

Applications

Bio-Chem Fluidics products are used by the world's leading analytical equipment manufacturers. They are used in a wide variety of applications; sometimes stand-alone (such as our [Chromatography Columns](#)), sometimes in many places within the same instrument.



BIO-CHEM VALVE

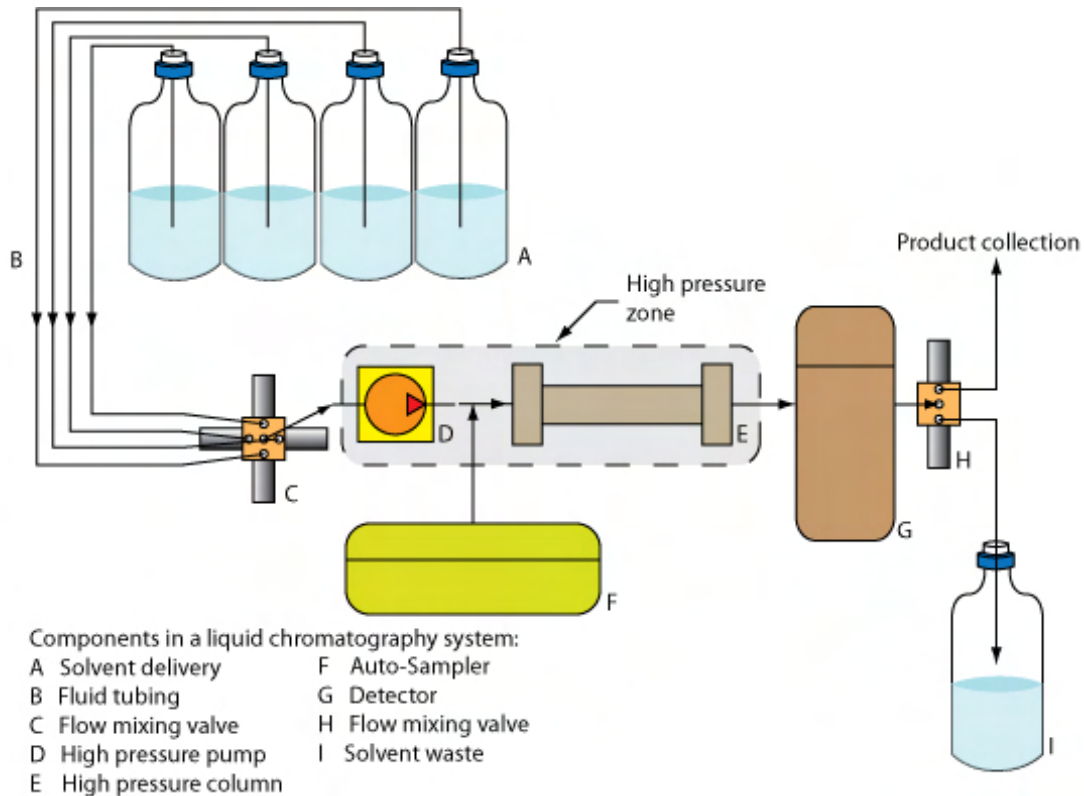
- [Solenoid Operated Micro Pumps](#)
- [Isolation Valves](#)
- [Flow Selection Valves](#)
- [Pinch Valves](#)
- [Relief Valves](#)
- [Electric Rotary Valves](#)
- [Solenoid Valve Accessories](#)

Omnifit

- [Fitting Systems](#)
- [Solvent Safety Bottle Caps](#)
- [Chromatography Columns](#)
- [Connectors & Adaptors](#)
- [Manual Rotary Valves](#)
- [Filters, Check Valves, Bubble Trap](#)

Systems approach to products and applications

The diagram below represents the layout of a "typical" liquid chromatography system. We've identified the main components of the system and list below what Bio-Chem Fluidics products can be used with or inside those components.



A. Solvent delivery

Solvent Safety Bottle Caps - used to prevent harmful solvent vapors from being released into the atmosphere. Also prevents spillage. More on [Solvent](#)

Tubing - both flexible and semi-rigid tubing is used to withdraw solvent from the bottle. More on [tubing](#) here

Omni-Lok fittings - used here to provide positive connections between the tubing and the bottle cap. More on [Omni-Lok and our other fittings systems](#) here.

COMPLETE Fluid System Solutions

BIO-CHEM FLUIDICS is a leading fluidic systems and components design and manufacturing company dedicated to providing the highest quality Precision Fluid Handling equipment and components. This includes our **BIO-CHEM VALVE™** Solenoid Operated [Micro-Pumps](#), [Isolation Valves](#) and [Pinch Valves](#) and our **OMNIFIT®** [Fittings](#), [Connectors](#), [Bottle Caps](#) and [Chromatography Columns](#).



Offering [CUSTOMIZED SOLUTIONS](#) for our OEM clients

BIO-CHEM VALVE

- [Solenoid Operated Micro Pumps](#)
- [Isolation Valves](#)
- [Flow Selection Valves](#)
- [Pinch Valves](#)
- [Relief Valves](#)
- [Electric Rotary Valves](#)
- [Solenoid Valve Accessories](#)

Our strength lies in the machining of inert materials to produce unmatched chemical resistance for a wide variety of fluid handling applications. As well as many standard products we also offer fully [Customized Solutions](#) for our OEM clients, across our full range of products. Our customized Solenoid Operated [Micro-Pumps](#), [Isolation Valves](#) and [Pinch Valves](#) are used by many of the world's leading analytical equipment manufacturers.

Bio-Chem Fluidics under our **Bio-Chem Valve™** and **Omnifit®** brands sell a wide range of engineered items including:

BIO-CHEM VALVE

Inert solenoid valves, electric rotary valves and pumps



Omnifit

- [Fitting Systems](#)
- [Solvent Safety Bottle Caps](#)
- [Chromatography Columns](#)
- [Connectors & Adaptors](#)
- [Manual Rotary Valves](#)
- [Filters, Check Valves, Bubble Trap](#)

Omnifit

Inert fluid handling components & labware



This broad range of products enables us to offer a complete fluid system

solution for a wide range of industries including analytical chemistry, clinical diagnostics and medical device manufacturers as well as a world-class labware portfolio for the scientific community.



Solenoid valves with an isolated solenoid for use with aggressive and high-purity fluids.

- 2-way or 3-way configuration
- Low Power Consumption
- Fully Isolated Solenoid
- Choice of PTFE, PEEK™, PPS, Tefzel®, EPDM, Viton® and pefluoroelastomer wetted parts
- Manifold Mountable for Minimizing Leak Points and Space Requirements
- Designed for over 20 million cycles continuously
- Minimal Space Requirements
- Fast Response Time
- Minimal Dead Space
- Design Pressure Limits for 15 to 550 psig

Compact valve configurations

The Bio-Chem Valve isolation valves are available with three valve sizes, using 0.38 inch, 0.75 inch and 1.00 inch solenoid shell diameters. These sizes correspond to orifice diameters spanning from 0.032 inches to 0.125 inches, covering a broad range of application requirements. Valves are offered in 2-way normally open, 2-way normally closed and 3-way configurations.

Choice of inert wetted materials

The isolation valve design ensures that the only wetted parts are the valve diaphragm and the valve body. PTFE is a standard material for the majority of isolation valves, offering the most chemically inert solution available. For different mechanical and chemical requirements, the customer also has the option of using PEEK™, PPS or Tefzel® for the body material and EPDM, Viton® or a perfluoroelastomer for the diaphragm material.

Quick-Change Customization™

Through Bio-Chem Valve's Quick-Change Customization™ process, the standard isolation valve configurations shown on this product data sheet can be modified to meet the customer's specifications. For possibilities regarding solenoid and spring response times, operating pressures, port threads and locations, body configurations, wetted material and other features, please consult Bio-Chem Valve and Omnifit.

Inside.....

Specifications

Valve series	2
Electrical	2
Orifice diameters	2
Max pressures	2
Internal Volumes	2
Flow factors	2
Reaction times	3
Port threads	3
Lead wires	3
Fittings	3
Mounting	3
Wetted materials	4
Ordering information	5
Installation drawings	5

Specifications

Valve Series

The isolation valves are offered in five valve series, distinguished by the solenoid shell size, manifold mountability, and flow configuration:

Valve Series	Shell Diameter	Manifold Mountable	Flow Configuration
038T2	0.38 inches	no	2-way NC
039T2	0.38 inches	yes	2-way NC
075T2	0.75 inches	no	2-way NC/NO
075T3	0.75 inches	no	3-way
079NC	0.75 inches	yes	2-way NC/NO
100T2	1.00 inches	no	2-way NC/NO
100T3	1.00 inches	no	3-way

Electrical

Valve Series	Voltage	Power @ 70°F (21°C)	Power with CoolCube™	Current @ 70°F (21°C)
038T2	12 VDC	1.8 Watts	0.22 Watts	0.17 amps
	24 VDC	1.9 Watts	0.22 Watts	0.08 amps
039T2	12 VDC	1.8 Watts	0.22 Watts	0.17 amps
	24 VDC	1.9 Watts	0.22 Watts	0.08 amps
075T2	12 VDC	2.8 Watts	0.29 Watts	0.22 amps
	24 VDC	2.9 Watts	0.29 Watts	0.10 amps
075T3	12 VDC	2.8 Watts	0.29 Watts	0.22 amps
	24 VDC	2.9 Watts	0.29 Watts	0.10 amps
079NC	12 VDC	2.8 Watts	0.29 Watts	0.22 amps
	24 VDC	2.9 Watts	0.29 Watts	0.10 amps
100T2	12 VDC	4.0 Watts	0.44 Watts	0.32 amps
	24 VDC	4.0 Watts	0.44 Watts	0.16 amps
100T3	12 VDC	4.0 Watts	0.44 Watts	0.32 amps
	24 VDC	4.0 Watts	0.44 Watts	0.16 amps

Note: 115 VAC and 220 VAC solenoid coils are also available on all valve series except 038 and 039.

Note 2: The Bio-Chem Valve CoolCube™ control module allows the application of over-voltage to actuate the valve (e.g. using 24 VDC to actuate a valve rated for 12 VDC). After a delay of 110 milliseconds, the CoolCube™ drops the voltage to 1/3 (e.g. to 8 VDC from the original 24 VDC), which is sufficient to hold the valve in position. The CoolCube50™ is designed for use with 038 and 039 series valves and drops the voltage to 1/2. (Please refer to the CoolCube™ specification sheet.)

Orifice diameter options & maximum operating pressures

Valve Series	Orifice Diameters				
	0.032" (0.80 mm)	0.046" (1.17 mm)	0.054" (1.40 mm)	0.062" (1.57 mm)	0.092" (2.34 mm) (3.18 mm)
038T2	20 psi	n/a	20 psi	n/a	n/a
039T2	20 psi	n/a	20 psi	n/a	n/a
075T2	20 psi	n/a	20 psi	20 psi	n/a
075T3	15 psi (NC/NO) 20 psi (Com)	15 psi (NC/NO) 20 psi (Com)	n/a	n/a	n/a
079NC	20 psi	n/a	n/a	20 psi	n/a
100T2NC	n/a	n/a	n/a	15 psi	15 psi
100T2NO	n/a	n/a	n/a	10 psi	10 psi
100T3	30 psi (NC/NO) 60 psi (Com)	n/a	n/a	30 psi (NC/NO) 60 psi (Com)	n/a

Note: All valves can be operated at a vacuum.

Note 2: Higher pressures are available, consult factory.

Internal Volumes (µL)

Valve Series	Orifice Diameter	Internal Volume
038T2 Side-Ported	0.032"	20 µl
	0.054"	42 µl
038T2 Bottom-Ported	0.032"	18 µl
	0.054"	35 µl
039T2	0.032"	13 µl
	0.054"	21 µl
075T2	0.032"	19 µl
	0.054"	39 µl
075T3	0.062"	54 µl
	0.032"	45 µl
079NC	0.046"	52 µl
	0.032"	21 µl
100T2	0.062"	31 µl
	0.062"	55 µl
100T3	0.092"	133 µl
	0.125"	296 µl
100T3	0.032"	47 µl
	0.062"	87 µl

Flow Factors (C_v)

Valve Series	Orifice Diameter	C _v
038T2	0.032"	0.008
	0.054"	0.015
039T2	0.032"	0.008
	0.054"	0.015
075T2	0.032"	0.011
	0.054"	0.027
075T3	0.062"	0.030
	0.032"	0.010
079NC	0.046"	0.023
	0.032"	0.011
100T2	0.062"	0.027
	0.062"	0.042
100T3	0.092"	0.080
	0.125"	0.105
100T3	0.032"	0.010
	0.062"	0.028

Specifications (contd.)

Reaction times (for normally closed operators)

Valve Series	Opening time (milliseconds)		Closing time (milliseconds)
	Standard	with CoolCube™	
038T2	10 ms	5 ms	5 ms
039T2	10 ms	5 ms	5 ms
075T2	15 ms	5 ms	5 ms
075T3	Call Factory		
079NC	15 ms	5 ms	5 ms
100T2	20 ms	7 ms	20 ms
100T3	Call Factory		

Note 1: Reaction times were tested with air. Reaction times will vary depending on the medium.

Note 2: The Bio-Chem Valve CoolCube™ control module allows the application of over-voltage to actuate the valve (e.g. using 24 VDC to actuate a valve rated for 12 VDC). After a delay of 110 milliseconds, the CoolCube™ drops the voltage to 1/3 (e.g. to 8 VDC from the original 24 VDC), which is sufficient to hold the valve in position. The CoolCube50™ is designed for use with 038 and 039 series valves and drops the voltage to 1/2. (Please refer to the CoolCube™ specification sheet.)

Note 3: With use of CoolCube™ and CoolCube50™, power consumption will be reduced to 1/9 and 1/4 respectively after initial energization.

Port Threads

The standard isolation valve has 1/4"-28 UNF flat bottom port threads.

Other port threads are available, such as M6 x 1.0, 10-32, 5/16"-24 and 1/8" NPT. Consult factory.

Lead Wires

Valve Series	Lead Wires
038T2	24" 28-Gauge Teflon® coated
039T2	24" 28-Gauge Teflon® coated
075T2	15" 26-Gauge Teflon® coated
075T3	15" 26-Gauge Teflon® coated
079NC	15" 26-Gauge Teflon® coated
100T2	15" 26-Gauge Teflon® coated
100T3	15" 26-Gauge Teflon® coated

Fittings

The Omni-Lok™ Fitting System has been designed for connecting to Bio-Chem Valve Isolation Valve ports. The glass filled polypropylene material provides a stronger hold in PTFE ports where other fittings tend to back out. The Omni-Lok™ is also designed to provide more thread engagement in the shallow ports of an isolation valve. See The Omni-Lok™ Fitting System spec sheet for more information.



The Omni-Lok™ Fitting System

Mounting

Mounting Clips, Rings and Flanges are available for standard valves. Manifold mountable valves are also available. (Series 079NC and 039T)

Two 0.093 inch (2.4 mm) diameter mounting holes for self-tapping screws are an option with 075T2 and 100T2 series valves. Two 4-40 threaded mounting holes are an option with 075T3 and 100T3 series valves.

See Mounting Accessories & Options data sheet for more information.

Specifications (contd.)

Wetted Material Options by Valve Series

		Diaphragm Material			
		PTFE	EPDM	Viton®	Perfluoroelastomer
Body Material	PTFE	075T2 075T3 100T2 100T3	075T2 079NC 100T2	075T2 079NC 100T2	075T2 079NC 100T2
	Tefzel®	075T2 100T2	075T2 100T2	075T2 100T2	075T2 100T2
	PPS	075T2 075T3 100T2 100T3	038T2 039T2 075T2 075T3 079NC 100T2	038T2 039T2 075T2 079NC 100T2	038T2 039T2 075T2 075T3 079NC 100T2
	PEEK	038T2 039T2 075T2 075T3 079NC 100T2 100T3	038T2 039T2 075T2 075T3 079NC 100T2	038T2 039T2 075T2 079NC 100T2	038T2 039T2 075T2 075T3 100T2

Ordering Information

1	Select valve size	038, 039T2M, 075, 079, 100
2	Indicate Style	T2, T3 (leave blank for 079 and 039T2M valve sizes)
3	Indicate Porting Option (for 038 size only)	B (bottom ported), S (side ported)
4	Indicate Operating Configuration	NC, NO (leave blank for 039T2M valve size)
5	Indicate voltage	12 VDC, 24 VDC, 115 VAC, 220 VAC
6	Indicate orifice diameter (in 1/1000 inch) (See chart on page 2 for available orifice sizes with specific models.)	32, 46, 54, 62, 92, 125
7	Body material (PTFE Standard except on 038 and 039 series. See chart on page 4 for options.)	2 (Tefzel®), 4 (PPS), 5 (PEEK™)
8	Diaphragm material (PTFE Standard. See chart on page 4 for options.)	E (EPDM), V (Viton®), P (Perfluoroelastomer)
9	Mounting holes on valve base	M

Options

Consult Bio-Chem Valve and Omnifit for options concerning:

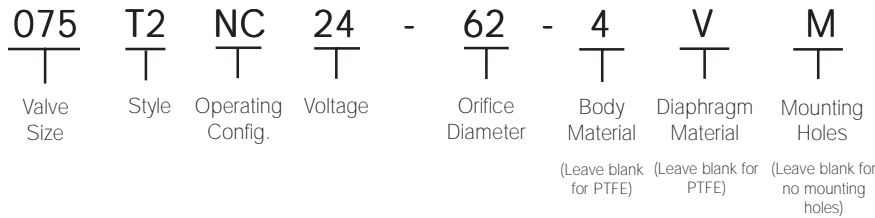
- Port threads
- Helicoils
- Terminal connectors and non-standard lead wire lengths
- Above standard operating pressure requirements
- Manifold configurations

Accessories

Please see the following product specification sheets for accessories:

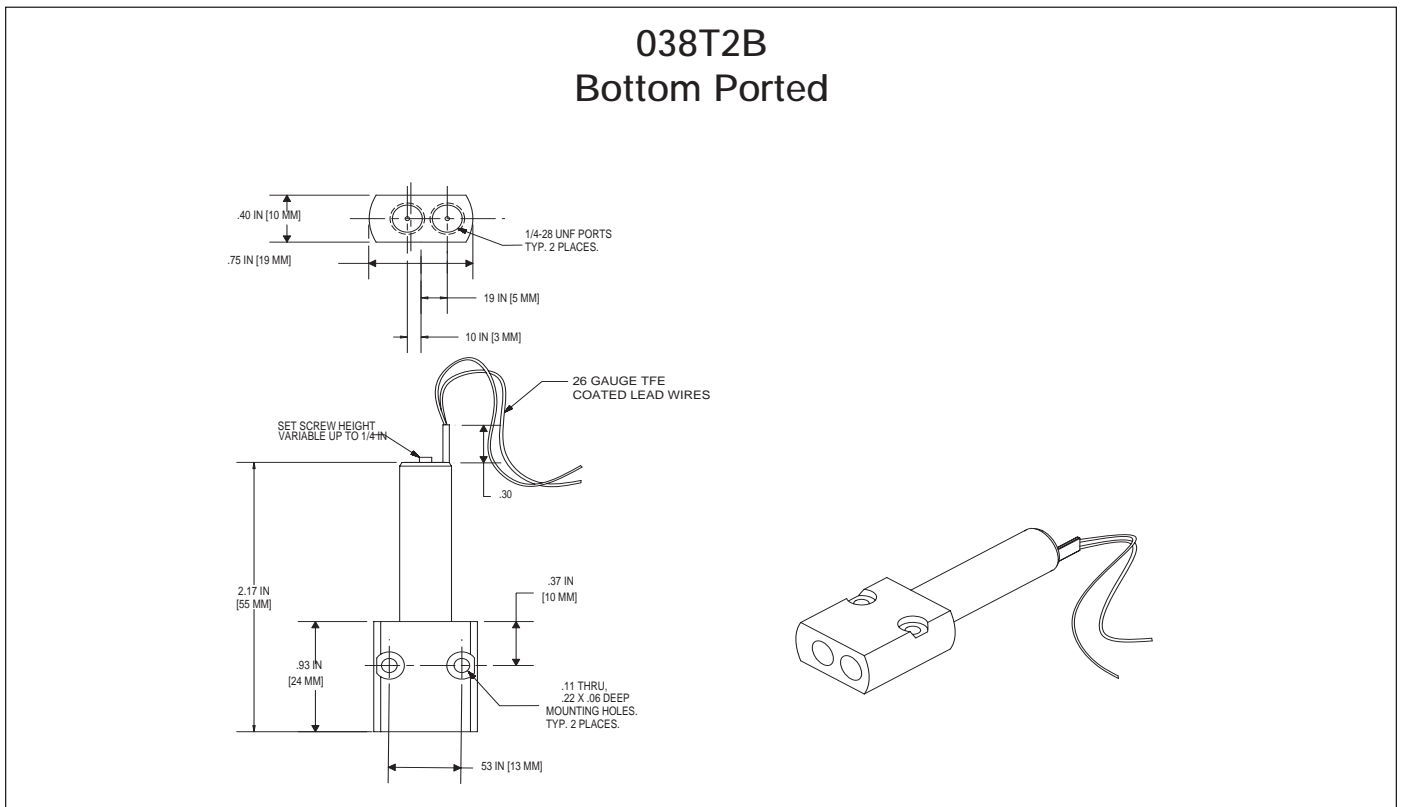
- Fitting Systems
- The Omni-Lok™ Fitting System
- CoolCube™ control module
- Mounting Accessories & Options

Example P/N:



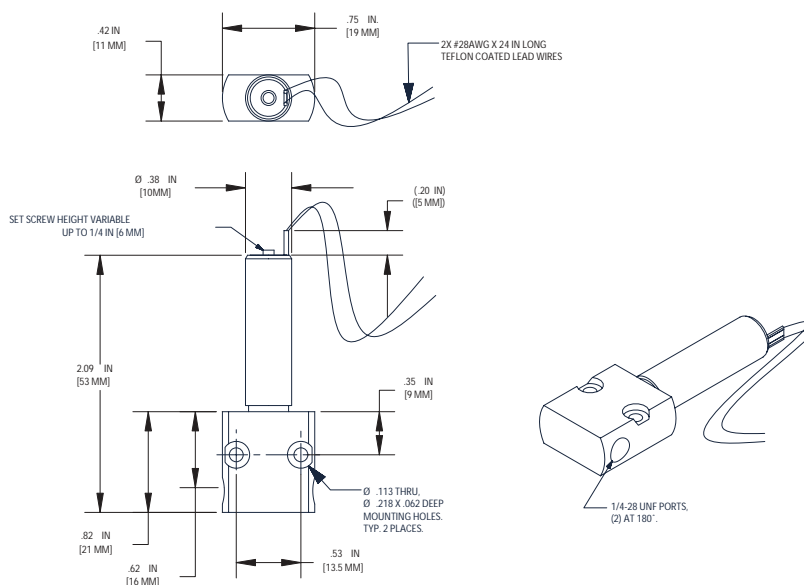
Important note:
Certain part number configurations may be subject to minimum order quantities and extended delivery schedules.
Please refer to factory before ordering.
Call: 973-263-3001 or e-mail: sales.us@biochemfluidics.com

Installation Drawings



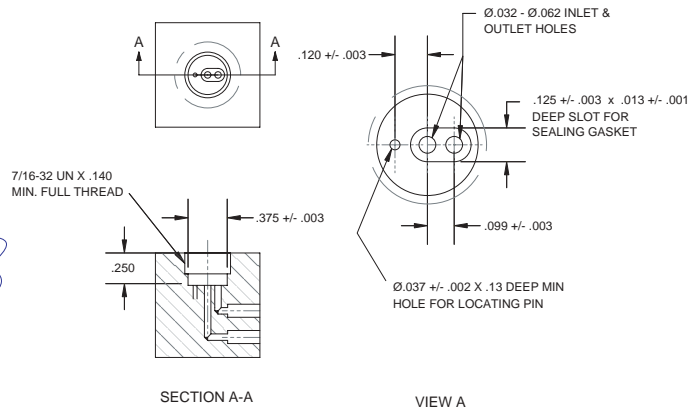
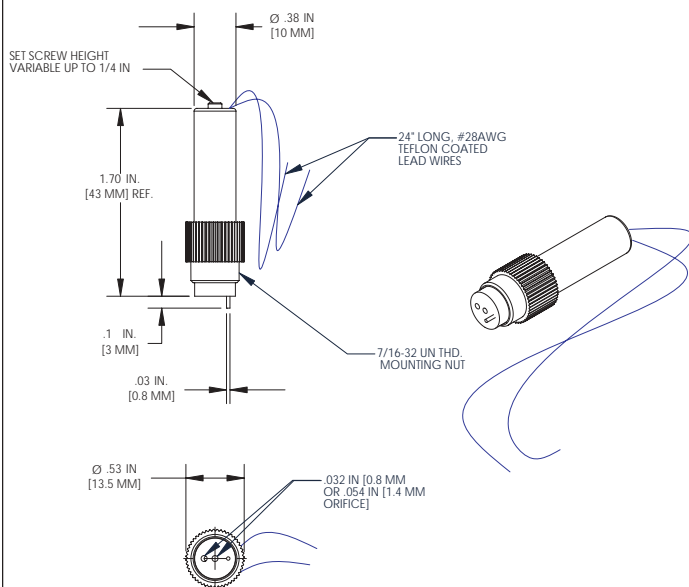
Installation Drawings

038T2S Side Ported



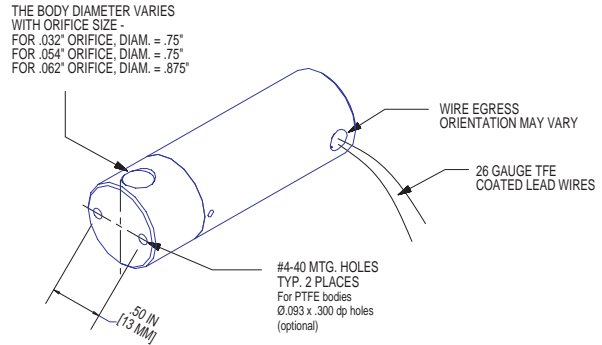
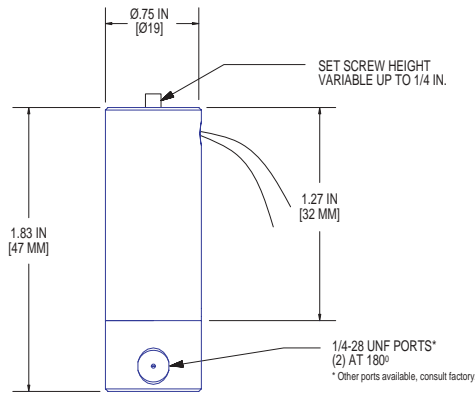
039T2M Manifold Mountable

Manifold Interface

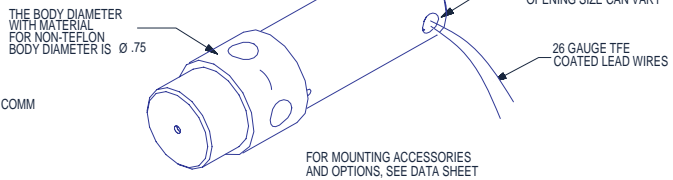
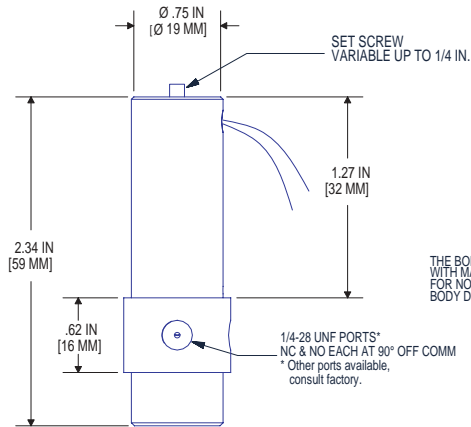


Installation Drawings (contd.)

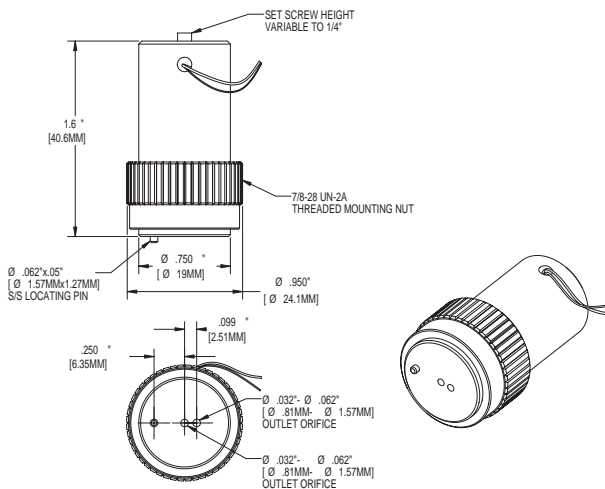
075T2NC



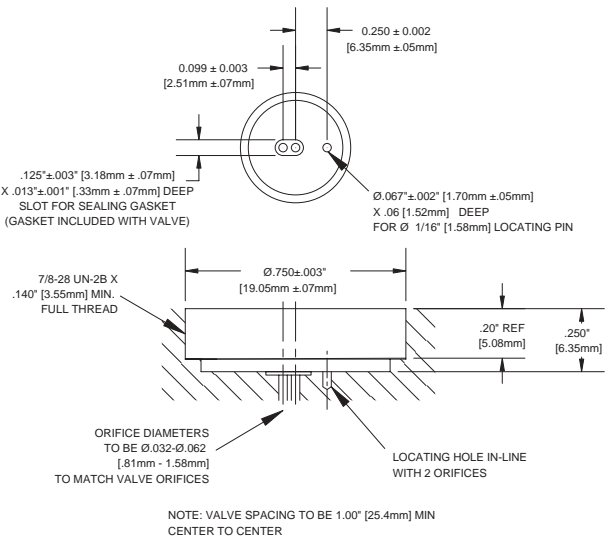
075T3MP



079NC Manifold Mountable

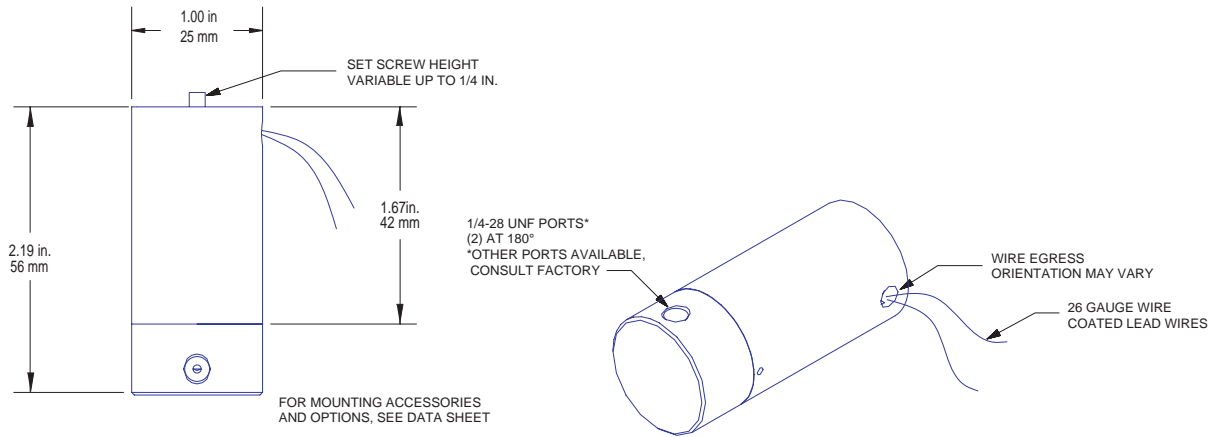


Manifold Interface

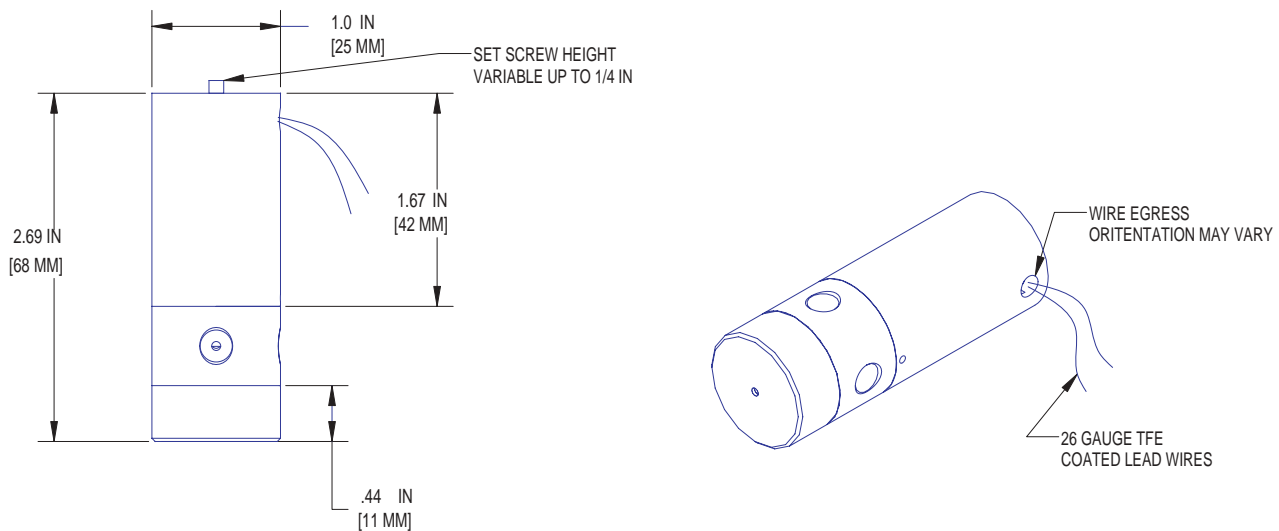


Installation Drawings (contd.)

100T2NC



100T3MP



Trademarks:

CoolCube™, CoolCube50™, Quick-Change Customization™ are trademarks of Bio-Chem Valve Inc.

Omni-Lok™ is a trademark of Omnifit Ltd.

PEEK™ is a trademark of Victrex plc

Teflon®, Tefzel® are registered trademarks of E.I. du Pont de Nemours and Company

Viton® is a registered trademark of DuPont Dow Elastomers

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Rev. 0805

A
HALIMA
GROUP
COMPANY



Solenoid operated pinch valves with Silicone Select™ or Bio-Chem (C-Flex) tubing

- High cycle life (valve: 20 million; tubing: 500,000 minimum)
- Low power consumption / minimal heat generation
- Tubing securely seated in valve body
- Rated for continuous duty suitable for hit & hold
- Zero dead volume closure
- Tubing options selected for chemical resistance and superior memory characteristics
- Options for especially quiet operation and integrated optical position sensor

High Cycle Life

Each valve is factory adjusted to ensure an optimal closing force with the tubing provided. The Silicone Select™ and Bio-Chem (C-Flex) tubing have been specially selected and treated for excellent memory characteristics. The tubing will not stick shut even after prolonged periods in the closed position. The Silicone Select™ tubing is rated for a minimum of 500,000 cycles.

Tubing securely seated without flow restriction

The tubing is seated within a groove in the pinch valve body. The tubing remains securely seated at all times. No mechanical locking feature is required to retain the tubing during operation. Flow is not restricted when the valve is in the open position.

Wide assortment of sizes and configurations

Bio-Chem Valve standard pinch valves are offered with tubing internal diameters ranging from 0.010" (0.25 mm) to 5/16" (7.95 mm). The valves are available in normally open, normally closed, and 3-way (one tube normally open, the other normally closed) configurations. Dual tubing configurations (two tubes being operated simultaneously) are offered with smaller tubing sizes. Multi-tube pinch valves with 4, 6, or 8 tubes are available in normally open configurations only. Through Bio-Chem Valve's Quick-Change Customization™ process, standard pinch valve configurations can be modified to meet customer specifications. For alternative tubing materials, operating pressures, electrical terminal connectors and other features, please consult Bio-Chem Valve and Omnifit.

Further advantages of Bio-Chem Valve Pinch Valves include:

- Ease of installation
- Resistance to particulate damage
- Minimal pressure drop

Inside.....

Specifications

Tubing	2
Valve Series & Weight	3
Lead wires	3
Electrical	3
Pressure limits	3
Height	4
Enhancement options	4
Mounting	5
Ordering information	5
Installation drawings	6
Accessories	8

Specifications

Pinch Valve Tubing Options

Bio-Chem Valve supplies two choices of high-purity medical grade pinch valve tubing:

- Silicone Select™ platinum cured silicone tubing
- Bio-chem (C-Flex) tubing

Both tubing materials comply with USP XXII, Class VI, FDA and USDA standards and are FDA master file listed. These tubing options have been specially developed to withstand the rigors of usage with pinch valves. The tubing will not stick shut even after the valve has been in the closed position for an extended period of time. Excellent tubing memory characteristics ensure unencumbered flow when the valve is in the open position. The Silicone Select™ tubing is rated for a minimum of 500,000 open-and close cycles, the Bio-Chem (C-Flex) tubing is rated for a minimum of 350,000 cycles.

Due to its superior life cycle characteristic, the Silicone Select™ tubing is recommended for all pinch valve applications except:

- Bio-chem (C-flex) tubing is preferable in applications where gas permeability is at issue
- Bio-chem (C-flex) tubing exhibits higher chemical resistance with certain media

Bio-Chem Valve pinch valves are supplied with tubing mounted in the valve:

- 2-way valves: one 12-inch (30 cm) tubing section
- 3-way valves: two 6-inch (15 cm) tubing sections joined by a "Y" connector

Tubing is easily replaced without removing the valve from the system. The tubing is also offered separately from the pinch valves in 50-foot (15 meter) coils.

Note: Different tubing may be requested for special applications. In that case, tubing samples should be provided to Bio-Chem Valve so that the appropriate adjustments in the valve settings can be made. Deviations from standard Bio-Chem Valve pinch valve tubing usually results in reduced life cycle expectancy.

Tubing Dimensions and Part Numbers

Valve Part Number extension	50' (15m) coil Part Number	Silicone	Bio-Chem (C-Flex)	I.D. (in/mm)	O.D. (in/mm)	Wall thickness (in/mm)
-10	10025-10	✓		0.010" / 0.25mm	0.093" / 2.36mm	0.041" / 1.05mm
-23	10025-23	✓	✓	0.023" / 0.58mm	0.093" / 2.36mm	0.035" / 0.89mm
-50	10025-50	✓		0.050" / 1.27mm	0.134" / 3.40mm	0.042" / 1.07mm
-01	10025-01	✓	✓	1/32" / 0.79mm	3/32" / 2.38mm	1/32" / 0.79mm
-02	10025-02	✓	✓	1/16" / 1.59mm	1/8" / 3.17 mm	1/32" / 0.79mm
-03	10025-03	✓	✓	1/16" / 1.59mm	3/16" / 4.76mm	1/16" / 1.59mm
-04	10025-04	✓		3/16" / 4.76mm	1/4" / 6.35mm	1/32" / 0.79mm
-05	10025-05	✓	✓	1/8" / 3.17mm	1/4" / 6.35mm	1/16" / 1.59mm
-06	10025-06	✓	✓	1/4" / 6.35mm	3/8" / 9.52mm	1/16" / 1.59mm
-07	10025-07	✓	✓	5/16" / 7.94mm	7/16" / 11.1mm	1/16" / 1.59mm

To identify the type of tubing when ordering 50-foot (15 meter) tubing coils, add the following designators to the part numbers shown above:

- **S** - Silicone Select™ tubing
- **B** - Bio-Chem (C-Flex) tubing

Specifications (contd.)

Valve Series & Weight

The pinch valves are offered in three valve series, distinguished by the solenoid shell sizes:

Valve Series	Shell Diameter	Weight
075P	0.75 inches	2 oz. (57 g)
100P	1.00 inches	5 oz. (142 g)
150P	1.50 inches	16 oz. (454 g)

Lead Wires

15 inches (380 mm) 26-gauge Teflon® coated. Different lengths of lead wires and terminal connectors can be provided.

Electrical

Standard:

Valve Series	Voltage	Power @ 70°F (21°C)	Current @ 70°F (21°C)
075P	12 VDC	2.8 Watts	0.22 amps
075P	24 VDC	2.8 Watts	0.10 amps
100P	12 VDC	4.0 Watts	0.32 amps
100P	24 VDC	4.0 Watts	0.16 amps
150P	12 VDC	8.0 Watts	0.66 amps
150P	24 VDC	8.0 Watts	0.33 amps

Exceptions:

Valve Series	Tubing Size	Configuration	Voltage	Power @ 70°F (21°C)	Current @ 70°F (21°C)
075P	I.D. = 0.010"	2-way	12 Vdc	3.5 Watts	0.29 amps
075P	I.D. = 0.010"	2-way	24 Vdc	3.5 Watts	0.15 amps
075P	I.D. = 1/32"	3-way	12 Vdc	3.5 Watts	0.29 amps
075P	I.D. = 1/32"	3-way	24 Vdc	3.5 Watts	0.15 amps
100P	O.D. = 3/8"	2-way	12 Vdc	8.0 Watts	0.66 amps
100P	O.D. = 3/8"	2-way	24 Vdc	8.0 Watts	0.33 amps
100P	O.D. ≥ 3/16"	3-way	12 Vdc	8.0 Watts	0.66 amps
100P	O.D. ≥ 3/16"	3-way	24 Vdc	8.0 Watts	0.33 amps
100P	O.D. ≥ 3/32"	dual 3-way	12 Vdc	8.0 Watts	0.66 amps
100P	O.D. ≥ 3/32"	dual 3-way	24 Vdc	8.0 Watts	0.33 amps

Note: 115 Vac and 220 Vac solenoid coils are also available.

