	GV-96441-70	GV-96441-88	GV-96441-89	3 m (10 ft)	GV-96445-87	GV-96445-91
Puri-Flex™	7.6 m (25 ft)	GV-96419-26	GV-96419-73	GV-96419-82	3 m (10 ft)	GV-96419-70	GV-96419-88	GV-96419-89	3 m (10 ft)	GV-96419-87	GV-96419-91
C-Flex®	7.6 m (25 ft)	GV-06424-26	GV-06424-73	GV-06424-82	3 m (10 ft)	GV-06424-70	GV-06424-88	GV-06424-89	3 m (10 ft)	GV-06424-87	GV-06424-91
PharMed® BPT	7.6 m (25 ft)	GV-06508-26	GV-06508-73	GV-06508-82	7.6 m (25 ft)	GV-06508-70	GV-06508-88	—	3 m (10 ft)	GV-06507-87	GV-06507-91
PharmaPure®	7.6 m (25 ft)	GV-06435-26	GV-06435-73	GV-06435-82	—	—	—	—	3 m (10 ft)	GV-06437-87	GV-06437-91
GORE® STA-PURE® Series PCS	0.6 m (2 ft)	GV-96241-26	GV-96241-73	GV-96241-82	0.6 m (2 ft)	—	GV-96241-88	GV-96241-89	—	GV-96241-87	GV-96241-91
GORE® STA-PURE® Series PFL	0.6 m (2 ft)	GV-96242-26	GV-96242-73	GV-96242-82	0.6 m (2 ft)	—	GV-96242-88	GV-96242-89	—	—	—
Chem-Durance® Bio	15.2 m (50 ft)	GV-06442-26	GV-06442-73	GV-06442-82	15.2 m (50 ft)	GV-06442-70	GV-06442-88	GV-06442-89	3 m (10 ft)	GV-06443-87	GV-06443-91
Tygon® E-LFL	7.6 m (25 ft)	GV-06440-26	GV-06440-73	GV-06440-82	7.6 m (25 ft)	GV-06440-70	GV-06440-88	GV-06440-89	3 m (10 ft)	GV-06440-87	GV-06440-91
Tygon E-Food (B-44-4X)	15.2 m (50 ft)	GV-06418-26	GV-06418-73	GV-06418-82	15.2 m (50 ft)	GV-06418-70	GV-06418-88	GV-06418-89	3 m (10 ft)	GV-06418-87	GV-06418-91
Tygon E-Lab (E-3603)	15.2 m (50 ft)	GV-06509-26	GV-06509-73	GV-06509-82	15.2 m (50 ft)	GV-06509-70	GV-06509-88	GV-06509-89	15.2 m (50 ft)	—	—
Norprene® (A-60 G)	15.2 m (50 ft)	GV-06404-26	GV-06404-73	GV-06404-82	7.6 m (25 ft)	GV-06404-70	GV-06404-88	GV-06404-89	7.6 m (25 ft)	—	—
Norprene Food (A 60 F)	15.2 m (50 ft)	GV-06402-26	GV-06402-73	GV-06402-82	7.6 m (25 ft)	—	GV-06402-88	GV-06402-89	3 m (10 ft)	GV-06399-87	GV-06399-91

OEM Design Capabilities

Our Original Equipment Manufacturer (OEM) team has more than 100 years of combined experience in custom designing fluid handling solutions. We provide thousands of quality products for scientific, technical, and industrial applications worldwide. When you require a product that is different from the products we advertise, or you need a feature from one of our products to meet your specific system requirement, we offer our OEM services.

Capabilities

We are known as an industry leader in the design, engineering, and manufacturing of peristaltic tubing and hose pumps, diaphragm metering pumps, vacuum/pressure pumps, flowmeters, and mixers.

Markets and applications

We specialize in the following markets: medical, semiconductor, wastewater treatment, food and beverage, biotechnology, filtration, pharmaceutical, environmental, printing, and metal finishing. Our products are used as irrigation and cooling pumps for medical devices, auto-analyzer pumps, pumping inks onto electric cable insulation, high-purity filtration systems, and many more specialized needs.

Work directly with our expert OEM engineers

Our first objective is defining your needs. We will discuss the project in detail—engineering staff to engineering staff. Once we jointly define your requirements, we will work with you through the entire design and manufacturing process.

After-sale technical support is a key service we provide

Our partnership doesn't end with product delivery. We are always available for follow-up service and technical support. We want to ensure that you remain completely satisfied with your final product.

Technical Info

High-quality products conform to these standards:

- ISO 9001:2008 Quality Management
- ETL Safety
- UL Safety
- cUL Safety, Canada
- CE - Electrical emissions
- EN61010 Safety, EU

Innovative pump solutions for your applications

Our custom design group provides win-win solutions for your product design.

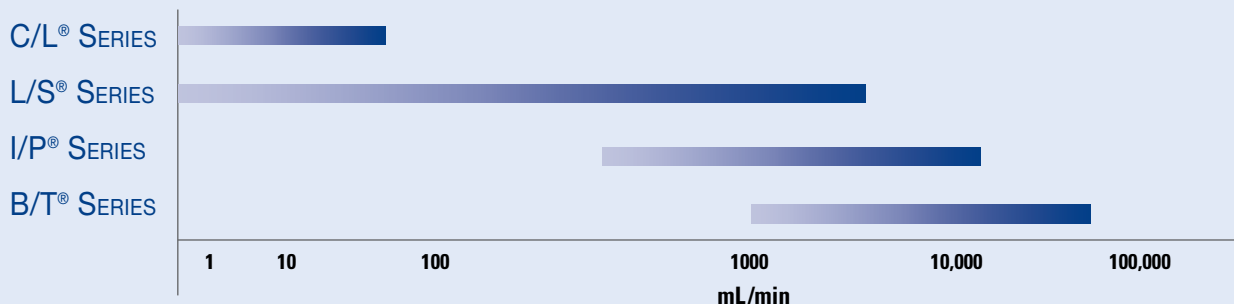


Flow Performance

From volumes less than a teardrop to flow rates more than a fire hose, we can provide a custom solution for your specific fluid transfer needs.

Flow rates: less than 10 μ L/min to more than 400 LPM

Pressure performance: up to 10.2 bar



Masterflex® L/S® Sanitary Pump Tubing Assemblies

Get quicker connection of tubing

Features/Benefits

- Meets stringent demands of biotech and pharmaceutical industries
- Smooth, pre-molded tubing ends allow quick connection to an adapter or to another length of sanitary tubing
- Connectors help maintain cleanliness and purity of your fluids
- Sanitary tubing is less thermally conductive than metallic tubing systems and not subject to galvanic action, RFI, or EMI
- All sanitary tubing conforms to USP Class VI and FDA standards



How to Connect Tubing

- Tubing features pre-molded ends. Tubing with 1/2" mini-connections uses molded-in gasket at one end to ensure quality seal
- Pre-molded ends allow quick connection to an adapter or additional length of sanitary tubing. Order adapters below.
- Join 1/2" mini-connection to another 1/2" mini-connection, adapter, or to your system with a push/pull clamp



How to Order

1. Order your desired tubing formulation and length. Choose tubing size based on flow range.
2. Order PVDF push/pull clamp (separately below).
3. Order silicone or Viton® gaskets as needed to connect to your system or to adapters
4. Select sanitary adapters as needed

Tubing size	PharMed BPT (06508-series) 5-ft (1.5-m) length		PharMed BPT (06508-series) 10-ft (3-m) length	
	Cat. no.	Price	Cat. no.	Price
L/S Precision sanitary pump tubing				
L/S 13	GV-96102-13		GV-96103-13	
L/S 14	GV-96102-14		GV-96103-14	
L/S 16	GV-96102-16		GV-96103-16	
L/S 25	GV-96102-25		GV-96103-25	
L/S 17	GV-96102-17		GV-96103-17	
L/S 18	GV-96102-18		GV-96103-18	
L/S High-Performance Precision sanitary pump tubing				
L/S 15	GV-96102-15		GV-96103-15	
L/S 24	GV-96102-24		GV-96103-24	
L/S 35	GV-96102-35		GV-96103-35	
L/S 36	GV-96102-36		GV-96103-36	

Accessories for Masterflex® Sanitary Pump Tubing Assemblies

Adapters

Adapter connections	Polypropylene		PVDF	
	Cat. no.	Price	Cat. no.	Price
1/2" mini to 1/8" NPT(M)	GV-31200-00		GV-31201-00	
1/2" mini to 1/8" NPT(F)	GV-31200-10		—	—
1/2" mini to 1/4" NPT(M)	GV-31200-01		GV-31201-01	
1/2" mini to 1/4" NPT(F)	GV-31200-11		GV-31201-11	
1/2" mini to 1/4" hose barb	GV-31805-25		GV-31808-25	
1/2" mini to 3/8" NPT(M)	GV-31200-02		GV-31201-02	
1/2" mini to 3/8" NPT(F)	GV-31200-12		GV-31201-12	
1/2" mini to 3/8" hose barb	GV-31805-26		GV-31808-26	
1/2" mini to 1/2" NPT(M)	GV-31200-03		GV-31201-03	
1/2" mini to 1/2" NPT(F)	GV-31200-13		GV-31201-13	
1/2" mini to 1/2" hose barb	GV-31805-27		—	—
1/2" mini to 1" maxi	GV-31200-30		—	—
1/2" mini to 1" ladish	GV-31805-05		—	—
1/2" mini to female luer lock	GV-31200-50		—	—



GV-31201-88 Push/pull clamp, PVDF. For quick joining of two 1/2" mini connections

Gaskets. Order gaskets to join 1/2" mini connection without molded-in gasket to another 1/2" mini connection without molded-in gasket or to an adapter (sold separately at left).

GV-30548-00 Silicone gasket for use with sanitary silicone (platinum-cured) tubing. Pack of 10

GV-30548-20 Viton® gasket for use with sanitary PharMed® BPT tubing. Pack of 10

Masterflex® L/S® Spooled Pump Tubing

Save money—buy in bulk

- Reduce scrap—cut only as needed
- Always have enough tubing on hand

Spooled pump tubing provides continuous lengths of pump tubing on convenient, manageable spools that are easy to transport and require less storage space than the equivalent amount of individual tubing coils.



Tubing size	Peroxide-cured silicone (96400-series)			Platinum-cured silicone (96410-series)			PharMed® BPT (06508-series)			BioPharm Silicone (96420-series), 400 ft		C-Flex® (06424-series), 400 ft	
	ft	Cat. no.	Price	ft	Cat. no.	Price	ft	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
L/S 13	250	GV-96407-13		500	GV-96403-13		—	—	—	—	—	GV-06427-13	
L/S 14	250	GV-96407-14		500	GV-96403-14		500	GV-95687-14		GV-96423-14		GV-06427-14	
L/S 16	250	GV-96407-16		500	GV-96403-16		500	GV-95687-16		GV-96423-16		GV-06427-16	
L/S 25	250	GV-96407-25		500	GV-96403-25		—	—	—	GV-96423-25		GV-06427-25	
L/S 17	250	GV-96407-17		500	GV-96403-17		500	GV-95687-17		GV-96423-17		GV-06427-17	
L/S 18	200	GV-96407-18		400	GV-96403-18		400	GV-95687-18		GV-96423-18		GV-06427-18	
L/S 15	250	GV-96407-15		400	GV-96403-15		400	GV-95687-15		GV-96423-15		GV-06427-15	
L/S 24	200	GV-96407-24		300	GV-96403-24		300	GV-95687-24		GV-96423-24		GV-06427-24	
L/S 35	—	—	—	300	GV-96403-35		300	GV-95687-35		—	—	GV-06427-35	
L/S 36	—	—	—	100	GV-96403-36		100	GV-95687-36		—	—	GV-06427-36	

Masterflex® L/S® Bulk-Packed Pump Tubing

No contamination—individually bagged

- Save money and shipping fees by buying in bulk

Ideal for large-volume pump tubing users, bulk packs contain individually bagged, sealed 25-ft (7.6-m) coils of tubing, all from a single manufacturing lot.



Pump tubing size	No. of bags per box	Platinum-cured silicone (96410-series)		C-Flex® (06424-series)	
		Catalog number	Price/bx	Catalog number	Price/bx
L/S 13	20	GV-96404-13		GV-06436-13	
L/S 14	20	GV-96404-14		GV-06436-14	
L/S 16	20	GV-96404-16		—	—
L/S 25	20	GV-96404-25		GV-06436-25	
L/S 17	20	GV-96404-17		GV-06436-17	
L/S 18	10	GV-96404-18		—	—
L/S 15	20	GV-96404-15		GV-06436-15	
L/S 24	20	GV-96404-24		GV-06436-24	
L/S 35	10	GV-96404-35		GV-06436-35	
L/S 36	10	GV-96404-36		GV-06436-36	

Masterflex® I/P® Spooled Pump Tubing

Use only the required length

- Eliminate waste by cutting to the exact length needed for your application
- Continuous lengths of tubing are convenient and cost-effective
- Spools contain up to 400 ft (121.9 m) of continuous pump tubing, depending on size
- Save space and shipping costs by buying in bulk
- Good choice for applications requiring long, continuous runs of tubing, or which use odd-size lengths that generate scrap when using standard 25- or 50-ft (7.6- or 15.2-m) coils



Tubing size	Peroxide-cured silicone (96400-series)			Platinum-cured silicone (96410-series)			PharMed® BPT (06508-series)			BioPharm Silicone (96420-series) (96421-series*)			C-Flex® (06424-series)		
	ft (m)	Catalog number	Price	ft (m)	Catalog number	Price	ft (m)	Catalog number	Price	ft (m)	Catalog number	Price	ft (m)	Catalog number	Price
I/P 26	—	—	—	200 (61.0)	GV-96403-26		—	—	—	400 (121.9)	GV-96423-26		400 (121.9)	GV-06427-26	
I/P 73	150 (45.7)	GV-96402-73		45.7 (150)	GV-96403-73		45.7 (150)	GV-95687-73		100 (30.5)	GV-96423-73		100 (30.5)	GV-06427-73	
I/P 82	100 (30.5)	GV-96402-82		100 (30.5)	GV-96403-82		100 (30.5)	GV-95687-82		—	—	—	100 (30.5)	GV-06427-82	
I/P 88	—	—	—	—	—	—	—	—	—	100 (30.5)	GV-96423-88*		—	—	—
I/P 89	—	—	—	—	—	—	—	—	—	100 (30.5)	GV-96423-89*		—	—	—

Masterflex® I/P® Bulk-Packed Pump Tubing

Individually bagged to prevent contamination

- Prevent contamination—tubing coils are individually bagged and sealed
- Use as many or as few as you need, and store the rest
- Save money by buying and shipping in bulk
- Bulk packs contain ten individually bagged, sealed 25-ft (7.6-m) coils of tubing, all from a single manufacturing lot



Bulk packs offer individually sealed bags of tubing at a lower price per pack than individual packs—so you save money!

Tubing size	Number of 25-ft (7.6-m) bags per box	Platinum-cured silicone (96410-series)		PharMed® BPT (06508-series)		C-Flex® (06424-series)	
		Catalog number	Price	Catalog number	Price	Catalog number	Price
I/P 26	10	GV-96404-26		—	—	GV-06436-26	
I/P 73	10	GV-96404-73		—	—	GV-06436-73	
I/P 82	10	GV-96404-82		GV-95691-82		GV-06436-82	

Ismatec® 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



Specifications

Accuracy: better than $\pm 1\%$ **Pressure:** up to 22 psi (1.5 bar) **Power:** 115/230 VAC, 50/60 Hz (selectable)

Flow range per channel	Channels	Speed	Rollers	Tubing	Catalog number	Price
Low-speed planetary gear-driven pumps						
0.0004 to 11 mL/min	4	0.11 to 11.25 rpm	8	Two-stop	GV-78001-00	
	8				GV-78001-10	
	12				GV-78001-20	
	16				GV-78001-30	
	24				GV-78001-40	
Standard-speed planetary gear-driven pumps						
0.002 to 44 mL/min	4	0.4 to 45 rpm	8	Two-stop	GV-78001-02	
	8				GV-78001-12	
	12				GV-78001-22	
	16				GV-78001-32	
	24				GV-78001-42	



Replacement Cartridges

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

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

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

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

Pack of 12

Ismatec® 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.

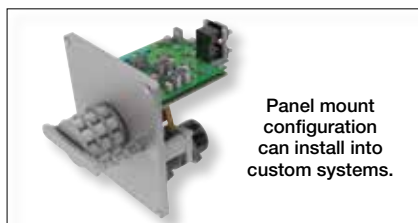


Specifications

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



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



Panel mount configuration can install into custom systems.

Minicartridges

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

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



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

Don't confuse your tubing—color-coded 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"> Complies with USP Class VI, EP, FDA, EU food, REACH, RoHS, ADFC Longest life of all Tygon formulations Broad chemical resistance 	10, 12, 14, 18, 22, 24, 26, 28, 30, 31, 33, 34, 36, 37, 40, 42, 43, 47, 48	12 (16")	GV-96449-XX		GV-96450-XX		GV-06449-XX	100 ft	
Tygon® E-Food	<ul style="list-style-type: none"> Complies with FDA, EU Food, NSF, 2A, REACH, RoHS, ADFC Smooth inner surface; nontoxic 	10, 12, 18, 26, 30, 34, 42, 48	12 (16")	GV-96457-XX		GV-96458-XX		GV-06457-XX	100 ft	
Tygon® E-Lab	<ul style="list-style-type: none"> Complies with USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADFC Ideal for general transfer applications Nonaging/nonoxidizing, low gas permeability 	09, 10, 12, 14, 16, 18, 19, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 36, 38, 39, 40, 42, 46, 48, 49	12 (16")	GV-96460-XX		GV-96461-XX		GV-06460-XX	100 ft	
Silicone (peroxide cured)	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC Greater physical compression capability Economical, long tubing life 	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")	GV-07616-XX		GV-07624-XX		GV-07625-XX	50 ft	
Silicone (platinum cured)	<ul style="list-style-type: none"> Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC Low protein binding, fungus-resistant, phthalate and latex free 	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")	GV-95602-XX		GV-95603-XX		GV-95612-XX	50 ft	
Viton®	<ul style="list-style-type: none"> Complies with FDA, ADFC Resists corrosives, solvents, and oils at elevated temperatures 	18, 22, 24, 26, 30, 34, 38, 42, 46, 48	12 (12")	GV-97628-XX		GV-97629-XX		GV-97632-XX	50 ft	
PharMed® BPT	<ul style="list-style-type: none"> Complies with USP Class VI, EP, FDA, NSF, REACH, RoHS Over 10,000 hours of tubing life, sealable, weldable Ideal for tissue and cell culture work 	10, 12, 14, 18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	12 (16")	GV-95723-XX		GV-95714-XX		GV-95809-XX	100 ft	
Autoclavable PharMed® BPT	<ul style="list-style-type: none"> Ideal for tissue and cell culture work 	12, 32, 48	6 (16")	GV-95692-XX		GV-95693-XX				
PVC Solvent/ hydrocarbon	<ul style="list-style-type: none"> Resistant to ozone and UV light Resists to cracking, swelling, hardening Ideal for fuels, distillates, lubricants, and glycol-based coolants 	10, 12, 14, 18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	12 (16")	GV-95606-XX		GV-95605-XX		GV-95712-XX	50 ft	
Chem-Durance® Bio	<ul style="list-style-type: none"> Suitable for acetone, MEK, and other highly aggressive chemicals Long life and outstanding fatigue resistance 	14, 18, 24, 26, 30, 34, 36, 42, 48	6 (16")	GV-96327-XX		GV-96328-XX		None (PharMed BPT recommended for extension tubing; see 95809-XX above)		

STEP 2:

Select the catalog number suffix.

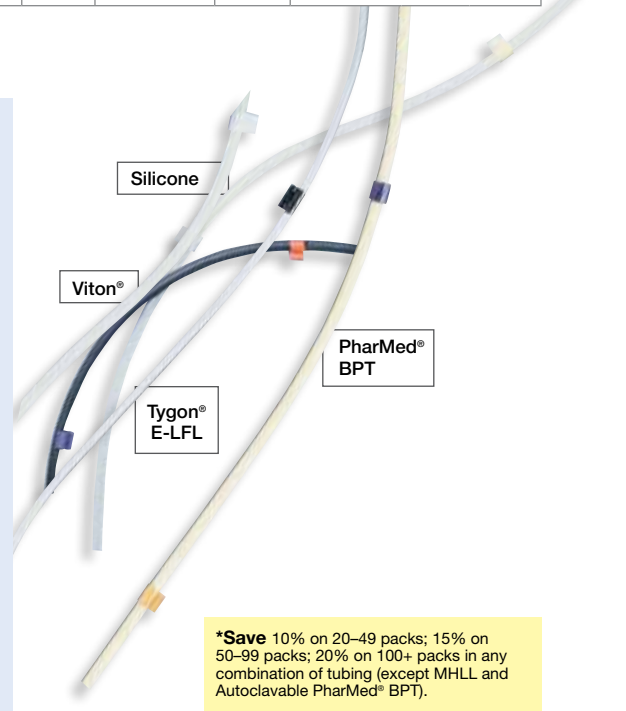
Catalog number suffix	ID (mm)	Color-coded stops
-09	0.13	Orange/Black
-10	0.19	Orange/Red
-12	0.25	Orange/Blue
-14	0.38	Orange/Green
-16	0.44	Green/Yellow
-18	0.51	Orange/Yellow
-19	0.57	White/Yellow
-22	0.64	Orange/White
-24	0.76	Black/Black
-26	0.89	Orange/Orange
-27	0.95	White/Black
-28	1.02	White/White
-29	1.09	White/Red
-30	1.14	Red/Red
-31	1.22	Red/Gray
-32	1.3	Gray/Gray
-34	1.42	Yellow/Yellow
-36	1.52	Yellow/Blue
-38	1.65	Blue/Blue
-39	1.75	Blue/Green
-40	1.85	Green/Green
-42	2.06	Purple/Purple
-44	2.29	Purple/Black
-46	2.54	Purple/Orange
-48	2.79	Purple/White
-49	3.17	Black/White

How to order 2- and 3-stop tubing

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

Step 2: Select the catalog number suffix based on the ID size. To find flow rates for each size with your pump system, go to ColeParmer.com and search for your pump system.

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



***Save** 10% on 20–49 packs; 15% on 50–99 packs; 20% on 100+ packs in any combination of tubing (except MHLL and Autoclavable PharMed® BPT).