Configuration and Pressure Limits

Several configurations are available with the Bio-Chem Valve pinch valves:

- 2-way normally closed (designated as NC)
- 2-way normally open (designated as NO)
- 3-way (designated as MP). One tube is NC and the other is NO.

Dual tubing for both 2-way and 3-way configurations is offered for some tubing sizes.

Valve Series	Tubing size (valve p/n ext)	2-Way NC	2-way NO	3-Way MP	Dual tubing	Minimum pressure	Maximum pressure
075P	-10	✓	✓			vacuum	30 psi
075P	-23	✓	✓	✓		vacuum	20 psi
075P	-50	✓	✓	✓		vacuum	15 psi
075P	-01	✓	✓	✓		vacuum	15 psi
075P	-02	✓	✓	✓		0 psi	15 psi
100P	-01	✓		✓	✓	vacuum	25 psi
100P	-02	✓	✓	✓	✓	0 psi	25 psi
100P	-03	✓	✓	✓		vacuum	25 psi
100P	-04	✓	✓	✓		0 psi	10 psi
100P	-05	✓	✓	✓		vacuum	20 psi
100P	-06	✓	✓			0 psi	10 psi
150P	-06	✓		✓		0 psi	10 psi
150P	-07	✓				0 psi	10 psi

108P multi-tube pinch valves

Two-way normally open valves using the -01B and -01S tubing with 4, 6, or 8 tubes operating simultaneously are also available. The maximum pressure is 15 psi. For further information, please consult Bio-Chem Valve.



Specifications (contd.)

Valve Height

Valve Series	2-Way NC	2-Way NO	3-Way MP
075P	1.88" (48 mm)	2.19" (56 mm)	2.13" (54 mm)
100P	2.50" (64 mm)	2.81" (71 mm)	2.50" (64 mm)
150P	3.80" (97 mm)	N/A	3.78" (96 mm)

Enhancement Options



Quiet Option

Through the use of noise dampening materials on internal valve components, the noise generated at actuation of the 075P and 100P pinch valves is reduced dramatically from approximately 72 dB to 52 dB. This optional feature is recommended for applications in noise-sensitive environments, such as hospitals and certain laboratories.

Optical Sensor Position Feedback Option

An infrared optical sensor can be factory mounted on the pinch valve. The sensor detects the position of the valve pusher/armature assembly and sends an electrical signal back to the controller confirming the open or closed valve position. With no moving parts, this sensor has been designed for virtually unlimited life.

Available valve configurations: 100P series valves with normally closed and 3-way configurations. Not available with normally open valves. 12 VDC and 24 VDC versions are offered.

Wiring: The entire valve and sensor assembly requires only three electrical wires:

■ : positive lead wire ■ : negative lead wire ■ : sensor feedback wire

Feedback signal:

- NC valve not actuated at 12 VDC or 24 VDC: tubing closed, 0 milliamp current on signal wire.
- NC valve actuated at 12 VDC or 24 VDC:
 - Tubing open: 0 milliamp current on signal wire.
 - Tubing closed (i.e. failure): 20 milliamp current on signal wire.

Dimensions: the optical sensor adds 1 inch (25 mm) to the height of the pinch valve.

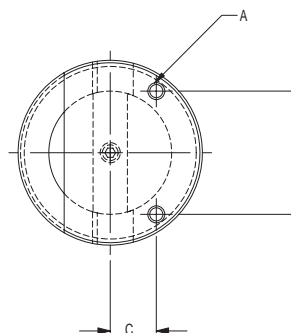
Specifications (contd.)

Mounting

For mounting clips, rings and flanges, please see the Mounting Accessories and Options specification sheet. Bottom mounting (add "M" to the end of the part number) is available for two-way normally open and normally closed pinch valves. The dimensions of the mounting holes in the pinch valve body are:

Valve Series	"A" Thread	"B" Center	"C"
075P2*	#2-56	0.500" (13mm)	0.125" (3mm)
100P2*	#4-40	0.687" (17mm)	0.218" (6mm)
150P2*	#6-32	1.000" (25mm)	0.375" (10mm)

* For P3 series consult factory.



Mounting holes can be provided in the shell on top of the valve. Please consult Bio-Chem Valve and Omnitfit concerning top mounting holes.

Ordering Information

Standard Pinch Valves

1	Select pinch valve series	075P, 100P, 150P
2	Indicate number of paths	2 (2-way), 3 (3-way), D2 (dual 2-way), D3 (dual 3-way)
3	Indicate operating configuration	NC, NO, MP (3-way)
4	Indicate voltage	12 vdc, 24 vdc, 115 vac, 220 vac
5	Indicate tube size	10, 23, 50, 01, 02, 03, etc.
6	Select tubing material	S (Silicone Select™), B (Bio-chem / C-Flex)
7	Indicate selected options	Q (Quiet), F (Feedback sensor), M (Mounting holes)

Important note:
 Certain part number configurations may be subject to minimum order quantities and extended delivery schedules.
 Please refer to factory before ordering.
 Call: 973-263-3001 or e-mail: sales.us@biochemfluidics.com

Part Number Example:

100P D3 MP 24 - 02 S QFM
 | | | | | | |
 Valve Paths Configu- Voltage Tube Tube Options
 Size ration ration Size Material

Multi-tube Pinch Valves

1	Select pinch valve series	108P
2	Indicate number of tubes	4, 6, or 8
3	Indicate operating configuration	NO
4	Indicate voltage	12 vdc, 24 vdc, 115 vac, 220 vac
5	Indicate tube size	01
6	Select tubing material	S (Silicone), B (Bio-chem / C-Flex)
7	Indicate selected options	Q (Quiet), F (Feedback sensor)

Part Number Example:

108P 8 NO 24 - 01 B QF
 | | | | | | |
 Valve Tubes Configu- Voltage Tube Tube Options
 Size ration ration Size Material

Consult Bio-Chem Valve for further options concerning:

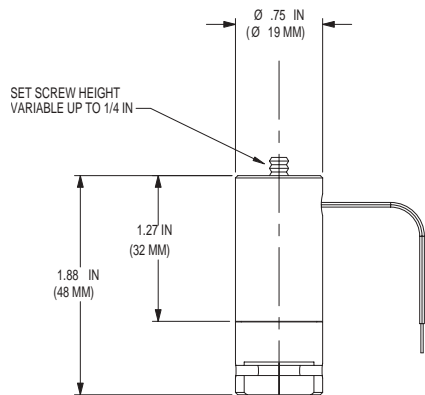
- Terminal connectors and non-standard lead wire lengths.
- Above standard operating pressure requirements.
- Custom tubing.

Please see our other product specification sheets for the following accessories:

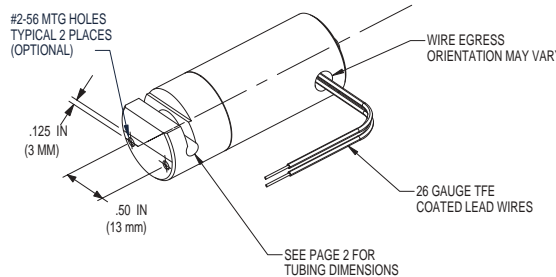
- Omnitfit PEEK barb fittings and adaptors
- CoolCube™ control module
- Mounting clips, flanges and rings

Installation Drawings

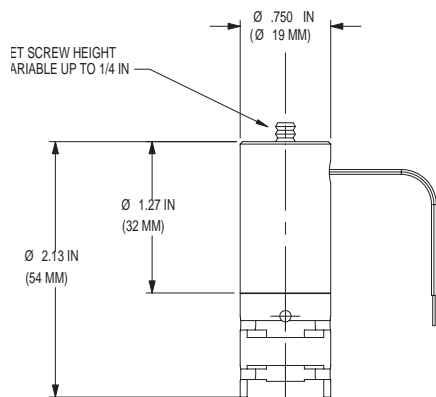
075P2NC



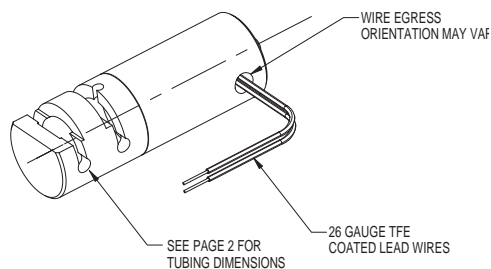
FOR MOUNTING ACCESSORIES AND OPTIONS, SEE DATA SHEET



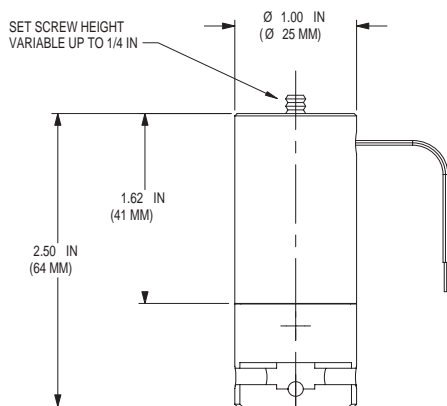
075P3



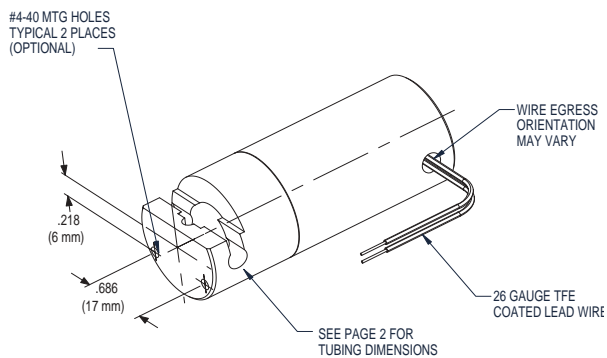
FOR MOUNTING ACCESSORIES AND OPTIONS, SEE DATA SHEET



100P2NC

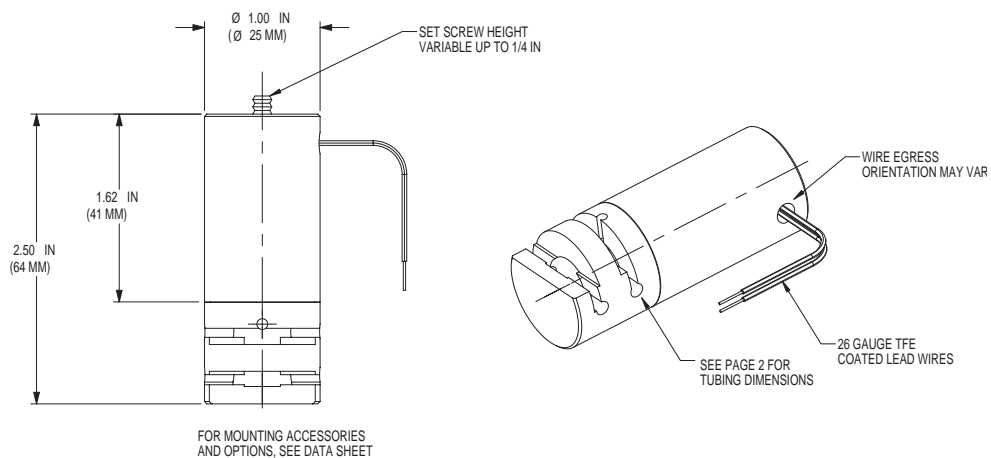


FOR MOUNTING ACCESSORIES AND OPTIONS, SEE DATA SHEET

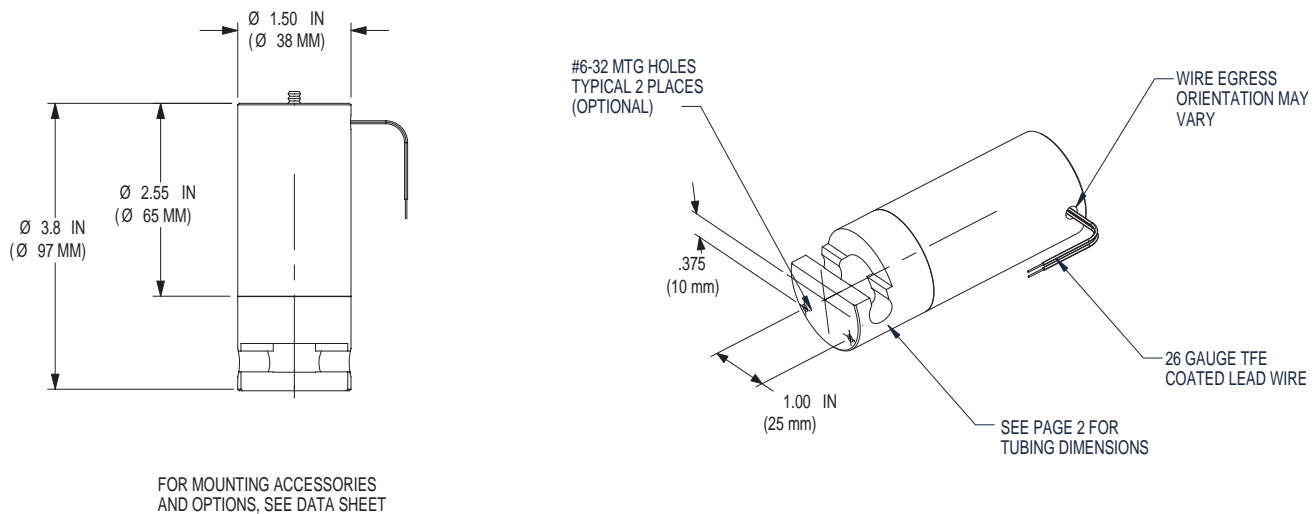


Installation Drawings (contd.)

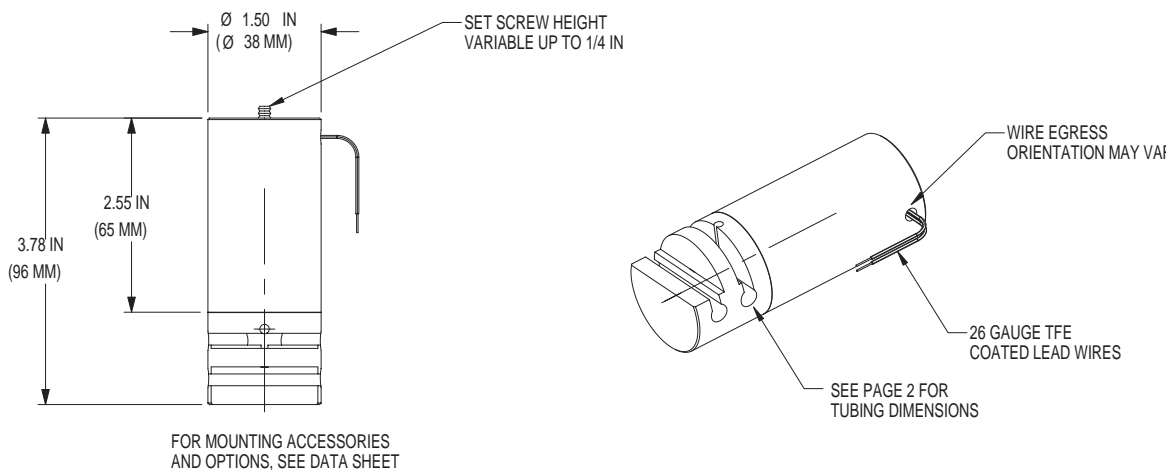
100P3



150P2NC



150P3



Accessories

Polypropylene Connectors and Fittings for Soft Tubing

Reducer



Part Number	Intended Tube Size
R-02/-01P	1/16" to 1/32" I.D.
R-05/-02P	1/8" to 1/16" I.D.

Straight



Part Number	Intended Tube Size
S-01P	1/32" I.D.
S-02P	1/16" I.D.
S-05P	1/8" I.D.

"Y"



Part Number	Intended Tube Size
Y-01P	1/32" I.D.
Y-02P	1/16" I.D.
Y-04P	3/16" I.D.
Y-05P	1/8" I.D.

1/4"-28 Flat Bottom to Barb



Part Number	Intended Tube Size
B-062ID	1/16" I.D.
B-095ID	3/32" I.D.
B-125ID	1/8" I.D.

Trademarks:

CoolCube™ is a trademark of Bio-Chem Valve Inc.
 PEEK™ is a trademark of Victrex plc
 Quick-Change Customization™ is a trademark of Bio-Chem Valve Inc.
 Silicone Select™ is a trademark of Bio-Chem Valve Inc.
 Teflon®, Viton® are registered trademarks of E.I. du Pont de Nemours and Company

Rev. 1104







.....
**Solenoid Operated
Micro-Pumps**



130SP Series Micro-Pump



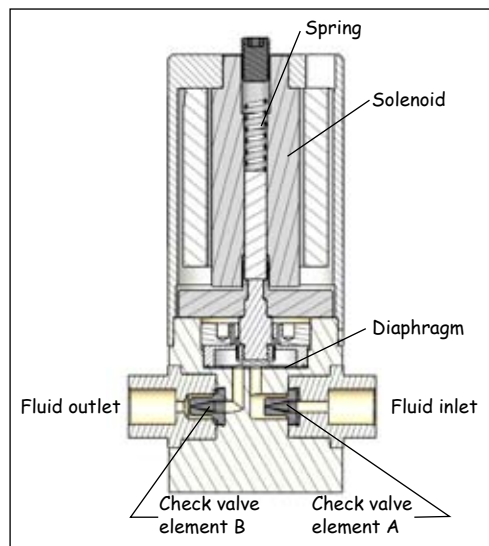
INDEX

Page 3	Micro-Pump Selection Guide	
Page 4	030SP Series Micro-Pump Ported Micro-Pumps (1/4"-28 UNF) for a very small dispense volume (4µl)	
Page 6	120SP Series Micro-Pump Ported Micro-Pumps (1/4"-28 UNF) for precise dispense volumes from 10 to 60µl	
Page 8	130SP Series Micro-Pump Ported Micro-Pumps (1/4"-28 UNF) for precise dispense volumes from 10 to 60µl (inert body)	
Page 10	150SP Series Micro-Pump Ported Micro-Pumps (5/16"-24 UNF) for precise dispense volumes from 100 to 250µl	
Page 12	039SP Series Micro-Pump Manifold mounted Micro-Pumps for a very small dispense volume (4µl)	
Page 14	139SP Series Micro-Pump Manifold mounted Micro-Pumps for precise dispense volumes from 10 to 60µl	
Page 16	Manifolds, Controller and Tubing	
Page 17	Fittings	
Page 18	Micro-Pumps Tech Tips - operation and installation	

MICRO-PUMPS GENERAL INFORMATION

What is a Micro-Pump?

A Micro-Pump is a solenoid operated device designed to provide a precise, repeatable and discrete dispensed volume of fluid. The



flow path is isolated from the operating mechanism by a flexible diaphragm. When the solenoid is energized, the diaphragm is retracted creating a partial vacuum within the pump body. This pulls liquid through the inlet check valve (A) and simultaneously closes the outlet check valve (B). When the

solenoid is de-energized a spring pushes the diaphragm down, expelling a discrete volume of liquid through check valve B while simultaneously closing check valve A. Micro-Pumps require a complete on-off cycle for each discrete dispense. Repeatedly cycling the solenoid creates a pulsed flow (refer to "Accurate discrete dispense volumes" in next column).

Features of the Bio-Chem Valve™ Micro-Pump

Inert materials

Our pumps provide a non-metallic inert fluid path for the dispensing of high purity or aggressive fluids. There is a range of different materials available for all the wetted parts of the pumps - body, diaphragm and check valve. Material combinations can be chosen to suit the application (refer to individual product selection pages for standard combinations - custom combinations are available, refer to page 18).

Body materials: PPS, PTFE, PEEK™, POM

Diaphragm materials: EPDM, PTFE

Check valve materials: EPDM, FKM, FFKM

Self-priming

At start-up, the pump is able to draw air. The suction created by the larger pumps is sufficient to pull liquids from an unpressurized container located up to 4' 3" (1.3m) beneath the pump. Once the pump is primed, it is able to generate around 5psi (0.3bar) pressure, equating to 11' 6" (3.5m) of water.

Continuous duty

The pumps are capable of continuous duty. They are suitable for up to 20 million actuations, corresponding to nearly 3,000 hours of continuous use at a 2 Hz cycle rate.

Accurate discrete dispense volumes

Dispense volumes range from 4µl to 250µl per cycle. The pumps can be cycled at up to 4 Hz for the smallest version and 1.6 Hz for the largest. Pumps can be operated at less than the maximum cycle rate by increasing the length of the "off" time. The "on" time should remain unchanged to retain dispense accuracy.

Micro-Pump Selection Guide

- Select pump style; either Ported or Manifold mount and work from the appropriate table:
 - Ported for direct connection with 1/4"-28 fittings (5/16"-24 for 150SP)
 - Manifold mount for use with manifolds (see page 16)

Then:

- Locate the volumetric characteristics that best suit your needs
- Choose your preferred body material depending on the level of chemical inertness you require
- Turn to the pages indicated to see full details and ordering information for each pump.

	Volumetric output		Body Material			
	Discrete Dispense Vol (µl)	Max flow rate (ml/min)	PTFE	PPS	PEEK™	POM
Ported	4	0.96		030SP (pg. 4)		
	10	1.2				
	20	2.4				
	30	3.6	130SP (pg. 8)	120SP (pg. 6)	120SP (pg. 6)	130SP (pg. 8)
	40	4.8				
	50	6.0				
	60	7.2				
	100	9.6				
	125	12.0				
	150	14.4				
	175	16.8		150SP (pg. 10)	150SP (pg. 10)	
	200	19.2				
	225	21.6				
250	24.0					

	Volumetric output		Body Material			
	Discrete Dispense Vol (µl)	Max flow rate (ml/min)	PTFE	PPS	PEEK™	POM
Manifold mounted	4	0.96		039SP (pg. 12)		
	10	1.2				
	20	2.4				
	30	3.6	139SP (pg. 14)		139SP (pg. 14)	139SP (pg. 14)
	40	4.8				
	50	6.0				
	60	7.2				

Polymers referenced in this brochure:

EPDM = ethylene-propylene-diene
 ETFE = ethylene tetrafluoroethylene
 FEP = fluorinated ethylene propylene
 FKM = fluorinated elastomer
 FFKM = perfluoro elastomer
 PEEK™ = polyetheretherketone
 POM = polyoxymethylene (Acetal resin)
 PPS = polyphenylene sulfide
 PTFE = polytetrafluoroethylene.

030SP SERIES MICRO-PUMP

For precise dispensing of 4 μ l and flow rates up to 0.96 ml/min

- Self-priming
- 4 μ l discrete dispense volume
- 960 μ l/min maximum flow rate
- 1/4"-28 UNF threaded ports

The 030SP series Micro-Pumps are solenoid operated, with the operating mechanism isolated from the flow path by a diaphragm. Check valves situated at the inlet and outlet of the pump control the direction of flow.

Materials available for the wetted parts are:

- Body materials: PPS
- Diaphragm materials: PTFE
- Check valve materials: FKM

030SP series options

PART NO.	VDC	DISPENSE VOL (μ L)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
12 VDC; 4μl dispense					
030SP124-4TV	12	4	PPS	PTFE	FKM
24 VDC; 4μl dispense					
030SP244-4TV	24	4	PPS	PTFE	FKM

ARRANGEMENT



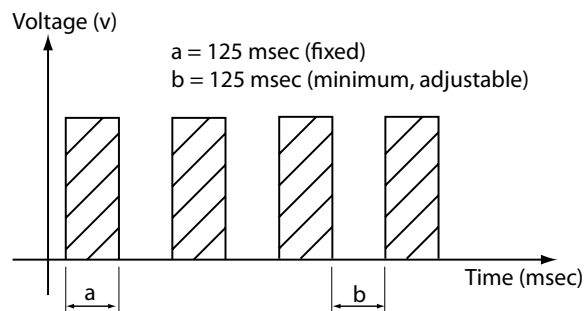
SPECIFICATIONS

030SP Fluid Data	
Dispense Volume (μ l)	4
Set-point accuracy	+/- 25%
Repeatability	+/- 5%
Max flow rate (μ l/min)	960
Internal vol (μ l)	130

030SP Electrical Data			
Voltage	Power @70°F (21°C)	Current @70°F (21°C)	Effective continuous power @ max cycle rate
12 VDC	1.9 Watts	0.22 amps	0.9 Watts
24 VDC	1.9 Watts	0.11 amps	0.9 Watts

030SP Cycle Rates		
Min "on" time	Min "off" time	Max cycle rate
125 msec	125 msec	4.0 Hz

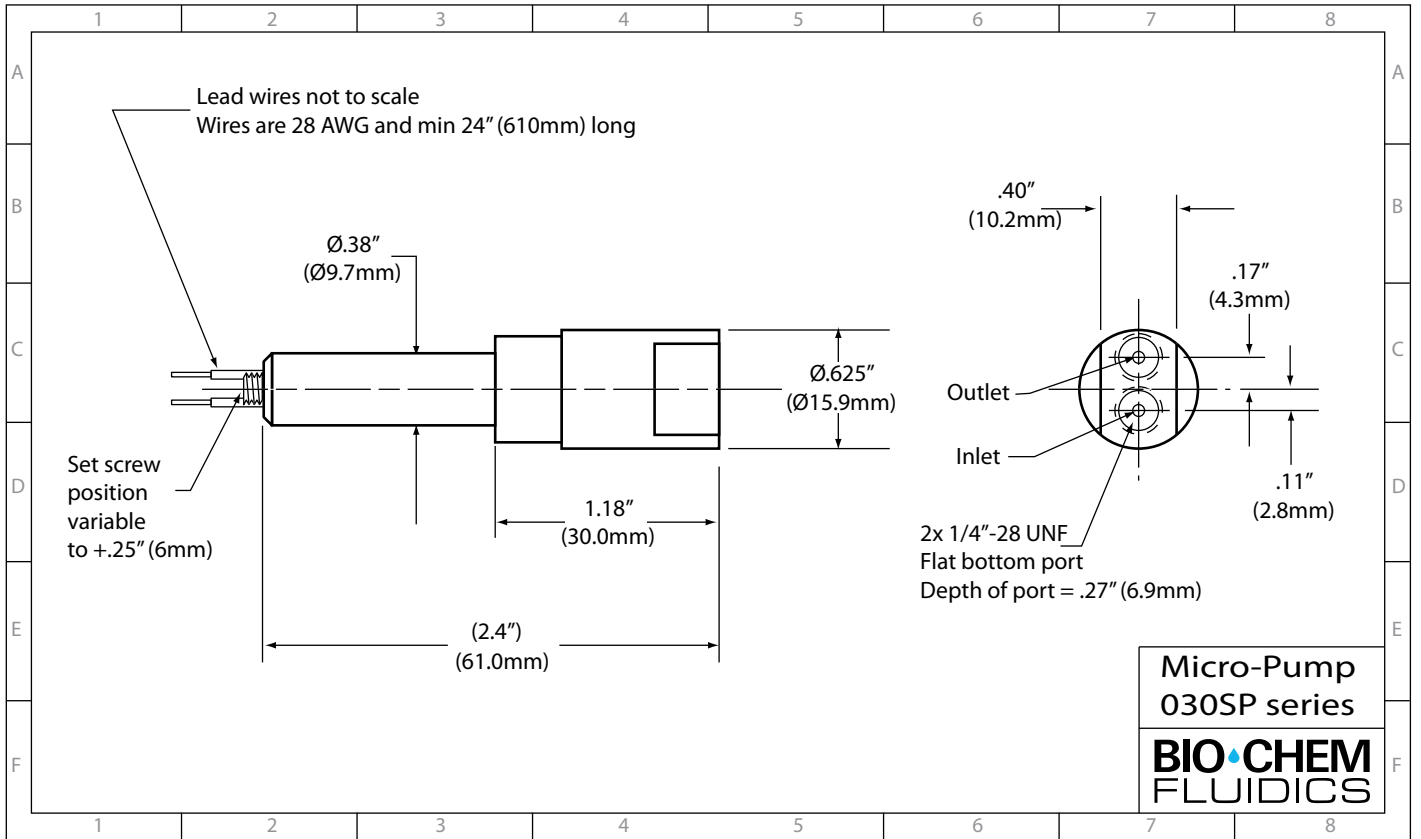
030SP Micro-Pumps can be cycled at up to 4 Hz. To maintain pumping precision the voltage "on" time should remain fixed - the pumping rate can be changed by increasing the "off" time.



Recommended tubing for 030SP

Inlet & outlet, 1/32" (0.80mm) ID, hardwall tubing, PART NO. 008T16-080

INSTALLATION DRAWING



120SP SERIES MICRO-PUMP

For precise dispensing between 10 and 60µl and flow rates up to 7.2 ml/min

- Self-priming
- 10-60µl discrete dispense volumes
- Up to 7.2 ml/min maximum flow rate
- ¼"-28 UNF threaded ports

The 120SP series Micro-Pumps are solenoid operated, with the operating mechanism isolated from the flow path by a diaphragm. Check valves situated at the inlet and outlet of the pump control the direction of flow. The combination of materials for each component can be selected to best suit your specific application.

Materials available for the wetted parts are:

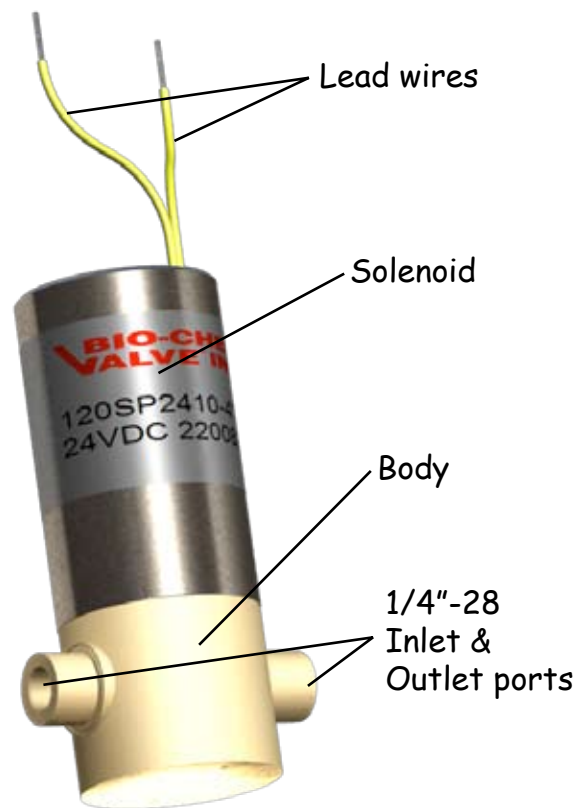
- Body materials: PPS, PEEK™
- Diaphragm materials: PTFE, EPDM
- Check valve materials: EPDM, FKM, FFKM

120SP series options

NOTE: For 24 VDC, replace 120SP12 with 120SP24 in any of the part numbers listed.

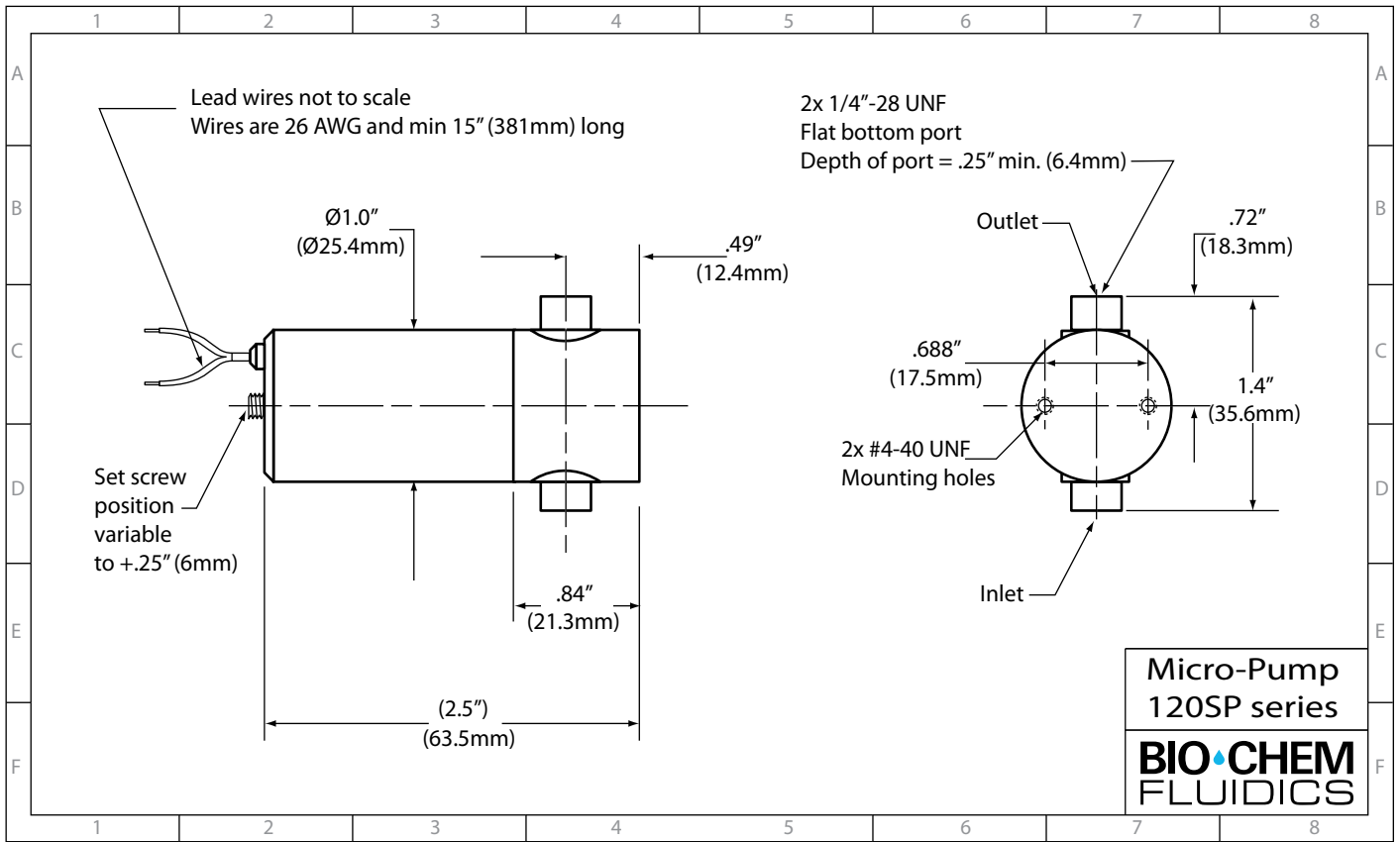
PART NO.	DISPENSE VOL (µL)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
12 VDC; 10µl dispense (Note: PTFE diaphragm for all 10 µl options)				
120SP1210-4TE	10	PPS	PTFE	EPDM
120SP1210-4TV	10	PPS	PTFE	FKM
120SP1210-4TP	10	PPS	PTFE	FFKM
120SP1210-5TE	10	PEEK™	PTFE	EPDM
120SP1210-5TV	10	PEEK™	PTFE	FKM
120SP1210-5TP	10	PEEK™	PTFE	FFKM
12 VDC; 20µl dispense				
120SP1220-4EE	20	PPS	EPDM	EPDM
120SP1220-4TV	20	PPS	PTFE	FKM
120SP1220-4TP	20	PPS	PTFE	FFKM
120SP1220-5EE	20	PEEK™	EPDM	EPDM
120SP1220-5TV	20	PEEK™	PTFE	FKM
120SP1220-5TP	20	PEEK™	PTFE	FFKM
12 VDC; 30µl dispense				
120SP1230-4EE	30	PPS	EPDM	EPDM
120SP1230-4TV	30	PPS	PTFE	FKM
120SP1230-4TP	30	PPS	PTFE	FFKM
120SP1230-5EE	30	PEEK™	EPDM	EPDM
120SP1230-5TV	30	PEEK™	PTFE	FKM
120SP1230-5TP	30	PEEK™	PTFE	FFKM

ARRANGEMENT



PART NO.	DISPENSE VOL (µL)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
12 VDC; 40µl dispense				
120SP1240-4EE	40	PPS	EPDM	EPDM
120SP1240-4TV	40	PPS	PTFE	FKM
120SP1240-4TP	40	PPS	PTFE	FFKM
120SP1240-5EE	40	PEEK™	EPDM	EPDM
120SP1240-5TV	40	PEEK™	PTFE	FKM
120SP1240-5TP	40	PEEK™	PTFE	FFKM
12 VDC; 50µl dispense				
120SP1250-4EE	50	PPS	EPDM	EPDM
120SP1250-4TV	50	PPS	PTFE	FKM
120SP1250-4TP	50	PPS	PTFE	FFKM
120SP1250-5EE	50	PEEK™	EPDM	EPDM
120SP1250-5TV	50	PEEK™	PTFE	FKM
120SP1250-5TP	50	PEEK™	PTFE	FFKM
12 VDC; 60µl dispense (Note: EPDM diaphragm for all 60 µl options)				
120SP1260-4EE	60	PPS	EPDM	EPDM
120SP1260-5EE	60	PEEK™	EPDM	EPDM

INSTALLATION DRAWING



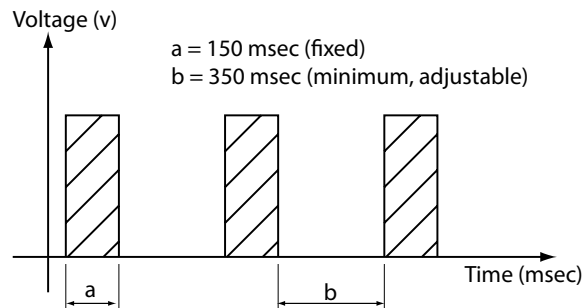
SPECIFICATIONS

120SP Fluid Data						
Dispense Volume (μl)	10	20	30	40	50	60
Set-point accuracy	+/- 4%	+/- 4%	+/- 3%	+/- 3%	+/- 2%	+/- 2%
Repeatability	+/- 3%	+/- 3%	+/- 3%	+/- 2%	+/- 2%	+/- 2%
Max flow rate ($\mu\text{l}/\text{min}$)	1200	2400	3600	4800	6000	7200
Internal vol (μl)	105	105	105	105	105	105

120SP Electrical Data				120SP Cycle Rates		
Voltage	Power @70°F (21°C)	Current @70°F (21°C)	Effective continuous power @ max cycle rate	Min "on" time	Min "off" time	Max cycle rate
12 VDC	4.0 Watts	0.32 amps	1.2 Watts	150 msec	350 msec	2.0 Hz
24 VDC	4.0 Watts	0.16 amps	1.2 Watts			

Recommended tubing for 120SP
Inlet & outlet, 1/32" (0.80mm) ID, hardwall tubing, PART NO. 008T16-080

120SP Micro-Pumps can be cycled at up to 2 Hz. To maintain pumping precision the voltage "on" time should remain fixed - the pumping rate can be changed by increasing the "off" time.



130SP SERIES MICRO-PUMP

For precise dispensing between 10 and 60µl and flow rates up to 7.2 ml/min

- Self-priming
- 10-60µl discrete dispense volumes
- Up to 7.2 ml/min maximum flow rate
- ¼"-28 UNF threaded ports
- Most inert body material for harshest applications

The 130SP series Micro-Pumps are solenoid operated, with the operating mechanism isolated from the flow path by a diaphragm. Check valves situated at the inlet and outlet of the pump control the direction of flow. The combination of materials for each component can be selected to best suit your specific application.