Gear Pump Benchtop Systems

Ready to use—drive and pump head included!



Analog Drives

- Continuous-duty operation with Micropump® A-mount pump heads
- Gradual, one-second acceleration offers smooth control of drive speed and flow rate
- Permanent-magnet, direct-current (PMDC) drive is built to last—perfect for long-term applications

Digital Drives

- Operate in continuous run, volume dispense, copy dispense, and timed dispense modes with precise, pulseless batching and dispensing
- IP33-rated enclosure protects the internal components from dust and splashes



WARNING: This product can expose you to chemicals including BPA, lead, and phthalates, which is known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

Flow rates (mL/min) [†]			Max pressure		Wetted parts			Analog systems		Digital systems	
mL/rev	at 50 rpm	at 3600 rpm	Diff (psi)	System (psi)	Body	Gears	Seals	Catalog number	Price	Catalog number	Price
0.017	0.85	85	20	300	316 SS	Graphite	PTFE	GV-74013-72		GV-74014-72	
0.092	4.60	331.2	75	300	316 SS	PPS	PTFE	GV-74013-02		GV-74014-02	
0.092	4.60	331.2	75	300	316 SS	PPS	PPS	—		GV-74014-62	
0.261	13.05	939.6	125	300	316 SS	PEEK	Viton®	GV-74013-52		GV-74014-52	
0.316	15.8	1137.6	75	300	316 SS	PPS	PTFE	GV-74013-12		GV-74014-12	
0.64	32.0	2304	75	300	316 SS	PPS	PTFE	GV-74013-22		GV-74014-22	
0.91	45.5	3276	75	300	316 SS	PPS	PTFE	GV-74013-32		GV-74014-32	
1.17	58.5	4212	60	300	316 SS	PPS	Viton	GV-74013-42		GV-74014-42	

[†]Flow rates in mL/min are based on water at room temperature and no back pressure.

[GV-07523-92](#) Foot switch, momentary start/stop for benchtop digital drives, 1.8-m cable

[GV-06385-10](#) Male pipe adapter (straight); PP, ¼" OD x ⅛" NPT(M). Pack of 10

[GV-40610-36](#) Male pipe adapter; natural PP, ⅛" NPT(M) x ¼" ID. Pack of 10

Specifications

Remote control:

Analog drives: on/off by contact closure
Digital drives: (input) on/off by contact closure (0 to 10 VDC, 0 to 20 mA, 4 to 20 mA), and remote output

Speed:

Analog drives: 50 to 5000 rpm
Digital drives: 36 to 3600 rpm

Power:

Analog drives: 115 VAC
Digital drives: 90 to 260 VAC

Micropump® A-Mount Gear Pump Heads

Achieve leak-free, pulseless flow

Magnetic drive and static seals keep fluids securely inside and potential contaminants out. Chemical resistant materials handle a wide range of materials (due to wetted parts). Pump heads are compact and easy to service. Modular design offers flexibility—configure to your specific needs.

Suction shoe pump heads provide higher delivery pressures and temperatures, plus increased efficiency (order below).

Cavity-style pump heads are designed to handle higher inlet pressures (order at ColeParmer.com).



Specifications

Port size: ⅛" NPT(F)

Max viscosity: 0.2 to 1500 cp

Suction lift: 12" of H₂O (3450 rpm)

Duty cycle: continuous

Find even more online! Go to ColeParmer.com to search more than 100,000 products.

Flow rates (mL/min) [†]			Max pressure psi (bar)		Wetted parts			Temperature range	Internal bypass	Max speed (rpm)	Catalog number	Price	Service kits	
mL/rev	at 50 rpm	at 5000 rpm	Diff	System	Body	Gears	Seals						Cat. no.	Price
0.017	0.85	85	20 (1.4)	300 (20.7)	316 SS	Graphite	PTFE	-50 to 250°F (-46 to 120°C)	No	8000	GV-07002-25		GV-07144-42	
0.042	2.10	210	40 (2.8)					-50 to 250°F (-46 to 120°C)	No	8000	GV-07002-26		—	
0.084	4.20	420	40 (2.8)					-50 to 250°F (-46 to 120°C)	No	8000	GV-07002-27		GV-07144-47	
0.092	4.60	460	75 (5.2)	300 (20.7)	316 SS	PEEK PPS	PTFE	-50 to 250°F (-46 to 120°C)	No	8000	GV-73003-14		—	
0.261	13.05	1305	125 (8.6)	300 (20.7)	316 SS	PEEK	Viton®	-50 to 250°F (-46 to 120°C)	Yes	10,000	GV-73004-00		—	
0.58	29.00	2900	125 (8.6)	300 (20.7)	316 SS	PEEK PPS	Viton	-50 to 250°F (-46 to 120°C)	Yes	10,000	GV-73004-02		—	
			75 (5.2)								GV-07003-02		GV-07003-12	
1.17	58.50	5850	60 (4.1)	300 (20.7)	316 SS	PEEK PPS	Viton	-50 to 250°F (-46 to 120°C)	Yes	10,000	GV-73004-04		—	
											GV-07003-04		GV-07003-14	

Note: Viscosity for all models is dependent on the parameters (flow rate, pressures, etc.) of the specific application.

[†]Flow rates based on water at room temperature and no back pressure.



Cole-Parmer® Peroxide-Cured Silicone Tubing

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



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.

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)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/50 (0.5)	1/12 (2.1)	1/32 (0.8)	30	GV-06411-59	
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	30	GV-06411-60	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	15	GV-06411-62	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	15	GV-06411-63	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	10	GV-06411-64	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	20	GV-06411-67	
1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	25	GV-06411-68	
5/32 (4.0)	5/32 (4.0)	1/32 (0.8)	10	GV-06411-65	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	9	GV-06411-66	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13	GV-06411-03	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	22	GV-06411-69	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	9	GV-06411-70	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10	GV-06411-71	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	17	GV-06411-72	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17	GV-06411-74	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	10	GV-06411-75	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	16	GV-06411-76	
5/16 (8.0)	3/8 (9.6)	1/8 (3.2)	20	GV-06411-77	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	10	GV-06411-12	
3/8 (9.6)	3/8 (9.6)	3/32 (2.4)	12	GV-06411-78	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	15	GV-06411-79	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	9	GV-06411-80	
1/2 (12.8)	1 1/16 (17.6)	3/32 (2.4)	10	GV-06411-19	
1/2 (12.8)	3/4 (19.2)	1/8 (3.2)	12	GV-06411-55	
5/8 (16.0)	1 3/16 (20.8)	3/32 (2.4)	10	GV-06411-82	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	12	GV-06411-58	
3/4 (19.2)	1 (25.4)	1/8 (3.2)	9	GV-06411-83	

Platinum-Cured Silicone Spools

Cut tubing to your needs

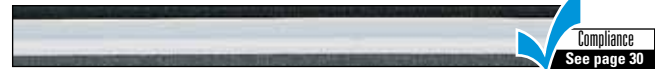
Reduce unpacking time, save money on shipping, and ensure that you always have enough tubing on hand with bulk tubing.



Dimensions in. (mm)		Length per spool	Catalog number	Price
ID	OD			
1/32 (0.8)	3/32 (2.4)	500 ft (152 m)	GV-98906-00	
1/16 (1.6)	1/8 (3.2)		GV-98906-02	
1/8 (3.2)	1/4 (6.4)	300 ft (91 m)	GV-98906-04	
3/16 (4.8)	5/16 (8.0)		GV-98906-06	
1/4 (6.4)	3/8 (9.6)		GV-98906-08	
3/8 (9.6)	5/8 (16.0)		GV-98906-10	
5/8 (16.0)	7/8 (22.4)		GV-98906-12	

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)	GV-96115-00	
0.02 (0.5)	0.037 (0.9)	0.0085 (0.22)	GV-96115-02	
0.025 (0.6)	0.047 (1.2)	0.011 (0.3)	GV-96115-04	
0.03 (0.8)	0.065 (1.7)	0.0175 (0.4)	GV-96115-06	
0.04 (1)	0.085 (2.2)	0.0225 (0.6)	GV-96115-08	
0.058 (1.5)	0.077 (2.0)	0.0095 (0.2)	GV-96115-10	
0.062 (1.6)	0.095 (2.4)	0.0165 (0.4)	GV-96115-12	
0.062 (1.6)	0.125 (3.2)	0.0315 (0.8)	GV-96115-14	
0.078 (2)	0.125 (3.2)	0.0235 (0.6)	GV-96115-16	
0.104 (2.6)	0.192 (4.9)	0.044 (1.1)	GV-96115-18	
0.132 (3.4)	0.183 (4.6)	0.0255 (0.6)	GV-96115-20	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	GV-96115-22	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	GV-96115-24	
3/16 (4.8)	3/8 (9.5)	3/32 (2.4)	GV-96115-26	
1/4 (6.4)	3/8 (9.5)	1/16 (1.6)	GV-96115-28	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	GV-96115-30	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	GV-96115-32	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	GV-96115-34	
3/8 (9.5)	5/8 (15.9)	1/8 (3.2)	GV-96115-40	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	GV-96115-44	

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)	GV-96105-00	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	16 (1.1)	GV-96105-02	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	12 (0.8)	GV-96105-03	
1/4 (6.4)	7/16 (11.1)	3/32 (2.4)	17 (1.2)	GV-96105-04	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17 (1.2)	GV-96105-05	
5/16 (8.0)	1/2 (14.0)	1/8 (3.0)	16 (1.1)	GV-96105-06	
3/8 (9.6)	9/16 (14.3)	3/32 (2.4)	13 (0.9)	GV-96105-08	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	14 (1.0)	GV-96105-09	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	10 (0.7)	GV-96105-11	
5/8 (16.0)	7/8 (22.2)	1/8 (3.2)	9 (0.6)	GV-96105-12	



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).

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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)	GV-95702-00	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	10 (0.7)	GV-95702-01	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	15 (1.0)	GV-95702-02	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	7 (0.5)	GV-95702-03	
3/32 (2.4)	7/32 (5.6)	1/16 (1.6)	12 (0.8)	GV-95702-04	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	7 (0.5)	GV-95702-05	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	9 (0.6)	GV-95702-06	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	5 (0.3)	GV-95702-08	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	7 (0.5)	GV-95702-09	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	9 (0.6)	GV-95702-10	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	5 (0.3)	GV-95702-13	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	7 (0.5)	GV-95702-14	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	5 (0.3)	GV-95702-16	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	6 (0.4)	GV-95702-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	4 (0.3)	GV-95702-18	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	5 (0.3)	GV-95702-19	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	7 (0.5)	GV-95702-20	

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.



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

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.

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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)	1/12 (2.1)	1/32 (0.8)	GV-06424-59	30		GV-06422-00	50		—	—	
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	GV-06424-60	31		GV-06422-01	51		—	—	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	GV-06424-62	15		GV-06422-02	25		—	—	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	GV-06424-63	14		GV-06422-03	23		—	—	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	GV-06424-64	10		GV-06422-04	17		—	—	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	GV-06424-67	21		GV-06422-05	35		GV-06432-50	35	
3/32 (4.0)	7/32 (5.6)	1/32 (0.8)	GV-06424-65	10		GV-06422-06	17		—	—	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	GV-06424-66	9		GV-06422-07	15		—	—	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	GV-06424-03	13		GV-06422-08	22		GV-06432-51	22	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	GV-06424-69	22		GV-06422-09	36		—	—	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	GV-06424-71	12		GV-06422-10	20		GV-06432-53	20	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	GV-06424-72	17		GV-06422-11	28		GV-06432-54	28	
1/4 (6.4)	1/2 (12.7)	1/8 (3.2)	GV-06424-74	17		GV-06422-12	28		GV-06432-55	28	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	GV-06424-75	10		GV-06422-13	17		—	—	
3/16 (8.0)	1/2 (12.7)	3/32 (2.4)	GV-06424-76	16		GV-06422-14	27		GV-06432-56	27	
3/8 (9.6)	1/2 (12.7)	1/16 (1.6)	GV-06424-12	10		GV-06422-15	17		GV-06432-57	17	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	GV-06424-79	14		GV-06422-16	23		GV-06432-59	23	
1/2 (12.7)	1 1/16 (17.6)	3/32 (2.4)	GV-06424-19	10		GV-06422-17	17		GV-06432-60	17	
1/2 (12.7)	3/4 (19.1)	1/8 (3.2)	GV-06424-81	10		GV-06422-18	17		GV-06432-61	17	

Tygon® Non-DEHP Lab Tubing

Pliable for sharp radius bending

Formulation: Tygon E-3603

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 requirements.

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

Sterilize: Autoclave or ethylene oxide.

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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)	GV-06407-70	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	36 (2.5)	GV-06407-71	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	69 (4.8)	GV-06407-72	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	25 (1.7)	GV-06407-73	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	20 (1.4)	GV-06407-75	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	36 (2.5)	GV-06407-76	
3/32 (4.0)	7/32 (5.6)	1/32 (0.8)	17 (1.2)	GV-06407-77	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	25 (1.7)	GV-06407-78	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	36 (2.5)	GV-06407-79	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	20 (1.4)	GV-06407-80	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	28 (1.9)	GV-06407-81	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	35 (2.5)	GV-06407-82	
3/16 (8.0)	7/16 (11.2)	1/16 (1.6)	17 (1.2)	GV-06407-83	
3/16 (8.0)	1/2 (12.8)	3/32 (2.4)	23 (1.6)	GV-06407-84	
3/8 (9.6)	9/16 (14.4)	1/8 (3.2)	30 (2.1)	GV-06407-85	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	GV-06407-86	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	20 (1.4)	GV-06407-87	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	25 (1.7)	GV-06407-88	
7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	13 (0.9)	GV-06407-89	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	12 (1.8)	GV-06407-90	
1/2 (12.8)	11/16 (17.8)	3/32 (2.4)	15 (1.0)	GV-06407-91	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	20 (1.4)	GV-06407-92	
1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	24 (1.7)	GV-06407-93	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	13 (0.9)	GV-06407-94	
5/8 (16.0)	7/16 (11.2)	1/8 (3.2)	17 (1.2)	GV-06407-95	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.0)	GV-06407-96	
3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	20 (1.4)	GV-06407-97	
1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	12 (0.8)	GV-06407-98	
1 (25.4)	1 1/2 (38.1)	1/4 (6.4)	20 (1.4)	GV-06407-99	

DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at ColeParmer.com/ChemChart



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.



PharMed® BPT Tubing

Protect your 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 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.

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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)	GV-96880-00	
1/32 (0.8)	5/32 (4.0)	1/16 (1.6)	40 (2.8)	GV-96880-02	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	34 (2.3)	GV-96880-04	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	19 (1.3)	GV-96880-06	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	GV-96880-08	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10 (0.7)	GV-96880-10	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	19 (1.3)	GV-96880-12	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	8 (0.6)	GV-96880-14	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	13 (0.9)	GV-96880-16	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	11 (0.8)	GV-96880-18	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	8 (0.6)	GV-96880-20	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	7 (0.5)	GV-96880-22	

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.

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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)	GV-95666-00	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	55 (3.8)	GV-95666-01	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	40 (2.8)	GV-95666-03	
3/32 (2.4)	7/32 (5.6)	1/16 (1.6)	70 (4.8)	GV-95666-04	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	30 (2.1)	GV-95666-05	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	55 (3.8)	GV-95666-06	
5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	25 (1.7)	GV-95666-07	
3/32 (4.0)	9/32 (7.1)	1/16 (1.6)	45 (4.3)	GV-95666-08	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	20 (1.4)	GV-95666-09	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	40 (2.8)	GV-95666-10	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	55 (3.8)	GV-95666-11	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	30 (2.1)	GV-95666-14	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	45 (1.7)	GV-95666-15	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	55 (3.8)	GV-95666-16	
3/8 (9.6)	9/16 (14.3)	3/32 (2.4)	30 (2.1)	GV-95666-21	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	40 (2.8)	GV-95666-22	
1/2 (12.8)	1 1/16 (17.6)	3/32 (2.4)	25 (1.7)	GV-95666-27	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	30 (2.1)	GV-95666-28	

Cole-Parmer® Kynar® PVDF Tubing

Fluoropolymer tubing at less cost



Characteristics: Polyvinylidene fluoride (PVDF) material is kink resistant; has excellent chemical resistance, and is odorless and nontoxic. Translucent.

Certifications: Resin is FDA-compliant (21 CFR 177.2600); meets USP Class VI requirements.

Temperature range: -40 to 260°F (-40 to 127°C)

Sterilize: Autoclave and gamma irradiation.

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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			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	350 (24.1)	GV-95100-00	
11/64 (4.2)	1/4 (6.4)	3/64 (1.2)	180 (12.4)	GV-95100-02	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	290 (20.0)	GV-95100-04	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	240 (16.5)	GV-95100-06	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	180 (12.4)	GV-95100-10	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	145 (10.0)	GV-95100-12	
5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	120 (8.3)	GV-95100-14	
3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	100 (6.9)	GV-95100-16	

Screw Clamp

Clamp is made of Delrin® acetal. Control flow in flexible tubing up to 1/2" (13 mm) OD. Install without disconnecting tubing. Autoclavable.



Description	Catalog number	Qty/pk	Price/pk
Screw clamp	GV-06833-10	3	

Heavy-Duty Tubing Closure

Handle higher working pressures

- Quick installation with positive swing-away locking screw
- Smooth contours allow for easy cleaning



Use this clamp with tubing or hose—it meets the working pressure of either item. High-strength polysulfone closure provides excellent durability, can be continually reused, and resists most chemicals. Simply align the hose within the clamp; mating surfaces on the clamp indicate complete closure. Typical applications include sterile filling, media bag connections, pumping, liquid control, and high-purity fluid transfers. FDA-compliant polysulfone material can be sterilized by autoclave or gamma irradiation.

Wall thickness range		Catalog number	Price/ea
Unreinforced	Reinforced		
0.090" to 0.190" (2.3 to 4.8 mm)	0.090" to 0.180" (2.3 to 4.6 mm)	GV-20001-00	

WARNING: This product can expose you to chemicals including titanium dioxide, carbon black, and BPA, which are known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

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	GV-06438-90	
Tubing cutter pouch	GV-06438-81	
Replacement blade	GV-06438-92	

Benchtop Tubing Cutter

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



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

Ratchet Tubing Clamps

Durable Celcon® plastic clamp is autoclavable; won't rust, corrode, or distort. Mini-clamp is suitable for up to 1/8" OD tubing. Standard clamp accepts flexible tubing to 1/2" OD.



Description	Catalog number	Qty/pk	Price/pk
Mini tubing clamp	GV-06833-01	25	
Tubing clamp	GV-06833-00	25	

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.

Description	Catalog number	Qty/pk	Price/pk
Clamp ties, white	GV-95615-00	100	
Clamp ties, black	GV-95615-10	100	

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Cole-Parmer® Barbed Fittings

No tools needed for assembly

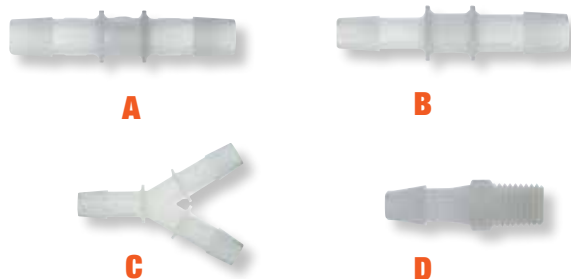
Combine these fittings with our flexible tubing for use in your low-pressure applications (less than 30 psi).

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.



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

Fittings connect in a snap

- Acetal fittings are ideal for use with corrosive fluids
- Polycarbonate and polysulfone materials meet USP Class VI requirements

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

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



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 15% off on 50 to 99
 10% off on 10 to 49 packs

Specifications

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

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



Complete Couplings

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

Standard Bodies and Caps

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

Standard Inserts and Plugs

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

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

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

CPC™ High-Flow Quick-Disconnect Couplings

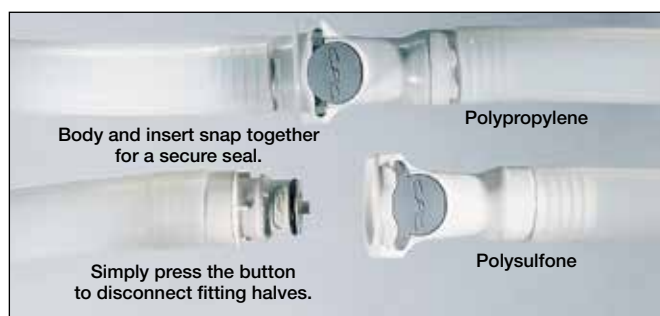
No more leaks—valved couplings automatically shut off flow

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

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

Specifications

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



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A. 31303-00



D. 31303-30



B. 31303-10



E. 31303-40



C. 31303-20



F. 31303-50

Quick-Disconnect Bodies (Female Coupling Halves)

A. Threaded Adapter Bodies

Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	GV-31303-00		GV-31307-00	
3/8"	1/2"	GV-31303-01		GV-31307-01	
3/8"	3/4"	GV-31303-02		GV-31307-02	
Straight-through fittings					
3/8"	3/8"	GV-31303-05		GV-31307-05	
3/8"	1/2"	GV-31303-06		GV-31307-06	
3/8"	3/4"	GV-31303-07		GV-31307-07	

B. Hose Barb Bodies

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	GV-31303-10		GV-31307-10	
3/8"	1/2"	GV-31303-11		GV-31307-11	
3/8"	5/8"	GV-31303-12		GV-31307-12	
3/8"	3/4"	GV-31303-13		GV-31307-13	
Straight-through fittings					
3/8"	3/8"	GV-31303-15		GV-31307-15	
3/8"	1/2"	GV-31303-16		GV-31307-16	
3/8"	5/8"	GV-31303-17		GV-31307-17	
3/8"	3/4"	GV-31303-18		GV-31307-18	

C. Bulkhead Panel Mount Hose Barb Bodies

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	GV-31303-20		GV-31307-20	
3/8"	1/2"	GV-31303-21		GV-31307-21	
3/8"	5/8"	GV-31303-22		GV-31307-22	
3/8"	3/4"	GV-31303-23		GV-31307-23	
Straight-through fittings					
3/8"	3/8"	GV-31303-25		GV-31307-25	
3/8"	1/2"	GV-31303-26		GV-31307-26	
3/8"	5/8"	GV-31303-27		GV-31307-27	
3/8"	3/4"	GV-31303-28		GV-31307-28	

Quick-Disconnect Inserts (Male Coupling Halves)

D. Male Threaded Inserts

Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	GV-31303-35		GV-31307-35	
3/8"	1/2"	GV-31303-36		GV-31307-36	
3/8"	3/4"	GV-31303-37		GV-31307-37	
Straight-through fittings					
3/8"	3/8"	GV-31303-30		GV-31307-30	
3/8"	1/2"	GV-31303-31		GV-31307-31	
3/8"	3/4"	GV-31303-32		GV-31307-32	

E. Hose Barb Inserts

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	GV-31303-45		GV-31307-45	
3/8"	1/2"	GV-31303-46		GV-31307-46	
3/8"	5/8"	GV-31303-47		GV-31307-47	
3/8"	3/4"	GV-31303-48		GV-31307-48	
Straight-through fittings					
3/8"	3/8"	GV-31303-40		GV-31307-40	
3/8"	1/2"	GV-31303-41		GV-31307-41	
3/8"	5/8"	GV-31303-42		GV-31307-42	
3/8"	3/4"	GV-31303-43		GV-31307-43	

F. Elbow Hose Barb Inserts

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
Valved fittings					
3/8"	3/8"	GV-31303-55		GV-31307-55	
3/8"	1/2"	GV-31303-56		GV-31307-56	
Straight-through fittings					
3/8"	3/8"	GV-31303-50		GV-31307-50	
3/8"	1/2"	GV-31303-51		GV-31307-51	

Find even more online! Go to ColeParmer.com to search more than 100,000 products.