Materials available for the wetted parts are:

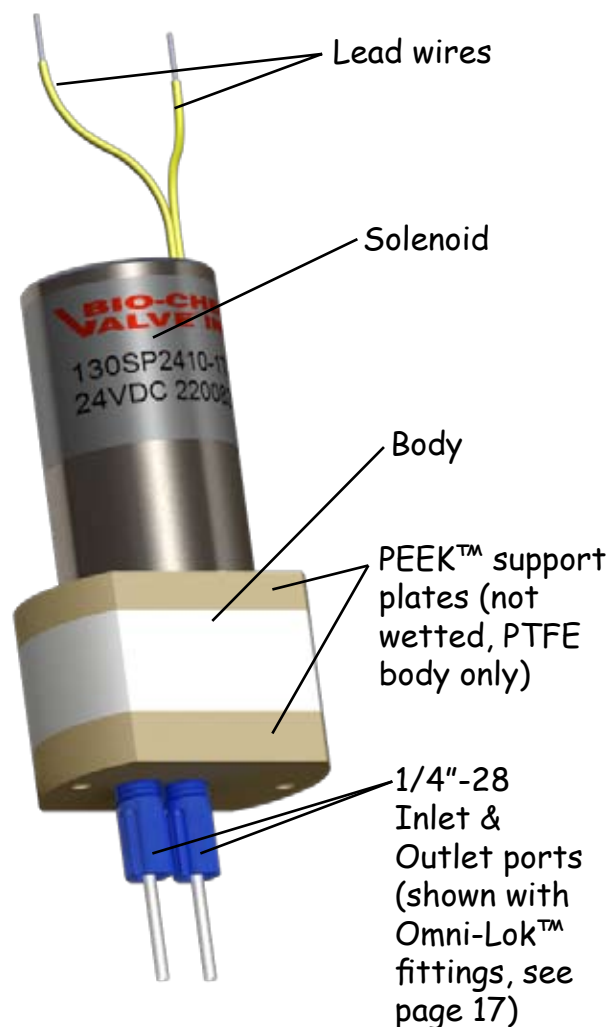
- Body materials: PTFE, POM
- Diaphragm materials: PTFE, EPDM
- Check valve materials: EPDM, FKM, FFKM

130SP series options

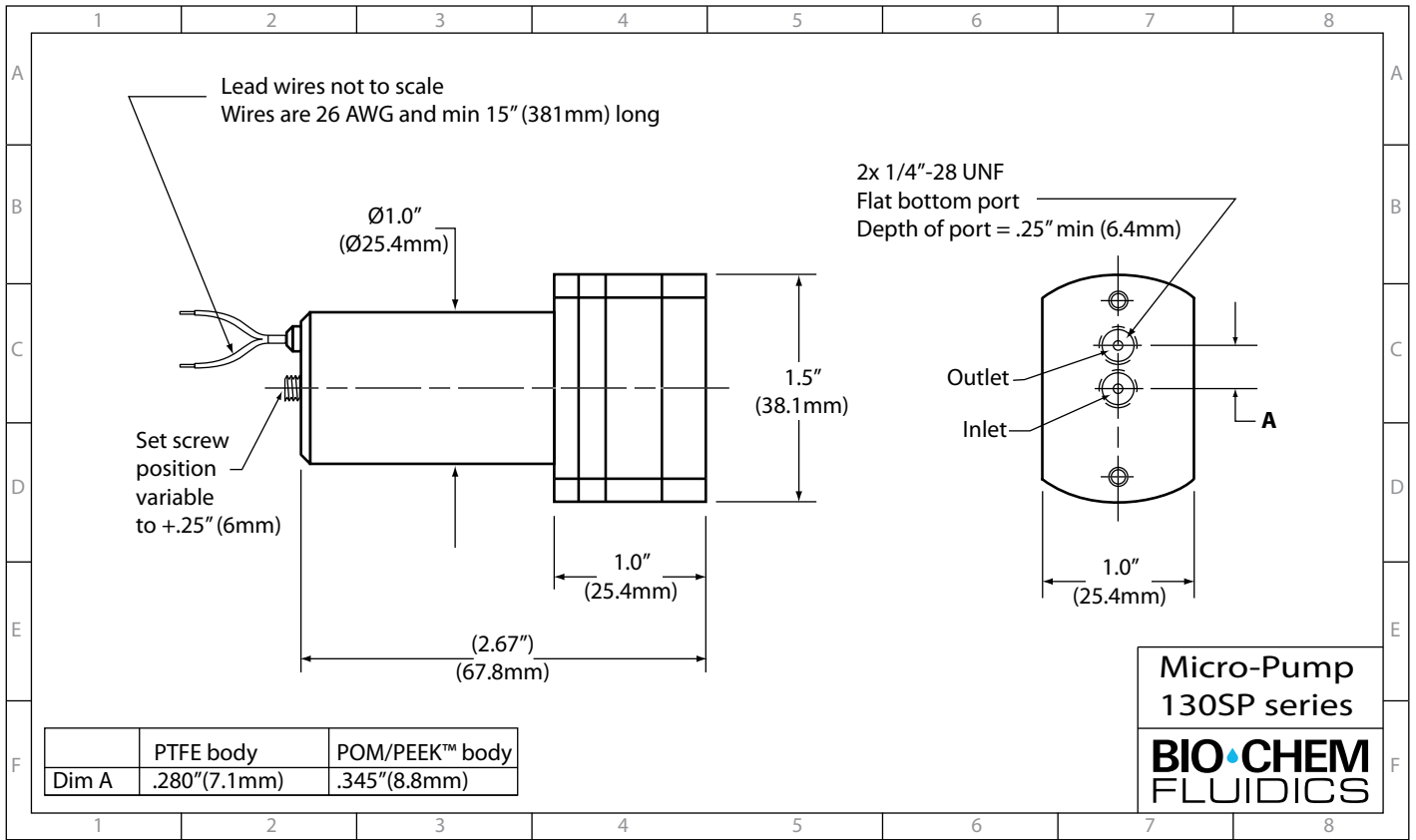
NOTE: For 24 VDC, replace 130SP12 with 130SP24 in any of the part numbers listed.

PART NO.	DISPENSE VOL (µL)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
12 VDC; 10µl dispense (Note: PTFE diaphragm for all 10 µl options)				
130SP1210-1TP	10	PTFE	PTFE	FFKM
130SP1210-6TV	10	POM	PTFE	FKM
130SP1210-6TE	10	POM	PTFE	EPDM
12 VDC; 20µl dispense				
130SP1220-1TP	20	PTFE	PTFE	FFKM
130SP1220-6TV	20	POM	PTFE	FKM
130SP1220-6EE	20	POM	EPDM	EPDM
12 VDC; 30µl dispense				
130SP1230-1TP	30	PTFE	PTFE	FFKM
130SP1230-6TV	30	POM	PTFE	FKM
130SP1230-6EE	30	POM	EPDM	EPDM
12 VDC; 40µl dispense				
130SP1240-1TP	40	PTFE	PTFE	FFKM
130SP1240-6TV	40	POM	PTFE	FKM
130SP1240-6EE	40	POM	EPDM	EPDM
12 VDC; 50µl dispense				
130SP1250-1TP	50	PTFE	PTFE	FFKM
130SP1250-6TV	50	POM	PTFE	FKM
130SP1250-6EE	50	POM	EPDM	EPDM
12 VDC; 60µl dispense				
130SP1260-6EE	60	POM	EPDM	EPDM

ARRANGEMENT



INSTALLATION DRAWING

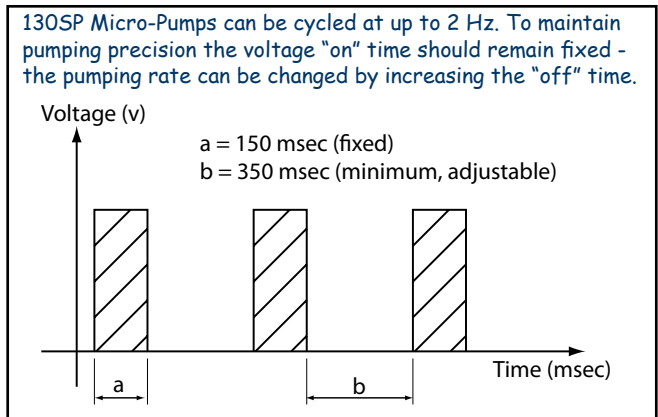


SPECIFICATIONS

130SP Volumetric Data						
Dispense Volume (µl)	10	20	30	40	50	60
Set-point accuracy	+/- 4%	+/- 4%	+/- 3%	+/- 3%	+/- 2%	+/- 2%
Repeatability	+/- 3%	+/- 3%	+/- 3%	+/- 2%	+/- 2%	+/- 2%
Max flow rate (µl/min)	1200	2400	3600	4800	6000	7200
Internal vol (µl)	105	105	105	105	105	105

130SP Electrical Data				130SP Cycle Rates		
Voltage	Power @70°F (21°C)	Current @70°F (21°C)	Effective continuous power @ max cycle rate	Min "on" time	Min "off" time	Max cycle rate
12 VDC	4.0 Watts	0.32 amps	1.2 Watts	150 msec	350 msec	2.0 Hz
24 VDC	4.0 Watts	0.16 amps	1.2 Watts			

Recommended tubing for 130SP
Inlet & outlet, 1/32" (0.80mm) ID, hardwall tubing, PART NO. 008T16-080



150SP SERIES MICRO-PUMP

For precise dispensing between 100 and 250µl and flow rates up to 24 ml/min

- Self-priming
- 100-250µl discrete dispense volumes
- Up to 24 ml/min maximum flow rate
- 5/16"-24 UNF threaded ports

The 150SP series Micro-Pumps are solenoid operated, with the operating mechanism isolated from the flow path by a diaphragm. Check valves situated at the inlet and outlet of the pump control the direction of flow. The combination of materials for each component can be selected to best suit your specific application.

Materials available for the wetted parts are:

- Body materials: PPS, PEEK™
- Diaphragm materials: EPDM
- Check valve materials: EPDM

150SP series options

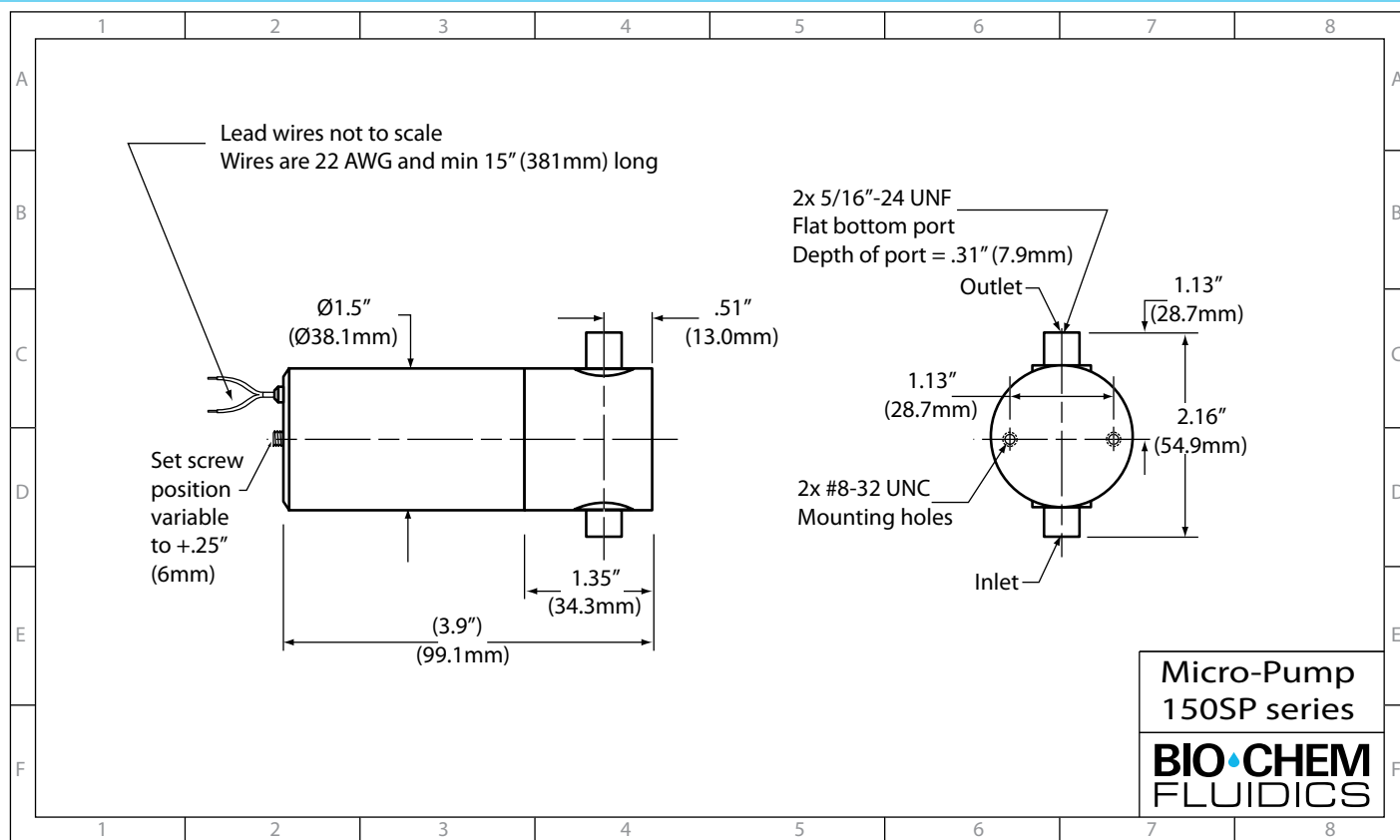
NOTE: For 24 VDC, replace 150SP12 with 150SP24 in any of the part numbers listed.

PART NO.	DISPENSE VOL (µL)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
12 VDC; 100µl dispense				
150SP12100-4EE	100	PPS	EPDM	EPDM
150SP12100-5EE	100	PEEK™	EPDM	EPDM
12 VDC; 125µl dispense				
150SP12125-4EE	125	PPS	EPDM	EPDM
150SP12125-5EE	125	PEEK™	EPDM	EPDM
12 VDC; 150µl dispense				
150SP12150-4EE	150	PPS	EPDM	EPDM
150SP12150-5EE	150	PEEK™	EPDM	EPDM
12 VDC; 175µl dispense				
150SP12175-4EE	175	PPS	EPDM	EPDM
150SP12175-5EE	175	PEEK™	EPDM	EPDM
12 VDC; 200µl dispense				
150SP12200-4EE	200	PPS	EPDM	EPDM
150SP12200-5EE	200	PEEK™	EPDM	EPDM
12 VDC; 225µl dispense				
150SP12225-4EE	225	PPS	EPDM	EPDM
150SP12225-5EE	225	PEEK™	EPDM	EPDM
12 VDC; 250µl dispense				
150SP12250-4EE	250	PPS	EPDM	EPDM
150SP12250-5EE	250	PEEK™	EPDM	EPDM

ARRANGEMENT



INSTALLATION DRAWING



SPECIFICATIONS

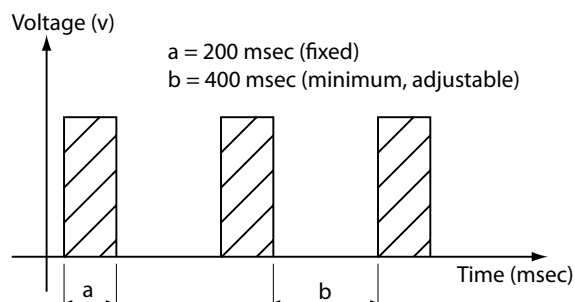
150SP Fluid Data							
Dispense Volume (μ l)	100	125	150	175	200	225	250
Set-point accuracy	+/- 5%	+/- 5%	+/- 4%	+/- 4%	+/- 4%	+/- 3%	+/- 3%
Repeatability	+/- 1%	+/- 1%	+/- 1%	+/- 1%	+/- 0.5%	+/- 0.5%	+/- 0.5%
Max flow rate (μ l/min)	9600	12000	14400	16800	19200	21600	24000
Internal vol (μ l)	710	710	710	710	710	710	710

150SP Electrical Data				150SP Cycle Rates		
Voltage	Power @70°F (21°C)	Current @70°F (21°C)	Effective continuous power @ max cycle rate	Min "on" time	Min "off" time	Max cycle rate
12 VDC	8.0 Watts	0.66 amps	3.2 Watts	200 msec	400 msec	1.6 Hz
24 VDC	8.0 Watts	0.33 amps	3.2 Watts			

Recommended tubing for 150SP

Inlet & outlet, 1/8" (3.2mm) ID, hardwall tubing,
PART NUMBER 008T47-032

150SP Micro-Pumps can be cycled at up to 1.6 Hz. To maintain pumping precision the voltage "on" time should remain fixed - the pumping rate can be changed by increasing the "off" time.



039SP SERIES MICRO-PUMP

For precise dispensing of 4 μ l and flow rates up to 0.96 ml/min in a manifold mountable design

- Self-priming
- 4 μ l discrete dispense volume
- 960 μ l/min maximum flow rate
- Manifold mountable

This sibling to the 030SP Micro-Pump duplicates the performance characteristics but is supplied ready for mounting in your manifold. Please contact us if you would like us to supply the manifold (see page 16).

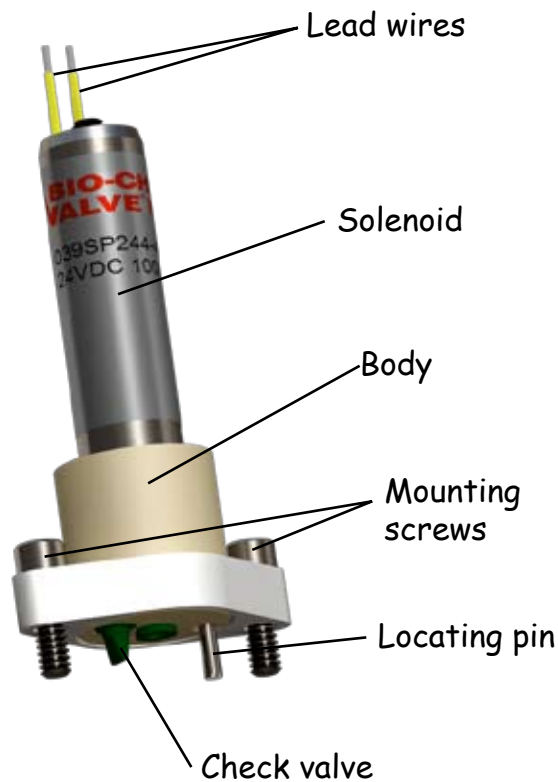
Materials available for the wetted parts of the pump are:

- Body materials: PPS
- Diaphragm materials: PTFE
- Check valve materials: FKM

039SP series options

PART NO.	VDC	DISPENSE VOL (μ L)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
12 VDC; 4μl dispense					
039SP124-4TV	12	4	PPS	PTFE	FKM
24 VDC; 4μl dispense					
039SP244-4TV	24	4	PPS	PTFE	FKM

ARRANGEMENT



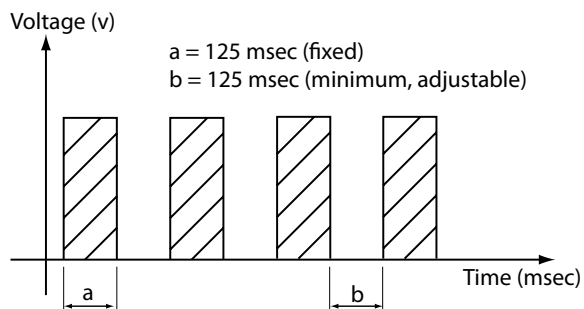
SPECIFICATIONS

039SP Volumetric Data	
Dispense Volume (μ l)	4
Set-point accuracy	+/- 25%
Repeatability	+/- 5%
Max flow rate (μ l/min)	960
Internal vol (μ l)	130

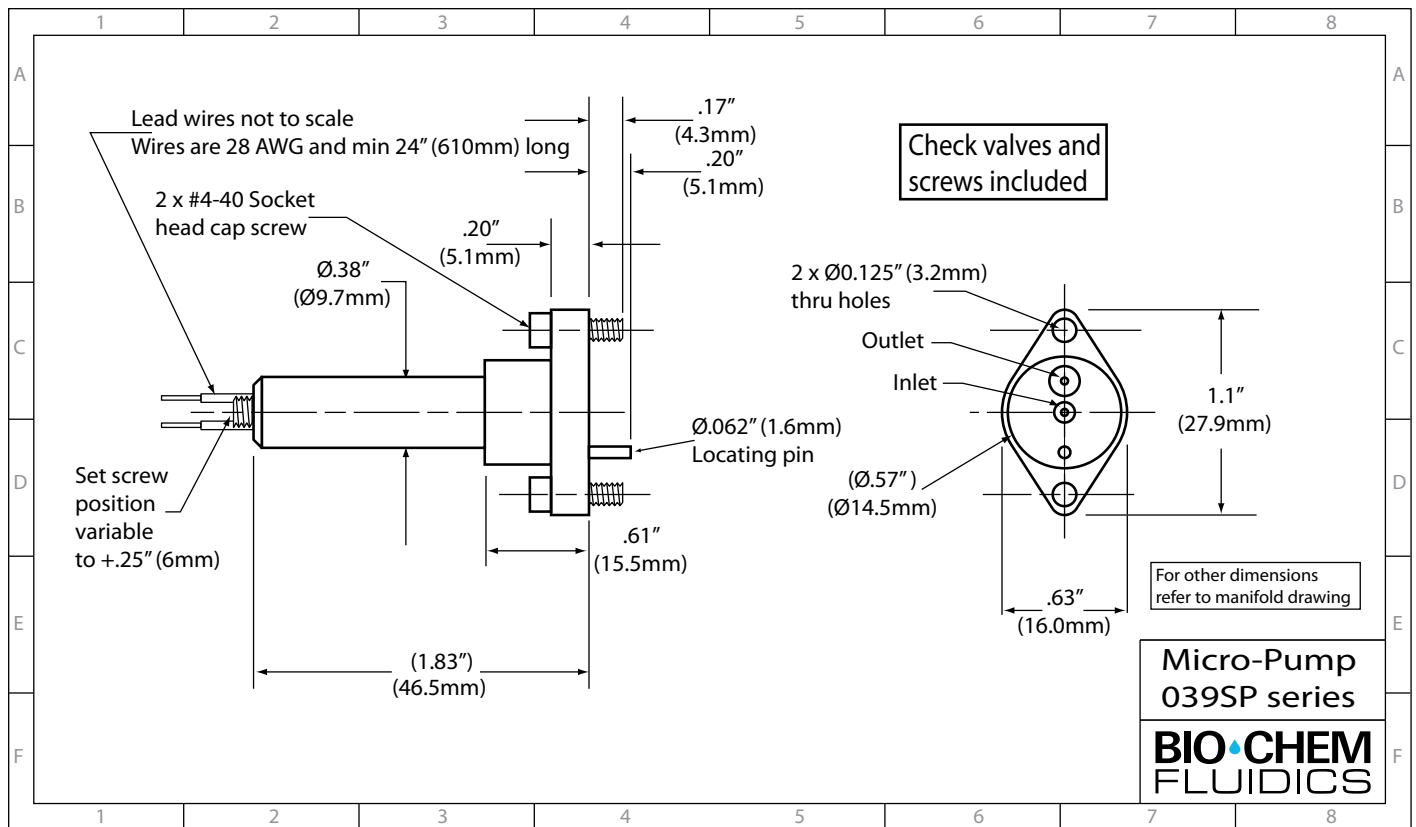
039SP Electrical Data			
Voltage	Power @70°F (21°C)	Current @70°F (21°C)	Effective continuous power @ max cycle rate
12 VDC	1.9 Watts	0.22 amps	0.9 Watts
24 VDC	1.9 Watts	0.11 amps	0.9 Watts

039SP Cycle Rates		
Min "on" time	Min "off" time	Max cycle rate
125 msec	125 msec	4.0 Hz

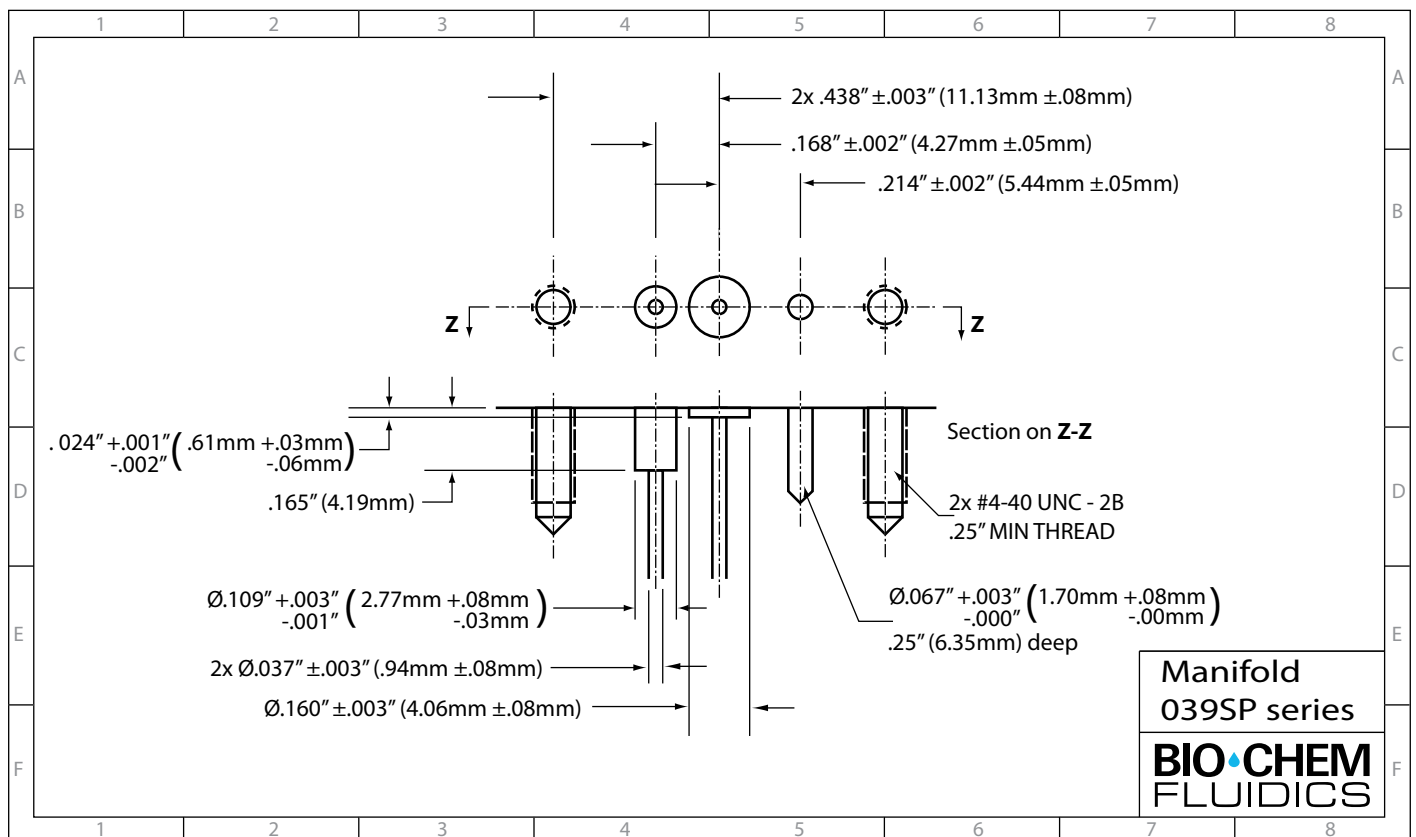
039SP Micro-Pumps can be cycled at up to 4 Hz. To maintain pumping precision the voltage "on" time should remain fixed - the pumping rate can be changed by increasing the "off" time.



INSTALLATION DRAWING



MANIFOLD INTERFACE DRAWING



139SP SERIES MICRO-PUMP

For precise dispensing between 10 and 60 μ l and flow rates up to 7.2 ml/min in a manifold mountable design

- Self-priming
- 10-60 μ l discrete dispense volumes
- Up to 7.2 ml/min maximum flow rate
- Manifold mountable

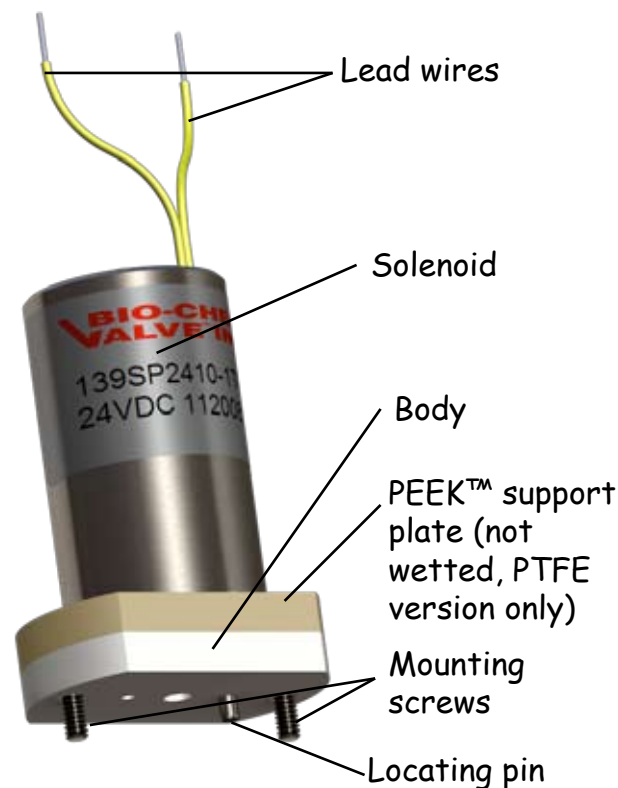
This sibling to the 130SP Micro-Pump duplicates the performance characteristics but is supplied ready for mounting in your manifold. Please contact us if you would like us to supply the manifold (see page 16). Materials available for the wetted parts are:

- Body materials: PTFE, POM, PEEK™
- Diaphragm materials: PTFE, EPDM
- Check valve materials: EPDM, FKM, FFKM

139SP series options

NOTE: For 24 VDC, replace 139SP12 with 139SP24 in any of the part numbers listed.

ARRANGEMENT



PART NO.	DISPENSE VOL (μ L)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
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12 VDC; 10 μ l dispense (Note: PTFE diaphragm for all 10 μ l options)

139SP1210-1TP	10	PTFE	PTFE	FFKM
139SP1210-5TP	10	PEEK™	PTFE	FFKM
139SP1210-5TV	10	PEEK™	PTFE	FKM
139SP1210-5TE	10	PEEK™	PTFE	EPDM
139SP1210-6TV	10	POM	PTFE	FKM
139SP1210-6TE	10	POM	PTFE	EPDM

12 VDC; 20 μ l dispense

139SP1220-1TP	20	PTFE	PTFE	FFKM
139SP1220-5TP	20	PEEK™	PTFE	FFKM
139SP1220-5TV	20	PEEK™	PTFE	FKM
139SP1220-5TE	20	PEEK™	PTFE	EPDM
139SP1220-6TV	20	POM	PTFE	FKM
139SP1220-6EE	20	POM	EPDM	EPDM

12 VDC; 30 μ l dispense

139SP1230-1TP	30	PTFE	PTFE	FFKM
139SP1230-5TP	30	PEEK™	PTFE	FFKM
139SP1230-5TV	30	PEEK™	PTFE	FKM
139SP1230-5TE	30	PEEK™	PTFE	EPDM
139SP1230-6TV	30	POM	PTFE	FKM
139SP1230-6EE	30	POM	EPDM	EPDM

PART NO.	DISPENSE VOL (μ L)	BODY MATERIAL	DIAPHRAGM MATERIAL	CHECK VALVE MATERIAL
----------	-------------------------	---------------	--------------------	----------------------

12 VDC; 40 μ l dispense

139SP1240-1TP	40	PTFE	PTFE	FFKM
139SP1240-5TP	40	PEEK™	PTFE	FFKM
139SP1240-5TV	40	PEEK™	PTFE	FKM
139SP1240-5TE	40	PEEK™	PTFE	EPDM
139SP1240-6TV	40	POM	PTFE	FKM
139SP1240-6EE	40	POM	EPDM	EPDM

12 VDC; 50 μ l dispense

139SP1250-1TP	50	PTFE	PTFE	FFKM
139SP1250-5TP	50	PEEK™	PTFE	FFKM
139SP1250-5TV	50	PEEK™	PTFE	FKM
139SP1250-5TE	50	PEEK™	PTFE	EPDM
139SP1250-6TV	50	POM	PTFE	FKM
139SP1250-6EE	50	POM	EPDM	EPDM

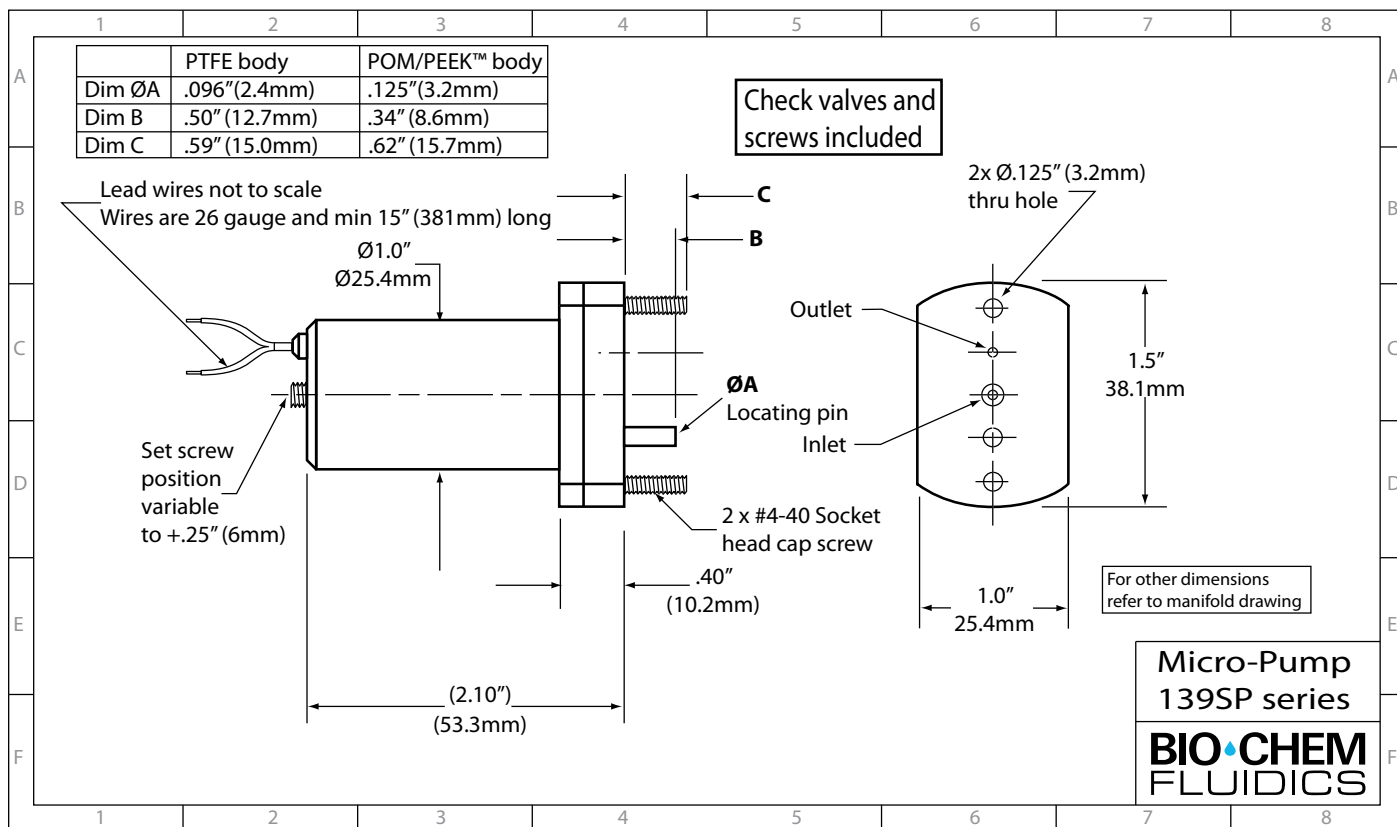
12 VDC; 60 μ l dispense

139SP1260-6EE	60	POM	EPDM	EPDM
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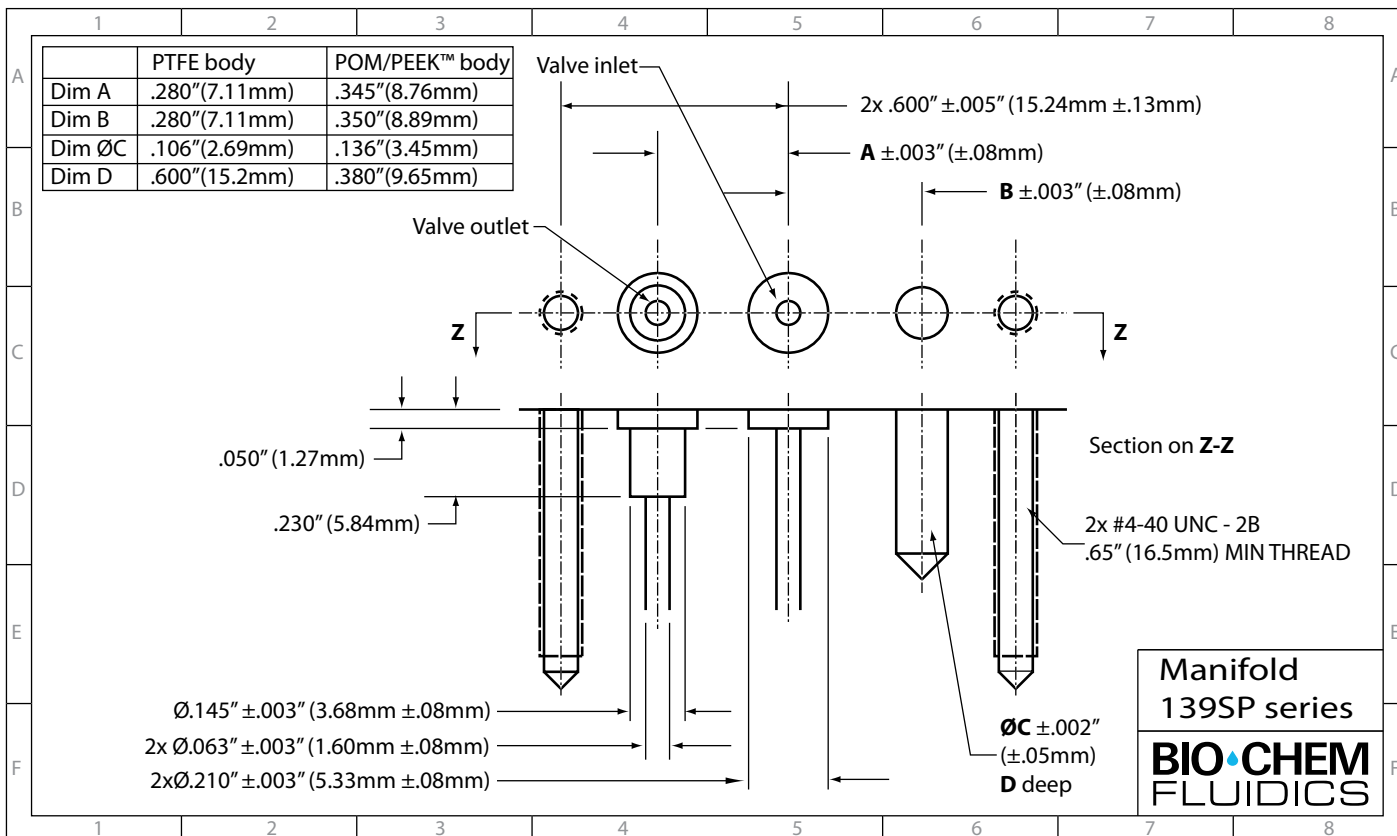
SPECIFICATIONS

The 139SP has the same specifications as the 130SP (see page 7)

INSTALLATION DRAWING



MANIFOLD INTERFACE DRAWING



MANIFOLDS



Custom manifold for (1) 139SP Micro-Pump (shown) and (3) isolation valves (not shown). Blue lines indicate the fluid path; the red dots are ruby balls used as plugs.

Custom-built manifolds are used to organize multiple Micro-Pumps and other Fluid Control Devices such as Isolation Valves into an efficient, pre-assembled, space-saving module that is designed to meet your specific flow needs. Manifolds can range from simple blocks for two devices to complex shapes with intricate flow paths for many devices. Bio-Chem Fluidics has produced complex manifolds for as many as 84 Micro-Pumps on a single block.

Features:

- Reduction of internal equipment space requirements.
- Allows for the combining of valves, tubing, pumps and connectors into a single, pre-assembled component.
- Elimination of unsightly and unmanageable wiring and tubing.
- Helps to reduce inventory.
- Reduces production time and costs associated with testing, handling and assembling multiple components.
- Materials of construction to suit fluid characteristics including, but not limited to; PTFE, POM, PEEK™, acrylic and PPS.

Please contact your local Bio-Chem Fluidics facility to discuss your manifold requirements with one of our engineers.



Custom manifold for (2) 139SP Micro-Pumps (not shown).

FCD CONTROLLER

The Bio-Chem Fluidics' Fluid Control Device (FCD) Controller is designed to provide end-user programmed control signals to any combination of eight such devices, including the full Bio-Chem Valve™ range of Micro-Pumps and solenoid operated valves.

The controller uses intelligent part number recognition technology to take the guesswork out of programming – simply by entering the part number the controller will recognize the function of the FCD and will generate applicable control signals. For applications requiring more control, the FCD Controller has a user-friendly symbol driven interface allowing for rapid programming of up to 999 steps. Built-in PC interface also allows for remote programming from any computer.

Features:

- Eight FCD's can be controlled, each can be programmed independently of the others.
- Supplied pre-loaded with control data for the complete range of Bio-Chem Valve™ valves and pumps. The standard USB interface ensures product data can be updated as needed.
- Stores up to 10 programs, each with up to 999 steps.
- LED's indicate the presence of a device and whether or not it is actuated.
- Adaptive power supply accepts either 115VAC or 230VAC
- RoHS compliant, CE marked.

FCD Controller to be released Summer 2009



CONTROLLER

PART NUMBER	DESCRIPTION	QTY
BBX8	8-position FCD controller	1 pk

TUBING

Inert PTFE tubing can be used with virtually all chemicals, solvents and corrosive materials, even at elevated temperatures. It can be sterilized in-line by steam, chemical methods, or autoclaving. This semi-rigid tubing is ideal for use with the Bio-Chem Valve™ range of Micro-Pumps.