CPC™ AseptiQuik™ Connectors

Make easy, secure sterile connections

- Quick, three-step connection process reduces risk of operator error
- Large housing size allows easy installation



Manufactured from sturdy polycarbonate, these connectors come clean. Use connectors with filters, tubing, and process containers to create systems for upstream or downstream processes.

Simply fit the connector half in your tubing line. Push the male and female connectors together; an audible snap confirms a tight connection. Align and snap membrane connectors together; pull from connector. Twist blue lock ring clockwise to hear another audible click. Alignment of the ring rib with the body's arrow indicator confirms final, secure connection.

Specifications

Type	Standard	High Temperature
Body material	Polycarbonate	
Seal material	Platinum-cured silicone	
Temp range	39 to 104°F (4 to 40°C)	
Max pressure	60 psi (4.4 bar)	
Sterilization	Gamma irradiation	Autoclave or gamma irradiation

AseptiQuik-Standard

Bodies (female coupling halves)

Size	Description	Cat. no.	Price/ea
3/8" ID	Hose barb	GV-20002-90	
	Hose barb high temperature	GV-20002-91	
1/2" ID	Hose barb	GV-20002-86†	
	Hose barb high temperature	GV-20002-87	

Inserts (male coupling halves)

Size	Description	Cat. no.	Price/ea
3/8" ID	Hose barb	GV-20002-94	
	Hose barb high temperature	GV-20002-95	
1/2" ID	Hose barb high temperature	GV-20002-89	

†Sold in a pack of 5.

AseptiQuik S-low flow, genderless

Size	Description	Cat. no.	Price/ea
1/8" ID	Hose barb high temperature	GV-20002-92	
1/4" ID		GV-20002-93	
3/4" Mini Tri-Clamp®	Sanitary high temperature	GV-20002-96	

AseptiQuik X-high flow

Bodies (female coupling halves)

Size	Description	Cat. no.	Price/ea
3/4" ID	Hose barb	GV-30003-21	
	Hose barb high temperature	GV-30003-22	
1"	Hose barb	GV-30003-23	
	Hose barb high temperature	GV-30003-24	
1 1/2"	Sanitary	GV-30003-25	
Tri-Clamp	Sanitary high temperature	GV-30003-26	

Inserts (male coupling halves)

Size	Description	Cat. no.	Price/ea
3/4" ID	Hose barb	GV-30003-31	
	Hose barb high temperature	GV-30003-32	
1"	Hose barb	GV-30003-33	
	Hose barb high temperature	GV-30003-34	
1 1/2"	Sanitary	GV-30003-35	
Tri-Clamp	Sanitary high temperature	GV-30003-36	

CPC™ Polysulfone Quick-Disconnect Couplings

Protect against lost media

- USP Class VI compliant
- Automatic shutoff valves
- BSE/TSE-free material in bodies and seals

For a complete quick-disconnect fitting, order both a body and insert separately. An audible click confirms a secure, leak-free connection. The automatic shutoff valve closes off the flow path at disconnection, protecting valuable media while eliminating the need for pinch clamps. Thumb latch enables easy one-handed operation.



Specifications

Body material	Polysulfone
O-ring material	Silicone, platinum-cured
Valve spring	316 stainless steel
Temperature range	-40 to 280°F (-40 to 138°C)
Pressure range	Vacuum to 125 psi (8.62 bar)
Sterilization	Autoclave or gamma irradiation

A. Hose Barb Bodies

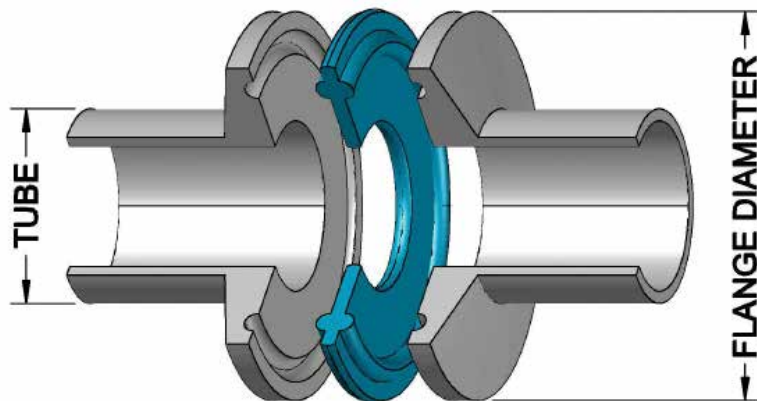
Tubing ID	Catalog number	Price
1/4"	GV-31313-01	
3/8"	GV-31313-02	
1/2"	GV-31313-03	

B. Hose Barb Inserts

Tubing ID	Catalog number	Price
1/4"	GV-31313-21	
3/8"	GV-31313-22	
1/2"	GV-31313-23	

Tri-Clamp® Guide

for Gaskets & Hoses



- **Tri-Clamp (TC)** is a commonly used term for the sanitary fittings with a clamp and ferrule in process applications.
- **TC Size** is governed by the Tube OD and not by the TC/Flange OD.

Hose/Gasket size (inch)	TC Size (inch)	Tube OD (inch)	Tube OD (mm)	TC/Flange OD (inch)	TC/Flange OD (mm)
½"	½"	½"	12.7	0.984"	25
¾"	¾"	¾"	19.05	0.984"	25
1"	1"	1"	25.4	1.984"	50.39
1½"	1½"	1½"	38.1	1.984"	50.39
2"	2"	2"	50.8	2.516"	63.91
2½"	2½"	2½"	63.5	3.047"	77.39
3"	3"	3"	76.2	3.579"	90.91
4"	4"	4"	101.6	4.682"	118.92

Gaskets for Pharmaceutical Applications



1= Excellent 2= Good 3= Acceptable 4= Marginal 5= Poor 0= Do Not Use

Gasket Comment	Continuous steam	Intermittent steam	Pure water ambient	Pure water hot	Process fluids ambient	Process fluids hot	Process fluids variables (<0°C to >100°C)	Temperature range
PTFE Wide temperature variation and may cause leakage at ΔT.	1	1	1	1	1	1	3	-100 to 500°F (-73 to 260°C)
Silicone (platinum) Very flexible very low temperature.	2	2	2	2	2	2	1	-40 to 450°F (-40 to 232°C)
FKM Fluoroelastomer Acceptable for steam applications.	2	2	2	2	2	2	2	-30 to 400°F (-34 to 204°C)
EPDM (peroxide cured) Low pressure steam only.	3	3	3	3	3	3	3	-30 to 300°F (-34 to 148°C)
Buna N* Not recommended for strong acids and ozone.	0	0	5	5	5	5	5	-30 to 200°F (-34 to 93°C)

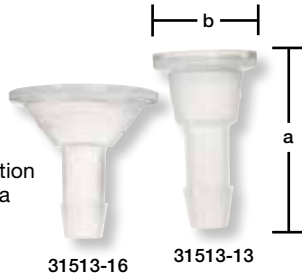
*Buna N does not pass US Pharmacopia Class VI Certificate and Cytotoxicity and is not ADI free.

Polypropylene Sanitary Adapters

No BSE documentation required!

- Meets USP Class VI requirements
- No sharp edges in the flow path, so cleaning is very easy; may be sterilized by gamma irradiation

PP adapters offer good chemical resistance and are the perfect transition from sanitary clamp connections to a barb for flexible tubing. Feature a radiused flow surface controlled to 15 micron Ra to ensure a smooth, uninterrupted flow and no particulate buildup. Free of animal-derived ingredients.



ANIMAL DERIVED
INGREDIENT FREE

Clamp size	Tubing ID	Dimensions			Catalog number	Price
		a	b	Orifice		
1/2"	3/8"	1.64"	0.98"	0.30"	GV-31513-13	
1/2"	1/2"	1.87"	0.98"	0.42"	GV-31513-14	
1 1/2"	1/2"	1.64"	1.99"	0.30"	GV-31513-15	
1 1/2"	1/2"	1.87"	1.99"	0.44"	GV-31513-16	

- [GV-30548-00](#) Gasket, 1/2", platinum-cured silicone. Pack of 10
- [GV-30548-04](#) Gasket, 1 1/2", platinum-cured silicone. Pack of 10
- [GV-31201-88](#) Push/pull sanitary mini clamp, PVDF
- [GV-30508-23](#) Sanitary clamp, 1 1/2", nylon

Masterflex® Nylon Sanitary Clamps

Color-coded knobs for easy identification

NEW

- Lightweight design puts less stress on your system
- Lot and batch traceability is ideal for increased security and compliance safety
- Compatible with ASME-BPE and BPSA standard nonmetallic and stainless steel flange ferrules



Constructed of glass-reinforced nylon, these disposable Tri-Clamp® sanitary clamps are perfect for single-use transfer lines in biopharma markets. The material meets USP Class VI and FDA compliance. Limited-slip design self-adjusts for balanced contact pressure without damaging the process lines.

MASTERFLEX®

Clamp size	Max pressure	Knob color	Catalog number	Price
3/4" mini	150 psi	White	GV-31201-43	
		Blue	GV-31201-48	
		Red	GV-31201-54	
		Yellow	GV-31201-59	
1 1/2"	150 psi	White	GV-31201-44	
		Blue	GV-31201-49	
		Red	GV-31201-55	
		Yellow	GV-31201-60	
2"	150 psi	White	GV-31201-45	
		Blue	GV-31201-51	
		Red	GV-31201-56	
		Yellow	GV-31201-61	
3"	120 psi	White	GV-31201-46	
		Blue	GV-31201-52	
		Red	GV-31201-57	
		Yellow	GV-31201-62	
4"	100 psi	White	GV-31201-47	
		Blue	GV-31201-53	
		Red	GV-31201-58	
		Yellow	GV-31201-63	

Cole-Parmer® 316L and 304 SS 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.

Cole-Parmer®



Clamp size	316L stainless steel		304 stainless steel	
	Cat. no.	Price	Cat. no.	Price
A. Concentric reducers				
1" x 3/4"	GV-30700-50		—	—
1 1/2" x 1"	GV-30700-51		GV-30700-95	
2" x 1"	GV-30700-52		GV-30700-96	
2" x 1 1/2"	GV-30700-53		GV-30700-97	
B. Eccentric reducers				
1" x 3/4"	GV-30700-54		—	—
1 1/2" x 1"	GV-30700-55		GV-30700-98	
2" x 1"	GV-30700-56		GV-30700-99	
2" x 1 1/2"	GV-30700-57		GV-30701-00	
C. Barbed adapters				
3/4" x 1/8"	GV-30700-58		—	—
3/4" x 1/4"	GV-30700-59		—	—
3/4" x 3/8"	GV-30700-60		—	—
3/4" x 1/2"	GV-30700-61		—	—
3/4" x 3/4"	GV-30700-62		—	—
1" x 1"	GV-30700-63		GV-30800-50	
1 1/2" x 1 1/2"	GV-30700-64		GV-30800-51	
2" x 2"	GV-30700-65		GV-30800-52	
D. Threaded adapters, clamp x NPT(M)				
3/4" x 1/8"	GV-30700-66		—	—
3/4" x 1/4"	GV-30700-67		—	—
3/4" x 3/8"	GV-30700-68		—	—
3/4" x 1/2"	GV-30700-69		—	—
3/4" x 3/4"	GV-30700-70		—	—
1" x 3/4"	GV-30700-71		GV-30800-53	
1" x 1"	GV-30700-72		GV-30800-54	
1" x 1 1/2"	GV-30700-74		GV-30800-55	
1 1/2" x 3/4"	GV-30700-76		GV-30800-57	
1 1/2" x 1"	GV-30700-77		GV-30800-58	
1 1/2" x 1 1/4"	GV-30700-78		GV-30800-59	
1 1/2" x 1 1/2"	GV-30700-79		GV-30800-60	
1 1/2" x 2"	—	—	GV-30800-61	
E. 90° elbows				
3/4"	GV-30700-80		—	—
1"	GV-30700-81		GV-30800-62	
1 1/2"	GV-30700-82		GV-30800-63	
2"	GV-30700-83		GV-30800-64	
F. 45° elbows				
3/4"	GV-30700-84		—	—
1"	GV-30700-85		GV-30800-65	
1 1/2"	GV-30700-86		GV-30800-66	
2"	GV-30700-87		GV-30800-67	
G. Tees				
3/4"	GV-30700-88		—	—
1"	GV-30700-89		GV-96449-XX	
1 1/2"	GV-30700-90		GV-30800-69	
2"	GV-30700-91		GV-30800-70	
H. Crosses				
1"	GV-30700-92		GV-30800-71	
1 1/2"	GV-30700-93		GV-30800-72	
2"	GV-30700-94		GV-30800-73	
I. Clamps				
1/2" to 3/4"	—	—	GV-30800-74	
1" to 1 1/2"	—	—	GV-30800-75	
2"	—	—	GV-30800-76	
2 1/2"	—	—	GV-30800-77	
3"	—	—	GV-30800-78	
4"	—	—	GV-30800-80	





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

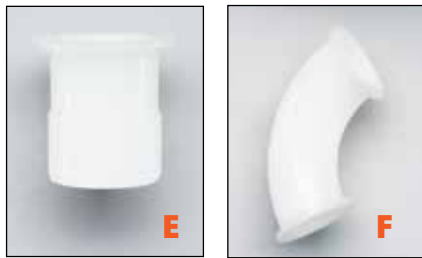
Maintain sanitary conditions in your processes

- 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 Path



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

Specifications

Clamp size	Inner dimension (based on SS tube ID)
¾" mini	¾"
1" maxi	7/8"
1" ladish†	7/8"
1½"	1¾"
2"	1¾"
2½"	2¾"
3"	2¾"

†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"	GV-30508-21	
1" to 1½"	GV-30508-23	
2"	GV-30508-25	
3"	GV-30508-27	
4"	GV-30508-29	

Gaskets (not shown)

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

LEVIFLOW® Single-Use Precision Ultrasonic Flowmeters

Be ultraclean with your high-purity fluids



- 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



REQUIRED System Components

- 1) Starter kit
- 2) Flow sensor

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.

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%	GV-24500-07	

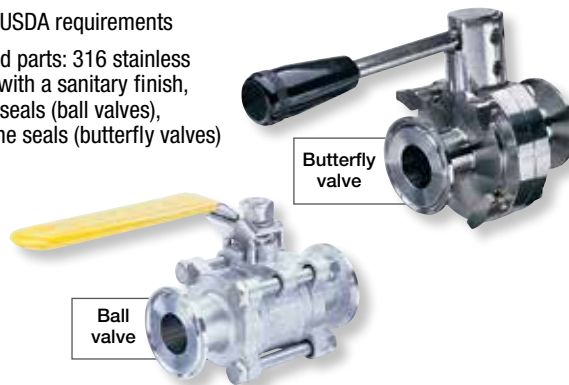
2. Single-Use Flow Sensors

Model	±1% accuracy at flow range	Connection size	Sterile	Catalog number	Price
LFS-03SU-Z	35 to 800 mL/min	¾" Tri-Clamp	—	GV-24500-08	
LFS-03SU-Z-G25			Yes	GV-24500-09	
LFS-06SU-Z	1.7 to 8 L/min	¾" Tri-Clamp	—	GV-24500-10	
LFS-06SU-Z-G25			Yes	GV-24500-11	
LFS-06SU-Z-SC1	0.08 to 8 L/min	¾" Tri-Clamp	—	GV-24500-12	
LFS-06SU-Z-SC1-G25			Yes	GV-24500-13	
LFS-10SU-Z	4.7 to 20 L/min	½" Tri-Clamp	—	GV-24500-14	
LFS-10SU-Z-G25			Yes	GV-24500-15	
LFS-20SU-Z	18.8 to 80 L/min	1" Tri-Clamp	—	GV-24500-16	
LFS-20SU-Z-G25			Yes	GV-24500-17	

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
Ball valves					
¾"	40	1000 psi at 70°F (21°C)	400°F (204°C)	GV-30530-00	
1"	70			GV-30530-01	
1½"	120			GV-30530-02	
2"	340			GV-30530-03	
Butterfly valves					
1"	—	145 psi at 68°F (20°C)	200°F (93°C)	GV-30531-01	
1½"	—			GV-30531-02	
3"	—			GV-30531-05	

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



Specifications

Accuracy: ±0.25% full-scale	Display: 5-digit LCD, 0.88"H
Dial size: 3½" (89 mm)	Process connection: 1½" sanitary Tri-Clamp®
Operating temp: 14 to 140°F (10 to 60°C)	Wetted materials: 316 stainless steel
Units of measure: psi, " H ₂ O, ft H ₂ O, mPa, mbar, kPa, kg/cm ² , bar, " Hg, mm Hg	Casing: 300 stainless steel
	Lens: polyester
	Power: two C batteries

Range	Resolution	Catalog number	Price
30 to 0" Hg	0.0001" Hg	GV-68901-50	
0 to 30 psi	0.0001 psi	GV-68901-51	
0 to 60 psi	0.005 psi	GV-68901-52	
0 to 100 psi	0.005 psi	GV-68901-53	
0 to 200 psi	0.01 psi	GV-68901-54	

[GV-17040-12](#) NIST-traceable calibration with data

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and reproductive harm. For more information, visit www.P65Warnings.ca.gov

Whatman™ 50-mm In-Line Filters

Versatile and cost-effective for large-volume samples

Filter up to one liter with one device; filtration area is 16 cm². Use with 6 to 10 mm hose. Autoclavable. Hold up volume with air purge is less than 0.1 mL. Maximum operating pressure is 60 psi (4.1 bar).

PTFE membrane filters are ideal for chemically aggressive solutions. Use as protective vents or for in-line filtration and isolation applications. Filter 29700-76 features a polypropylene prefilter.

PES aqueous solution filters are low protein binding and contain no surfactants. A glass microfiber prefilter extends the life of the membrane.

Polypropylene filters have excellent flow rate characteristics and are ideal for filtering up to 1 L of aqueous and solvent samples.



Membrane	Pore size	Sterile	Catalog number	Qty/pk	Price/pk
PTFE	0.1 µm	No	GV-29700-70	10	
	0.2 µm	No	GV-29700-72		
	0.45 µm	No	GV-29700-74		
	1.0 µm	No	GV-29700-76		
PES/GMF†	0.2 µm	Yes	GV-29700-78	10	
	0.45 µm	Yes	GV-29700-80		
PP	5.0 µm	No	GV-29700-86	10	
	10.0 µm	No	GV-29700-88		

†GMF = glass microfiber

Minntech® Hollow Fiber Filter Capsules

Provide high flow rates with low pressure drop

- Steam sterilize capsules in-line or autoclave off-line
- Polysulfone membrane offers low protein binding

These hollow fiber filters offer superior performance in a compact size. Filters have up to six times more surface area compared to other pleated membrane filters, providing greater capacity and longer filter life. The unique membrane structure helps remove bacteria, high-level endotoxins, spores, and pyrogens†—ideal for a variety of water purification applications. Maximum differential pressure is 30 psi (2 bar). Capsules have a polycarbonate case and end caps and polyurethane end seals. Capsules are provided nonsterile.

Pore size (absolute)	Effective filtration area	Connections	Catalog number	Qty/cs	Price/cs
Medium flow: 0.5 to 2.5 LPM					
0.05 µm	1858 cm ²	3/8" hose barb	GV-29880-06	6	
		1/4" NPT(M)	GV-29880-12		
0.1 µm	1858 cm ²	3/8" hose barb	GV-29880-14	6	
		1/4" NPT(M)	GV-29880-08		
0.2 µm	1858 cm ²	3/8" hose barb	GV-29880-10	6	
		1/4" NPT(M)	GV-29880-22		
High flow: 1 to 5.7 LPM					
0.05 µm	5575 cm ²	1/4" NPT(M)	GV-29880-28	6	
		3/8" NPT(M)	GV-29880-30		
0.1 µm	5575 cm ²	1/4" NPT(M)	GV-29880-32	6	
		3/8" NPT(M)	GV-29880-34		
0.2 µm	5575 cm ²	1/4" NPT(M)	GV-29880-36	6	
		3/8" NPT(M)	GV-29880-38		

†Only 0.05 and 0.1 µm pore size membrane filters remove pyrogens.



CultureGard Hollow Fiber Filter

Reduce the risk of contamination

Naturally hydrophilic cellulose hollow fiber membrane exhibits low extractables and high biocompatibility. Use two filters in series to form a sterile barrier when feeding media to the bioreactor. Easily change the first filter if it becomes plugged while the second continues to maintain culture sterility.

Fiber filter is made of polysulfone housing and end caps, and features polypropylene autotvent to prevent air locking—operate filter in any position. Includes 1/8" hose adapters and clamps. Nonsterile and autoclavable.