PTFE TUBING

PART NUMBER	OD	ID	LENGTH	QTY
008T16-080-20	1.6mm (1/16")	0.8mm (1/32")	20m	ea
008T16-080-200	1.6mm (1/16")	0.8mm (1/32")	200m	ea
008T47-032-10	4.7mm (3/16")	3.2mm (1/8")	10m	ea
008T47-032-100	4.7mm (3/16")	3.2mm (1/8")	100m	ea

Other sizes are available and we also stock flexible, Silicone tubing for other applications (for example, Pinch Valves).

This PTFE tubing is the recommended tubing for use with our Omni-Lok™ fittings (see following page).

OMNI-LOK™ INVERTED CONE FITTINGS

Removable and reusable system for quick and convenient low-pressure connections

- Pressure rated up to 250psi (17 bar)
- For 1/16", 1/8" or 3/16" OD semi-rigid tubing e.g. PTFE, ETFE, FEP
- For flat-bottom 1/4"-28 UNF or 5/16"-24 UNF ports

Omni-Lok™ inverted cone fittings provide a simple, easy to use low-pressure connection. Only the ETFE cone and the tubing itself are in the fluid path.

No tools are required to assemble the flangeless fitting quickly and economically - just slip the fitting nut and the ETFE cone over the tubing and screw into the port. None of the parts are permanently attached to the tubing, so that the fitting nuts and inverted cones can easily be removed and re-used. A recess in the fitting nut houses the inverted cone. This allows maximum thread engagement with the port. The system seals up to 250psi (17 bar) pressure even in shallow PTFE ports. Note: The Omni-Lok™ inverted cone and fitting nut for 3/16" OD tubing and 5/16"-24 UNF flat-bottom ports is pressure rated up to 30 psi (2 bar).

Fitting nuts in robust, glass-filled polypropylene are available in a range of different colors for easy line identification. Nuts are also available in PEEK™ with standard and compact head designs (see the Omnifit® Fittings Systems Brochure for our full range).

For 1/16" OD Tubing

INVERTED CONES FOR 1/16" OD TUBING

PART NUMBER	DESCRIPTION	QTY
008CZ16	ETFE inverted cone	10pk

NUTS FOR 1/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC16-YC5U	PP	Blue	1/4•28	10pk
008NC16-YC5G	PP	Green	1/4•28	10pk

For 1/8" OD Tubing

INVERTED CONES FOR 1/8" OD TUBING

PART NUMBER	DESCRIPTION	QTY
008CZ32	ETFE inverted cone	10pk

NUTS FOR 1/8" OD TUBING

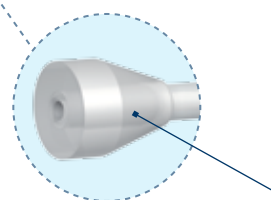
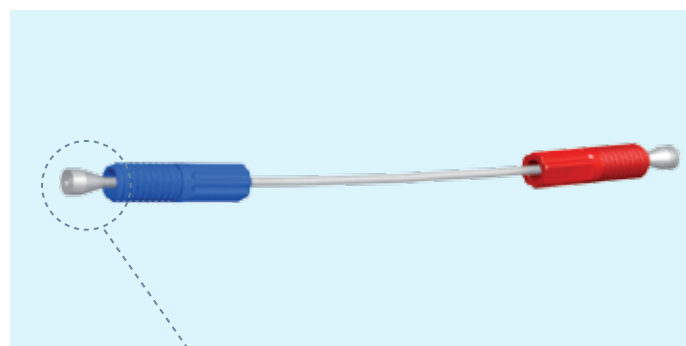
PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC32-YC5U	PP	Blue	1/4•28	10pk
008NC32-YC5G	PP	Green	1/4•28	10pk
008NC32-YC5N	PP	Orange	1/4•28	10pk
008NC32-YC5R	PP	Red	1/4•28	10pk
008NC32-YC5Y	PP	Yellow	1/4•28	10pk

TECH TIP:

Need more connection options?

See the Omnifit® Fitting Systems Brochure for our full range of threaded fittings, connectors and adaptors.

SPECIFICATIONS



ETFE inverted cone

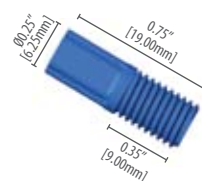
For 3/16" OD Tubing

INVERTED CONE FOR 3/16" OD TUBING

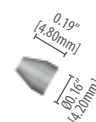
PART NUMBER	DESCRIPTION	QTY
008CZ47	ETFE inverted cone	10pk

NUTS FOR 3/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC47-YC7U	PP	Blue	5/16•24	10pk

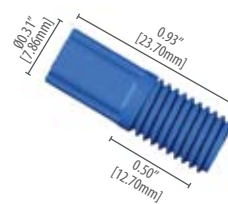


008NC16-YC5U
Nut for 1/16" OD tubing
1/4•28, blue

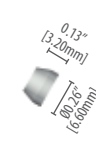


008CZ16
Omni-Lok™ inverted
cone for 1/16" OD tubing

For use
with O30SP,
120SP &
130SP series
pumps



008NC47-YC7U
Nut for 3/16" OD tubing
5/16•24, blue



008CZ47
Omni-Lok™ inverted cone
for 3/16" OD tubing

For use with
150SP series
pumps

MICRO-PUMP TECH TIPS

OPERATING PARAMETERS

Design Specifications: Bio-Chem Fluidics' Micro-Pumps are chemically compatible with a wide range of liquids, by virtue of the materials of construction. Specifications detailed in this brochure were determined via testing with distilled water under precise conditions. This means that the dispense rate for your pump may vary depending on your specific liquid. Other factors that can have an impact on operation include:

- Orientation
- Vertical distance between fluid reservoir and pump and then between pump and collection vessel
- Bore and length of inlet and outlet tubing
- Operating temperature

Please contact us to discuss your application and to get our recommendations for installation.

Pressure limits: Although Micro-Pumps are capable of producing outlet pressures of up to 5 psi (0.35 bar) while a dispense is taking place, for optimal dispense accuracy, the pressure on both the inlet and the outlet side of the pump should be kept between ± 0.5 psi (0.035 bar), equivalent to a head of ± 12 " (300mm) water.

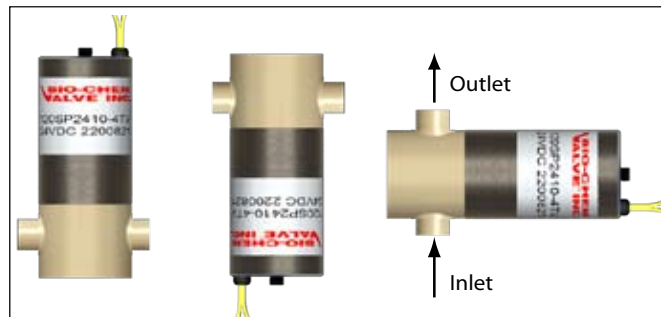
During the pump's up-stroke, suction is created on the inlet. Positive pressure is generated at the outlet during the down-stroke. When the pump is not actuated, it will shut-off flow as long as the pressure on the inlet does not exceed the maximum holding pressure. To ensure correct operation, pressure on the inlet side should never exceed 2 psi (0.14 bar) even when the pump is in the closed position. The check valves in the pump prevent fluid from flowing against the intended flow direction.

Priming: Micro-Pumps must be fully primed prior to operation to ensure that all air is removed from the pump cavity. Priming is achieved by cycling the pump until no air bubbles are seen in the dispense. This normally takes 30-60 seconds. Excessive air bubbles in the dispense are generally caused by air leaks due to loose fittings - check all the fittings in the system and tighten accordingly.

Lead Wires: As a standard all lead wires are PTFE coated. Lead wires are provided with stripped ends for easy wiring into your control system - refer to drawings on product pages for more details. Different lengths and terminal connectors can be provided - refer to customization notes below.

INSTALLATION TIPS

Orientation: Pumps should be installed with the solenoid portion of the pump pointing upwards, downwards or in a horizontal position with the outlet on top. This ensures that any air in the system will be evacuated quickly and also minimizes the effects of a pressure head acting to keep the check elements open when they should be closed.



Preferred mounting positions

Tubing: Unlike centrifugal pumps where the outlet is normally larger than the inlet (to reduce the discharge head on the pump), our Micro-Pumps actually prefer to have the same sized tubing on the inlet and outlet. We recommend hardwall tubing for the connections and offer $\frac{1}{16}$ " OD x $\frac{1}{32}$ " ID (our part number 008T16-080) and $\frac{3}{16}$ " OD x $\frac{1}{8}$ " ID (008T47-032) PTFE tubing that can be installed using our Omni-Lok™ $\frac{1}{4}$ "-28 and $\frac{5}{16}$ "-24 fittings. For more details refer to pages 16 and 17.

Mounting options: The Micro-Pumps can be installed into your equipment with a variety of mounting options including mounting clips, rings and flanges. Some of the pumps can be mounted directly via mounting holes that are drilled into the pump body. For more details refer to the "Mounting Accessories & Options" spec sheet.



MC-100
Mounting clip



MR-100
Mounting ring

CUSTOMIZED SOLUTIONS

We understand that many applications require customized solutions. Our design and prototyping expertise enables us to offer simple modifications of standard products as well as completely customized designs. Over 90% of the Micro-Pumps we sell are customized to one extent or another. Customizable options include (but are not limited to):

- Materials of construction
- Operating voltage
- Dispense volume
- Mounting options
- Tagging / labeling
- Length and/or style of connecting leads
- Custom manifolds

We look forward to working with you to meet your design engineering objectives!

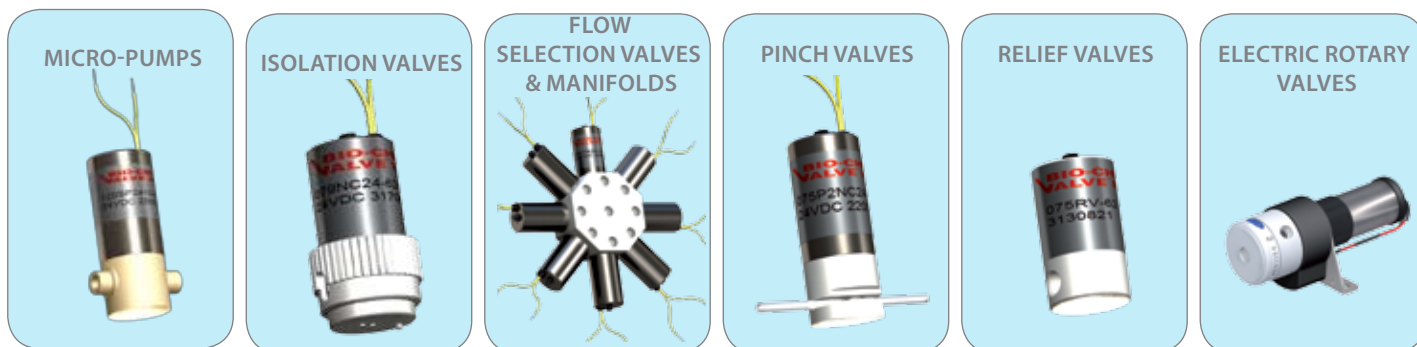
THE BIO-CHEM FLUIDICS BRAND FAMILY

Bio-Chem Fluidics is dedicated to providing instrument manufacturers and laboratories with the industry's best choice of inert, miniature fluid handling components.

Under our Bio-Chem Valve™ and Omnifit® brands we offer a complete fluid system solution for a wide range of industries including analytical chemistry, clinical diagnostics and medical device manufacturers as well as a world-class labware portfolio for the scientific community.

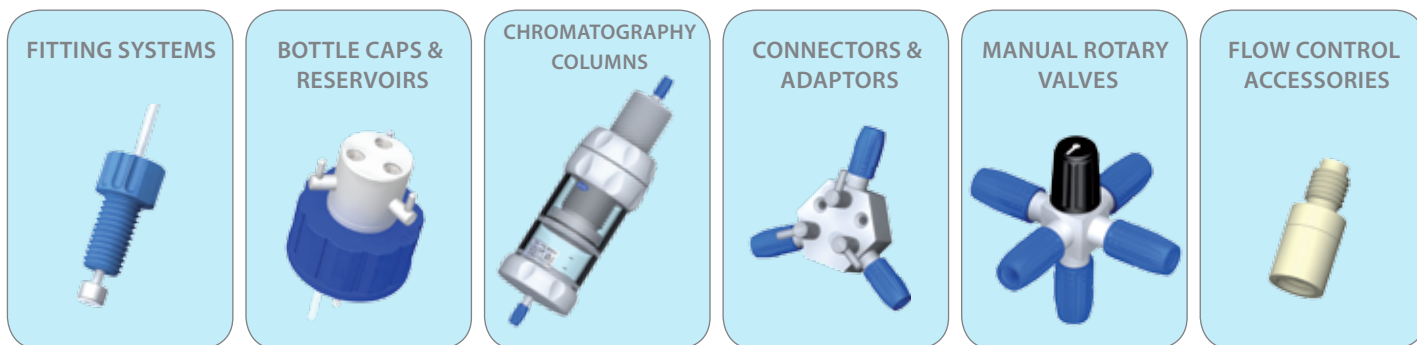
BIO-CHEM VALVE

INERT SOLENOID VALVES AND PUMPS, ELECTRIC ROTARY VALVES



Omnifit

INERT FLUID HANDLING COMPONENTS AND LABWARE



Trademarks

PEEK™ is a registered trademark of Victrex plc.

Omnifit®, Omni-Lok™ are trademarks of Bio-Chem Fluidics Ltd.

Bio-Chem Valve™ is a trademark of Bio-Chem Fluidics Inc.

FEATURES

Options available:

- 075RV - stand-alone, spring loaded
- 075RS - spring loaded with solenoid control

Standard Features:

- 6 Pressure relief settings from 20 to 150 psi
- FFKM and PPS fluid path
- Minimal internal volume

Series 075RS Solenoid Features:

- Isolated solenoid
- Continuous duty coil
- Low power consumption
- Fast response time
- High cycle life

SPECIFICATIONS

SERIES	075RV / 075RS	
Orifice diameter:	0.062" (1.57mm)	
Flow rate:	$C_v = 0.030 \pm 0.005$	
Internal volume:	54 μ l	
Ports:	1/4"-28 Flat Bottom	
SERIES	075RS	
Voltage:	12 VDC	24 VDC
Power Watts @ 70° F (21° C) :	2.8	2.8
Current Amps @ 70° F (21° C):	0.23	0.12
Lead Wires:	15" (381mm) 26 Gauge PTFE Coated	

STANDARD PRESSURE CONFIGURATIONS

Operating Pressure	Relief Pressure
0 - 17 psig	20 +/- 3 psi
0 - 31 psig	35 +/- 4 psi
0 - 54 psig	60 +/- 6 psi
0 - 77 psig	85 +/- 8 psi
0 - 100 psig	110 +/- 10 psi
0 - 138 psig	150 +/- 12 psi



The 075RV / 075RS relief valve series is ideally suited for use with aggressive and high-purity fluids. Wetted parts consist of a PPS valve body and an FFKM diaphragm. The unique Bio-Chem Valve™ diaphragm retention design ensures reliable performance and long life.

The solenoid operated, normally closed 075RS relief valve provides dual functionality as a solenoid valve with pressure relief function. This provides flow control and the capability to periodically purge the system.

Customized configurations are available, including:

- Broad range of wetted materials including PTFE, ETFE, PFA, PEEK™, POM, EPDM, FKM
- Port threads such as M6, 10-32
- Larger or smaller orifice sizes
- Alternate port configurations, including 3-port designs
- Special relief and/or operating pressure settings
- Mounting options including manifold mountable configurations

Please contact Bio-Chem Fluidics to discuss your custom requirements.

Materials:

EPDM = ethylene-propylene-diene
 ETFE = ethylene tetrafluoroethylene
 FFKM = perfluoroelastomer
 FKM = fluoroelastomer

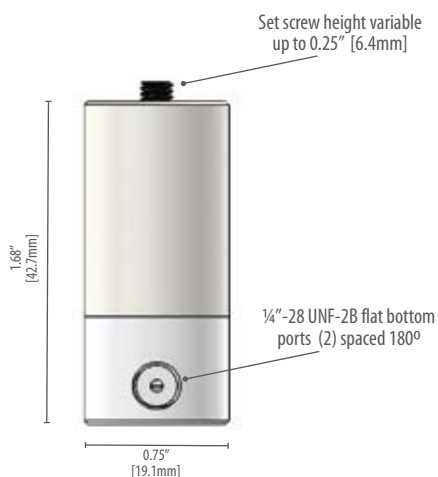
PEEK™ = polyetheretherketone
 PFA = perfluoroalkoxy
 POM = polyoxymethylene
 PPS = polyphenylene sulphide
 PTFE = polytetrafluoroethylene

Trademarks:

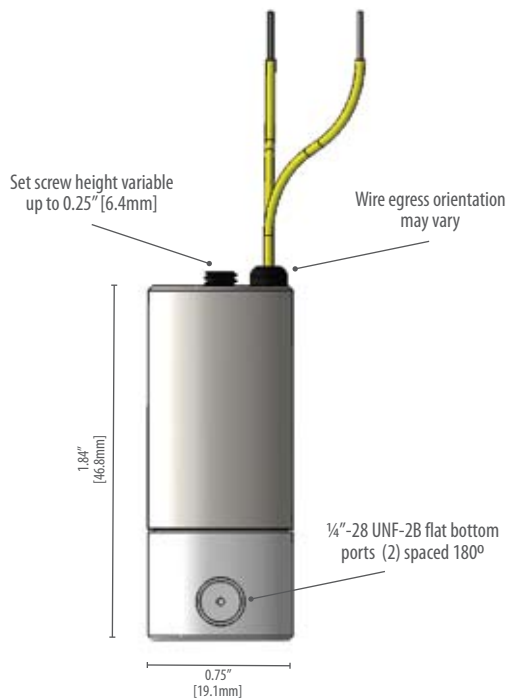
Bio-Chem Valve™ is a trademark of Bio-Chem Fluidics Inc.
 PEEK™ is a registered trademark of Victrex plc.

INSTALLATION INSTRUCTIONS

Series 075RV relief valve



Series 075RS relief valve with solenoid



Ordering Information:

Series 075RV relief valve

Spring loaded only

PART NO.	SET PRESSURE (psig)	BODY MATERIAL	DIAPHRAGM MATERIAL
075RV-62-20	20	PPS	FFKM
075RV-62-35	35	PPS	FFKM
075RV-62-60	60	PPS	FFKM
075RV-62-85	85	PPS	FFKM
075RV-62-110	110	PPS	FFKM
075RV-62-150	150	PPS	FFKM

Series 075RS relief valve

Spring loaded with 12VDC solenoid

PART NO.	SET PRESSURE (psig)	BODY MATERIAL	DIAPHRAGM MATERIAL
075RS12-62-20	20	PPS	FFKM
075RS12-62-35	35	PPS	FFKM
075RS12-62-60	60	PPS	FFKM
075RS12-62-85	85	PPS	FFKM
075RS12-62-110	110	PPS	FFKM
075RS12-62-150	150	PPS	FFKM

NOTE: For 24 VDC, replace 075RS12 with 075RS24 in any of the part numbers listed.

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Manual Valves



Inside.....

- Small high pressure rotary valves 2*
- Small rotary valves with 'Omnifit Cap' connections 2*
- Distribution and Loop Injection Valves 3*
- Stacked distribution valves... 3*
- Sample injection valve 4*
- Application and set up notes 4*

A range of large and small manual valves offering a variety of flow paths and connection options

- Low and high pressure versions
- Excellent chemical resistance
- Accept 1/4"-28 UNF fittings
- Custom designs available for OEM applications

Small High Pressure Rotary Valves

These manual rotary valves are constructed from PTFE with a Kel-F® rotor and have a 0.8mm bore size, making them suitable for pressure applications up to 500 psi (33 bar). They are available in 4 and 5 port versions. All ports are 1/4"-28 UNF flat-bottom and will accept any 1/4"-28 UNF male fitting. Omnifit's 1000 psi (68 bar) pressure rated Gripper fittings or Omni-Lok™ fittings are ideal for use with these valves. These valves are bulkhead mountable.

Small Rotary Valves with 'Omnifit Cap' connections

Omnifit's small manual rotary valves use the 'Omnifit-Cap' connection system and can be used for sampling, flow-splitting, mixing and fluid line interconnection. They have a 1.5mm bore size and accept tubing sizes between 0.5 and 4mm OD. They are pressure rated to 50 psi (3.3 bar).

Distribution and Loop Injection Valves

These manual valves have a click-stop mechanism to ensure correct flow path alignment. Each valve consists of a glass filled PTFE body with a Kel-F® rotor and a PEEK™ casing. These valves are rated to 500 psi (34 bar).

Sample Injection Valve

Designed for low to medium pressure chromatography systems, this injection valve system is supplied with 0.5ml, 1.0ml and 2.5ml loops and a 5ml syringe. Other loops can be supplied on request. Pressure rating is 500 psi (34 bar).

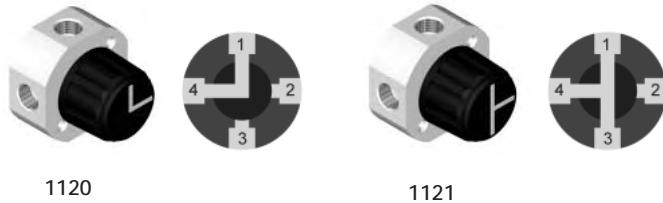
Stacked Distribution Valves

Omnifit's manual stacked distribution valves are constructed using PTFE bodies with a Kel-F® rotor giving excellent chemical compatibility. The valves have a 1.5mm bore size and are available in 2, 3 and 4 tiers to switch 2, 3 or 4 flow lines simultaneously. 1/4"-28 UNF ports are compatible with all Omnifit 1/4"-28 male fittings. A mechanical stop provides positive flow path alignment.

Small High Pressure Rotary Valves

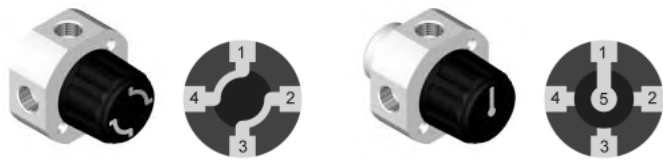
- Pressure rated to 500 psi (33 bar)
- Accepts 1/4"-28 UNF fittings
- M3 holes for mounting
- Flow paths indicated by control knob

These manual rotary valves are constructed from PTFE with a Kel-F® rotor and have a 0.8mm bore size, making them suitable for high pressure applications up to 500 psi (33 bar). They are available in 4 and 5 port versions and any spare ports can be sealed with a plug (part number 2320) for maximum flexibility. All ports are 1/4"-28 UNF flat-bottom and will accept any 1/4"-28 UNF male fitting. These valves are bulkhead mountable with pre-drilled M3 threaded holes for easy mounting.



1120

1121



1122

1126

4-port valves

4-port valves allow flow across selected ports, from either one or two inlets to a combination of the remaining ports.

5-port valve

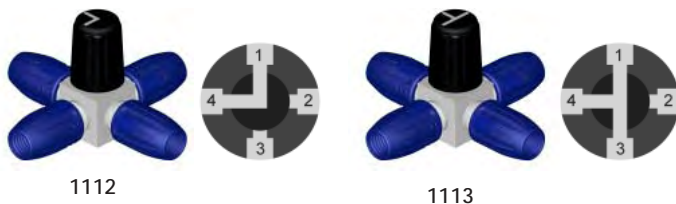
The 5-port valve utilizes the common port as the inlet and allows flow to a combination of the remaining 4 ports.

Part Number	Ports	Pack Size
1120	4	1
1121	4	1
1122	4	1
1126	5	1

Small Rotary Valves with 'Omnifit-Cap' connectors

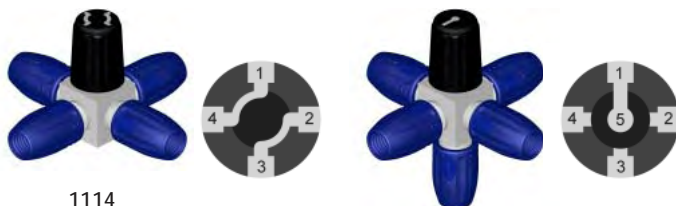
- Range of flow path options
- PTFE body
- Kel-F® rotor
- Flow paths indicated by control knob

Omnifit's small manual rotary valves use the 'Omnifit Cap' connection system and can be used for sampling, flow-splitting, mixing and fluid line interconnection. They have a 1.5mm bore size and accept tubing sizes between 0.5 and 4mm OD. They are pressure rated to 50 psi (3.3 bar). The valves are available in 4 and 5 port versions and any spare ports can be sealed with a plug (part number 2320) or by using a PTFE cone blank (part number 1514) for maximum flexibility.



1112

1113



1114

1118

4-port valves

4-port valves allow flow across selected ports, from either one or two inlets to a combination of the remaining ports.

5-port valve

The 5-port valve utilizes the common port as the inlet and allows flow to a combination of the remaining 4 ports.

See the connectors spec sheet for information on the 'Omnifit Cap' connection system.



Part Number	Ports	Pack Size
1112	4	1
1113	4	1
1114	4	1
1118	5	1



Distribution and Loop Injection Valves

- 500 psi (33 bar) pressure rating
- Click-stop for port identification & alignment
- Ready for mounting on a flat surface
- PEEK™ casing
- Glass filled PTFE Body
- Kel-F® rotor



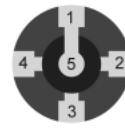
1127-6LI



1127-10LI



1127-4D



Distribution valve

Omnifit's click-stop distribution valve is available in a 5-port option. This enables it to be used as a 4-way distribution valve, by using one port as the inlet and selecting flow to any of the other available ports for outlet. This distribution valve can be used for sample collection and stream selection.

Loop injection valves

Omnifit's click-stop loop injection valves are available in 6 or 10-port options.

See back page for application notes.

Part Number	Valve Type	Ports	Pack Size
1127-6LI	Loop injection	6	1
1127-10LI	Loop injection	10	1
1127-4D	Distribution	5	1

Stacked Distribution Valves

- Pressure rated to 500 psi (33 bar)
- Minimal dead volumes
- 2, 3 or 4 tier configurations
- Positive switch stops

Omnifit's manual stacked distribution valves are constructed using PTFE bodies with a Kel-F® rotor giving excellent chemical compatibility. The valves have a 1.5mm bore size and are available in 2, 3 and 4 tiers to accept 2, 3 or 4 flow lines. The 1/4"-28 UNF ports are compatible with all Omnifit 1/4"-28 male fittings.

Valves are available in three flow configurations and have the same configuration on each tier.



1142



1143



1144



1152



1153



1154



1162



1163



1164

Part Number	Description	Pressure rating	Pack Size
1142	2-tier valve allowing flow between two ports at 90°	500 psi	1
1152	3-tier valve allowing flow between two ports at 90°	100 psi	1
1162	4-tier valve allowing flow between two ports at 90°	100 psi	1
1143	2-tier valve allowing flow between 3 ports in a 'T' formation	500 psi	1
1153	3-tier valve allowing flow between 3 ports in a 'T' formation	100 psi	1
1163	4-tier valve allowing flow between 3 ports in a 'T' formation	100 psi	1
1144	2-tier valve allowing flow between pairs of adjacent ports	500 ps	1
1154	3-tier valve allowing flow between pairs of adjacent ports	100 psi	1
1164	4-tier valve allowing flow between pairs of adjacent ports	100 psi	1

Complete Fluid System Solutions™ 3

Sample Injection Valve

- Allows introduction of reproducible sample volumes
- 0.5ml, 1.0ml and 2.5ml sample loops included



1106

Designed for low pressure chromatography systems, this loop injection valve system is supplied with 0.5ml, 1.0ml and 2.5ml loops and a 5ml syringe. Other loops can be supplied on request. A clamp for easy mounting to a retort stand is included.

See application notes below.

Part Number	Description	Pack Size
1106	Manual sample injection valve	1
1106.5	Spare sample loop for use with 1106 0.5ml	1
1106-1	Spare sample loop for use with 1106 1ml	1
1106-2	Spare sample loop for use with 1106 2.5ml	1
1106-5	Spare sample loop for use with 1106 5ml	1

Application and set up notes.

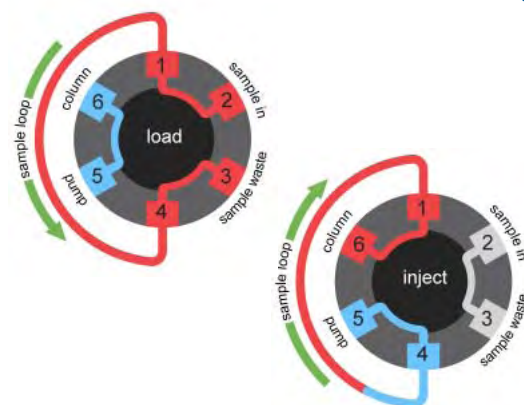
The images below show Omnifit loop inject valves in use as sample injection devices in a chromatography system. These are the most common applications but the use of the valves is not limited to these.

6 port loop inject valve used as a sample injector

With the valve in the load position the sample can be injected into the sample loop while the mobile phase is pumped directly through to the column.

When the valve is switched to the inject position, the pump is then connected to the sample loop and the sample is carried onto and through the column. The 'sample in' and 'waste' ports are joined but isolated from the loop.

It is suggested that ports are connected to the corresponding lines as shown. This ensures that the flow of the mobile phase is in opposite directions during the load and inject operations.

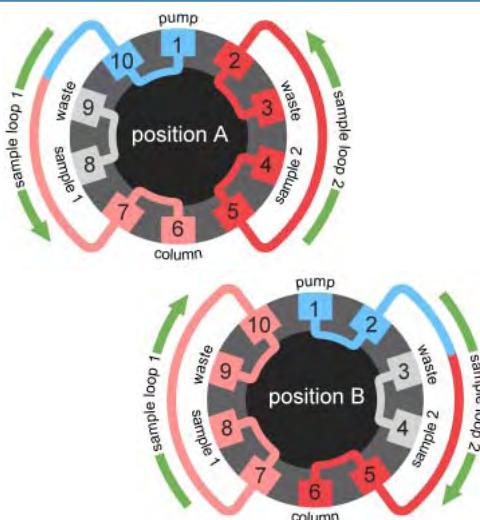


10 port loop inject valve used as a sample injector

This valve allows alternate injection from two different sample loops, either identical or of different sizes. This application can alternatively be satisfied with a 4 port switching valve and a 6 port loop inject valve.

With the valve in position A, sample 2 can be loaded into sample loop 2 while the mobile phase is pumped through sample loop 1 and carries sample 1 onto the column. The 'sample 1 in' and 'waste' ports are connected but isolated from the loop.

When the valve is switched to position B, the pump is connected to sample loop 2 and sample 2 is carried onto and through the column. The 'sample 2 in' and 'waste' ports are connected but isolated from the loop. Whilst sample 2 is pumped onto the column, sample loop 1 can be re-loaded.



Trademarks:

Kel-F® is a registered trademark of the 3M Company

PEEK™ is a trademark of Victrex plc

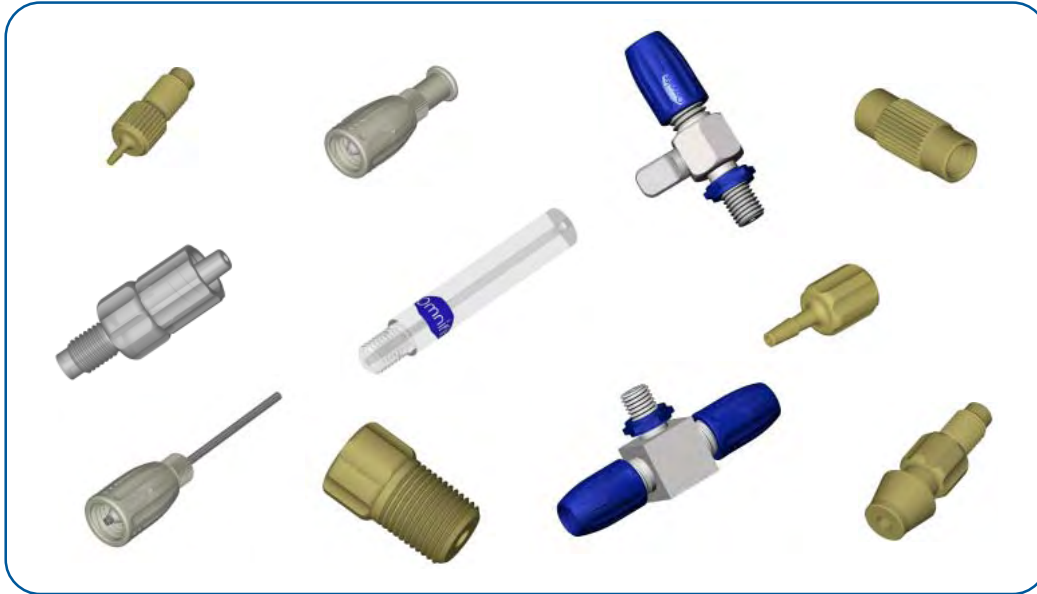
Rev. 0205



Adaptors & Couplings

Inside.....

- Barbed Adaptors..... 2*
 - Male 2*
 - Female 2*
- 1/4"-28 Adaptors 3*
- 'Omnifit Cap' Adaptors 3*
- Variable Bore Adaptors 4*
- Couplings 4*



Chemically inert adaptors and couplings for a variety of thread sizes and tubing types

- Luer, 1/4"-28, barbed and 'Omnifit Cap' connection types
- Excellent chemical resistance
- Versions for hardwall and softwall tubing
- Custom designs available for OEM applications

Barbed Adaptors

Omnifit barbed adaptors are designed for use with soft wall tubing. They are machined rather than moulded and this gives a superior barb to retain soft wall tubing.

1/4"-28 Adaptors

These 1/4"-28 UNF male thread adaptors fit into any 1/4"-28 UNF flat bottom port, as used in most Omnifit valves and connectors, giving quick, push-on connections for softwall tubing. Glass adaptors and adaptors to male and female luer are also available. The glass 1/4"-28 UNF adaptor can be fused to other laboratory glassware to give a convenient threaded connection.

'Omnifit Cap' Adaptors

Cap adaptors replace the coloured cap on any of Omnifit's small variable bore connectors and valves to give either quick push-on connections for softwall tubing or luer connections.

Variable Bore Adaptors

Adaptors to fit 1/4"-28 female ports and adapt to 'Omnifit Cap' connections.

Couplings

Omnifit threaded couplings are a useful range of 'problem solving' parts that enable you to convert thread sizes quickly and easily. Omnifit couplings are available that accept a 1/4"-28 UNF male fitting at one end and convert this to a range of male and female thread types: 1/4"-28 UNF female, 10-32 female, 3/8" NPT male, 1/8" NPT male, M6, or 1/8" BSPT male.



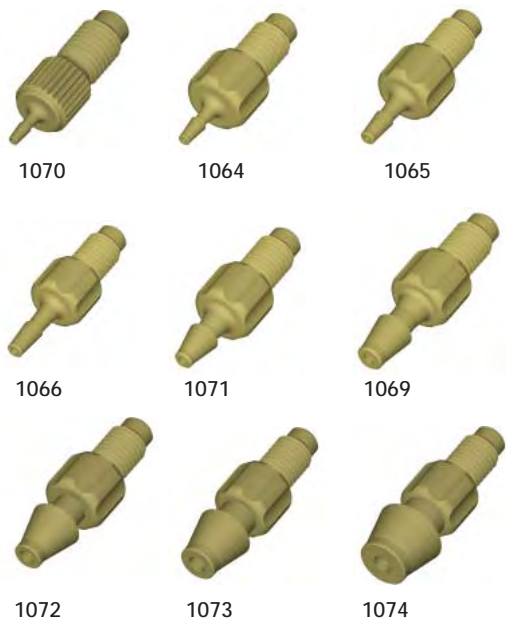
Barbed Adaptors

1/4"-28 Male to Barb Adaptors

- PEEK™ material
- Excellent chemical resistance
- Extra sharp machined barbs for resilient connections

These male 1/4"-28 to barb adaptors will connect softwall tubing to any female 1/4"-28 port.

Omnifit barbed adaptors are designed for use with softwall tubing. They are machined rather than moulded and this gives a superior barb to retain soft wall tubing.



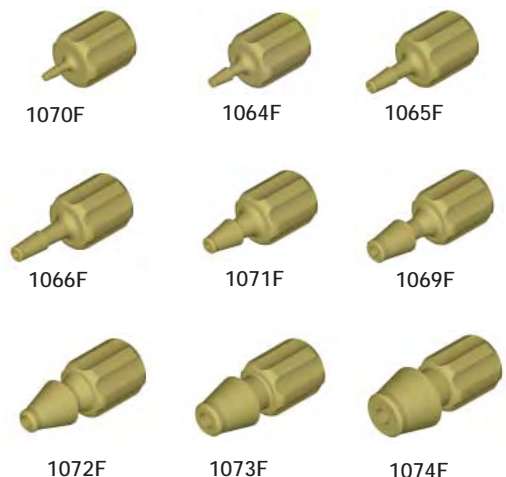
Part Number	Compatible Tubing I.D.	Pack Size
1070	1.0mm	1
1064	1.5mm	1
1065	2.0mm	1
1066	2.5mm	1
1071	3.0mm	1
1069	3.2mm	1
1072	4.0mm	1
1073	6.0mm	1
1074	8.0mm	1

1/4"-28 Female to Barb Adaptors

- PEEK™ material
- Excellent chemical resistance
- Extra sharp machined barbs for resilient connections

These female 1/4"-28 to barb adaptors will connect softwall tubing to any male 1/4"-28 thread.

Omnifit barbed adaptors are designed for use with softwall tubing. They are machined rather than moulded and this gives a superior barb to retain softwall tubing.

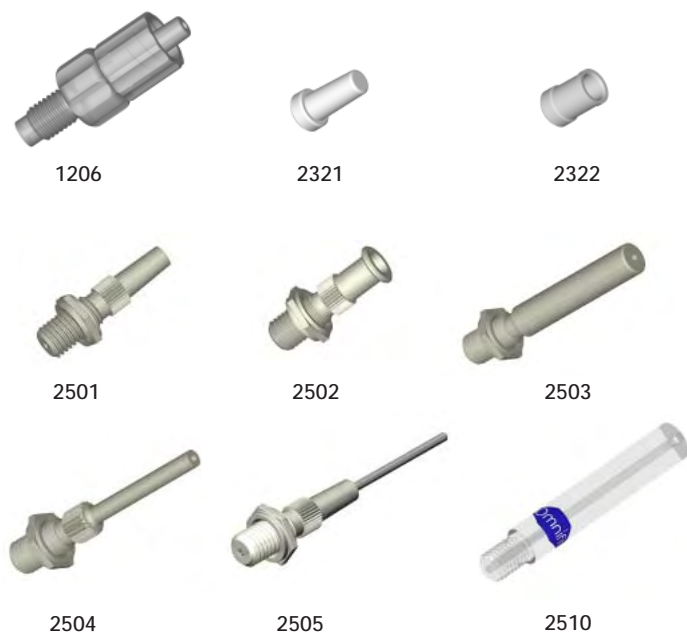


Part Number	Compatible Tubing I.D.	Pack Size
1070F	1.0mm	1
1064F	1.5mm	1
1065F	2.0mm	1
1066F	2.5mm	1
1071F	3.0mm	1
1069F	3.2mm	1
1072F	4.0mm	1
1073F	6.0mm	1
1074F	8.0mm	1



1/4"-28 Adaptors

- Inert Tefzel® or glass
- Autoclavable (Tefzel® only)
- Fit any 1/4"-28 UNF flat bottom ports

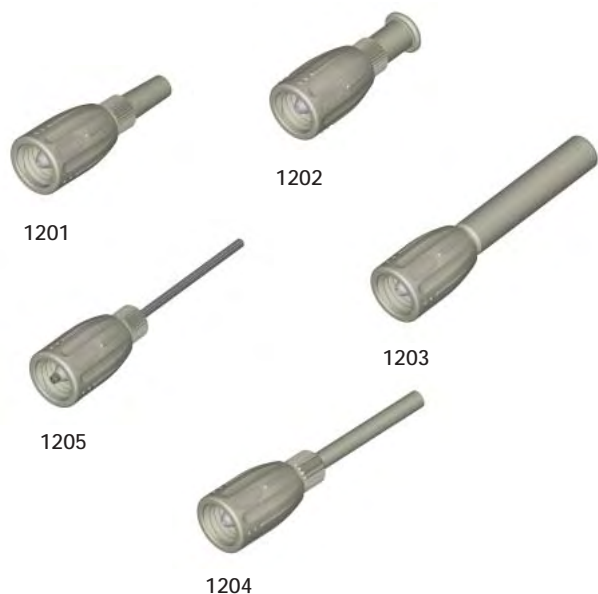


These adaptors will fit into 1/4"-28 UNF flat bottom ports in most Omnifit connectors and valves. The Tefzel® 1/4"-28 UNF male thread adaptors provide a quick, push-on connection for softwall tubing or luer. Adaptors to male and female Luer are available. The 1/4"-28 UNF male thread glass adaptors fit into any 1/4"-28 UNF flat bottom ports and are suitable for flame fusing onto other glassware.

Part Number	Description	Pack Size
1206	Tefzel® Luer lock fitting with Polypropylene lock-ring	1
2321	PTFE plug for female luer	2
2322	PTFE plug for male luer	2
2501	Tefzel® male luer fitting	1
2502	Tefzel® female luer fitting	1
2503	Tefzel® 1/4" O.D. pipe connector	1
2504	Tefzel® 1/8" O.D. pipe connector	1
2505	Tefzel® 1/16" O.D. pipe connector with stainless steel tube	1
2510	1/4" glass tubing with 1.5mm bore	1

'Omnifit Cap' Adaptors

- Replaces the colored cap on any 'Omnifit Cap' connector or valve
- Push-on connection for softwall tubing
- Adaptors with luer fittings
- Autoclavable



These adaptors can replace the Omnifit cap on any 'Omnifit Cap' connector or valve to give either quick push-on connections for softwall tubing or luer connections. Cap-to-luer adaptors are available with male or female luer connections. Cap-to-pipe adaptors are available in Tefzel® or stainless steel to accept softwall tubing with the following internal diameters: 1/16", 1/8" and 1/4".

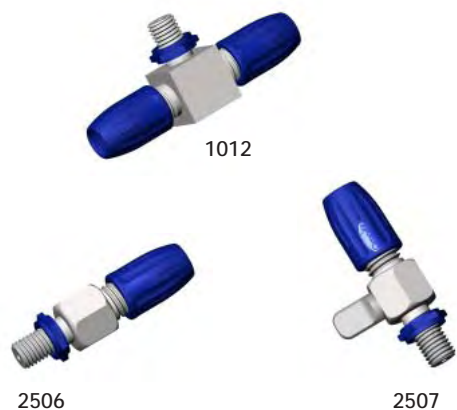
Part Number	Description	Pack Size
1201	Tefzel® male luer fitting	1
1202	Tefzel® female luer fitting	1
1203	Tefzel® 1/4" O.D. pipe connector	1
1204	Tefzel® 1/8" O.D. pipe connector	1
1205	Tefzel® 1/16" O.D. pipe connector with a stainless steel tube	1

Complete Fluid System Solutions™

Variable Bore Adaptors

- 50 psi pressure rating
- 1.5mm (.062") bore size
- Chemically inert all-PTFE body
- Polypropylene caps

Omnifit variable bore adaptors allow any size of tubing between 0.5 and 4mm O.D. to be connected to a 1/4"-28 UNF port via the 'Omnifit Cap'. The valved version has a Tefzel® rotor. Each adaptor has a male 1/4"-28 UNF thread that will fit any female 1/4"-28 UNF threaded port.



Part Number	Description	Pack Size
1012	3-way 'T' variable bore connector to male 1/4"-28	1
2506	1/4"-28 to variable bore	1
2507	1/4"-28 to variable bore with valve	1

Couplings

- Excellent chemical resistance
- Polypropylene, PEEK™ or Tefzel®
- Convert different thread sizes

Omnifit threaded couplings are a useful range of 'problem solving' parts that enable you to convert thread sizes quickly and easily.

Omnifit couplings are available that accept a 1/4"-28 UNF male fitting at one end and convert this to a range of male and female thread types including: 1/4"-28 UNF female, 10-32 female, 3/8" NPT male, 1/8" NPT male, 1/8" BSPT male and M6.



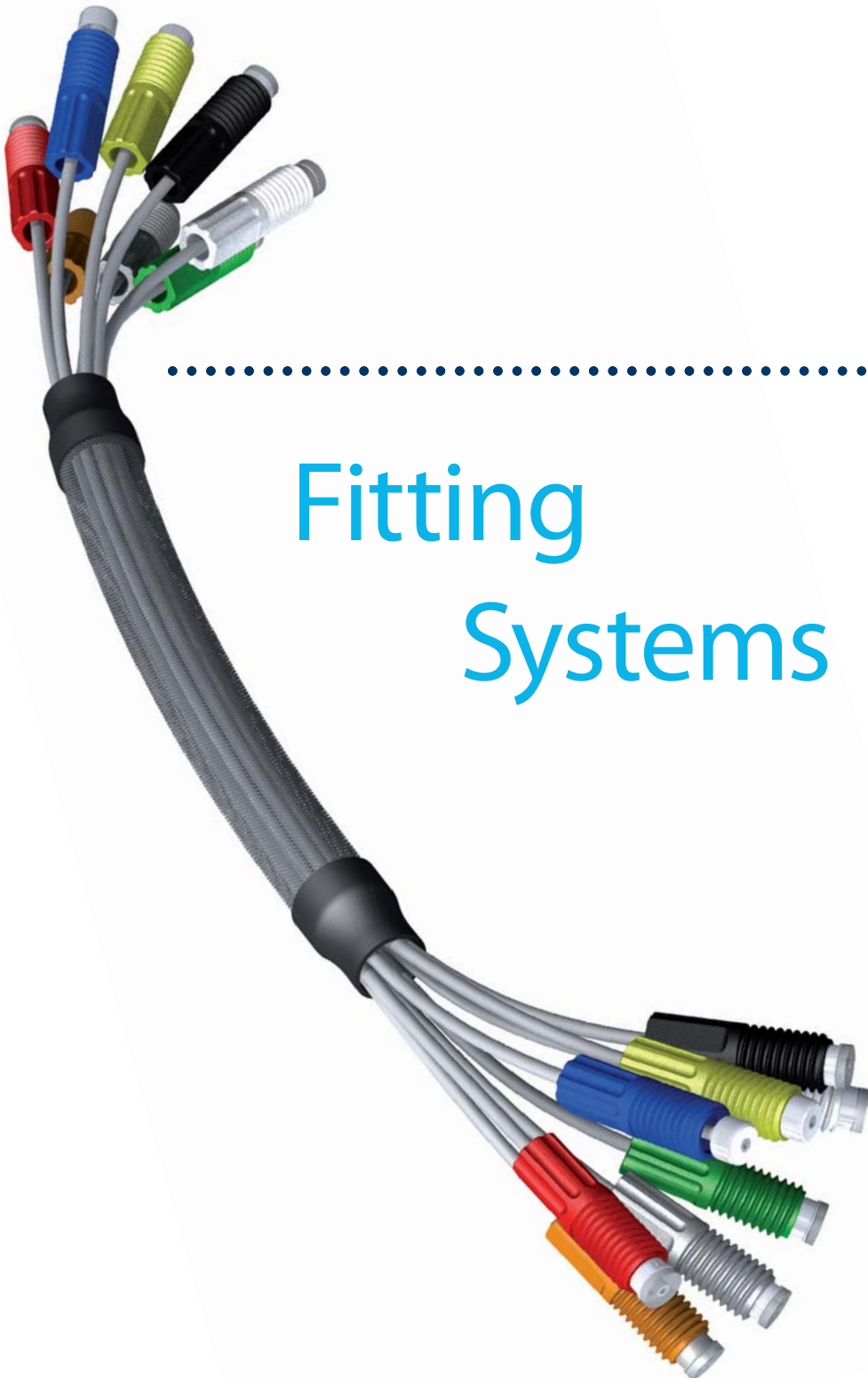
Part Number	Description	Pack Size
2301	Polypropylene two-way coupling	1
2302	Tefzel® two-way coupling	1
2306	PEEK™, 1/4"-28 Female to 10-32 Female	1
2352	PEEK™, 1/4"-28 Female to M6 Male	1
2354	PEEK™, 1/4"-28 Female to 1/8" NPT Male	1
2356	PEEK™, 1/4"-28 Female to 3/8" NPT Male	1
2357	PEEK™, 1/4"-28 Female to 1/8" BSPT Male	1

Trademarks:

PEEK™ is a trademark of Victrex plc
 Tefzel® is a registered trademark of E.I. du Pont de Nemours and Company

Rev. 0205

— A —



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Fitting Systems






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Index

Page 4	<p>OMNI-LOK™ TYPE P Chemically inert flangeless fitting with permanently attached PTFE ferrule. Ideal for repeat connect/disconnect. Our highest pressure rated system.</p>	
Page 6	<p>OMNI-LOK™ TYPE S Chemically inert flangeless fitting with permanently attached PEEK™ or ETFE ferrules. Ideal for repeat connect/disconnect.</p>	
Page 8	<p>OMNI-LOK™ INVERTED CONE Removeable and reusable system for quick and convenient low-pressure connections. No tools required for assembly.</p>	
Page 10	<p>OMNI-LOK™ FLANGED Flanged (flared) tubing system for economical low pressure connections.</p>	
Page 12	<p>OMNIFIT® GRIPPER Chemically inert flangeless fitting with permanently attached PTFE ferrule. Ideal for repeat connect/disconnect.</p>	
Page 14	<p>FITTING AND TORQUE TOOLS Tools for installation of fittings in difficult to access locations and to ensure the recommended torque.</p>	
Page 15	<p>CLICK-N-SEAL™ Fittings with integral torque control for easy, hand-tight installation.</p>	
Page 16	<p>FACTORY ASSEMBLED CUSTOM TUBING SETS Tubing sets assembled to your specifications, ensuring a perfect, leak-free connection every time.</p>	
Page 17	<p>TUBING Chemically-resistant softwall (Silicone Select and C-Flex) and semi-rigid tubing (PTFE).</p>	
Page 18	<p>BARBED ADAPTORS Thread to barb adaptors to connect softwall tubing to threaded ports or to semi-rigid tubing.</p>	
Page 20	<p>THREADED ADAPTORS A useful range of “problem-solving” parts to convert thread sizes quickly and easily.</p>	
Page 20	<p>COUPLINGS AND CONNECTORS Couplings to connect two or three fitting lines using the same thread type.</p>	
Page 21	<p>BUBBLE TRAP Effective, in-line removal of bubbles.</p>	
Page 21	<p>IN-LINE FILTERS Inert, micro-porous filters to remove particulates and protect sensitive instrumentation.</p>	
Page 22	<p>IN-LINE CHECK VALVES Low-pressure check valves with ¼”-28 UNF threads or Omnifit® “cap-type” connections</p>	

Plastics

ETFE = ethylene tetrafluoroethylene
 PTFE = polytetrafluoroethylene
 PEEK™ = polyetheretherketone
 PP = polypropylene
 PC = polycarbonate

Trademarks

PEEK™ is a registered trademark of Victrex plc.
 Omnifit®, Omni-Lok™ are trademarks of Bio-Chem Fluidics Ltd.
 Bio-Chem Valve™, Bio-Chek™ are trademarks of Bio-Chem Fluidics Inc.
 Click-N-Seal™ is a trademark of Diba Industries Inc.

Fitting Systems Selection Guide

In the table below:

1. Locate the outer diameter (OD) of the tubing you wish to connect;
2. Choose the maximum pressure rating you require;
3. Locate the type of threads your port has;
4. Turn to the pages indicated to see full details and ordering information for each system.

Tubing OD	Max pressure		Port threads		
	psi	bar	¼"-28 UNF	M6	⅝"-24 UNF
⅛"	250	17	Omni-Lok™ Inverted Cone (p8)	Omni-Lok™ Inverted Cone (p8)	
			Click-N-Seal™ Inverted Cone (p15)	Click-N-Seal™ Inverted Cone (p15)	
			Omni-Lok™ Flanged (p10)		
	500	34	Omni-Lok™ Type S (p6)	Omni-Lok™ Type S (p6)	
			Click-N-Seal™ Type S (p15)	Click-N-Seal™ Type S (p15)	
	1000	69	Omni-Lok™ Type P (p4)	Omni-Lok™ Type P (p4)	
			Gripper (p12)	Click-N-Seal™ Type P (p15)	
			Click-N-Seal™ Type P (p15)		
	2.0mm	250	17	Omni-Lok™ Inverted Cone (p8)	Click-N-Seal™ Inverted Cone (p15)
Click-N-Seal™ Inverted Cone (p15)					
2.5mm	250	17	Omni-Lok™ Inverted Cone (p8)	Click-N-Seal™ Inverted Cone (p15)	
			Click-N-Seal™ Inverted Cone (p15)		
3.0mm	250	17	Omni-Lok™ Inverted Cone (p8)	Click-N-Seal™ Inverted Cone (p15)	
			Click-N-Seal™ Inverted Cone (p15)		
⅜"	250	17	Omni-Lok™ Inverted Cone (p8)	Click-N-Seal™ Inverted Cone (p15)	
			High Temp Inverted Cone (p9)		
			Omni-Lok™ Flanged (p10)		
			Click-N-Seal™ Inverted Cone (p15)		
	500	34	Omni-Lok™ Type S (p6)	Omni-Lok™ Type S (p6)	
			Click-N-Seal™ Type S (p15)	Click-N-Seal™ Type S (p15)	
	1000	69	Omni-Lok™ Type P (p4)	Omni-Lok™ Type P (p4)	
			Gripper (p12)	High Temp Gripper (p13)	
			High Temp Gripper (p13)	Click-N-Seal™ Type P (p15)	
Click-N-Seal™ Type P (p15)					
⅝"	30	2			Omni-Lok™ Inverted Cone (p8)
	120	8			Omni-Lok™ Type S (ETFE) (p6)
	200	14			Omni-Lok™ Type S (PEEK™) (p6)
					Omni-Lok™ Type P (p4)

OMNI-LOK™ TYPE P

Chemically inert flangeless fitting with permanently attached PTFE ferrule ideal for repeat connect/disconnect

- Pressure rated up to 1000psi (69 bar)
- For 1/16", 1/8" or 3/16" OD semi-rigid tubing e.g. PTFE, ETFE, FEP
- For flat-bottom 1/4"-28 UNF, M6 or 5/16"-24 UNF ports

The Omni-Lok™ Type P fitting system uses a one-piece ferrule which fits permanently onto the outside of semi-rigid tubing. Ferrules have an inner PTFE sealing face ensuring that only PTFE is in the fluid path.

The fitting nut can spin freely, eliminating tubing twist. A recess in the fitting houses the ferrule, allowing maximum thread engagement with the port. This ensures the system stays sealed up to 1000psi (69 bar) pressure, even in shallow PTFE ports. Note: Omni-Lok™ Type P for 3/16" OD tubing and 5/16"-24 UNF flat-bottom ports is pressure rated up to 200 psi (14 bar).

Compact head fitting nuts, in glass-filled polypropylene, are available in a range of different colors for easy line identification. Other options are a longer length nut for applications where accessibility is an issue (1/8" OD tubing only) and standard head nuts in PEEK™ for higher temperatures.

Assembly of Omni-Lok™ type P fittings onto tubing requires the use of simple tooling. See the assembly instructions on our website for full details.

For 1/16" OD Tubing

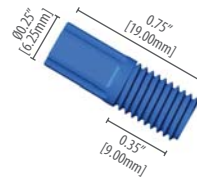
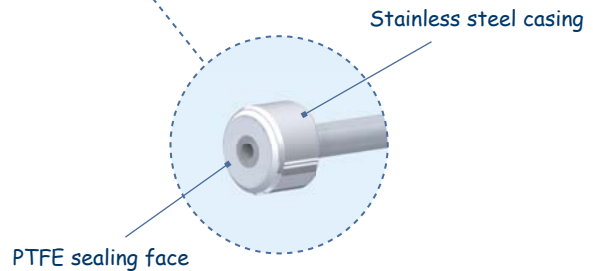
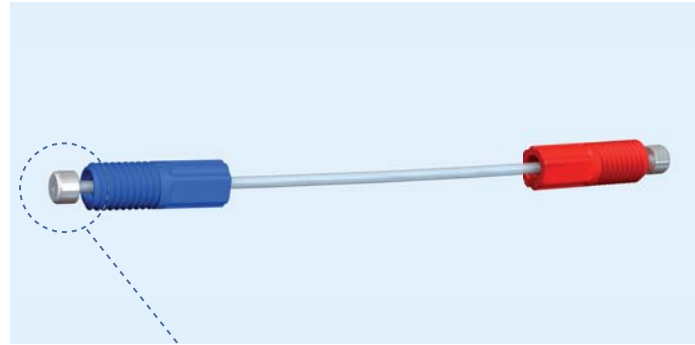
FERRULES FOR 1/16" OD TUBING

PART NUMBER	DESCRIPTION	QTY
008FT16	One piece PTFE ferrule for 1/4•28 and M6 nuts	10pk

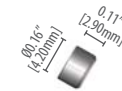
NUTS FOR 1/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF16-YC5B	PP	Black	1/4•28	10pk
008NF16-YC5U	PP	Blue	1/4•28	10pk
008NF16-YC5A	PP	Gray	1/4•28	10pk
008NF16-YC5G	PP	Green	1/4•28	10pk
008NF16-YC5N	PP	Orange	1/4•28	10pk
008NF16-YC5R	PP	Red	1/4•28	10pk
008NF16-YC5H	PP	White	1/4•28	10pk
008NF16-YC5Y	PP	Yellow	1/4•28	10pk
008NF16-YC6B	PP	Black	M6	10pk
002122S	PEEK™	Natural	1/4•28	ea

SPECIFICATIONS



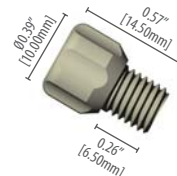
008NF16-YC5U
Nut for 1/16" OD tubing
1/4•28, blue



008FT16
Type P ferrule
for 1/16" OD tubing



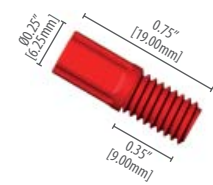
008NF16-YC6B
Nut for 1/16" OD tubing
M6, black



002122S
PEEK™ nut
for 1/16" OD tubing, 1/4•28

For 1/8" OD Tubing

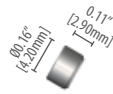
FERRULES FOR 1/8" OD TUBING					
PART NUMBER	DESCRIPTION				
008FT32	One piece PTFE ferrule for 1/4•28 and M6 nuts				10pk
NUTS FOR 1/8" OD TUBING					
PART NUMBER	MATERIAL	COLOR	THREAD	QTY	
008NF32-YC5B	PP	Black	1/4•28	10pk	
008NF32-YC5U	PP	Blue	1/4•28	10pk	
008NF32-YC5A	PP	Gray	1/4•28	10pk	
008NF32-YC5G	PP	Green	1/4•28	10pk	
008NF32-YC5N	PP	Orange	1/4•28	10pk	
008NF32-YC5R	PP	Red	1/4•28	10pk	
008NF32-YC5H	PP	White	1/4•28	10pk	
008NF32-YC5Y	PP	Yellow	1/4•28	10pk	
008NF32-YL5B	PP	Black	1/4•28	10pk	
008NF32-YC6B	PP	Black	M6	10pk	
002222S	PEEK™	Natural	1/4•28	ea	



008NF32-YC5R
Nut for 1/8" OD tubing
1/4•28, red



008NF32-YC6B
Nut for 1/8" OD tubing
M6, black



008FT32
Type P ferrule
for 1/8" OD tubing



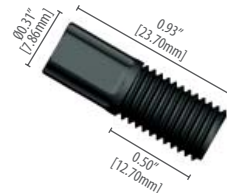
008NF32-YL5B
Long nut for 1/8" OD tubing,
1/4•28, black



002222S
PEEK™ nut
for 1/8" OD tubing, 1/4•28

For 3/16" OD Tubing

FERRULES FOR 3/16" OD TUBING					
PART NUMBER	DESCRIPTION				
008FT47	One piece PTFE ferrule for 5/16•24 nuts				10pk
NUTS FOR 3/16" OD TUBING					
PART NUMBER	MATERIAL	COLOR	THREAD	QTY	
008NF47-YC7B	PP	Black	5/16•24	10pk	



008NF47-YC7B
Nut for 3/16" OD tubing
5/16•24, black



008FT47
Type P ferrule
for 3/16" OD tubing

Blanking Plugs

ETFE nut with PTFE sealing face designed to seal unused ports. These blanking plugs can be used in any flat-bottom 1/4"-28 UNF port.

BLANKING PLUG FOR 1/4•28 FLAT-BOTTOM PORTS

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
002320	ETFE	Natural	1/4•28	2pk



002320
ETFE plug
for 1/4•28 ports

TECH TIP:

Problems with shallow or PTFE ports?

Some shallow ports, especially those found in solenoid valves, may offer limited thread engagement for most standard fittings. Ports machined from PTFE can also be slippery and difficult to seal, with fittings becoming loose and "backing out". With glass-filled polypropylene and a recessed ferrule, Omni-Lok™ fittings are specifically designed for use in shallow and PTFE ports to ensure maximum security and a leak-free seal.

OMNI-LOK™ TYPE S

Chemically inert flangeless fitting with permanently attached PEEK™ or ETFE ferrules, ideal for repeated connect/disconnect

- Pressure rated up to 500psi (34 bar)
- For 1/16", 1/8" or 3/16" OD semi-rigid tubing e.g. PTFE, ETFE, FEP
- For flat-bottom 1/4"-28 UNF, M6 or 5/16"-24 UNF ports
- PEEK™ ferrules can be used with rigid tubing, e.g. PEEK™

The Omni-Lok™ Type S fitting system uses a two-piece ferrule which fits permanently to the outside of the tubing. Two-part ferrules consist of an inner PEEK™ or ETFE sealing surface surrounded by a stainless steel lock ring with only the inner portion in the fluid path.

The fitting nut can spin freely against the ferrule, eliminating tubing twist and subsequent loosening of the nut. A recess in the fitting houses the ferrule, allowing maximum thread engagement with the port ensuring the system stays sealed up to 500psi (34 bar) pressure even in shallow PTFE ports. Note: The Omni-Lok™ Type S for 3/16" OD tubing and 5/16"-24 UNF flat-bottom ports is pressure rated up to 200 psi (14 bar).

Compact head fitting nuts in glass-filled polypropylene, are available in a range of different colors for easy line identification. Other options are a longer length nut for applications where accessibility is an issue (1/8" OD tubing only) and standard head nuts in PEEK™ for higher temperatures. The Type S PEEK™ ferrule can be used with rigid PEEK™ tubing and a PEEK™ fitting nut to create a robust, high temperature assembly.

For 1/16" OD Tubing

FERRULES FOR 1/16" OD TUBING

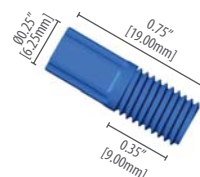
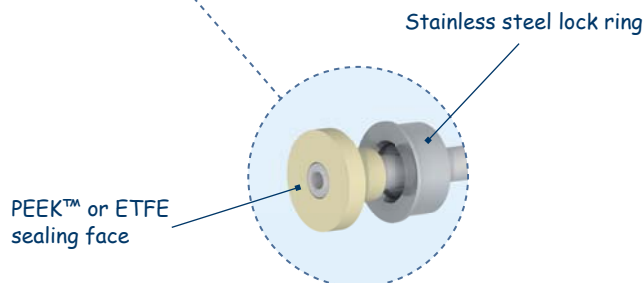
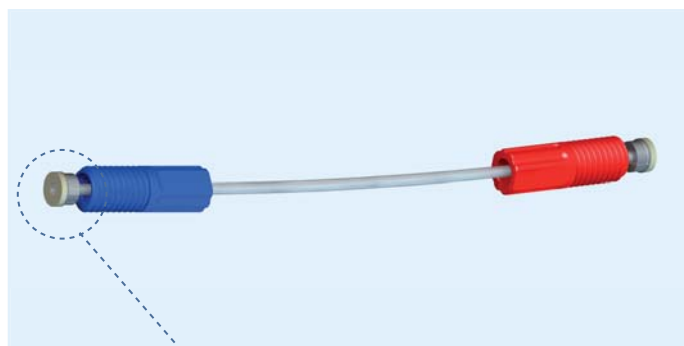
PART NUMBER	DESCRIPTION	QTY
008FK16	PEEK™ ferrule and SS lock ring	10pk
008FZ16	ETFE ferrule and SS lock ring	10pk

008FK16 & 008FZ16 ferrules can be used with all nuts listed and either 1/4"-28 and M6 flat-bottom ports.

NUTS FOR 1/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF16-YC5B	PP	Black	1/4"•28	10pk
008NF16-YC5U	PP	Blue	1/4"•28	10pk
008NF16-YC5A	PP	Gray	1/4"•28	10pk
008NF16-YC5G	PP	Green	1/4"•28	10pk
008NF16-YC5N	PP	Orange	1/4"•28	10pk
008NF16-YC5R	PP	Red	1/4"•28	10pk
008NF16-YC5H	PP	White	1/4"•28	10pk
008NF16-YC5Y	PP	Yellow	1/4"•28	10pk
008NF16-YC6B	PP	Black	M6	10pk
002122S	PEEK™	Natural	1/4"•28	ea

SPECIFICATIONS



008NF16-YC5U

Nut for 1/16" OD tubing,
1/4"•28, blue



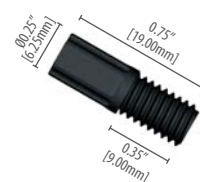
008FK16

Two-part ferrule, PEEK™



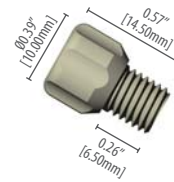
008FZ16

Two-part ferrule, ETFE



008NF16-YC6B

Nut for 1/16" OD tubing
M6, black



002122S

PEEK™ nut for 1/16" OD tubing
1/4"•28, natural

TECH TIP:

Need a completely PEEK™ connection?

An all-PEEK™ fitting and tubing system can be obtained using the Omni-Lok™ Type S ferrule in PEEK™, with PEEK™ tubing and the PEEK™ fitting nuts shown. Perfect for higher temperature applications or harsh environments.

For 1/8" OD Tubing

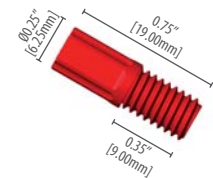
FERRULES FOR 1/8" OD TUBING

PART NUMBER	DESCRIPTION	QTY
008FK32	PEEK™ ferrule and SS lock ring	10pk
008FZ32	ETFE ferrule and SS lock ring	10pk

008FK32 & 008FZ32 ferrules can be used with all nuts listed and either 1/4•28 and M6 flat-bottom ports.

NUTS FOR 1/8" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF32-YC5B	PP	Black	1/4•28	10pk
008NF32-YC5U	PP	Blue	1/4•28	10pk
008NF32-YC5A	PP	Gray	1/4•28	10pk
008NF32-YC5G	PP	Green	1/4•28	10pk
008NF32-YC5N	PP	Orange	1/4•28	10pk
008NF32-YC5R	PP	Red	1/4•28	10pk
008NF32-YC5H	PP	White	1/4•28	10pk
008NF32-YC5Y	PP	Yellow	1/4•28	10pk
008NF32-YL5B	PP	Black	1/4•28	10pk
008NF32-YC6B	PP	Black	M6	10pk
002222S	PEEK™	Natural	1/4•28	ea



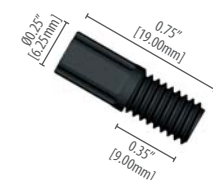
008NF32-YC5R
Nut for 1/8" OD tubing
1/4•28, red



008FK32
Two-part ferrule, PEEK™



008FZ32
Two-part ferrule, ETFE



008NF32-YC6B
Nut for 1/8" OD tubing
M6, black



002222S
PEEK™ nut
for 1/8" OD tubing, 1/4•28



008NF32-YL5B
Long nut for 1/8" OD tubing,
1/4•28, black

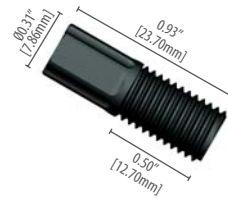
For 3/16" OD Tubing

FERRULES FOR 3/16" OD TUBING

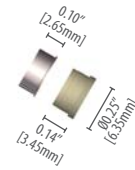
PART NUMBER	DESCRIPTION	QTY
008FK47	PEEK™ ferrule and SS lock ring	10pk
008FZ47	ETFE ferrule and SS lock ring	10pk

NUTS FOR 3/16" OD TUBING

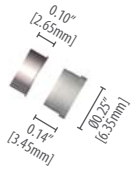
PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF47-YC7B	PP	Black	5/16•24	10pk



008NF47-YC7B
Nut for 3/16" OD tubing
5/16•24, black



008FK47
Two-part ferrule, PEEK™



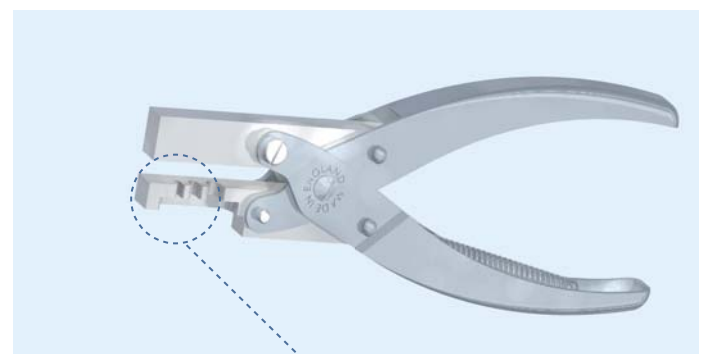
008FZ47
Two-part ferrule, ETFE

Omni-Lok™ Type S Assembly Tool

The Omni-Lok™ Type S two-piece ferrule is easily assembled onto tubing using this tool. Simply cut the tube end square, then fit the Omni-Lok™ ferrule and lock ring onto the squarely cut tube end, load into the assembly tool and squeeze the tool handles together to press the lock ring onto the ferrule. Full instructions are provided with the tool and on our website.

OMNI-LOK™ TYPE S ASSEMBLY TOOL

PART NUMBER	DESCRIPTION	QTY
008AT	Assembly tool	ea



OMNI-LOK™ INVERTED CONE FITTINGS

Removable and reusable system for quick and convenient low-pressure connections

- Pressure rated up to 250psi (17 bar)
- For 1/16", 1/8" or 3/16" OD and metric sizes 2.0, 2.5 or 3.0mm OD semi-rigid tubing e.g. PTFE, ETFE, FEP
- For flat-bottom 1/4"-28 UNF, M6 or 5/16"-24 UNF ports

Omni-Lok™ inverted cone fittings provide a simple, easy to use low-pressure connection. Only the ETFE cone is in the fluid path.

No tools are required to assemble a flangeless fitting quickly and economically - just slip the fitting nut and the ETFE cone over the tubing and screw into the port. None of the parts are permanently attached to the tubing, so both fittings and inverted cones can easily be removed and re-used. A recess in the fitting houses the inverted cone, allowing maximum thread engagement with the port ensuring the system stays sealed up to 250psi (17 bar) pressure even in shallow PTFE ports. Note: The Omni-Lok™ inverted cone and fitting nut for 3/16" OD tubing and 5/16"-24 UNF flat-bottom ports is pressure rated up to 30 psi (2 bar).

Fitting nuts in robust, glass-filled polypropylene are available in a range of different colors for easy line identification. Nuts are also available in PEEK™ with standard and compact head designs or with shorter thread length for shallow ports.

For 1/16" OD Tubing

INVERTED CONES FOR 1/16" OD TUBING

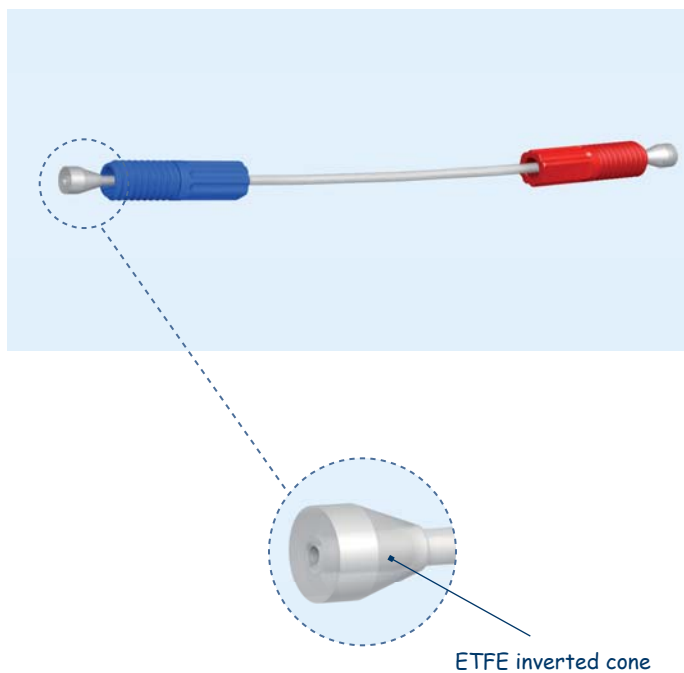
PART NUMBER	DESCRIPTION	QTY
008CZ16	ETFE inverted cone	10pk

008CZ16 inverted cones can be used with all nuts listed below.

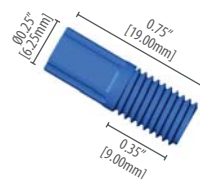
NUTS FOR 1/16" OD TUBING

PART NUMBER	Material	Color	Thread	QTY
008NC16-YC5U	PP	Blue	1/4•28	10pk
008NC16-YC5G	PP	Green	1/4•28	10pk
008NC16-YC6U	PP	Blue	M6	10pk
002144	PEEK™	Natural	1/4•28	ea
002144S	PEEK™	Natural	1/4•28	ea
002145	PEEK™	Natural	1/4•28	ea

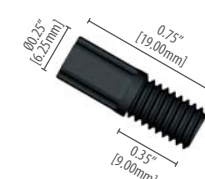
SPECIFICATIONS



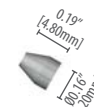
ETFE inverted cone



008NC16-YC5U
Nut for 1/16" OD tubing
1/4•28, blue



008NC16-YC6B
Nut for 1/16" OD tubing
M6, black



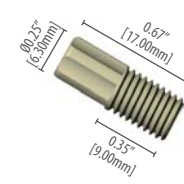
008CZ16
Omni-Lok™ inverted cone for 1/16" OD tubing



002144S
PEEK™ nut for 1/16" OD tubing,
1/4•28



002144
PEEK™ nut for 1/16" OD tubing,
1/4•28



002145
Compact PEEK™ nut for 1/16" OD tubing, 1/4•28

For 1/8" OD Tubing

INVERTED CONES FOR 1/8" OD TUBING

PART NUMBER	DESCRIPTION	QTY
001545	ETFE inverted cone	10pk

PEEK™ NUTS FOR 1/8" OD TUBING

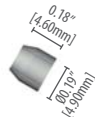
PART NUMBER	HEAD	LENGTH	MATERIAL	COLOR	THREAD	QTY
002244	Standard	Standard	PEEK™	Natural	1/4•28	ea
002244S	Standard	Short	PEEK™	Natural	1/4•28	ea
002245	Compact	Standard	PEEK™	Natural	1/4•28	ea



002244
PEEK™ nut for 1/8" OD tubing
1/4•28, natural



002245
Compact PEEK™ nut
for 1/8" OD tubing, 1/4•28



001545
ETFE inverted cone
for 1/8" OD tubing



002244S
Shorter thread PEEK™ nut
for 1/8" OD tubing, 1/4•28

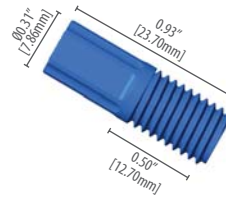
For 3/16" OD Tubing

INVERTED CONE FOR 3/16" OD TUBING

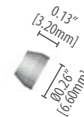
PART NUMBER	DESCRIPTION	QTY
008CZ47	ETFE inverted cone	10pk

NUTS FOR 3/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC47-YC7U	PP	Blue	5/16•24	10pk



008NC47-YC7U
Nut for 3/16" OD tubing
5/16•24, blue



008CZ47
Omni-Lok™ inverted cone
for 3/16" OD tubing

For 1/8", 2.0, 2.5 and 3.0mm OD Tubing

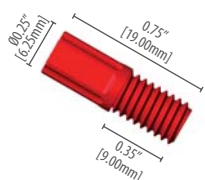
INVERTED CONES FOR 1/8", 2.0, 2.5 & 3.0MM OD TUBING

PART NUMBER	MATERIAL	TO FIT TUBE OD	QTY
008CZ19	ETFE	1.8 - 2.0mm	10pk
008CZ25	ETFE	2.5mm	10pk
008CZ30	ETFE	3.0mm	10pk
008CZ32	ETFE	1/8" (3.2mm)	10pk

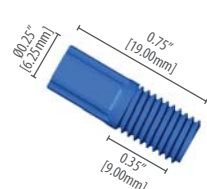
NUTS FOR 1/8", 2.0, 2.5 & 3.0MM OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC32-YC5U	PP	Blue	1/4•28	10pk
008NC32-YC5G	PP	Green	1/4•28	10pk
008NC32-YC5N	PP	Orange	1/4•28	10pk
008NC32-YC5R	PP	Red	1/4•28	10pk
008NC32-YC5Y	PP	Yellow	1/4•28	10pk
008NC32-YC6U	PP	Blue	M6	10pk

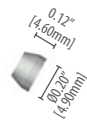
The 008NC32 nuts can be used with all tube sizes and inverted cones listed above



008NC32-YC5R
Nut for 1/8" OD tubing
1/4•28, red



008NC32-YC6U
Nut for 1/8" OD tubing
M6, blue



008CZ-32
Omni-Lok™ inverted
cone for 1/8" OD tubing

TECH TIP:

Frequent connection / disconnection?

For applications needing repeated connect / disconnect we recommend a permanently attached ferrule with stainless steel collar. Choose from our Omni-Lok™ Type P and S, or Gripper ranges.

OMNI-LOK™ FLANGED

Flanged (flared) tubing system for economical low-pressure connections

- Pressure rated up to 250psi (17 bar)
- For 1/16", 1/8" or 3/16" OD semi-rigid tubing, e.g. PTFE
- For flat-bottom 1/4"-28 UNF ports
- Removeable and reusable

Omni-Lok™ flanged fittings require the end of hardwall tubing to be formed into a flange (flare). A flanging washer is placed between the flange and the fitting nut. When screwed into a flat-bottom, the flange is compressed against the bottom of the port to produce a seal. Only the tubing is in the fluid path.

Omni-Lok™ flanged fitting nuts and washers permit maximum thread engagement between the port and the robust, glass-filled polypropylene fitting nuts. This ensures that the system stays sealed up to 250psi (17 bar) pressure, even in shallow PTFE ports.

PEEK™ flanging washers and nuts are designed to provide a simple, easy to use low-pressure connection for use in environments where harsh chemicals or higher temperature preclude the use of a polypropylene fitting.

Omni-Lok™ Flanged Fittings requires tubing to be flanged prior to use. We recommend our Flanging Kit for quick and easy heat-free flange forming - see page 11.

For 1/16" OD Tubing

FLANGING WASHER FOR 1/16" OD TUBING

PART NUMBER	DESCRIPTION	QTY
008FW16	PP flanging washer	10 pk

The 008FW16 flanging washer can be used with all nuts listed and either 1/4•28 or M6 flat-bottom ports.

NUTS FOR 1/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF16-YC5B	PP	Black	1/4•28	10pk
008NF16-YC5U	PP	Blue	1/4•28	10pk
008NF16-YC5A	PP	Gray	1/4•28	10pk
008NF16-YC5G	PP	Green	1/4•28	10pk
008NF16-YC5N	PP	Orange	1/4•28	10pk
008NF16-YC5R	PP	Red	1/4•28	10pk
008NF16-YC5H	PP	White	1/4•28	10pk
008NF16-YC5Y	PP	Yellow	1/4•28	10pk
008NF16-YC6B	PP	Black	M6	10pk

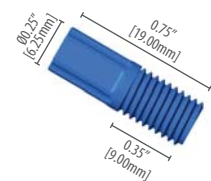
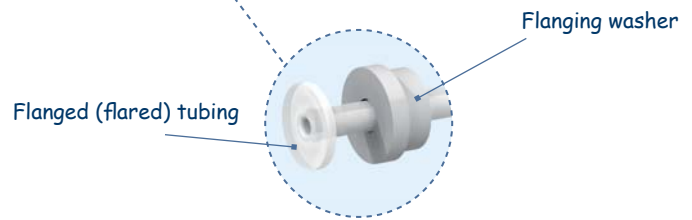
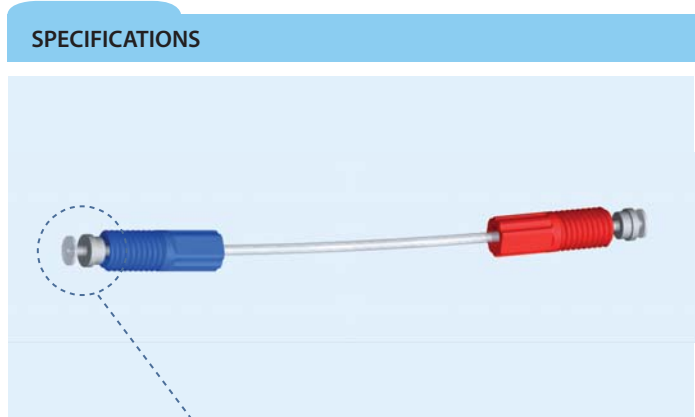
For 1/16" OD Tubing

FLANGING WASHER FOR 1/16" OD TUBING

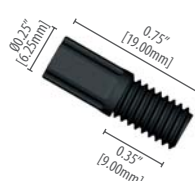
PART NUMBER	DESCRIPTION	QTY
002123FN	PEEK™ flanging washer	10pk

NUTS FOR 1/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
002123	PEEK™	Natural	1/4•28	10pk
002124	PEEK™	Natural	1/4•28	10pk



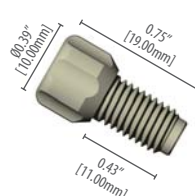
008NF16-YC5U
Nut for 1/16" OD tubing
1/4•28, blue



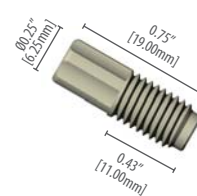
008NF16-YC6B
Nut for 1/16" OD tubing
M6, black



008FW16
Flanging washer
for 1/16" OD tubing



002123
PEEK™ nut for 1/16" OD tubing
1/4•28, natural



002124
Compact PEEK™ nut
for 1/16" OD tubing, 1/4•28



002123FN
PEEK™ flanging washer
for 1/16" OD tubing

For 1/8" OD Tubing

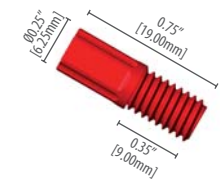
FLANGING WASHER FOR 1/8" OD TUBING

PART NUMBER	DESCRIPTION	QTY
008FW32	PP flanging washer	10pk

The 008FW32 flanging washer can be used with all nuts listed and either 1/4"28 or M6 flat-bottom ports.