Specifications

Maximum temperature: 113°F (45°C) **Maximum pressure:** 30 psig **Housing/end caps:** polysulfone

Pore size	Connections (inlet/outlet)	Catalog number	Qty/bx	Price/bx
0.2 µm	Female luer lock/male luer lock	GV-29510-50	12	

Applications

- ✓ Perfusion
- ✓ Bioreactor feed



PendoTECH Pressure Monitoring and Transmitting System

Monitor process pressure accurately

- Ideal for applications such as tangential flow filtration, cross flow filtration, depth filtration, bioreactor monitoring, and chromatography



Applications

- ✓ TFF
- ✓ Bioreactor monitoring
- ✓ Depth filtration

Adapter tee 19406-34 assembled to luer sensor 19406-32

1. PressureMAT™ Monitor

- Data output capability to a PC or control system
- User-configurable min/max alarm set points

The PressureMAT combines a pressure monitor, data logger, alarm, and transmitter in one simple control box. Designed for use with single-use, in-line pressure sensors. Each channel takes pressure readings once per second. Process pressure is displayed on the easy-to-read LCD. System is easily calibrated to zero through a single button. The PressureMAT may also transmit output via a 4 to 20 mA signal or can provide RS-232 data transfer for use in common PC applications, such as the PressureMAT Data Acquisition Software or Excel®, through WinWedge or Hyper Terminal software.



Number of process sensor inputs	Number of outputs	Accuracy	Power	Catalog number	Price
2 pressure	2 relay, 2 analog, or 4 relay	±0.1% full-scale	12 to 24 VDC	GV-19406-03	
4 pressure	4 analog			GV-19406-07	
3 pressure; 1 flow	4 analog			GV-19406-11	

[GV-19406-82](#) RS-232 to USB serial adapter cable, 6 ft (1.8 m)

[GV-19406-87](#) Masterflex® interface cable for L/S pump

[GV-19406-95](#) PressureMAT stand



REQUIRED System Components

- 1) PressureMAT™ monitor
- 2) Single-use pressure sensor(s)

2. Single-Use Pressure Sensors

- Economical alternative to stainless steel sensors currently in the market
- Sensors priced for single-use systems but may be reused

Sensors measure static and dynamic process pressure and are perfect components for disposable systems requiring sterilization but also minimal downtime. Sensors feature an integral flow sensor with no dead legs and no fluid path obstructions. All pressure sensors are manufactured in a FDA-registered, ISO 13485-certified facility; in an ISO Class 8 cleanroom. Sensors are made from USP Class VI-compliant polycarbonate or caustic-resistant polysulfone. Both materials are gamma stable. Sensors are 100% tested for accuracy and leaks during the manufacturing process. Connect sensor to PressureMAT monitor with 3.6-m reusable cable. Sensors are designed for use up to a maximum pressure of 5.3 bar.

Process-Scale Sensors connect directly to the tubing line and are available up to 1" hose barb (see [ColeParmer.com](#)).

Small-Scale Sensors are available with luer connections and may connect directly to the fluid line with luer adapters or indirectly by using a 1/4" or 3/8" barbed adapter tee. Both connection setups have been tested for accuracy.

Material	Connection	Catalog number	Price/ea
Process-scale sensors			
Polycarbonate, non-sterile	1/4" tubing ID	GV-19406-21	
	3/8" tubing ID	GV-19406-23	
	1/2" tubing ID	GV-19406-28	
Polysulfone, non-sterile	3/4" tubing ID	GV-19406-29	
	1/4" tubing ID	GV-19406-27	
	3/8" tubing ID	GV-19406-25	
	1/2" tubing ID	GV-19406-22	
	3/4" tubing ID	GV-19406-24	
Small-scale sensors			
Polycarbonate, sterile	Female luer	GV-19406-32	
Polysulfone, non-sterile	Female luer	GV-19406-20	

Note: The single-use sensors will work with third-party pressure monitors. Please contact Cole-Parmer for more information about adapting the sensors to existing monitors.

[GV-19406-34](#) Adapter tee, 1/4" barb x 1/4" barb x male luer, polycarbonate; for 19406-22, -32

[GV-19406-36](#) Adapter tee, 3/8" barb x 3/8" barb x male luer, polycarbonate; for 19406-22, -32

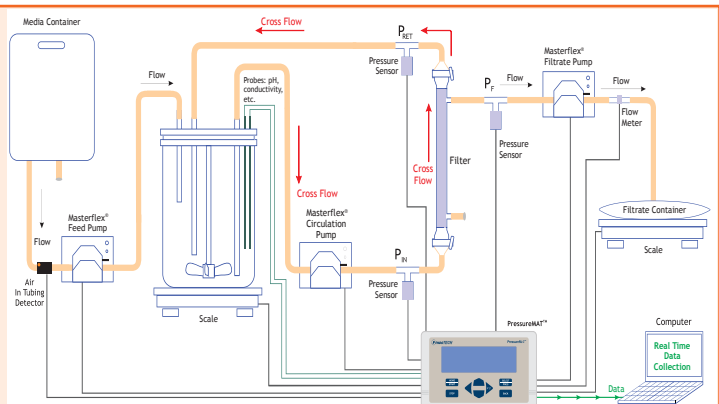
[GV-19406-35](#) Adapter tee, 1/2" barb x 1/2" barb x male luer, polycarbonate; for 19406-22, -32

[GV-19406-80](#) Sensor cable with wire leads for third-party monitors, 12 ft (3.6 m)

Where can I use PendoTECH products?

A better question is where can't you use PendoTECH pressure monitors! The single-use design for sensors make them an easy addition both upstream and downstream:

- Line pressure before and after a chromatography column
- Back pressure monitoring in filtration feed lines
- Inlet pressure for a circulation pump during filtration
- Line pressure monitoring to a filtrate vessel
- Vent line gas pressure from a bioreactor
- Centrifugation output
- Perfusion



Texwipe® Cleanroom Swabs

Meet your validation requirements

– Ideal for cleaning small surface areas and for cleaning validation

Sealed swab handles are thermo-formed. Swabs with ESD handles eliminate damage from static electricity and are effective in all humidities.

Fabric Swabs have excellent chemical compatibility. Sealed swabs contain low chloride and other ionic contaminants.

Foam Swabs have sealed handles and are constructed from 100 pores-per-inch reticulated urethane foam—ideal for solvent dispersion and low-viscosity adhesives. Sealed foam swabs are perfect for removal of solvents and fluxes. Cleanfoam® swabs feature low levels of nonvolatile residue, particle generation, and are constructed of open-cell polyurethane foam for excellent solvent capacity.

Swab tip	Tip description	Handle description	Tip length	Swab length	Compliance	Qty/pk	Catalog number	Price/pk
Fabric swabs								
	Knit polyester	Sealed polypropylene	0.39" (1 cm)	2.75" (7 cm)	—	50	GV-33676-01	
	Knit polyester	Sealed polypropylene	0.66" (1.7 cm)	6.39" (16.2 cm)	—	100	GV-33676-07	
	Knit polyester	Sealed polypropylene	0.16" (0.4 cm)	2.76" (7 cm)	ISO Class 3	500	GV-33677-58	
	Knit polyester	Sealed polypropylene	0.27" (0.7 cm)	6.39" (16.2 cm)	ISO Class 3	100	GV-33677-60	
	Knit polyester	Sealed polypropylene	0.5" (1.3 cm)	5.00" (12.7 cm)	ISO Class 3	100	GV-33677-62	
	Knit polyester	Sealed polypropylene	0.5" (1.3 cm)	5.00" (12.7 cm)	—	100	GV-33677-63	
	Knit polyester	Sealed polypropylene	1.01" (2.6 cm)	5.02" (12.8 cm)	—	20	GV-33677-64	
	Knit polyester	Sealed polypropylene	1.01" (2.6 cm)	5.02" (12.8 cm)	—	20	GV-33677-65	
Foam swabs								
	Foam bud	Hardwood	1.10" (2.8 cm)	6.06" (15.4 cm)	—	500	GV-33676-03	
	Cleanfoam	Polypropylene	0.13" (0.3 cm)	2.75" (7 cm)	ISO Class 5	500	GV-33677-50	
	Flexible cleanfoam	Polypropylene	0.13" (0.3 cm)	2.67" (6.8 cm)	ISO Class 5	500	GV-33677-52	
	Cleanfoam	Polypropylene	0.25" (0.6 cm)	6.37" (16.2 cm)	ISO Class 5	500	GV-33677-55	
	Circular foam	Sealed polypropylene	0.81" (2.1 cm)	5.20" (13.2 cm)	ISO Class 5	100	GV-33677-56	
	Cleanfoam	ESD	0.14" (0.4 cm)	3.50" (8.9 cm)	ISO Class 5	500	GV-33677-72	
	Cleanfoam	ESD	0.15" (0.4 cm)	2.75" (7 cm)	ISO Class 5	500	GV-33677-74	

Kimberly-Clark® Critical Task Wipes

Low-lint, absorbent, soft, and nonabrasive

- Won't scratch delicate surfaces
- Single- and two-ply delicate task wipes are made of a finely textured tissue
- Solvent-resistant Kimtech CL4 wipes are made of a single-ply, nonwoven fabric specially bonded to eliminate surface fibers and trap particles

Description	Compliance	Wipe size	Qty/bx	Box/cs	Catalog number	Price/cs*
Delicate task wipes						
Kimwipes® EX-L, 1 ply	—	4 1/2" x 8 1/2"	280	1	GV-25000-35	
		4 1/2" x 8 1/2"	280	6	GV-25000-37	
		4 1/2" x 8 1/2"	280	60	GV-33670-04	
		15" x 16 3/4"	140	15	GV-33670-06	
Kaydry® EX-L, 2 ply	—	15" x 16 3/4"	90	15	GV-33670-10	
Cleanroom wipes						
Kimtech CL4 Cleanroom	ISO Class 4	12" x 12"	100	5	GV-33670-20	

*Discounts: Save 10% on 10 to 49 cases and 15% on 50 or more cases.



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- Bioreagents

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available when you need it**

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Custom blending services and express delivery also available.

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Description	Volume/Mass	Catalog number	Price
Sodium Hydroxide, 1.0 Normal	1 L	GV-88400-89	
Water, ACS Reagent Grade, ASTM Type I	4 L	GV-88401-21	
Isopropanol, 70% (v/v) Aqueous Solution	1 gal.	GV-88400-48	
Acetone, ACS Grade, Poly Bottle	4 L	GV-88406-15	
Sulfuric Acid Solution, 1.00 Normal	1 L	GV-88401-09	
Reagent Alcohol, ACS Reagent Grade, Anhydrous, Absolute	1 gal.	GV-88400-66	
Hydrochloric Acid, 1.00 Normal	1 L	GV-88400-40	
Iodine (Iodine-Iodide), 0.100 Normal (N/10)	32 oz	GV-88400-47	
Silver Nitrate, 0.100 Normal (N/10)	1 L	GV-88400-70	
Acetic Acid, Glacial, ACS Grade	2.5 L	GV-88401-62	
Sodium Chloride, ACS Grade	500 g	GV-88404-60	

...or find them all at ColeParmer.com/Chemicals

Sterilized Sampling Bottle Assemblies

Safely transfer, sample, and store biopharmaceutical products and reagents

- Ideal for cell count, sterility testing, metabolic testing, and more
- Secure, single-piece cap/tubing assembly eliminates contamination and product loss due to loose connections
- Presterilized by gamma irradiation—eliminates labor and validation costs associated with assembly and cleaning

Cap assembly includes a seamless liner with premolded C-Flex® fill and vent tubes to create an unobstructed fluid path. The 18" (45.7 cm) fill tube is plugged at the terminal end to maintain assembly sterility until use. Vent tube includes a 0.2-micron Pall® Acrodisc PTFE vent filter to prevent infiltration by contaminants. Vent filter is hydrophobic to guard against loss of costly product or media during filling or emptying. The one-piece liner eliminates the risk of bacterial entrapment and contamination and forms an elastomeric seal between cap and bottle rim.