NUTS FOR 1/8" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF32-YC5B	PP	Black	1/4"28	10pk
008NF32-YC5U	PP	Blue	1/4"28	10pk
008NF32-YC5A	PP	Gray	1/4"28	10pk
008NF32-YC5G	PP	Green	1/4"28	10pk
008NF32-YC5N	PP	Orange	1/4"28	10pk
008NF32-YC5R	PP	Red	1/4"28	10pk
008NF32-YC5H	PP	White	1/4"28	10pk
008NF32-YC5Y	PP	Yellow	1/4"28	10pk
008NF32-YL5B	PP	Black	1/4"28	10pk
008NF32-YC6B	PP	Black	M6	10pk



008NF32-YC5R
Nut for 1/8" OD tubing
1/4"28, red



008NF32-YC6B
Nut for 1/8" OD tubing
M6, black



008FW32
Flanging washer
for 1/8" OD tubing



008NF32-YL5B
Long nut for 1/8" OD tubing,
1/4"28, black

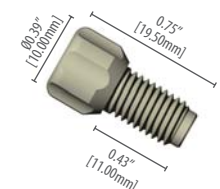
For 1/8" OD Tubing

FLANGING WASHER FOR 1/8" OD TUBING

PART NUMBER	DESCRIPTION	QTY
002223FN	PEEK flanging washer	10pk

NUTS FOR 1/8" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
002223	PEEK	Natural	1/4"28	10pk
002224	PEEK	Natural	1/4"28	10pk



002223
PEEK™ nut for 1/8" OD tubing
1/4"28, natural



002224
Compact PEEK™ nut
for 1/8" OD tubing, 1/4"28



002223FN
PEEK™ flanging washer
for 1/8" OD tubing

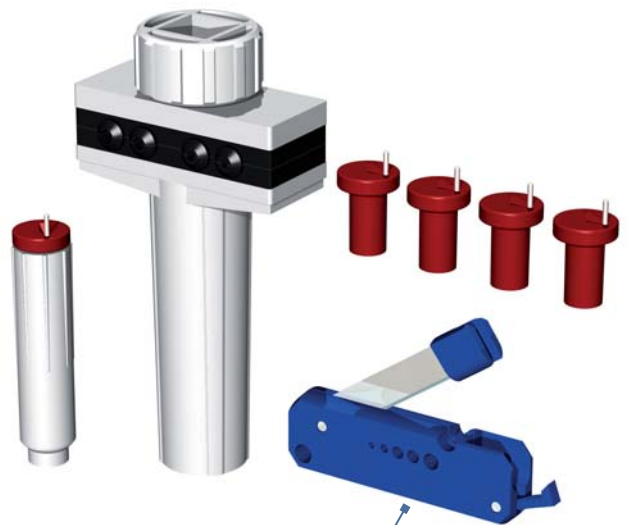
FLANGING KIT

- Quick and easy production of perfect flanges every time

The flanging kit includes the flanging tool and tips for 0.5mm, 0.8mm and 1.3mm ID tubing. The flanging tool creates a perfect flange by mechanically forming the flange without heat stressing the tube material. The flanging tool is safe to use being non-electrical and not heated, especially important with organic solvents around. Full instructions are provided with the kit.

FLANGING KIT

PART NUMBER	DESCRIPTION	QTY
007003	Flanging kit	ea
007-201536	Flanging disc with 1.3mm polymer pin	ea
007-201537	Flanging disc with 1.3mm titanium pin	ea
007-201541	Flanging disc with 0.8mm polymer pin	ea
007-201554	Flanging disc with 0.8mm titanium pin	ea
007-202235	Flanging disc with 0.5mm SS pin	ea



Tubing Cutter p/n 003062 available separately (see page 14)

TECH TIP:

Frequent connection / disconnection?

Flanges can distort over time after prolonged use or repeated connect / disconnect. This can cause leaking and may increase dead volume. Omni-Lok™ Type P and Type S offer a robust alternative to flanging with simple assembly and leak-free seals for repeated use.

OMNIFIT® GRIPPER

Chemically inert flangeless fitting with permanently attached PTFE ferrule ideal for repeat connect/disconnect

- Pressure rated up to 1000psi (69 bar)
- For 1/16" or 1/8" OD semi-rigid tubing
- For 1/4"-28 UNF or M6 flat-bottom ports

The Omnifit® Gripper fitting system uses a one-piece ferrule which fits permanently onto the outside of semi-rigid tubing. Ferrules have an inner PTFE sealing face ensuring that only PTFE is in the fluid path. The fitting nut can spin freely, eliminating tubing twist and allowing easy repeat connect/disconnect. The system is pressure rated up to 1000psi (69 bar).

A range of different colored polypropylene nuts are available to connect 1/16" or 1/8" OD tubing into 1/4"-28 UNF flat-bottom ports. Mixed color packs include all 10 colors for easy line identification. PEEK™ fitting nuts for use in higher temperatures are available in standard or compact head styles and with 1/4"-28 UNF or M6 threads.

Assembly of the Omnifit® Gripper onto tubing requires the use of simple tooling. See the assembly instructions on our website for full details.

For 1/16" OD Tubing

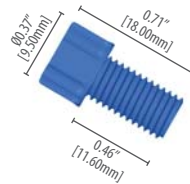
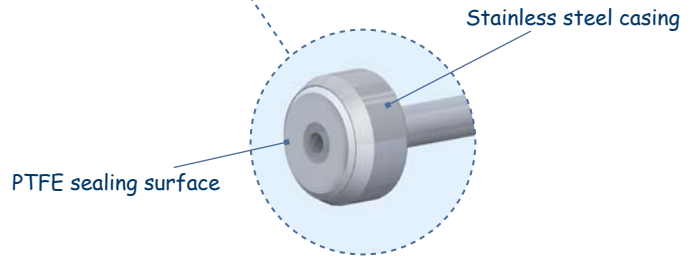
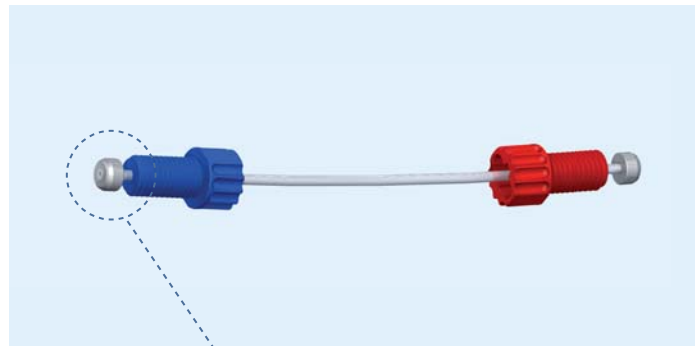
GRIPPERS FOR 1/16" OD TUBING

PART NUMBER	DESCRIPTION	QTY
002310	One piece PTFE ferrule for 1/4•28 nuts	10pk
002313	One piece PTFE ferrule for M6 fitting nuts	10pk

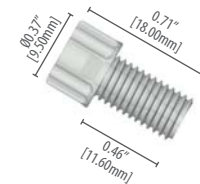
NUTS FOR 1/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
002100	PP	Black	1/4•28	10pk
002101	PP	Brown	1/4•28	10pk
002102	PP	Red	1/4•28	10pk
002103	PP	Orange	1/4•28	10pk
002104	PP	Yellow	1/4•28	10pk
002105	PP	Green	1/4•28	10pk
002106	PP	Blue	1/4•28	10pk
002107	PP	Violet	1/4•28	10pk
002108	PP	Gray	1/4•28	10pk
002109	PP	White	1/4•28	10pk
002110	PP	Mixed	1/4•28	10pk
002130	ETFE	Natural	1/4•28	10pk
002119	PEEK™	Natural	1/4•28	ea
002122	PEEK™	Natural	1/4•28	ea
002135	PEEK™	Natural	M6	ea

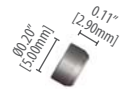
SPECIFICATIONS



002106
Nut for 1/16" OD tubing
1/4•28, blue



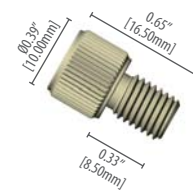
002130
ETFE nut for 1/16" OD tubing
1/4•28, natural



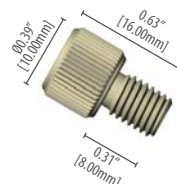
002310
Gripper ferrule
for 1/16" OD tubing



002119
Compact PEEK™ nut
for 1/16" OD tubing, 1/4•28



002122
PEEK™ nut
for 1/16" OD tubing, 1/4•28



002135
PEEK™ nut
for 1/16" OD tubing, M6



002313
Gripper ferrule
for 1/16" OD tubing, M6

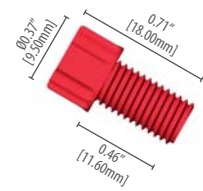
For 1/8" OD Tubing

GRIPPERS FOR 1/8" OD TUBING

PART NUMBER	DESCRIPTION	QTY
002312	One piece PTFE ferrule for 1/4•28 fitting nuts	10pk
002314	One piece PTFE ferrule for M6 fitting nuts	10pk

NUTS FOR 1/8" OD TUBING

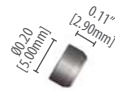
PART NUMBER	MATERIAL	COLOR	THREAD	QTY
002200	PP	Black	1/4•28	10pk
002201	PP	Brown	1/4•28	10pk
002202	PP	Red	1/4•28	10pk
002203	PP	Orange	1/4•28	10pk
002204	PP	Yellow	1/4•28	10pk
002205	PP	Green	1/4•28	10pk
002206	PP	Blue	1/4•28	10pk
002207	PP	Violet	1/4•28	10pk
002208	PP	Gray	1/4•28	10pk
002209	PP	White	1/4•28	10pk
002210	PP	Mixed	1/4•28	10pk
002230	ETFE	Natural	1/4•28	10pk
002219	PEEK™	Natural	1/4•28	ea
002222	PEEK™	Natural	1/4•28	ea



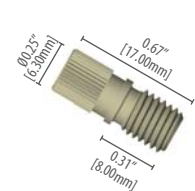
002202
Nut for 1/8" OD tubing
1/4•28, red



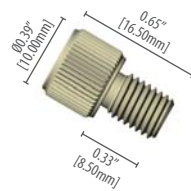
002230
ETFE nut for 1/8" OD tubing
1/4•28, natural



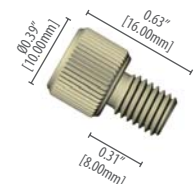
002312
Gripper ferrule
for 1/8" OD tubing



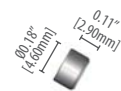
002219
Compact PEEK™ nut
for 1/8" OD tubing, 1/4•28



002222
PEEK™ nut
for 1/8" OD tubing, 1/4•28



002235
PEEK™ nut
for 1/8" OD tubing, M6



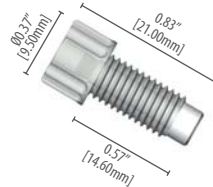
002314
Gripper ferrule
for 1/8" OD tubing, M6

Blanking Plugs

This ETFE nut has a PTFE sealing face designed to seal unused ports. These blanking plugs can be used in any flat-bottom 1/4"-28 UNF port.

BLANKING PLUG FOR 1/4•28 FLAT-BOTTOM PORTS

PART NUMBER	HEAD STYLE	MATERIAL	COLOR	THREAD	QTY
002320	Standard	ETFE	Natural	1/4•28	2pk



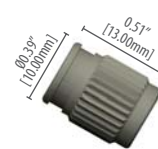
002320
ETFE plug
for 1/4•28 ports

In-line connectors

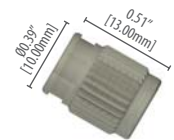
Compact in-line connectors using the Omnifit™ Gripper are ideal when space is limited. A tubing line is secured into the connector using an Omnifit® Gripper ferrule. The connector then effectively becomes a 1/4"-28 UNF threaded female port that accepts a standard threaded fitting from a second fluid line.

IN-LINE CONNECTORS

PART NUMBER	MATERIAL	COLOR	TUBE OD	THREAD	QTY
002333	PEEK™	Natural	1/16"	1/4•28 F	ea
002334	PEEK™	Natural	1/8"	1/4•28 F	ea



002333
PEEK™ in-line connector for
1/4•28 F threads, 1/16" OD tube



002334
PEEK™ in-line connector for
1/4•28 F threads, 1/8" OD tube

TECH TIP:

Problems with shallow or PTFE ports?

Some shallow ports, especially those found in solenoid valves, may lack sufficient threading to allow effective use of the Gripper fitting. Ports machined from PTFE can also be slippery and difficult to seal. We recommend Omni-Lok™ fittings for use in shallow and PTFE ports to ensure maximum security and a leak-free seal.

OMNIFIT® FITTING TOOL

Quick, convenient access to your Omnifit® fittings wherever they're located

- Fitting extension to reach nuts in remote locations
- Accessibility for closely packed fittings

The Omnifit® fitting tool gives instant accessibility to large and compact headed nuts, wherever they are located. The tool provides an extension to the fitting, enabling nuts to be hand-tightened remotely. The tool is also ideal for accessing individual nuts when close packing means they are difficult to handle.

Tools are available to fit standard head sizes, such as the Omnifit® Gripper and compact head Omni-Lok™ fittings.

OMNIFIT® TORQUE TOOL

Ensure your Omni-Lok fittings are connected at the correct torque every time for a reliable, leak-free seal

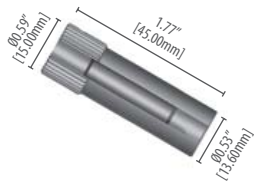
- Accessibility for remote or closely packed fittings
- Torque control to ensure nuts are not over-tightened

The Omnifit® Torque Tool provides quick and easy connection of fittings to exactly the right torque required for a leak-free seal. Using a clutch-based mechanism, the tool ensures that connections are leak-free, but not over-tightened.

Tools are available to fit compact or standard head fittings and with torque ratings suitable for PTFE or non-PTFE ports.

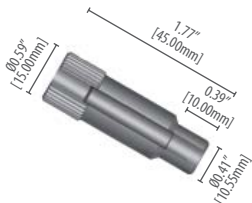
FITTING TOOLS

PART NUMBER	TO SUIT FITTINGS:		
	FITTING TYPE	THREAD	QTY
008FTL-5M	Gripper	¼•28	ea
008FTC-56M	Omni-Lok™	¼•28 or M6	ea
008FTC-7M	Omni-Lok™	⅝•24	ea



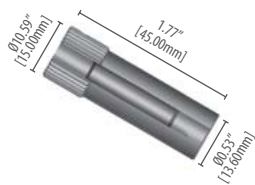
008FTL-5M

Fitting tool for standard head
¼•28 fittings



008FTC-56M

Fitting tool for compact head
¼•28 or M6 fittings



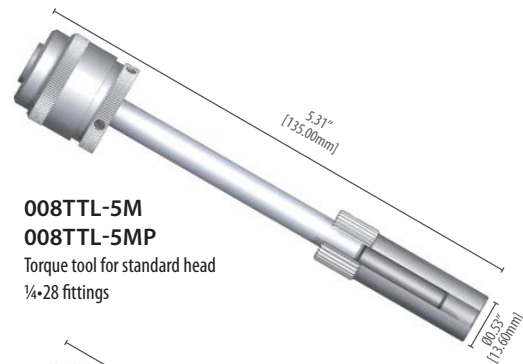
008FTC-7M

Fitting tool for compact head
⅝•24 fittings

NB. All drawings on this page are 1:2 scale

TORQUE TOOLS

PART NUMBER	FITTING TYPE	THREAD	TO SUIT FITTINGS AND PORTS:	
			PORT MATERIAL	QTY
008TTL-5MP	Gripper	¼•28	PTFE	ea
008TTL-5M	Gripper	¼•28	Non-PTFE	ea
008TTL-56MP	Omni-Lok™	¼•28 or M6	PTFE	ea
008TTL-56M	Omni-Lok™	¼•28 or M6	Non-PTFE	ea
008TTL-7MP	Omni-Lok™	⅝•24	PTFE	ea
008TTL-7M	Omni-Lok™	⅝•24	Non-PTFE	ea



008TTL-5M

Torque tool for standard head
¼•28 fittings



008TTC-56M

Torque tool for compact head
¼•28 or M6 fittings



008TTC-7M

Torque tool for compact head
⅝•24 fittings

CLICK-N-SEAL™

Hand-tight fittings without the guesswork

- For Omni-Lok™ Type P & Type S ferrules or inverted cones
- For 1/16" or 1/8" OD semi-rigid tubing
- Feel and hear when the fitting is properly installed

Click-N-Seal™ offers a unique system for hand-tight fittings. As the fitting is tightened, the resistance of the cap increases until the correct torque is reached; at which point, the cap clicks. The user is able to hand-tighten the fittings without tools or guesswork and be confident that the fitting is properly seated, creating a secure seal. The fitting can be unscrewed and reused.

Click-N-Seal™ Fittings for Omni-Lok™ Type P & Type S For 1/16" OD Tubing

FERRULES FOR 1/16" OD TUBING				
PART NUMBER	DESCRIPTION			QTY
008FT16	Omni-Lok™ Type P ferrule			10pk
008FK16	Omni-Lok™ Type S ferrule, PEEK™			10pk
008FZ16	Omni-Lok™ Type S ferrule, ETFE			10pk

CLICK-N-SEAL™ FITTINGS FOR 1/16" OD TUBING				
PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF16-CS5R	PC	Red	1/4•28	ea
008NF16-CS6R	PC	Red	M6	ea

For 1/8" OD Tubing

FERRULES FOR 1/8" OD TUBING				
PART NUMBER	DESCRIPTION			QTY
008FT32	Omni-Lok™ Type P ferrule			10pk
008FK32	Omni-Lok™ Type S ferrule, PEEK™			10pk
008FZ32	Omni-Lok™ Type S ferrule, ETFE			10pk

CLICK-N-SEAL™ FITTINGS FOR 1/8" OD TUBING				
PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NF32-CS5R	PC	Red	1/4•28	ea
008NF32-CS6R	PC	Red	M6	ea

008FT-16
Type P ferrule
for 1/16" OD tubing

008FK16
Type S ferrule PEEK™
for 1/16" OD tubing

008FZ16
Type S ferrule ETFE
for 1/16" OD tubing

008NF16-CS5R
Click-N-Seal™ Nut
for 1/16" OD tubing, 1/4•28, red

008FT-32
Type P ferrule
for 1/8" OD tubing

008FK32
Type S ferrule, PEEK™

008NF32-CS5R
Click-N-Seal™ Nut
for 1/8" OD tubing, 1/4•28, red

008FZ32
Type S ferrule, ETFE

Click-N-Seal™ fittings for Omni-Lok™ Inverted Cones For 1/16" OD Tubing

INVERTED CONES FOR 1/16" OD TUBING				
PART NUMBER	DESCRIPTION			QTY
008CZ16	ETFE inverted cone			10pk

CLICK-N-SEAL™ FITTINGS FOR 1/16" OD TUBING				
PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC16-CS5R	PC	Red	1/4•28	ea
008NC16-CS6R	PC	Red	M6	ea

For 1/8", 2.0, 2.5 & 3.0mm OD Tubing

INVERTED CONES FOR 1/8", 2.0, 2.5 & 3.0MM OD TUBING				
PART NUMBER	MATERIAL	TO FIT TUBE OD		QTY
008CZ19	ETFE	1.8 - 2.0mm		10pk
008CZ25	ETFE	2.5mm		10pk
008CZ30	ETFE	3.0mm		10pk
008CZ32	ETFE	1/8" (3.2mm)		10pk

CLICK-N-SEAL™ FITTINGS FOR 1/8", 2.0, 2.5 & 3.0MM OD TUBING				
PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC32-CS5R	PC	Red	1/4•28	ea
008NC32-CS6R	PC	Red	M6	ea

The 008NC32 Click-N-Seal™ nuts can be used with all tube sizes and inverted cones listed above

008NC16-CS5R
Click-N-Seal™ Nut
for 1/16" OD tubing, 1/4•28, red

008CZ-16
Omni-Lok™ inverted cone
for 1/16" OD tubing

008CZ-32
Omni-Lok™ inverted cone
for 1/8" OD tubing

FACTORY ASSEMBLED CUSTOM TUBING SETS

Save time and assembly costs and simplify your purchasing and inventory management by choosing pre-assembled tubing sets to your exact specifications

- Assembled with any of our chemically-resistant PTFE, PEEK™ or ETFE Omni-Lok™ ferrules, partnered with our robust Omni-Lok™ nuts
- Kits to plumb complete instruments can be supplied loose or mesh-wrapped in bundles

Omni-Lok™ pre-assembled tubing sets are designed to provide significant improvements over assembly of your own fittings. Our tubing sets are assembled to your specifications by our skilled production staff, ensuring a perfect, leak-free connection every time. You simply specify your choices of fitting nut, ferrule and tubing and whether you require fittings at one or both ends of the tube and we do the rest. With a wide range of ferrule types, fitting nut designs and colors, thread types, tubing sizes and materials, we can deliver an Omni-Lok™ tubing set to suit any application. The options are endless!

Options available:**Ferrule types**

Our Omni-Lok™ ferrule options give you a choice of permanently attached ferrules, depending on your requirements for pressure rating and chemical compatibility.

Nuts

Our standard head fitting nut is suitable for most applications, or choose a compact or low profile head for restricted spaces, all in tough glass-filled polypropylene.

Thread types

Fitting nuts are available in ¼"-28 UNF, M6 or ⅝"-24 UNF thread types, all designed for flat-bottom ports.

Color

Fitting nuts are available in a range of colors so you can color-code your tubing sets for easy line identification.

Tubing

We offer tubing in PTFE and FEP, with ¼", ⅜" or ⅝" outer diameters and a range of inner bores.

Multi-tube bundles

We can supply single tubes or sets of multiple tubes bundled and mesh-wrapped to provide a neatly packaged one-piece assembly. This eliminates unmanageable and untidy loose tubing within an instrument making manufacture and servicing easier. We will allocate a single part number to your assembly, simplifying ordering and inventory management.

Bundled tubing sets can be specified with any combination of colored fitting nuts, tubing and ferrule types, specific to your needs.

SPECIFICATIONS

Choose single tubing sets with fittings on one or both ends, or bundle a number of sets together to completely plumb an instrument

- Choose different colored fitting nuts for easy line identification
- Mix tubing sizes and ferrule types to custom configure your ideal tubing connections
- Mesh wrapping simplifies tubing management within an instrument

How to Order

With so many variations possible, we need to quote your tubing sets specifically for you. Please contact the factory to discuss your options with one of our engineers.

For North America, Canada and S.E. Asia contact our US office:

Call: (973) 263 3001 or email: sales.us@biochemfluidics.com

For Europe and all other locations contact our UK office:

Call: +44 (0) 1223 416 612 or email: sales.eu@biochemfluidics.com

TECH TIP:**Not quite what you need?**

For other ferrule or nut types offered outside our Omni-Lok™ range, call the factory. We can custom assemble any of our fittings into a tubing set for your needs. For high temperature or aggressive environments, we can make up tubing sets using our PEEK™ nuts and Gripper fittings.

TUBING

Chemically resistant softwall and semi-rigid tubing for demanding applications

- Semi-rigid PTFE tubing
- Softwall Silicone Select™ and Bio-Chem (C-Flex®) tubing

Semi-rigid PTFE

Almost totally inert, PTFE tubing can be used with virtually all chemicals, solvents and corrosive materials, even at elevated temperatures. It can be sterilised in-line by steam, chemical methods, or autoclaving. PTFE tubing is ideal for use with Gripper, Omni-Lok™ or inverted cone fittings. Available in 1/16" or 1/8" outer diameters and a range of inner bore sizes.

PTFE TUBING

PART NUMBER	OD	ID	LENGTH	QTY
008T16-030-20	1.6mm (1/16")	0.3mm (.012")	20m	ea
008T16-030-200	1.6mm (1/16")	0.3mm (.012")	200m	ea
008T16-050-20	1.6mm (1/16")	0.5mm (.020")	20m	ea
008T16-050-200	1.6mm (1/16")	0.5mm (.020")	200m	ea
008T16-080-20	1.6mm (1/16")	0.8mm (.031")	20m	ea
008T16-080-200	1.6mm (1/16")	0.8mm (.031")	200m	ea
008T16-100-20	1.6mm (1/16")	1.0mm (.039")	20m	ea
008T16-100-200	1.6mm (1/16")	1.0mm (.039")	200m	ea
008T32-150-10	3.2mm (1/8")	1.5mm (.059")	10m	ea
008T32-150-100	3.2mm (1/8")	1.5mm (.059")	100m	ea
008T47-032-10	4.7mm (3/16")	3.2mm (1/8")	10m	ea
008T47-032-100	4.7mm (3/16")	3.2mm (1/8")	100m	ea

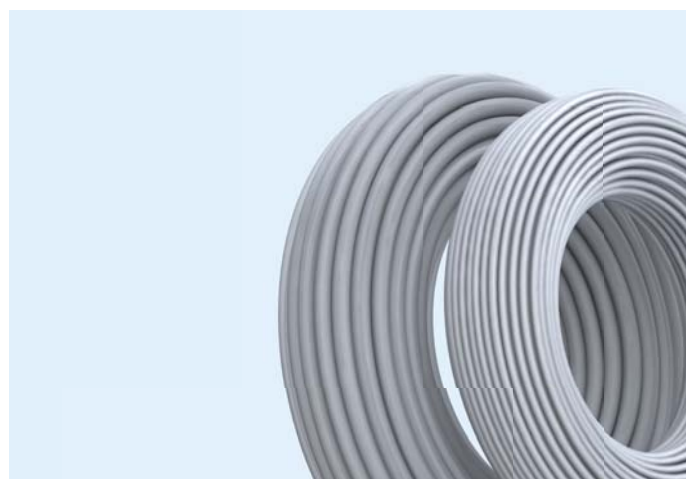
Softwall Silicone Select™

Silicone Select™ tubing is platinum cured silicone tubing designed for high-purity medical grade applications. It complies with USP XXII, Class VI, FDA and USDA standards and is FDA master file listed. This tubing has been specially developed to withstand the rigors of usage with pinch valves and is recommended for most pinch valve applications.

SILICONE SELECT™ TUBING

PART NUMBER	OD	ID	LENGTH	QTY
10025-10S	0.093" (2.36mm)	0.010" (0.25mm)	50ft	ea
10025-23S	0.093" (2.36mm)	0.023" (0.58mm)	50ft	ea
10025-50S	0.134" (3.40mm)	0.050" (1.27mm)	50ft	ea
10025-01S	3/32" (2.38mm)	1/32" (0.79mm)	50ft	ea
10025-02S	1/8" (3.17mm)	1/16" (1.59mm)	50ft	ea
10025-03S	3/16" (4.76mm)	1/16" (1.59mm)	50ft	ea
10025-04S	1/4" (6.35mm)	3/16" (4.76mm)	50ft	ea
10025-05S	1/4" (6.35mm)	1/8" (3.17mm)	50ft	ea
10025-06S	3/8" (9.52mm)	1/4" (6.35mm)	50ft	ea
10025-07S	7/16" (11.1mm)	5/16" (7.94mm)	50ft	ea

SPECIFICATIONS



Softwall Bio-Chem (C-Flex®) Tubing

Bio-Chem (C-Flex®) tubing is designed for high-purity medical grade applications, complies with USP XXII, Class VI, FDA and USDA standards and is FDA master file listed. This tubing has been specially developed to withstand the rigors of usage with pinch valves and is recommended for pinch valve applications where gas permeability is an issue.

BIO-CHEM (C-FLEX®) TUBING

PART NUMBER	OD	ID	LENGTH	QTY
10025-23B	0.093" (2.36mm)	0.023" (0.58mm)	50ft	ea
10025-01B	3/32" (2.38mm)	1/32" (0.79mm)	50ft	ea
10025-02B	1/8" (3.17mm)	1/16" (1.59mm)	50ft	ea
10025-03B	3/16" (4.76mm)	1/16" (1.59mm)	50ft	ea
10025-05B	1/4" (6.35mm)	1/8" (3.17mm)	50ft	ea
10025-06B	3/8" (9.52mm)	1/4" (6.35mm)	50ft	ea
10025-07B	7/16" (11.1mm)	5/16" (7.94mm)	50ft	ea

TUBING CUTTER

PART NUMBER	DESCRIPTION	QTY
003062	Tubing cutter	ea
003063	Replacement blade	ea

BARBED ADAPTORS

Thread to barb adaptors to connect softwall tubing to threaded ports or to semi-rigid tubing

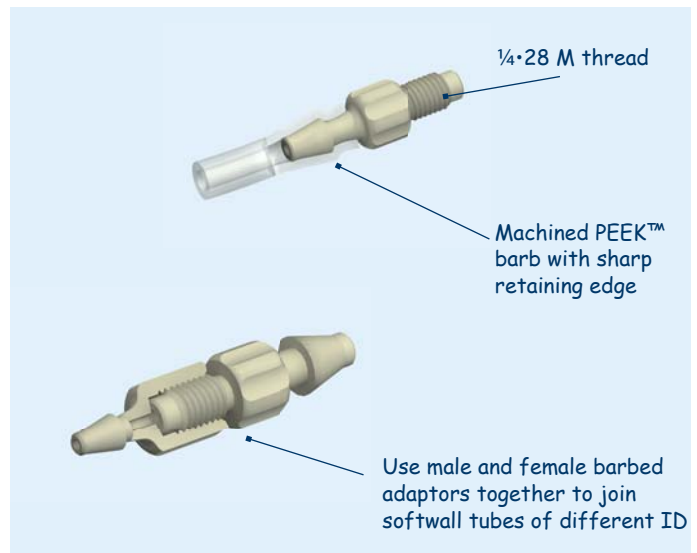
Omnifit® barbed adaptors are designed for use with soft-wall tubing. Machined from chemically resistant PEEK™ they have a superior barb with a crisp edge that retains soft wall tubing more securely than molded adaptors.

To connect softwall tubing into any female 1/4"-28 UNF port, use a male 1/4"-28 UNF to barb adaptor. The male thread screws into the port and tubing can then be pushed over the barb.

To connect softwall tubing to any male 1/4"-28 UNF thread, use a female 1/4"-28 UNF to barb adaptor. The barb is inserted into the softwall tubing and the female 1/4"-28 UNF port is available to receive any 1/4"-28 UNF threaded fitting.

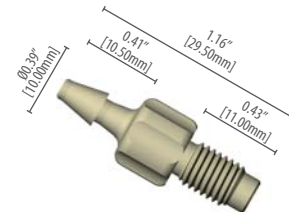
A tight, leak-free connection can be ensured by matching the ID of your tubing to the barb size of the adaptor. If there is not an exact match, always choose the barb size that is just larger than your tubing ID.

SPECIFICATIONS

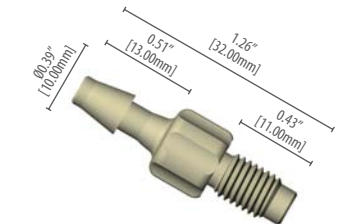


MALE 1/4"-28 UNF TO BARB ADAPTOR

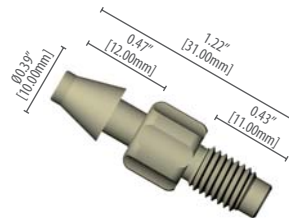
PART NUMBER	MATERIAL	COLOR	THREAD	TUBE ID	QTY
001070	PEEK™	Natural	1/4•28 M	1.0 mm	ea
001064	PEEK™	Natural	1/4•28 M	1.5 mm	ea
001065	PEEK™	Natural	1/4•28 M	2.0 mm	ea
001066	PEEK™	Natural	1/4•28 M	2.5 mm	ea
001071	PEEK™	Natural	1/4•28 M	3.0 mm	ea
001069	PEEK™	Natural	1/4•28 M	3.2 mm	ea
001072	PEEK™	Natural	1/4•28 M	4.0 mm	ea
001073	PEEK™	Natural	1/4•28 M	6.0 mm	ea
001074	PEEK™	Natural	1/4•28 M	8.0 mm	ea



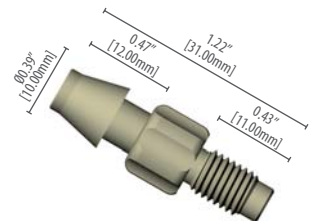
001071
1/4•28 M to 3.0 mm barb



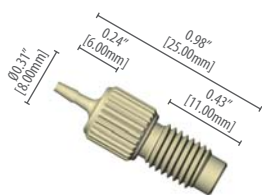
001069
1/4•28 M to 3.2 mm barb



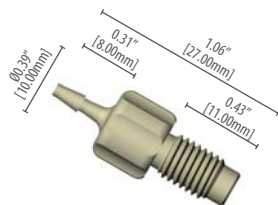
001072
1/4•28 M to 4.0 mm barb



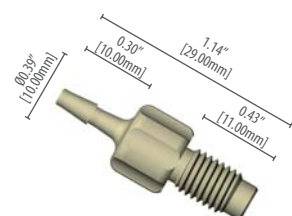
001073
1/4•28 M to 6.0 mm barb



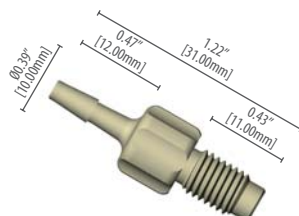
001070
1/4•28 M to 1.0 mm barb



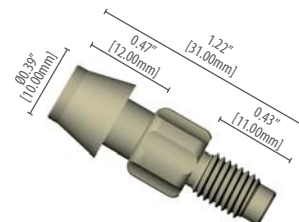
001064
1/4•28 M to 1.5 mm barb



001065
1/4•28 M to 2.0 mm barb



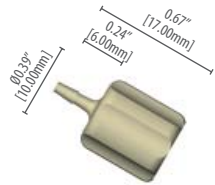
001066
1/4•28 M to 2.5 mm barb



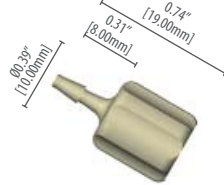
001074
1/4•28 M to 8.0 mm barb

FEMALE 1/4"-28 UNF TO BARB ADAPTOR

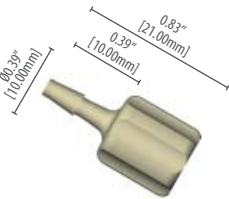
PART NUMBER	MATERIAL	COLOR	THREAD	TUBE ID	QTY
001070F	PEEK™	Natural	1/4•28 F	1.0 mm	ea
0001064F	PEEK™	Natural	1/4•28 F	1.5 mm	ea
001065F	PEEK™	Natural	1/4•28 F	2.0 mm	ea
001066F	PEEK™	Natural	1/4•28 F	2.5 mm	ea
001071F	PEEK™	Natural	1/4•28 F	3.0 mm	ea
001069F	PEEK™	Natural	1/4•28 F	3.2 mm	ea



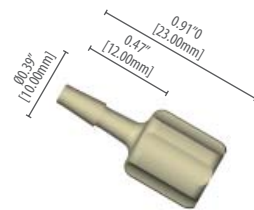
001070F
1/4•28 F to 1.0 mm barb



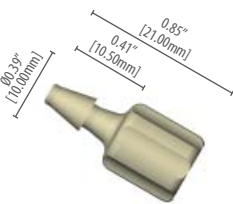
001064F
1/4•28 F to 1.5 mm barb



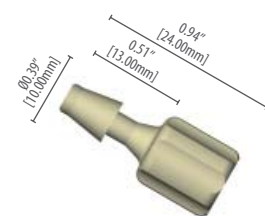
001065F
1/4•28 F to 2.0 mm barb



001066F
1/4•28 F to 2.5 mm barb



001071F
1/4•28 F to 3.0 mm barb



001069F
1/4•28 F to 3.2 mm barb

CLICK-N-SEAL™ BARBED ADAPTORS

Thread to barb connections that can't be overtightened!

- For 1/16, 1/8 or 5/32" ID softwall tubing
- For 1/4"-28 UNF or M6 threaded ports
- Re-useable and reliable

Click-N-Seal™ allows you to feel and hear when the fitting is properly installed, giving an audible click when the correct torque is reached. This thread to barb adaptor version enables connection of softwall tubing to a threaded port.

CLICK-N-SEAL™ MALE 1/4"-28 UNF TO BARB ADAPTOR

PART NUMBER	MATERIAL	COLOR	THREAD	TUBE ID	QTY
008NB16-CS5R	PC	Red	1/4•28 M	1/16" (1.57mm)	ea
008NB16-CS6R	PC	Red	M6 M	1/16" (1.57mm)	ea
008NB32-CS5R	PC	Red	1/4•28 M	1/8" (3.18mm)	ea
008NB32-CS6R	PC	Red	M6 M	1/8" (3.18mm)	ea
008NB40-CS5R	PC	Red	1/4•28 M	5/32" (3.96mm)	ea
008NB40-CS6R	PC	Red	M6 M	5/32" (3.96mm)	ea



008NB16-CS5R
Click-N-Seal™ Thread to Barb
for 1/16" ID tubing, 1/4•28, red

Note: Overall dimensions are the same for all part numbers listed. Only barb sizes vary.

Click-N-Seal™ is a trademark of Diba Industries Inc.

TECH TIP:

Can't find a barb to fit your tubing?

To ensure a tight, leak-free connection, match the ID of your tubing to the barb size of the adaptor. If there is not an exact match, always choose the barb size that is just larger than your tubing ID. Most tubing is flexible enough to be pushed over a barb that is larger than the tube ID.

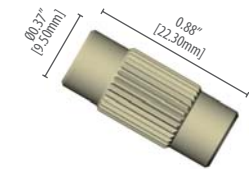
THREADED ADAPTORS

A useful range of "problem-solving" parts to convert thread sizes quickly and easily

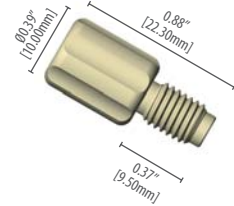
Omnifit® threaded adaptors are a useful range of 'problem solving' parts that enable you to convert thread sizes quickly and easily, accepting a 1/4"-28 UNF male fitting at one end and a range of male and female thread types at the other.

TWO-WAY ADAPTORS, PEEK™

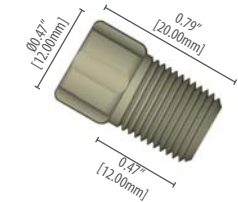
PART NUMBER	MATERIAL	COLOR	THREAD 1	THREAD 2	QTY
002306	PEEK™	Natural	1/4•28 F	10-32 F	ea
002352	PEEK™	Natural	1/4•28 F	M6 M	ea
002354	PEEK™	Natural	1/4•28 F	1/8" NPT M	ea
002356	PEEK™	Natural	1/4•28 F	3/8" NPT M	ea
002357	PEEK™	Natural	1/4•28 F	1/8" BSPT M	ea



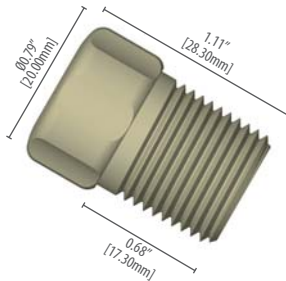
002306
PEEK™ adaptor for 1/4•28 M and 10-32 M threads



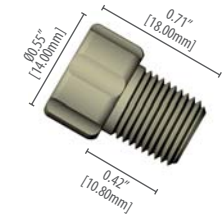
002352
PEEK™ adaptor for 1/4•28 F to M6 M threads



002354
PEEK™ adaptor for 1/4•28 F to 1/8" NPT M threads



002356
PEEK™ coupling for 1/4•28 F to 3/8" NPT M threads



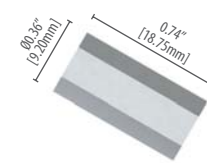
002357
PEEK™ coupling for 1/4•28 F to 1/8" BSPT M threads

COUPLINGS & CONNECTORS

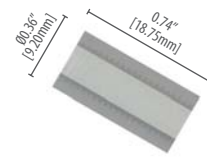
Couplings to connect two or three fitting lines using the same thread type

TWO-WAY COUPLINGS

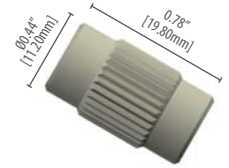
PART NUMBER	MATERIAL	COLOR	THREAD 1	THREAD 2	QTY
002301	PP	White	1/4•28 F	1/4•28 F	ea
002302	ETFE	Natural	1/4•28 F	1/4•28 F	ea
002307	PEEK™	Natural	1/4•28 F	1/4•28 F	ea



002301
PP coupling for 1/4•28 M threads



002302
ETFE coupling for 1/4•28 M threads



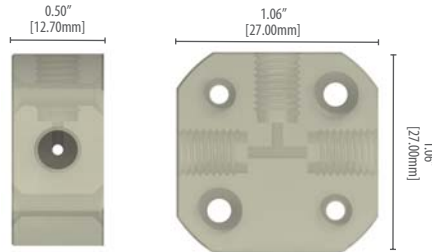
002307
PEEK™ coupling for 1/4•28 M threads

Mountable block connectors

The 3-way and 4-way block connectors have an internal bore of 1.5mm. They are mountable and when used with Omnifit Gripper fittings or Omni-Lok Type P or S fittings, provide an inert fluid path with zero dead volume.

THREE-WAY & FOUR-WAY BLOCK CONNECTORS

PART NUMBER	MATERIAL	COLOR	CONFIGURATION	THREADS	QTY
001057	PEEK™	Natural	3-way	1/4•28 F	ea
001058	PEEK™	Natural	4-way	1/4•28 F	ea



001057
3-way PEEK™ block connector for 1/4•28 F threads

In-line connectors ideal for where space is limited

A tubing line is connected into the connector using an Omnifit® Gripper ferrule. The connector then effectively becomes a 1/4"-28 UNF threaded female port that accepts a standard threaded fitting from a second fluid line.

IN-LINE CONNECTORS

PART NUMBER	MATERIAL	COLOR	TUBE OD	THREAD	QTY
002333	PEEK™	Natural	1/16"	1/4•28 F	ea
002334	PEEK™	Natural	1/8"	1/4•28 F	ea



002333
PEEK™ in-line connector for 1/4•28 F threads, 1/16" OD tube



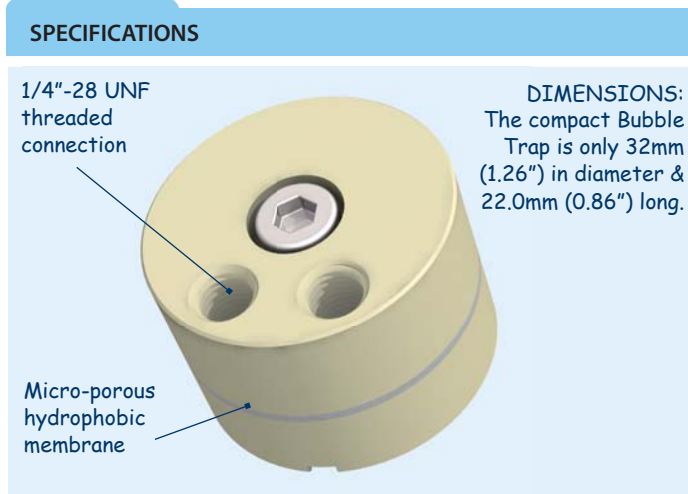
002334
PEEK™ in-line connector for 1/4•28 F threads, 1/8" OD tube

BUBBLE TRAP

Effective, in-line removal of bubbles

- Pressure rated up to 30 psi
- Effective de-bubbling of aqueous solutions

The Omnifit® Bubble Trap effectively removes bubbles from aqueous solutions. The unit is quickly and easily connected in-line using the 1/4"-28 UNF female threaded ports and fittings such as Omni-Lok™. Spare membranes are available.



Operation

When a fluid containing bubbles flows through the unit, the bubbles are forced through a micro-porous, hydrophobic membrane whilst aqueous fluid is retained within the Trap. Because the membrane function depends on its hydrophobicity, the Trap is only suitable for use with aqueous systems and NOT with organic solvents.

Flow

Maximum flow rate is dependent upon the amount of bubbles in the liquid. Typical operating range is 0.5 - 2.0ml/min, but up to 6ml/min can be achieved if few bubbles are present in the liquid.

Pressure

The unit is pressure rated up to 30psi. De-bubbling is effected under positive pressure. It is not possible to pull liquid through the unit under vacuum as this would introduce bubbles into the fluid. If the system back-pressure is insufficient for the unit to function, a length of tube can be fitted on the outlet side to create more back-pressure.

Maintenance

The lifetime of the membranes strongly depends on the kind of fluid being used. For pure water, the lifetime may be several months or years. If buffer solutions are used, the life will be reduced and it is advisable to flush the unit with de-ionized/distilled water after use to prevent salt crystals forming.

INLINE BUBBLE TRAP					
PART NUMBER	FILTER MATERIAL	POROSITY	CONNECTION 1	CONNECTION 2	QTY
006BT	PTFE	25 µm	1/4•28 M	1/4•28 F	ea

REPLACEMENT FILTER ELEMENTS			
PART NUMBER	FILTER MATERIAL	POROSITY	QTY
006BTF	PTFE	25 µm	ea

IN-LINE FILTERS

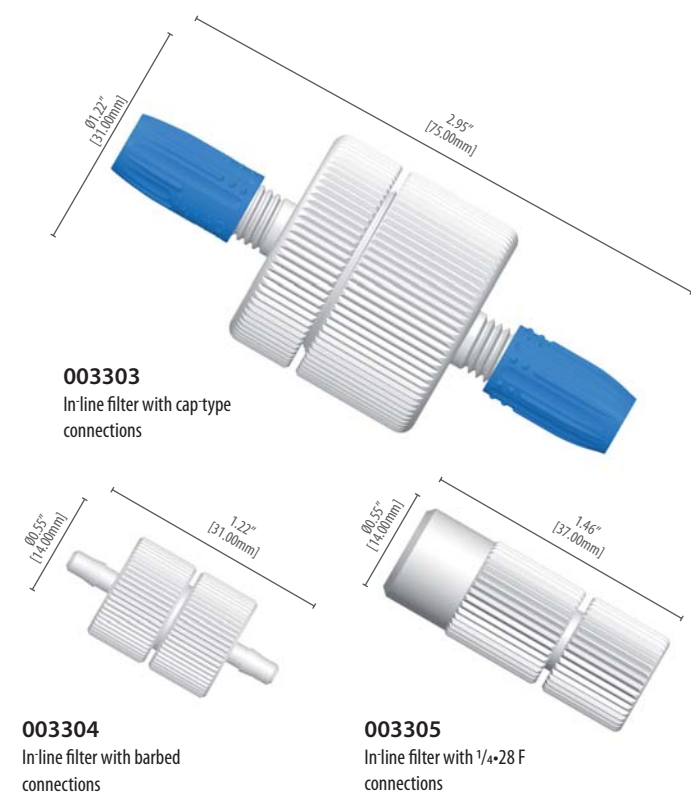
Inert microporous filters remove particulates and protect solenoid valves and sensitive instruments

- Inert flow path with all PTFE wetted parts
- Simple filter replacement
- Fluid distribution pattern for optimum filtration
- Easy installation in-line

These all-PTFE in-line filter units offer a highly inert flow path suitable to applications involving aggressive and high-purity fluids. The filters ensure that particulates are removed from the medium, protecting downstream instrumentation from particulate damage. PTFE solenoid valves for example, are inherently susceptible to damage from particulates.

Each filter unit comprises an all PTFE housing which holds a removable 100µm PTFE filter. The filter element can be easily and economically replaced, making the filters an excellent investment to ensure the long-term functioning of your solenoid valves and analytical instruments. A distribution pattern machined into the filter housing ensures that liquid is spread across the entire filter surface, giving maximum usage of the filter area. This distribution pattern is present on both sides of the filter housing, meaning that the filters are bi-directional with either port able to act as the inlet. However, once installed, flow direction should not be reversed, as contamination may result.

INLINE FILTERS					
PART NUMBER	FILTER MATERIAL	POROSITY	CONNECTION 1	CONNECTION 2	QTY
003303	PTFE	100µm	Omnifit® cap	Omnifit® cap	ea
003304	PTFE	25µm	Barb	Barb	ea
003305	PTFE	25µm	1/4•28 F	1/4•28 F	ea



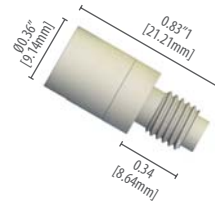
BIO-CHEK™ IN-LINE CHECK VALVES

Inert, low pressure check valves with 1/4"-28 UNF threads for quick, easy connection in-line

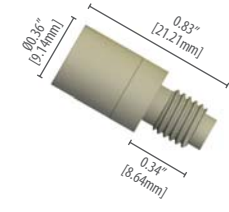
- Operating pressure up to 50psi
- Backpressure up to 100psi
- Cracking pressures ≤ 1psi
- Inert flow path with no metal parts

Bio-Chek™ self-sealing in-line check valves offer an inert flow path, no metal components and zero maintenance, ideal for high-purity, low-pressure applications. Unlike spring-actuated check valves that can restrict or impede the flow path causing content (product) damage, the Bio-Chek™ in-line check valve has a smooth flow path to minimize shear and turbulence.

The Bio-Chek™ valve provides a flow rate equivalent to a 0.030" orifice, a cracking pressure of 1psi or less and can check against back flow pressure up to 100psi. A choice of housing and check element materials and several flow configurations are available, all offering standard 1/4"-28 UNF connections.



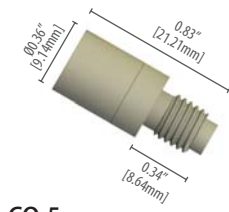
CI-4 BIO-CHEK™ inlet type check valve, PPS



CI-5 BIO-CHEK™ inlet type check valve, PEEK™



CO-4 BIO-CHEK™ outlet type check valve, PPS



CO-5 BIO-CHEK™ outlet type check valve, PEEK™

OMNIFIT® VARIBORE CHECK VALVES

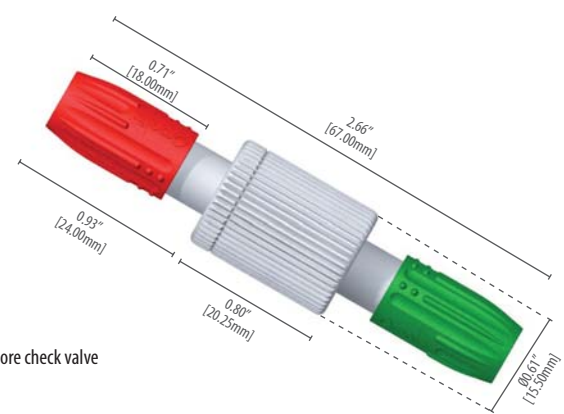
Low pressure check valves with versatile "cap" connections for tubing sizes up to 4mm OD

- All PTFE body
- For use with rigid and semi-rigid tubing
- Cracking pressures up to 10psi

Omnifit® in-line check valves offer a versatile connection method for many tubing sizes and materials, including stainless steel. Integral FKM O-rings, or PTFE cones (available separately) can be used to make a simple compression fitting direct to the OD of the tubing. Alternatively, the internal thread of the colored cap is a standard 1/4"-28 UNF female, enabling connection using any standard 1/4"-28 UNF threaded fitting, such as Omni-Lok™ or Grippers.

OMNIFIT® VARIBORE CHECK VALVE

PART NUMBER	BODY	CHECK ELEMENT	CRACKING PRESSURE	QTY
0011340	PTFE	FKM	0.1psi	2
0011341	PTFE	FKM	0.5psi	2
0011342	PTFE	FKM	1.5psi	2
0011343	PTFE	FKM	3.0psi	2
0011344	PTFE	FKM	10.0psi	2



- 0011340
- 0011341
- 0011342
- 0011343
- 0011344

Omnifit® varibore check valve

DUAL FEMALE BIO-CHEK™ CHECK VALVE

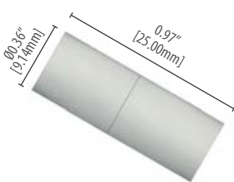
PART NUMBER	HOUSING	CHECK ELEMENT	INLET	OUTLET	CRACKING PRESSURE	INTERNAL VOLUME	QTY
CF-4C	PPS	FFKM	1/4•28 F	1/4•28 F	0.3psi	49µl	ea
CF-4E	PPS	EPDM	1/4•28 F	1/4•28 F	1.0psi	49µl	ea
CF-4V	PPS	FKM	1/4•28 F	1/4•28 F	0.8psi	49µl	ea
CF-5C	PEEK™	FFKM	1/4•28 F	1/4•28 F	0.3psi	49µl	ea
CF-5E	PEEK™	EPDM	1/4•28 F	1/4•28 F	1.0psi	49µl	ea
CF-5V	PEEK™	FKM	1/4•28 F	1/4•28 F	0.8psi	49µl	ea

INLET TYPE BIO-CHEK™ CHECK VALVE

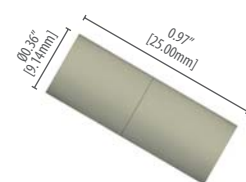
CI-4C	PPS	FFKM	1/4•28 F	1/4•28 M	0.3psi	60µl	ea
CI-4E	PPS	EPDM	1/4•28 F	1/4•28 M	1.0psi	60µl	ea
CI-4V	PPS	FKM	1/4•28 F	1/4•28 M	0.8psi	60µl	ea
CI-5C	PEEK™	FFKM	1/4•28 F	1/4•28 M	0.3psi	60µl	ea
CI-5E	PEEK™	EPDM	1/4•28 F	1/4•28 M	1.0psi	60µl	ea
CI-5V	PEEK™	FKM	1/4•28 F	1/4•28 M	0.8psi	60µl	ea

OUTLET TYPE BIO-CHEK™ CHECK VALVE

CO-4C	PPS	FFKM	1/4•28 M	1/4•28 F	0.3psi	68µl	ea
CO-4E	PPS	EPDM	1/4•28 M	1/4•28 F	1.0psi	68µl	ea
CO-4V	PPS	FKM	1/4•28 M	1/4•28 F	0.8psi	68µl	ea
CO-5C	PEEK™	FFKM	1/4•28 M	1/4•28 F	0.3psi	68µl	ea
CO-5E	PEEK™	EPDM	1/4•28 M	1/4•28 F	1.0psi	68µl	ea
CO-5V	PEEK™	FKM	1/4•28 M	1/4•28 F	0.8psi	68µl	ea



CF-4 BIO-CHEK™ dual female check valve, PPS



CF-5 BIO-CHEK™ dual female check valve, PEEK™

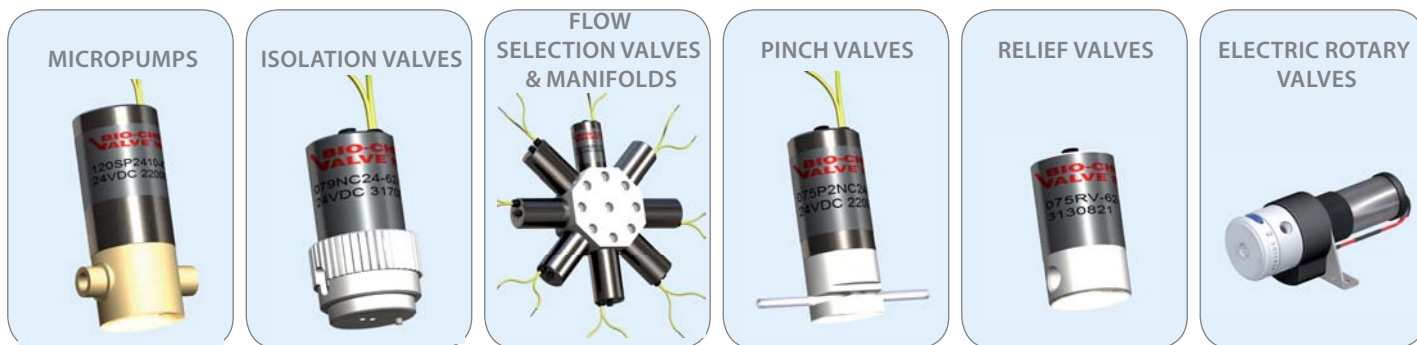
THE BIO-CHEM FLUIDICS BRAND FAMILY

Bio-Chem Fluidics is dedicated to providing instrument manufacturers and laboratories with the industry's best choice of inert, miniature fluid handling components.

Under our Bio-Chem Valve™ and Omnifit® brands we offer a complete fluid system solution for a wide range of industries including analytical chemistry, clinical diagnostics and medical device manufacturers as well as a world-class labware portfolio for the scientific community.

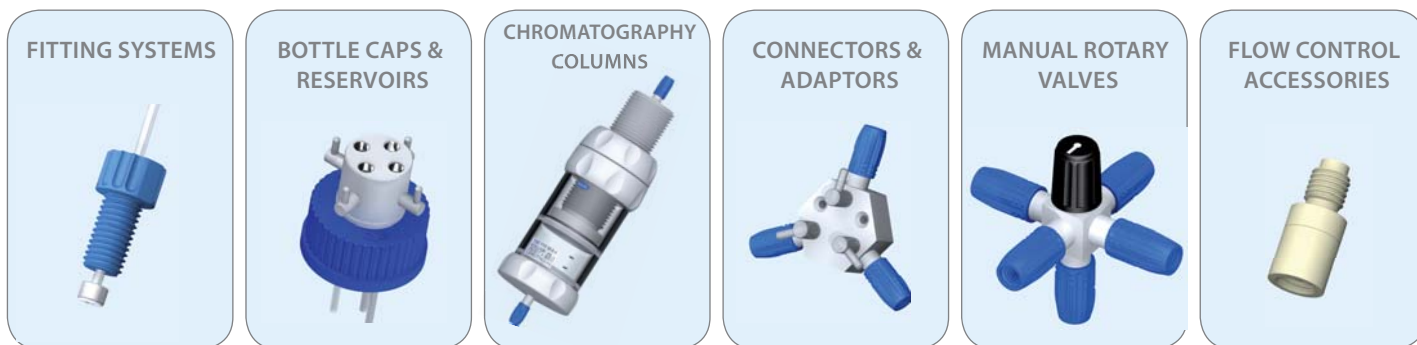
BIO-CHEM VALVE

INERT SOLENOID VALVES, ELECTRIC ROTARY VALVES AND PUMPS



Omnifit

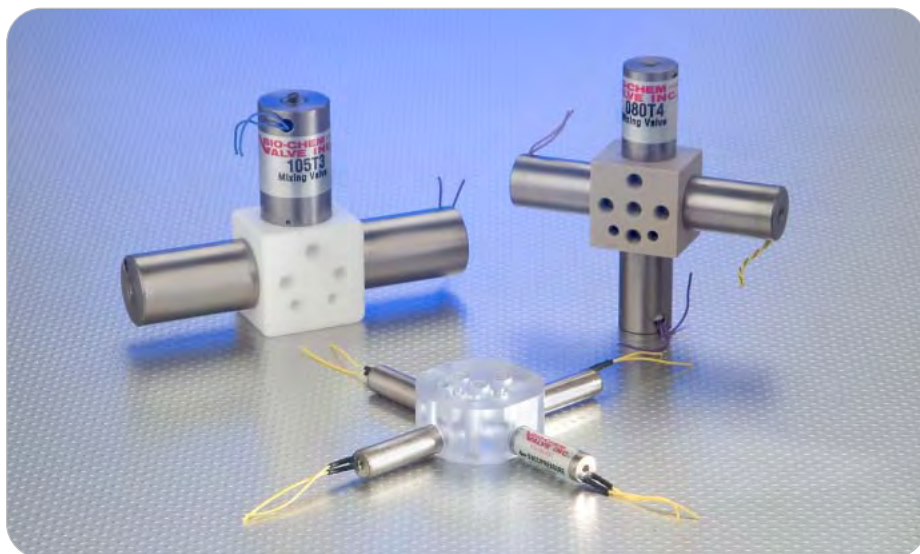
INERT FLUID HANDLING COMPONENTS AND LABWARE



CUSTOMIZED SOLUTIONS

We understand that many applications require customized solutions. Our design and prototyping expertise enables us to offer simple modifications of standard products as well as completely customized designs.

We look forward to working with you to meet your design engineering objectives!



Manifold mounted solenoid valves for gradient, mixing and diverting applications

- Precise flow characteristics
- Compact, robust construction
- Minimal dead volume
- Fast response time
- All PTFE wetted parts; other materials available

Compact valve / manifold configurations

The Bio-Chem Valve flow selection valves are available with three valve sizes, using 0.38 inch, 0.75 inch and 1.00 inch solenoid shell diameters. These sizes correspond to orifice diameters spanning from 0.032 inches to 0.125 inches, covering a broad range of application requirements. For ease of installation, all inlet ports are positioned on the same side of the manifold. The common outlet port is centered between the inlet ports. (Note: in diverting applications, the inlet and outlet ports are reversed.) The compact manifold construction ensures minimal internal volumes.

Optimized flow characteristics

Every solenoid actuator on the flow selection valve is individually adjusted in the factory so as to provide equal flow rates at the same pressure. Ultra-fast response times for gradient applications. Through rapid cycling of the solenoid, the valves can be used to provide modulating flow rates at constant pressures. With opening and closing times of only 2 milliseconds, the 040T valve series is ideally suited to gradient applications.

Choice of inert wetted materials

The isolation valve design used with the Bio-Chem Valve flow selection valves ensures that the only wetted parts are the valve diaphragm and the valve seat, which is part of the manifold. In the standard flow selection valve, both parts are made of PTFE, offering the most chemically inert solution available. For different mechanical and chemical requirements, the customer also has the option of using PEEK™ or PPS for the manifold material and EPDM, Viton® or a perfluorelastomer for the diaphragm material.

Quick-Change Customization™

Through Bio-Chem Valve's Quick-Change Customization™ process, the standard flow selection valve configurations shown on this product data sheet can be modified to meet the customer's specifications. For possibilities regarding solenoid and spring response times, operating pressures, port threads and locations, wetted material and other features, please consult Bio-Chem Valve and Omnifit.

Inside.....

Specifications

Valve series	2
Electrical	2
Flow configurations	2
Internal volumes	2
Orifice diameters	2
Operating pressures	2
Reaction times	3
Port threads	3
Wetted materials	3
Mounting	3
Lead wires	3
Ordering information	3
Installation drawings	4

Specifications

Valve Series

The flow selection valves are offered in three valve series, distinguished by the solenoid shell sizes:

Valve Series	Shell Diameter
040T	0.38 inches
080T	0.75 inches
105T	1.00 inches

Electrical

Valve Series	Voltage	Power @ 70°F (21°C)	Current @ 70°F (21°C)
040T	12 VDC	1.9 Watts	0.17 amps
040T	24 VDC	1.9 Watts	0.08 amps
080T	12 VDC	2.6 Watts	0.22 amps
080T	24 VDC	2.6 Watts	0.10 amps
105T	12 VDC	8.0 Watts	0.63 amps
105T	24 VDC	8.0 Watts	0.33 amps

Note: 115 VAC and 220 VAC solenoid coils are also available.

Flow Configurations

Valve Series	Number of Inlet Ports Available						
	2	3	4	5	6	8	10
040T		✓	✓				
080T	✓	✓	✓	✓	✓	✓	✓
105T	✓	✓	✓		✓		

Note 1: All flow selection valves have a common outlet port.

Note 2: In fluid diverting applications, the inlet and outlet ports are reversed.

Note 3: The standard flow selection valves are offered with all ports normally closed. For the 080T and 105T series, normally open ports are optionally available.

Internal Volumes (µL)

Valve Series	Orifice Diameter	Common Port						Inlet Ports (per port)	
		T2	T3	T4	T5	T6	T8	T2	T3+
040T	0.032"	n/a	28 µl	36 µl	n/a	n/a	n/a	n/a	21 µl
040T	0.054"	n/a	60 µl	77 µl	n/a	n/a	n/a	n/a	44 µl
080T	0.032"	7 µl	24 µl	30 µl	45 µl	53 µl	96 µl	14 µl	15 µl
080T	0.062"	27 µl	91 µl	117 µl	174 µl	207 µl	373 µl	24 µl	35 µl
080T	0.078"	42 µl	140 µl	180 µl	269 µl	318 µl	574 µl	69 µl	69 µl
105T	0.092"	79 µl	233 µl	300 µl	n/a	616 µl	n/a	105 µl	110 µl
105T	0.125"	146 µl	444 µl	573 µl	n/a	1175 µl	n/a	233 µl	240 µl

Orifice diameter options & maximum operating pressures

Valve Series	Orifice Diameters					
	0.032" (0.80 mm)	0.054" (1.40 mm)	0.062" (1.57 mm)	0.078" (1.98 mm)	0.092" (2.34 mm)	0.125" (3.18 mm)
040T	20 psi	20 psi	n/a	n/a	n/a	n/a
080T	20 psi	n/a	20 psi	10 psi	na/	n/a
105T	n/a	n/a	n/a	n/a	10 psi	10 psi

Note : All valves can be operated at a vacuum.

Specifications (contd.)

Reaction times (for normally closed operators)

Valve Series	Opening time (milliseconds)		Closing time (milliseconds)
	Standard	with CoolCube™	
040T	5 ms	2 ms	2 ms
080T	10 ms	5 ms	3 ms
105T	20 ms	8 ms	8 ms

Note 1: Reaction times were tested with air. Reaction times will vary depending on the medium.

Note 2: The Bio-Chem Valve CoolCube™ control module allows the application of over-voltage to actuate the valve (e.g. using 24 VDC to actuate a valve rated for 12 VDC). After a delay of 110 milliseconds, the CoolCube drops the voltage to 1/3 (e.g. to 8 VDC from the original 24 VDC), which is sufficient to hold the valve in position. (Please refer to the CoolCube specification sheet.)

Note 3: The reaction times of the 040T valves are optimized for use in gradient applications. Assuming that the valves are used with over-voltage (24 VDC with a 12 VDC valve or 48 VDC for a 24 VDC valve), the opening and closing times are equal at 2 ms, ensuring a well controlled flow characteristic.

Ordering Information

1	Select valve size	040T, 080T, 105T
2	Indicate number of inlets (all valves have one common outlet).	2, 3, 4, 5, 6, 8, 10
3	Indicate voltage	12 VDC, 24 VDC, 115 VAC, 220 VAC
4	Indicate orifice diameter (in 1/1000 inch)	32, 54, 62, 78, 92, 125
5	Manifold body material (PTFE Standard)	4 (PPS), 5 (PEEK™)
6	Diaphragm material (PTFE Standard)	E (EPDM), V (Viton®), P (Perfluoroelastomer)

Part Number Example:

080T **4** **24** - **62** - **5** **V**
 | | | | | |
 Valve Inlets Voltage Orifice Body Diaphragm
 Size Diameter Material Material

(Leave blank for PTFE) (Leave blank for PTFE)

Important note:
Certain part number configurations may be subject to minimum order quantities and extended delivery schedules.
Please refer to factory before ordering.
Call: 973-263-3001 or e-mail: sales.us@biochemfluidics.com

Port Threads

The standard flow selection valve has 1/4"-28 flat bottom port threads.

Other port threads are available, such as M6 x 1.0 and 10-32. 5/16"-24 threads are available for valves with three or more inlets.

Wetted material options

Bio-Chem Valve offers a selection of material options for both the valve diaphragms as well as the manifolds:

- Manifold materials: PTFE, PEEK™, PPS
- Valve diaphragm materials: PTFE, EPDM, Viton®, Perfluoroelastomer

Mounting

Clip mounting is available for 2-inlet valves. (Please see Mounting Accessories and Options specifications sheet.)

Two 0.156 inch (4 mm) diameter mounting holes are provided in the manifold body for flow selection valves with 3 or more inlets.

Lead Wires

15 inches (380 mm) 26-gauge Teflon® coated. Different lengths of lead wires and terminal connectors can be provided.

Consult Bio-Chem Valve for options concerning:

- Normally open valve operators
- Port threads
- Helicoils
- Terminal connectors and non-standard lead wire lengths
- Above standard operating pressure requirements
- Manifold configurations

Please see the following product specification sheets for accessories:

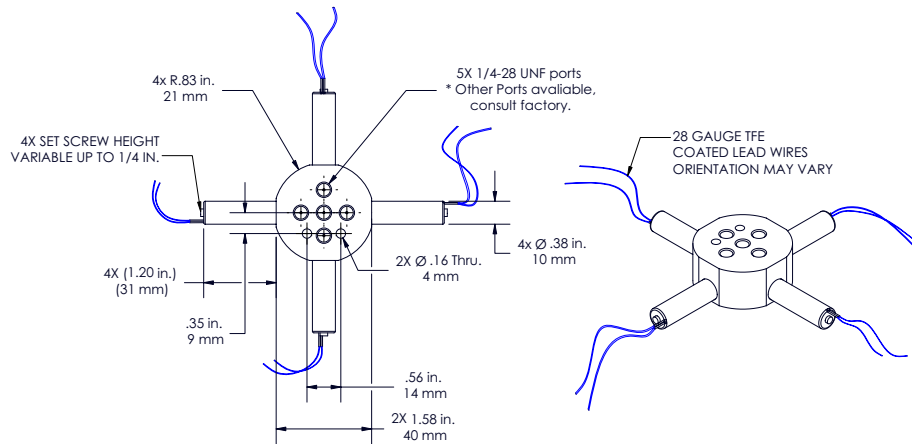
- Fitting Systems
- CoolCube™ control module
- Mounting Accessories & Options

Trademarks:

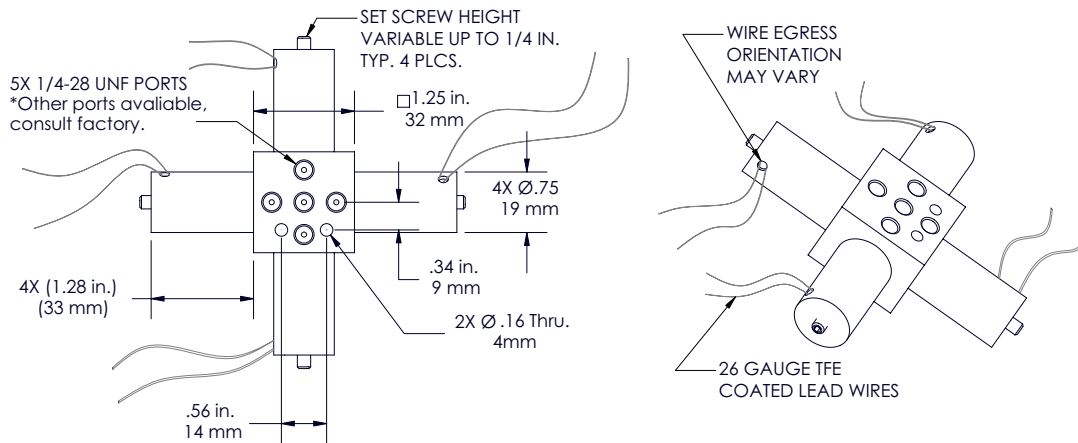
CoolCube™ is a trademark of Bio-Chem Valve Inc.
PEEK™ is a trademark of Victrex plc
Quick-Change Customization™ is a trademark of Bio-Chem Valve Inc.
Teflon® is a registered trademark of E.I. du Pont de Nemours and Company
Viton® is a registered trademark of DuPont Dow Elastomers

Installation Drawings

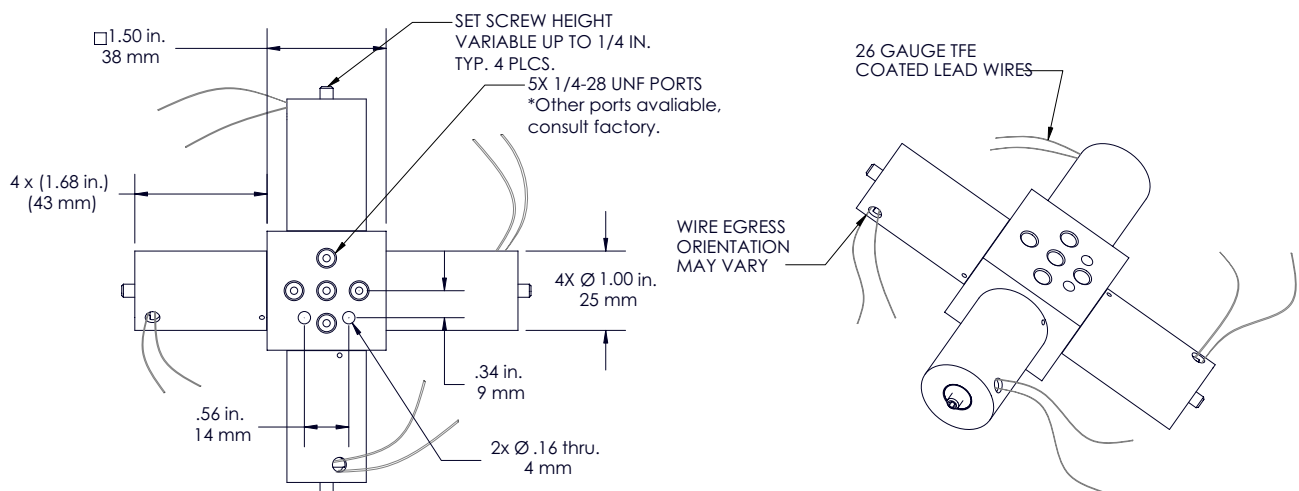
040T4



080T4



105T4



Rev. 1104



Solvent Safety Bottle Caps

HRoMalytic +61(0)3 9762 2034
ECHnology Pty Ltd
Australian Distributors; Importers & Manufacturers



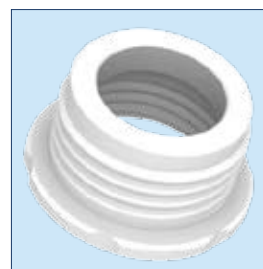
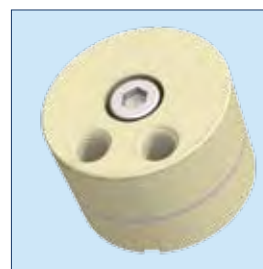
BIO•CHEM
FLUIDICS

A HALMA COMPANY



Index

- Page 4 **Q-SERIES BOTTLE CAPS**
 ¼"-28 UNF ports with optional on-off valves. A screw-in check valve and filter is available for a completely closed solvent supply or waste system.
- Page 6 **BARBED ADAPTORS**
 Thread to barb adaptors to connect softwall tubing to ¼"-28 UNF ports.
- Page 7 **SOFTWALL TUBING**
 Chemically-resistant softwall Silicone Select™ and C-Flex® tubing for demanding applications. Ideal for use with barbed adaptors to connect into Q and T-series caps.
- Page 8 **T-SERIES BOTTLE CAPS**
 Luer ports combined with straight-through tubing connections, plus optional check valve and filter for a completely closed system.
- Page 10 **T-SERIES LUER ADAPTORS**
 A range of Luer accessories for quick and easy connection of different tubing types and sizes to T-series caps.
- Page 10 **ACTIVATED CARBON VAPOR TRAP**
 A solvent vapor trap with Luer connection for use with T-series caps in both solvent supply or waste collection applications.
- Page 11 **OMNI-LOK™ INVERTED CONE FITTINGS**
 Removable and reusable inverted cone fitting system for quick and convenient low-pressure connections, using semi-rigid tubing e.g. PTFE.
- Page 11 **SEMI-RIGID PTFE TUBING**
 Chemically inert PTFE tubing.
- Page 12 **FILTERS AND BUBBLERS**
 Bottom-of-bottle filters and spargers (bubblers) for simple, effective solvent filtration.
- Page 12 **BUBBLE TRAP**
 Effective in-line removal of bubbles.
- Page 13 **PRESSURE-RATED GLASS BOTTLES**
 Pressure-rated clear glass bottles.
- Page 13 **S40 THREAD ADAPTOR**
 Converts S40 bottle threads to accept T and Q-series GL45 bottle caps.
- Page 14 **TECHNICAL DATA**



Plastics

ETFE = ethylene tetrafluoroethylene
 PTFE = polytetrafluoroethylene
 PEEK™ = polyetheretherketone
 PP = polypropylene
 PC = polycarbonate
 PCTFE = polychlorotrifluoroethylene

Trademarks

PEEK™ is a registered trademark of Victrex plc.
 Omnifit®, Omni-Lok™ are trademarks of Bio-Chem Fluidics Ltd.
 Bio-Chem Valve™ is a trademarks of Bio-Chem Fluidics Inc.

www.biochemfluidics.com

Bottle Caps Selection Guide

In the table below:

1. Choose the connection type you require for your fluid lines;
2. Locate the thread type of the bottle you wish to connect to;
3. Turn to the pages indicated to see full details and ordering information for each system.

Bottle Thread	Fluid Line Connection	
	Threaded fittings + optional on-off valves on each line	Straight-through tubes
GL32	00932Q (Page 4)	00932T (Page 8)
GL45	00945Q (Page 4)	00945T (Page 8)
38-430 (Glass)	00938Q (Page 4)	00938T (Page 8)
38-430 (Plastic)	00938PQ (Page 4)	00938PT (Page 8)
S40	00945Q (Page 4) + S40 thread adaptor (Page 13)	00945T (Page 8) + S40 thread adaptor (Page 13)

Guide to thread types:

GL32	GL45	38-430	S40
1.26" [32.0mm]	1.77" [45.0mm]	1.50" [38.0mm]	1.57" [40.0mm]
			

Q-SERIES BOTTLE CAPS

1/4"-28 UNF ports with optional on-off valves

- Accept standard male 1/4"-28 UNF fittings
- Anti-twist design
- Optional on-off valves to control individual fluid lines

The Omnifit® Q-series provides a versatile range of caps with the security of threaded fitting nuts to ensure a leak-free, vapor-tight seal - ideal for repeated connect / disconnect.

Anti-twist design

The anti-twist design allows the PTFE body to spin freely within the outer blue cap. This means no more twisted tubes when the cap is fitted or removed and no need to disconnect fluid lines before unscrewing the cap. See more details in Technical Data (page 14).

Tubing connections

Q-series caps offer a secure way to connect tubing using 1/4"-28 UNF fitting nuts. Each port has a robust stainless steel thread insert to enable repeated connect/disconnect.

- Semi-rigid tubing can be connected using standard 1/4"-28 UNF threaded fittings. We recommend Omni-Lok™ fittings (see p11).
- Fluid lines can be color-coded for easy identification using colored fitting nuts.
- Softwall tube, such as silicone, can be connected using Omnifit® PEEK™ thread to barb adaptors (see p6).
- A length of 1/8" OD PTFE tubing is supplied fitted inside the cap and extending into the bottle. This can be cut to fit, or easily replaced if a longer length is required.
- Non-valved caps have Ø1.8mm (0.07") through-holes enable 1/16" OD semi-rigid tubing to be passed straight through into the bottle. Tube can be secured at the required height using an Omni-Lok™ inverted cone fitting.

On-off valves

On-off valves enable easy control of liquid flow into and out of the bottle, as each fluid line can be switched on or off independently. Changing bottles is easy - simply close off the fluid lines and switch the cap onto a new reservoir without leaks. Caps without valves have a compact design ideal when head space is limited.

Materials

The solid PTFE inner body provides the highest chemical inertness. The PTFE creates a reliable seal to the glass bottle with no need for extra seals or O-rings. In normal use, the outer cap is not wetted.

Component	Material
Outer cap	Glass-filled PP
Body	PTFE
Valve internal rotor (for caps with on-off valves)	PCTFE

Pressure & temperature ratings

Q-series caps (except 00938PQ*) can be used under vacuum or positive pressure. All caps are rated for continuous use at 50°C and can be autoclaved.

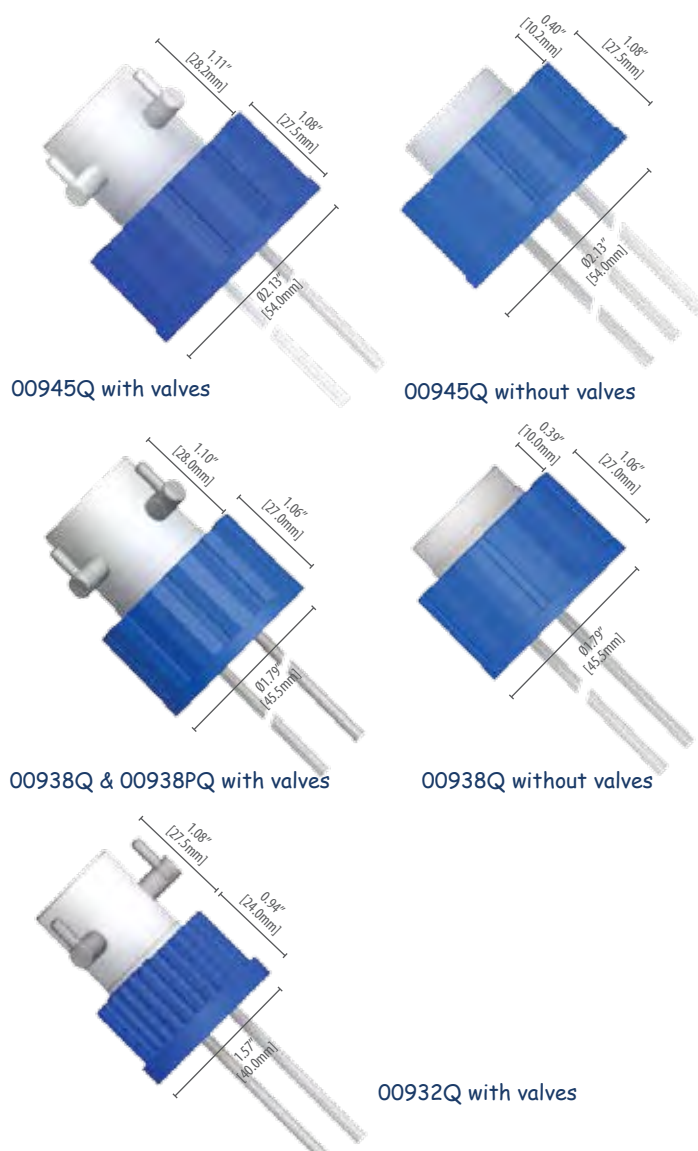
Type	Vacuum	+ve pressure
Q-series (except 00938PQ*)	-10 psi	20 psi

CAUTION! Use only vacuum or pressure-rated bottles

SPECIFICATIONS



Dimensions



Ordering information:

Q-series caps with on-off valves

GL45 THREAD

PART NUMBER	BOTTLE THREAD	PORTS	ON-OFF VALVES	QTY
00945Q-2V	GL45	2 x 1/4"28	YES	ea
00945Q-3V	GL45	3 x 1/4"28	YES	ea
00945Q-4V	GL45	4 x 1/4"28	YES	ea

38-430 (GL38) GLASS BOTTLE THREAD

00938Q-2V	38-430	2 x 1/4"28	YES	ea
00938Q-3V	38-430	3 x 1/4"28	YES	ea
00938Q-4V	38-430	4 x 1/4"28	YES	ea

38-430 (GL38) PLASTIC BOTTLE THREAD

00938PQ-2V	38-430	2 x 1/4"28	YES	ea
00938PQ-3V	38-430	3 x 1/4"28	YES	ea

GL32 THREAD

00932Q-3V	GL32	3 x 1/4"28	YES	ea
-----------	------	------------	-----	----



*00938PQ caps are designed to fit plastic bottles which are unsuitable for vacuum or pressurized applications. Therefore, 00938PQ caps are not pressure-rated.