C-Flex tubing is manufactured according to cGMP and meets USP Class VI and USDA requirements. Tubing can withstand temperatures from -100 to 275°F (-73 to 135°C). Offers exceptional tensile and tear strength, extremely low extractables, and excellent biocompatibility. The smooth inner surface reduces absorption and protein binding.

What's included: Thermo Scientific™ Nalgene™ clear PETG bottle, 38-mm cap, C-Flex tube/liner assembly with 1/8" ID x 1/4" OD tubing, and 0.2-micron vent filter.

Applications

- ✓ Fermentation
- ✓ Purification
- ✓ Final filling



Bottle volume	Catalog number	Price
125 mL	GV-95644-00	
250 mL	GV-95644-02	
500 mL	GV-95644-04	
1000 mL	GV-95644-06	
2000 mL	GV-95644-08	

Thermo Scientific™ Nalgene™ Sterile Media Bottles, PETG

No prewashing needed



- Radiation-sterilized and nonpyrogenic—no need to wash, depyrogenate, or autoclave
- PETG bottle with HDPE closures for long-term storage and sterility



Capacity mL (oz)	Closure size	Qty/ cs	Catalog number	Price/ cs
30 (1)	20 mm	96	GV-06254-00	
60 (2)	24 mm	96	GV-06254-10	
125 (4)	38-430 mm	48	GV-06254-20	
250 (8)	38-430 mm	48	GV-06254-30	
500 (16)	38-430 mm	24	GV-06254-40	
1000 (32)	38-430 mm	24	GV-06254-50	
2000 (128)	53B mm	12	GV-06254-60	

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 1/8" (2.1 mm) OD tubing. Standard clamp accepts flexible tubing to 1/2" (12.7 mm) OD.

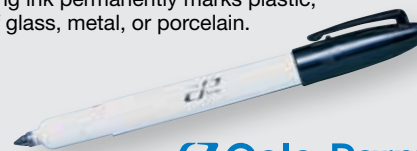


[GV-06833-01](#) Mini tubing clamp. Pack of 25

[GV-06833-00](#) Tubing clamp. Pack of 25

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.



Cole-Parmer®

Color	Qty/pk	Catalog number	Price
Black	10	GV-09964-00	
Blue		GV-09964-10	
Green		GV-09964-15	
Red		GV-09964-20	

Cylindrical Tanks with Cover, HDPE and PP

Sturdy design complies with FDA 21 CFR 177.1520

- Contain drips with stepped-flange design
- Get easier sampling of liquids—tanks over 30 gallons are designed for near-total drainage
- No separate part number for lid—all tanks include lid of same wall thickness
- Rated for use with 1.8 specific gravity media
- High-density polyethylene (HDPE) tanks have good chemical resistance and max temperature of 150°F (65°C)
- Polypropylene (PP) tanks offer good stress-crack and chemical resistance; max service temperature is 220°F (104°C)



ISO 9001:2008
CERTIFIED SUPPLIER

Gallons (liters)	Dimension (H x OD) [†]	Graduation gal. (liters)	Wall	Shpg wt lb (kg)	HDPE tanks		PP tanks	
					Cat. no.	Price	Cat. no.	Price
15 (57)	27" x 13"	1 (4)	3/16"	12 (5)	GV-06317-65		GV-06317-68	
30 (114)	30" x 18"	2.5 (10)	3/16"	18 (8)	GV-06317-70		GV-06317-73	
55 (208)	36" x 22"	2.5 (10)	1/4"	31 (14) [‡]	GV-06317-75		GV-06317-78	
80 (303)	48" x 24"	5 (20)	1/4"	42 (19) [‡]	GV-06317-80		GV-06317-83	
100 (379)	44" x 28"	5 (20)	1/4"	49 (22) [‡]	GV-06317-10		GV-06317-13	
150 (568)	49" x 31"	10 (40)	1/4"	77 (35) [‡]	GV-06317-20		GV-06317-23	
200 (757)	51" x 36"	25 (100)	1/4"	136 (62) [‡]	GV-06317-31		GV-06317-34	
275 (1041)	49" x 42"	25 (100)	1/4"	193 (88) [‡]	GV-06317-41		—	
360 (1363)	49" x 48"	25 (100)	1/4"	206 (93) [‡]	GV-06317-85		GV-06317-88	

[†]Measured at bottom of tank. Add 2" for approximate OD at top of tank.

[‡]Ship by motor freight only.

Sterile Single-Use Tank Liners, LLDPE

Ready to use

- Save money and time—no more washing, cleaning, or revalidation
- Sterile and pyrogen-free



Capacity Gal. (L)	Size (H x OD)	Catalog number	Qty/pk	Price/pk
13.2 (50)	27" x 13"	GV-06310-01	40	
34.4 (130)	30" x 18"	GV-06310-02	20	
52.8 (200)	36" x 22"	GV-06310-04	20	
79.3 (300)	48" x 24"	GV-06310-06	20	
106 (401)	44" x 28"	GV-06310-08	20	
148 (560)	49" x 31"	GV-06310-10	10	
198 (750)	51" x 36"	GV-06310-12	10	
264 (1000)	49" x 42"	GV-06310-14	10	
343 (1298)	49" x 48"	GV-06310-16	10	

Thermo Scientific™ Nalgene™ FDA-Compliant Carboys, PP

Get a better grip with two-handle construction

- Dispense solutions more quickly with optional spigot models—accept 1/4", 1/2", or 3/8" ID tubing
- Leakproof polypropylene (PP) cap
- Autoclavable



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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
FDA-compliant carboys, USP Class VI				
10 (2½)	83B	GV-06063-12	1	
20 (5)	83B	GV-06063-22		
50 (13)	83B	GV-06063-32		
FDA-compliant carboys with spigot, USP Class VI				
10 (2½)	83B	GV-06064-50	1	
20 (5)	83B	GV-06064-60		
50 (13)	83B	GV-06064-70		

Cole-Parmer® Economical Heavy-Duty Carboys, 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



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Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
Heavy-duty carboys with shoulder handle				
5 (1¼)	45 mm	GV-62507-00	1	
10 (2½)	90 mm	GV-62507-10	1	
20 (5¼)	90 mm	GV-62507-20	1	
Heavy-duty carboys with shoulder handle and spigot				
5 (1¼)	45 mm	GV-62507-05	1	
10 (2½)	90 mm	GV-62507-15	1	
20 (5¼)	90 mm	GV-62507-25	1	

Graduated Sample Containers, PP

Graduated for easier sampling

- Durable design—translucent, unbreakable, and chemical resistant
- Sterile containers are individually wrapped



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Capacity mL (oz)	Description	Catalog number	Qty/pk	Price/pk
118 (4)	Sterile, no tab	GV-06049-40	100	
118 (4)	Nonsterile with white tab	GV-06049-50	500	



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" Bag is designed to sample surfaces and equipment for *Listeria*, *Salmonella*, and other food-borne pathogens; contains a small sponge that is free of bactericides and noninhibitory; with white labeling area.

06499-10

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.

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

Snap-Seal™ Sample Containers

Won't spill or leak

- Hinged cap remains locked, reducing the chance of contamination
- Autoclavable polypropylene

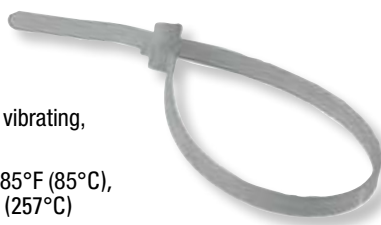


Capacity	Catalog number	Qty/pk	Price/pk
13 mL	GV-62261-00	500	
45 mL	GV-62261-10	400	
120 mL	GV-62261-20	200	
240 mL	GV-62261-30	100	
300 mL	GV-62261-40	100	

Solid-Design Cable Ties, Nylon

Won't corrode or stretch—made from injection-molded plastic

- Simply bend tip and pull through locking mechanism to secure
- Won't lose tension—even in vibrating, oily, or wet environments
- Withstand temperatures to 185°F (85°C), with melting point of 495°F (257°C)



Length	Bundle dia	Color	Catalog number	Qty/pk	Price/pk
Miniature, 18-lb tensile strength					
4" (10.2 cm)	7/8" (2.2 cm)	White	GV-06830-52	1000	
Intermediate, 40-lb tensile strength					
5½" (14.0 cm)	1¼" (3.2 cm)	White	GV-06830-54	1000	
8" (20.3 cm)	2½" (5.4 cm)	White	GV-06830-30	1000	
Standard, 50-lb tensile strength					
7½" (19.1 cm)	1¾" (4.4 cm)	White	GV-06830-56	1000	



Standup bags stay upright



Rack

Buy More...Save More!

\$ 20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity oz (mL)	Size (W x L)	Thickness (mil)	Catalog number	Qty/pk	Price/pk
STERILE					
Sampling bags without white labeling area					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	GV-06499-10	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	GV-06499-20	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	GV-06499-30	500	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	3.0	GV-06499-40	500	
42 (1242)	6" x 15" (15.2 x 38.1 cm)	3.0	GV-06499-50	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	GV-06499-54	500	
Standup sampling bags with white labeling area					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.5	GV-06499-16	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	3.0	GV-06499-21	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	GV-06499-31	500	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	4.0	GV-06499-33	250	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	4.0	GV-06499-35	250	
Sampling bags with white labeling area					
2 (58)	3" x 5" (7.6 x 12.7 cm)	2.5	GV-06499-60	500	
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	GV-06499-70	500	
7 (207)	3¾" x 7" (9.5 x 17.8 cm)	2.5	GV-06499-72	500	
13 (384)	5¼" x 7½" (13.3 x 19.1 cm)	2.5	GV-06499-74	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	GV-06499-80	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	GV-06499-85	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	GV-06499-89	500	
92 (2721)	10" x 15" (25.4 x 38.1 cm)	4.0	GV-06499-94	250	
123 (3637)	10" x 20" (25.4 x 50.8 cm)	4.0	GV-06499-98	250	
184 (5441)	15" x 20" (38.1 x 50.8 cm)	4.0	GV-06499-99	100	
"Speci-Sponge" bag for surface sampling with sponge					
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	GV-06499-13	100	
Sodium thiosulfate bags for water sampling with tablet					
3½ (100)	3" x 7¼" (7.6 x 18.4 cm)	2.5	GV-06499-90	100	
10½ (300)	4½" x 9" (11.4 x 22.9 cm)	2.5	GV-06499-95	100	

GV-66203-10 Carrying rack for 2- and 4-oz bags. Double-grid design keeps bags upright and has 15 compartments. Vinyl coated, autoclavable

GV-66203-00 Carrying rack for 18-oz bags. Double-grid design keeps bags upright. Rack has 20 compartments. Vinyl coated, autoclavable

WARNING: This product can expose you to chemicals including aniline, which is known to the State of California to cause cancer. For more information, visit [www.P65Warnings.ca.gov](#)

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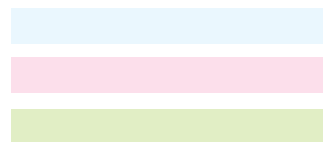
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MASTERFLEXLIVE™

See pages 8–9

Masterflex® L/S® Easy-Load® Pump Heads

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See page 15

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See page 14