Q-series caps without on-off valves

GL45 THREAD

PART NUMBER	BOTTLE THREAD	PORTS	ON-OFF VALVES	QTY
00945Q-2	GL45	2 x 1/4"28	NO	ea
00945Q-3	GL45	3 x 1/4"28	NO	ea
00945Q-4	GL45	4 x 1/4"28	NO	ea

38-430 (GL38) GLASS BOTTLE THREAD

00938Q-2	38-430	2 x 1/4"28	NO	ea
00938Q-3	38-430	3 x 1/4"28	NO	ea
00938Q-4	38-430	4 x 1/4"28	NO	ea



Closed systems

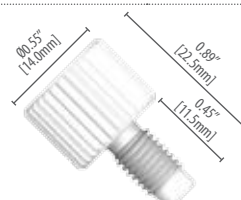
To fully close a solvent system, a screw-in check valve and filter can be used in any spare port. These units allow pressure to be equalized while preventing particulate contamination.

The inlet version (Part# 009VF) is recommended for solvent supply. Vapor is completely contained within the bottle by the one-way check valve. When liquid is withdrawn, air is allowed into the bottle, equalizing pressure.

The outlet version (Part# 009VF-W) allows air to escape from the bottle as liquid is pumped in and is recommended for solvent waste collection. NOTE: when using the outlet check valve, appropriate precautions for vapor containment should be made, for example placing in a fume hood.

SCREW-IN CHECK VALVE AND FILTER

PART NUMBER	DESCRIPTION	QTY
009VF	Inlet check valve & filter, 1/4"28 thread	ea
009VF-W	Outlet check valve & filter, 1/4"28 thread	ea



009VF & 009VF-W
Inlet or outlet check valve & filter, 1/4"28 thread

BARBED ADAPTORS

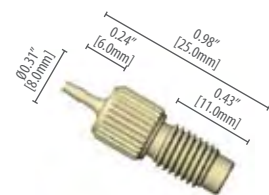
Thread to barb adaptors to connect softwall tubing to 1/4"-28 UNF ports

Omnifit® barbed adaptors are designed for use with softwall tubing. Machined from chemically resistant PEEK™ they have a superior barb with a crisp edge that retains soft wall tubing more securely than molded adaptors.

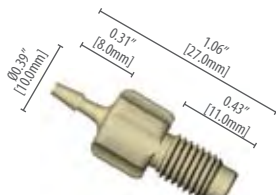
These male 1/4"-28 UNF to barb adaptors can be used to connect softwall tubing into female 1/4"-28 UNF ports on any Q-series bottle cap. The male thread screws into the port and tubing can then be pushed over the barb.

A tight, leak-free connection can be ensured by matching the ID of your tubing to the barb size of the adaptor. If there is not an exact match, always choose the barb size that is just larger than your tubing ID.

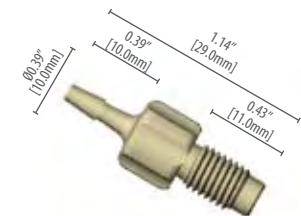
MALE 1/4"-28 UNF TO BARB ADAPTOR					
PART NUMBER	MATERIAL	COLOR	THREAD	BARB SIZE/TUBE ID	QTY
001070	PEEK™	Natural	1/4•28	0.039" (1.0mm)	ea
001064	PEEK™	Natural	1/4•28	0.059" (1.5mm)	ea
001065	PEEK™	Natural	1/4•28	0.079" (2.0mm)	ea
001066	PEEK™	Natural	1/4•28	0.098" (2.5mm)	ea
001071	PEEK™	Natural	1/4•28	0.118" (3.0mm)	ea
001069	PEEK™	Natural	1/4•28	1/8" (3.2mm)	ea
001072	PEEK™	Natural	1/4•28	0.157" (4.0mm)	ea
001073	PEEK™	Natural	1/4•28	0.236" (6.0mm)	ea
001074	PEEK™	Natural	1/4•28	0.315" (8.0mm)	ea



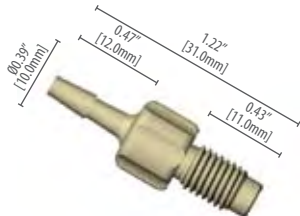
001070
1/4•28 to 0.039" (1.0 mm) barb



001064
1/4•28 to 0.059" (1.5 mm) barb

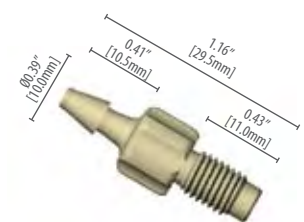


001065
1/4•28 to 0.079" (2.0 mm) barb

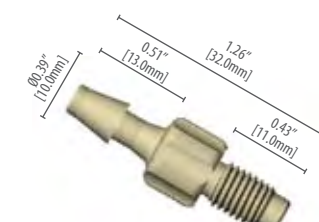


001066
1/4•28 to 0.098" (2.5 mm) barb

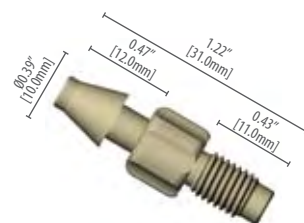
SPECIFICATIONS



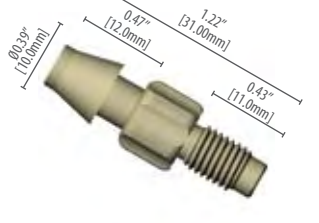
001071
1/4•28 to 0.118" (3.0 mm) barb



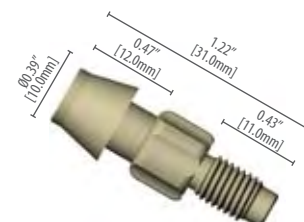
001069
1/4•28 to 1/8" (3.2 mm) barb



001072
1/4•28 to 0.157" (4.0 mm) barb



001073
1/4•28 to 0.236" (6.0 mm) barb



001074
1/4•28 to 0.315" (8.0 mm) barb

TECH TIP:

Connecting softwall tube?

Always screw the adaptor into the threaded port before pushing the softwall tubing over the barb. This ensures a secure, leak-free seal and prevents tubing getting twisted.

SOFTWALL TUBING

Chemically resistant softwall tubing for demanding applications - ideal for use with barbed adaptors

- Softwall Silicone Select™
- Bio-Chem (C-Flex®) tubing

Softwall Silicone Select™

Silicone Select™ tubing is platinum cured silicone tubing designed for high-purity medical grade applications. It complies with USP XXII, Class VI, FDA and USDA standards and is FDA master file listed.

SILICONE SELECT™ TUBING				
PART NUMBER	OD	ID	LENGTH	QTY
10025-10S	0.093" (2.36mm)	0.010" (0.25mm)	50ft	ea
10025-23S	0.093" (2.36mm)	0.023" (0.58mm)	50ft	ea
10025-50S	0.134" (3.40mm)	0.050" (1.27mm)	50ft	ea
10025-01S	3/32" (2.38mm)	1/32" (0.79mm)	50ft	ea
10025-02S	1/8" (3.17mm)	1/16" (1.59mm)	50ft	ea
10025-03S	3/16" (4.76mm)	1/16" (1.59mm)	50ft	ea
10025-04S	1/4" (6.35mm)	3/16" (4.76mm)	50ft	ea
10025-05S	1/4" (6.35mm)	1/8" (3.17mm)	50ft	ea
10025-06S	3/8" (9.52mm)	1/4" (6.35mm)	50ft	ea
10025-07S	7/16" (11.1mm)	5/16" (7.94mm)	50ft	ea

Softwall Bio-Chem (C-Flex®) Tubing

Bio-Chem (C-Flex®) tubing is designed for high-purity medical grade applications, complies with USP XXII, Class VI, FDA and USDA standards and is FDA master file listed. This tubing is recommended for applications where gas permeability is an issue.

BIO-CHEM (C-FLEX®) TUBING				
PART NUMBER	OD	ID	LENGTH	QTY
10025-23B	0.093" (2.36mm)	0.023" (0.58mm)	50ft	ea
10025-01B	3/32" (2.38mm)	1/32" (0.79mm)	50ft	ea
10025-02B	1/8" (3.17mm)	1/16" (1.59mm)	50ft	ea
10025-03B	3/16" (4.76mm)	1/16" (1.59mm)	50ft	ea
10025-05B	1/4" (6.35mm)	1/8" (3.17mm)	50ft	ea
10025-06B	3/8" (9.52mm)	1/4" (6.35mm)	50ft	ea
10025-07B	7/16" (11.1mm)	5/16" (7.94mm)	50ft	ea

TUBING CUTTER		
PART NUMBER	DESCRIPTION	QTY
003062	Tubing cutter	ea
003063	Replacement blade	ea

Recommended barbed adaptor / softwall tube combinations

The fit of softwall tubing to a barb connector or adaptor depends on several factors, including the tube materials and flexibility. There is no fixed pairing of tube ID and barb size. Tubing of a specific ID may still fit over a barb of larger size than the quoted ID of the tubing, if for example the tube has a thin wall and is particularly stretchy. However, we are able to recommend certain part numbers from our range of barbed adaptors to fit specific tubing supplied by Bio-Chem Fluidics. Tubing from other manufacturers must be tested by the customer to find the barbed adaptor that gives the best fit.

Barbed Adaptor Part #	BIO-CHEM FLUIDICS SOFTWALL TUBING SIZE AND TYPE																
	10S	23S	23B	50S	01S	01B	02S	02B	03S	03B	04S	05S	05B	06S	06B	07S	07B
001070	■	■	■	■	■	■											
001064				■	■	■	■	■	■	■							
001065				■			■	■	■	■							
001066				■			■	■	■	■							
001071							■	■	■	■		■	■				
001069											■	■	■				
001072											■	■	■	■			
001073												■	■	■	■		
001074														■	■	■	■

T-SERIES BOTTLE CAPS

Luer ports combined with straight-through tubing connections plus optional check valve and filter

- Straight-through connection for 1/8" OD semi-rigid tube e.g. PTFE, ETFE, FEP.
- Other sizes and types of tube can be connected using Luer adaptors.
- Optional check valve and filter allows pressure equalization and prevents particulate contamination
- Ideal for vacuum applications

The Omnifit® T-series is a very easy to use and versatile range of caps that require no additional fittings to connect 1/8" OD semi-rigid tubing. Tubing pushes straight through the port creating a liquid and vapor-tight seal.

Anti-twist design

The anti-twist design allows the PTFE body to spin freely within the outer blue cap. This means no more twisted tubes when the cap is fitted or removed and no need to disconnect fluid lines before unscrewing the cap. See more details in Technical Data (page 14).

Tubing connections

- 1/8" OD semi-rigid tubing pushes straight through the port creating a liquid and vapor-tight seal.
- 1/16" OD semi-rigid tubing can be connected using a Luer adaptor part #009LA (page 10).
- Softwall tubing such as peristaltic pump tubing can be connected using one of a range of Luer to barb adaptors available separately (see page 10).
- Luer ports also mean you can easily and securely remove liquid using a syringe - no septum to pierce, just fit the male luer of the syringe into a port.

Integral check valve and filter

The optional check valve and filter offers many advantages for the laboratory user. The one-way check valve:

- Allows pressure equalization - as liquid is drawn out of the bottle under vacuum, air is allowed in preventing dangerous negative pressurization of the bottle.
- Prevents vapor escape - helping protect the laboratory environment and personnel from dangerous chemical vapor.
- Helps conserve valuable contents from evaporation - minimizing the loss of valuable chemicals and risk of concentrations and mixtures changing ratio.
- The air inlet is covered by a 10µm filter to prevent particulate contamination.

Materials

The solid PTFE inner body provides the highest chemical inertness. The PTFE creates a reliable seal to the glass bottle with no need for extra seals or O-rings. In normal use, the outer cap is not wetted.

Component	Material
Outer cap	Glass-filled PP
Inner sealing face	PTFE
Check valve	Fluorocarbon
Filter	10µm PTFE

SPECIFICATIONS



Pressure & temperature ratings

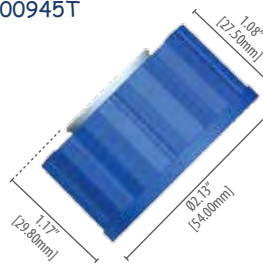
T-series caps are ideal for use in vacuum applications. T-series caps without an integral check valve and filter can also be used in positive pressure applications but only when 1/8" OD through tubes are used. T-series caps with male Luers fitted are not recommended for positive pressure applications. All caps are rated for continuous use at 50°C and can be autoclaved.

Type	Vacuum	+Ve pressure
T-series without valve*; with 1/8" OD through tubes	-10 psi	20 psi
T-series without valve*; with male Luers	-10 psi	Not recommended
T-series with valve*	-10 psi	Not recommended

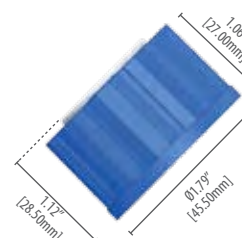
CAUTION! Use only vacuum or pressure-rated bottles

Dimensions

00945T



00938T & 00938PT



00932T



www.biochemfluidics.com

Ordering information

T-series caps with integral check valve and filter

GL45 THREAD				
PART NUMBER	BOTTLE THREAD	PORTS	CHECK VALVE & FILTER	QTY
00945T-2F	GL45	2 x Luer	YES	ea
00945T-3F	GL45	3 x Luer	YES	ea
00945T-4F	GL45	4 x Luer	YES	ea
38-430 (GL38) GLASS BOTTLE THREAD				
00938T-2F	38-430	2 x Luer	YES	ea
00938T-3F	38-430	3 x Luer	YES	ea
00938T-4F	38-430	4 x Luer	YES	ea
38-430 (GL38) PLASTIC BOTTLE THREAD				
00938PT-2F	38-430	2 x Luer	YES	ea

T-series caps without integral check valve and filter

GL32 THREAD				
PART NUMBER	BOTTLE THREAD	PORTS	CHECK VALVE & FILTER	QTY
00932T-2	GL32	2 x Luer	NO	ea
GL45 THREAD				
00945T-2	GL45	2 x Luer	NO	ea
00945T-3	GL45	3 x Luer	NO	ea
00945T-4	GL45	4 x Luer	NO	ea
38-430 (GL38) GLASS BOTTLE THREAD				
00938T-2	38-430	2 x Luer	NO	ea
00938T-3	38-430	3 x Luer	NO	ea
00938T-4	38-430	4 x Luer	NO	ea
38-430 (GL38) PLASTIC BOTTLE THREAD				
00938PT-2	38-430	2 x Luer	NO	ea



00945T-2F
GL45, 2 port, check valve/filter



00945T-3F
GL45, 3 port, check valve/filter



00945T-4F
GL45, 4 port, check valve/filter



00945T-2
GL45 cap, 2 port



00945T-3
GL45 cap, 3 port



00945T-4
GL45 cap, 4 port



00938T-2F
38-430, 2 port, check valve/filter for glass bottles



00938T-3F
38-430, 3 port, check valve/filter for glass bottles



00938T-4F
38-430, 4 port, check valve/filter for glass bottles



00938T-2
38-430, 2 port for glass bottles



00938T-3
38-430, 3 port for glass bottles



00938T-4
38-430, 4 port for glass bottles



00938PT-2F
38-430, 2 port, check valve/filter for plastic bottles



00938PT-2
38-430, 2 port for plastic bottles



00932T-2
GL32 cap, 2 port



* Except 00938PT caps. These caps are designed to fit plastic bottles which are unsuitable for vacuum or pressurized applications. Therefore, 00938PQ caps are not pressure-rated.

10 T-SERIES CAPS AND ACCESSORIES

T-SERIES LUER ADAPTORS

A range of Luer accessories for quick and easy connection of different tubing types and sizes to T-series caps

Simply connect the tube onto the appropriate adaptor and then push the male Luer into any T-series cap port. A Luer plug is also available to seal unused ports.

Ordering information

LUER ADAPTORS FOR SEMI-RIGID TUBING

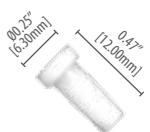
PART NUMBER	DESCRIPTION	QTY
009LA2	Adaptor to connect 1/16" OD semi-rigid tubing	2pk

LUER ADAPTORS FOR SOFT TUBING

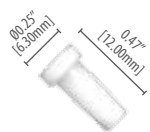
009BA-16	Barbed adaptor for 1/16" ID softwall tubing	2pk
009BA-32	Barbed adaptor for 1/8" ID softwall tubing	2pk
009BA-63	Barbed adaptor for 1/4" ID softwall tubing	2pk

LUER PLUG

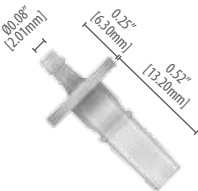
009LP	Luer plug to close unused ports	2pk
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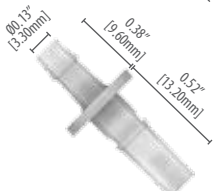
009LA
Luer adaptor,
1/16" OD tube



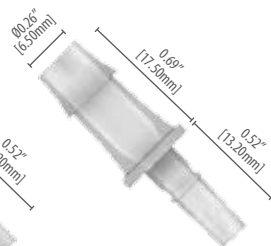
009LP
Luer plug



009BA-16
Luer to barb adaptor,
1/16" ID tube



009BA-32
Luer to barb adaptor,
1/8" ID tube



009BA-63
Luer to barb adaptor,
1/4" ID tube

Recommended barbed adaptor / tube combinations

The fit of softwall tubing to a barb connector or adaptor depends on several factors, so there is no fixed pairing of tube ID and barb size. However, we are able to recommend certain part numbers from our range of barbed adaptors to fit specific tubing supplied by Bio-Chem Fluidics. Tubing from other manufacturers must be tested by the customer to find the barbed adaptor that gives the best fit.

Barbed Adaptor Part #	BIO-CHEM FLUIDICS SOFTWALL TUBING SIZE AND TYPE													
	50S	01S	01B	02S	02B	03S	03B	04S	05S	05B	06S	06B	07S	07B
009BA-16														
009BA-32														
009BA-63													*	*

* This tube / barb combination is only suitable for very low pressure systems, due to the very low interference fit between the tube and the barb.

ACTIVATED CARBON VAPOR TRAP

A solvent vapor trap with Luer connection for use with T-series caps in solvent supply or waste collection applications

- Simple, male Luer connection fits all T-series bottle caps
- Controls solvent vapor escape from reservoirs
- Traps solvent vapor and equalizes pressure when solvent is pumped into the bottle
- Enables T-series caps to be used for waste collection

This simple to use solvent vapor trap push-fits into a spare Luer port on any T-series cap. For waste collection, as liquid is pumped into the bottle, vapor can pass out through the filter port, thereby equalizing pressure. Dangerous solvent vapors are absorbed by the activated carbon contained in the unit. It is important that any other unused ports are sealed using a Luer plug (part # 009LP) to prevent solvent vapor escaping directly into the environment.

Note: The push-fit nature of the vapor trap and Luer plugs mean that only low positive pressure should be applied to prevent Luer connections being loosened.

The trap can also be used for solvent (mobile phase) reservoir bottles. If a T-series bottle cap without check valve and filter is selected, the vapor trap can be used in any spare port to ensure that vapor escape into the environment, for example, as a result of temperature changes, is controlled.

SPECIFICATIONS



Usage

The unit contains approx. 25ml charcoal. The frequency of exchange of the unit depends on local conditions and type of solvent used. Users must determine the saturation rate of the activated carbon for their own specific solvents, concentrations and flow rates and change the unit accordingly to ensure that vapor break-through is minimized. As a guide, the capacity of the unit for methanol is approximately 1.6g and for other solvents approx. 2.5g.

Ordering information www.biochemfluidics.com

ACTIVATED CARBON VAPOR TRAP

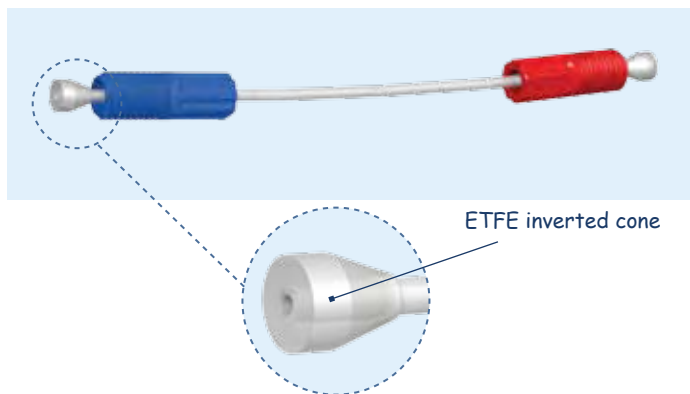
PART NUMBER	DESCRIPTION	QTY
009CF-T	Activated carbon vapor trap for T-series caps	ea

OMNI-LOK™ INVERTED CONE FITTINGS

Removable and reusable system for quick and convenient low-pressure connections

- Pressure rated up to 250psi (17 bar)
- For 1/16", 1/8" and metric sizes 2.0, 2.5 or 3.0mm OD semi-rigid PTFE tubing
- For flat-bottom 1/4"-28 UNF ports

SPECIFICATIONS



Omni-Lok™ inverted cone fittings provide a simple, easy to use low-pressure connection. Only the ETFE cone is in the fluid path.

No tools are required to assemble these flangeless fitting quickly and economically - just slip the fitting nut and the ETFE cone over the tubing and screw into the port. None of the parts are permanently attached to the tubing, so both fittings and inverted cones can easily be removed and re-used. A recess in the fitting houses the inverted cone, allowing maximum thread engagement with the port ensuring the system stays sealed up to 250psi (17 bar) pressure even in shallow PTFE ports.

The fitting nuts in robust, glass-filled polypropylene are available in a range of different colors for easy line identification. Nuts are also available in PEEK™ with standard and compact head designs (see the Omnifit® Fitting Systems Brochure for our full range).

For 1/16" OD tubing

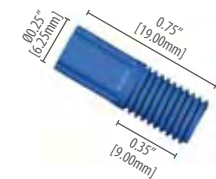
INVERTED CONES FOR 1/16" OD TUBING

PART NUMBER	DESCRIPTION	QTY
008CZ16	ETFE inverted cone	10pk

008CZ16 inverted cones can be used with all nuts listed below.

NUTS FOR 1/16" OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC16-YC5U	PP	Blue	1/4•28	10pk
008NC16-YC5G	PP	Green	1/4•28	10pk



008NC16-YC5U
Nut for 1/16" OD tubing 1/4•28, blue



008CZ16
Omni-Lok™ inverted cone for 1/16" OD tubing

For 1/8", 2.0, 2.5 and 3.0mm OD tubing

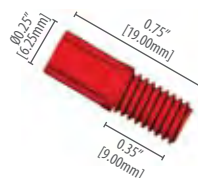
INVERTED CONES FOR 1/8", 2.0, 2.5 & 3.0MM OD TUBING

PART NUMBER	MATERIAL	TO FIT TUBE OD	QTY
008CZ19	ETFE	1.8 - 2.0mm	10pk
008CZ25	ETFE	2.5mm	10pk
008CZ30	ETFE	3.0mm	10pk
008CZ32	ETFE	1/8" (3.2mm)	10pk

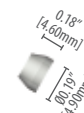
NUTS FOR 1/8", 2.0, 2.5 & 3.0MM OD TUBING

PART NUMBER	MATERIAL	COLOR	THREAD	QTY
008NC32-YC5U	PP	Blue	1/4•28	10pk
008NC32-YC5G	PP	Green	1/4•28	10pk
008NC32-YC5N	PP	Orange	1/4•28	10pk
008NC32-YC5R	PP	Red	1/4•28	10pk
008NC32-YC5Y	PP	Yellow	1/4•28	10pk

The 008NC32 nuts can be used with all tube sizes and inverted cones listed above.



008NC32-YC5R
Nut for 1/8" OD tubing, 1/4•28, red



008CZ32
Omni-Lok™ inverted cone for 1/8" OD tubing

SEMI-RIGID PTFE TUBING

Almost totally inert, PTFE tubing can be used with virtually all chemicals, solvents and corrosive materials, even at elevated temperatures. It can be sterilised in-line by steam, chemical methods or autoclaving. Recommended for use with Omni-Lok™ inverted cone fittings.

PTFE TUBING

PART NUMBER	OD	ID	LENGTH	QTY
008T16-030-20	1.6mm (1/16")	0.3mm (0.012")	20m	ea
008T16-030-200	1.6mm (1/16")	0.3mm (0.012")	200m	ea
008T16-050-20	1.6mm (1/16")	0.5mm (0.020")	20m	ea
008T16-050-200	1.6mm (1/16")	0.5mm (0.020")	200m	ea
008T16-080-20	1.6mm (1/16")	0.8mm (0.031")	20m	ea
008T16-080-200	1.6mm (1/16")	0.8mm (0.031")	200m	ea
008T16-100-20	1.6mm (1/16")	1.0mm (0.039")	20m	ea
008T16-100-200	1.6mm (1/16")	1.0mm (0.039")	200m	ea
008T32-150-10	3.2mm (1/8")	1.5mm (0.059")	10m	ea
008T32-150-100	3.2mm (1/8")	1.5mm (0.059")	100m	ea

TECH TIP:

Need more connection options?

See the Omnifit® Fitting Systems Brochure for our full range of threaded fittings, connectors and adaptors.

FILTERS AND BUBBLERS

Bottom-of-bottle filters and spargers for simple, effective solvent filtration

- Push-fit onto 1/8" OD tube
- Inert, all-PTFE filter units with 10µm porosity filters
- PTFE or stainless steel bubblers

Bottom-of-bottle filters

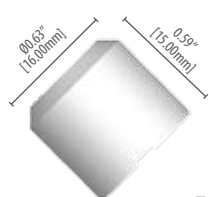
All-PTFE construction enables the filters to be used with the harshest chemicals. The filter units have slots in the body to enable virtually all liquid to be removed from the bottle, minimizing waste. 10µm porosity PTFE filters ensure even the smallest particulates are removed from the solvent supply.

Filter spargers (bubblers)

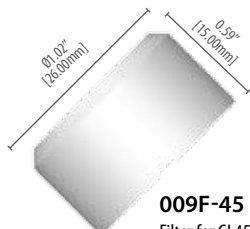
PTFE or stainless steel elements are suitable for filtration or sparging applications.

Materials

Component	Body	Filter
009F-32	PTFE	10µm PTFE
009F-45	PTFE	10µm PTFE
009PFB	PTFE	3µm PTFE
009SFB	PTFE	10µm SS



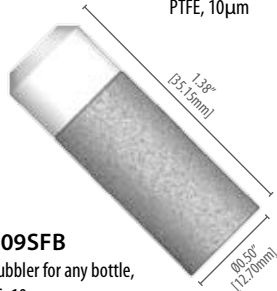
009F-32
Filter for GL32 bottle,
PTFE, 10µm



009F-45
Filter for GL45 bottle,
PTFE, 10µm



009PFB
Bubbler for any bottle,
PTFE, 3µm



009SFB
Bubbler for any bottle,
SS, 10µm

Ordering information

BOTTOM-OF-BOTTLE FILTERS

PART NUMBER	DESCRIPTION	QTY
009F-32	Bottom-of-bottle filter for GL32 /38-430 bottle	ea
009F-45	Bottom-of-bottle filter for GL45 bottle	ea
009FE-32	Replacement filters for 009F-32	20pk
009FE-45	Replacement filters for 009F-45	20pk

FILTER BUBBLERS

009PFB	PTFE filter bubbler	ea
009SFB	Stainless steel filter bubbler	ea

BUBBLE TRAP

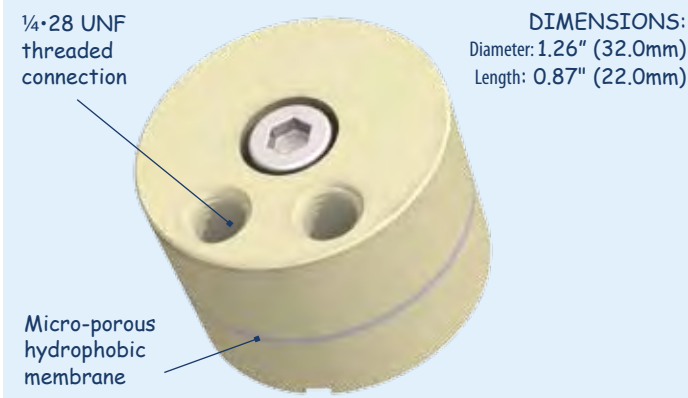
Effective, in-line removal of bubbles

- Pressure rated up to 30 psi
- Effective de-bubbling of aqueous solutions

The Omnifit® Bubble Trap effectively removes bubbles* from aqueous solutions. The unit is quickly and easily connected in-line using the 1/4"-28 UNF female threaded ports and fittings such as Omni-Lok™. Spare membranes are available.

* Note: the bubble trap does not remove dissolved gases

SPECIFICATIONS



Operation

When a fluid containing bubbles flows through the unit, aqueous fluid is retained while bubbles are forced through a micro-porous, hydrophobic membrane. Because the membrane function depends on its hydrophobicity, the Trap is only suitable for use with aqueous systems and NOT with organic solvents.

Flow

Maximum flow rate depends on the amount of bubbles in the liquid. Typical operating range is 0.5 - 2.0ml/min, but up to 6ml/min can be achieved if few bubbles are present in the liquid.

Pressure

The unit is pressure rated up to 30psi. De-bubbling is effected under positive pressure. It is not possible to pull liquid through the unit under vacuum as this would introduce bubbles into the fluid. If the system back-pressure is insufficient for the unit to function, a length of tube can be fitted on the outlet side to create more back-pressure.

Maintenance

Membrane lifetime strongly depends on the kind of fluid being used. For pure water, the lifetime may be several months or years. Buffer solutions reduce lifetime and it is advisable to flush the unit with de-ionized/distilled water after use to prevent salt crystals forming.

INLINE BUBBLE TRAP

PART NUMBER	FILTER MATERIAL	CONNECTION 1	CONNECTION 2	QTY
006BT	PTFE	1/4"28	1/4"28	ea

REPLACEMENT FILTER ELEMENTS

PART NUMBER	FILTER MATERIAL	QTY
006BTF	PTFE	ea

PRESSURE RATED GLASS BOTTLES

Clear 1L glass bottles pressure rated to -1 / + 1.5 bar

- 1L GL45 thread bottles suitable for pressurised applications
- Indelible volumetric markings
- Chemically-resistant borosilicate glass

Bottles are pressure rated to -1 / +1.5 bar, so suitable for either vacuum or positive pressure applications.



Ordering information

GLASS BOTTLES

PART NUMBER	BOTTLE THREAD	VOLUME	QTY
003406	GL45	1L	ea

CAUTION: Only bottles specified as pressure rated are recommended for pressure or vacuum delivery of liquids. Always treat glass bottles with care.

S40 THREAD ADAPTOR

Convert S40 bottle threads to accept any Omnifit® GL45 bottle caps from the T- and Q-series

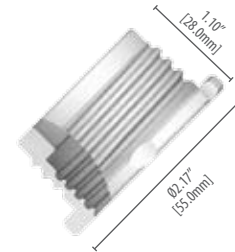
- Fits any S40 threaded bottle
- Accepts any GL45 threaded Q or T-series bottle cap

The S40 thread adaptor provides a simple way to use any Omnifit® GL45 thread cap with S40 thread glass or plastic bottles. Simply screw the adaptor onto the bottle neck to make a GL45 thread connection.

Materials

The S40 thread adaptor is constructed from solid PTFE providing the highest chemical inertness. The PTFE creates a reliable seal to the glass bottle with no need for extra seals or O-rings.

Dimensions



Assembly

Screw the S40 adaptor onto the bottle neck first. Screw any GL45 cap from the Q or T-series onto the adaptor.



Ordering information

S40 to GL45 THREAD ADAPTOR

PART NUMBER	BOTTLE THREAD	CAP THREAD	QTY
00945A-S40	S40	GL45	ea

CLOSED SYSTEMS FOR SOLVENT SAFETY

Open solvent bottles can allow harmful solvent vapor to escape and chemicals to be spilled. Omnifit® bottle caps and accessories help prevent these problems and give you the security of a safe and dependable solvent delivery system. Caps can be used on the supply side to provide closed delivery systems for safe supply of solvents. An optional check valve and filter enables pressure equalization and prevents contamination. Caps can also be used for safe disposal of solvent waste, providing a closed waste system.

What are the benefits of a closed system?

- **Safety** - closed solvent supply systems prevent vapor leakage into the atmosphere, protecting lab staff from exposure to toxic fumes.
- **Contamination control** - prevents ingress of particulates.
- **Protection of mixing ratios** - prevent evaporation of solvent leading to altered concentration of reagents or ratios of mixtures.

Where should you use a closed system?

- **HPLC** - mobile phase handling, both solvent supply and waste collections.
- **Fermentation or culture preparations** - where sterile transfer of culture media or addition of reagents to closed systems is required.
- **All labs working with solvents, reagent supply and waste handling** - where safety and contamination control are paramount in life sciences, analytical chemistry, clinical, and biotech.

What are the key differences between the Omnifit® bottle cap ranges?

Q-series with ¼"-28 UNF threaded ports

- Optional valves offer easy on-off control of individual fluid lines, ideal for selecting flow or for closing off lines prior to removing caps to change or re-fill solvent bottles.
- Robust threaded ports for standard ¼"-28 UNF threaded fitting nuts and adaptors gives a secure connection ideal for repeated connect / disconnect.
- Optional screw-in check valve and filter accessory enables pressure equalization while keeping the system closed and preventing both particulate contamination and evaporation of expensive or harmful chemicals.

T-series with Luer ports

- Simple and easy-to-use with no need for fitting nuts and ferrules (for ⅜" OD semi-rigid tube). Tubing passes straight through the cap for a continuous fluid path.
- Luer ports take standard male Luer components including a range of accessories for different tubing types and sizes.
- Optional integrated check valve and filter enables pressure equalization whilst keeping the system closed and preventing particulate contamination or evaporation of expensive or harmful chemicals.
- A Luer connection solvent vapor trap can be used to contain / control vapor egress into the environment.

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WASTE-SIDE SOLVENT SAFETY

Both the Q and T-series caps can be used for waste collection vessels. Because waste systems require positive pressure to be applied in pumping waste solvent into the bottle, certain accessories are needed to convert "standard" Omnifit® bottle caps to waste collection.

Q-series

Any Q-series cap can be used for waste collection with the following changes:

- An outlet version screw-in check valve and filter (Part # 009VF-W) must be used in one of the ports. This allows air to escape from the bottle as liquid is pumped in, preventing pressure build-up.
- In order to control vapor in the environment released via the check valve, precautions for vapor containment should be made, such as placing the system in a fume hood.

T-series

Any T-series cap can be used for waste collection with the following changes:

- A solvent trap (Part # 009CF-T) should be push-fitted into a spare Luer port. As liquid is pumped into the bottle, vapor can pass out through the trap, equalizing pressure. Dangerous solvent vapor is neutralized by the activated carbon contained in the unit.
- Any other unused ports must be sealed using a Luer plug (part # 009LP) to prevent solvent vapor escaping directly into the environment. Note: The push-fit nature of the vapor trap and Luer plugs mean that only low positive pressure should be applied to prevent Luer connections being loosened.

ANTI-TWIST DESIGN

All Omnifit® bottle caps have this anti-twist feature, allowing the body to spin freely within the cap. The benefit of this design is that tubes no longer get twisted when the cap is fitted or removed from the bottle and there is no need to disconnect fluid lines before unscrewing the cap.

The inner body of each Omnifit® cap is made from PTFE, providing the highest chemical inertness. PTFE also creates a reliable seal to the glass bottle with no need for extra seals or O-rings.

Outer PP cap is not in contact with the fluid path in normal use



Inner PTFE body rotates within the cap

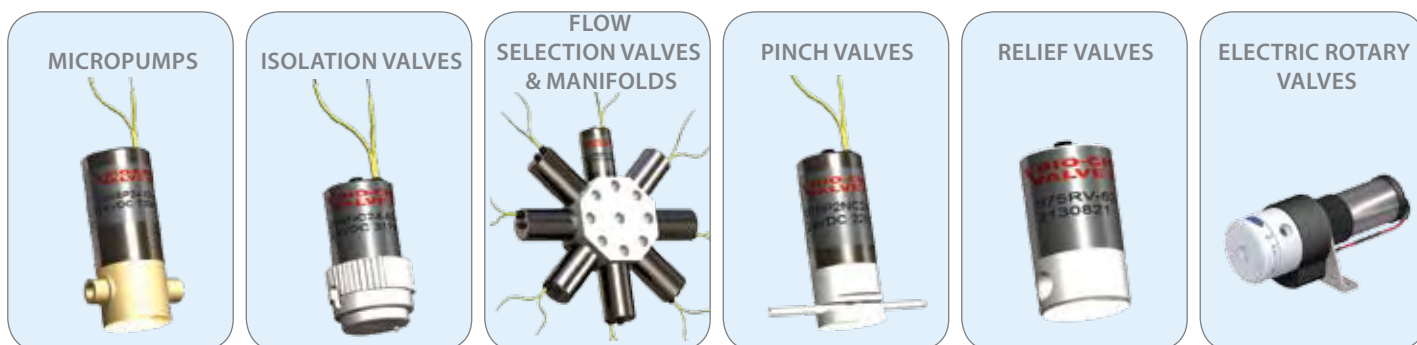
THE BIO-CHEM FLUIDICS BRAND FAMILY

Bio-Chem Fluidics is dedicated to providing instrument manufacturers and laboratories with the industry's best choice of inert, miniature fluid handling components.

Under our Bio-Chem Valve™ and Omnifit® brands we offer a complete fluid system solution for a wide range of industries including analytical chemistry, clinical diagnostics and medical device manufacturers as well as a world-class labware portfolio for the scientific community.

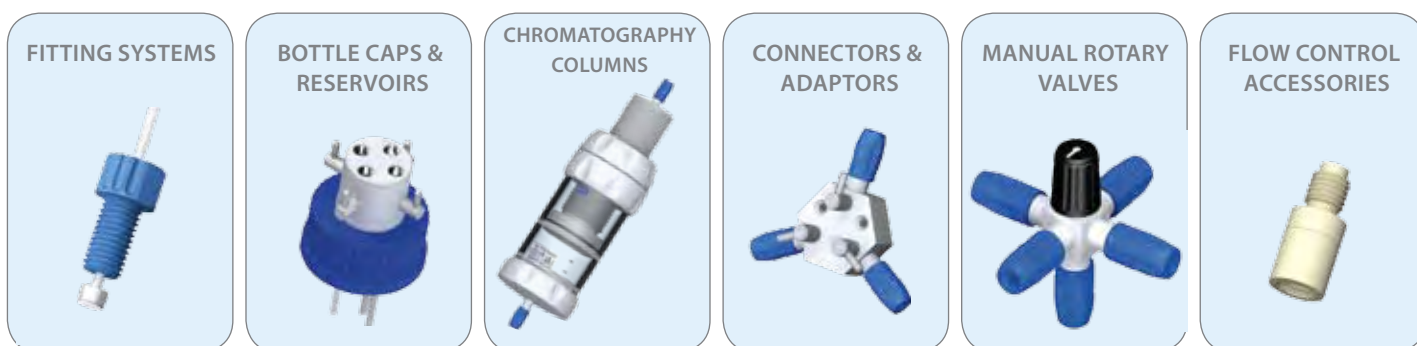
BIO-CHEM VALVE

INERT SOLENOID VALVES, ELECTRIC ROTARY VALVES AND PUMPS



Omnifit

INERT FLUID HANDLING COMPONENTS AND LABWARE



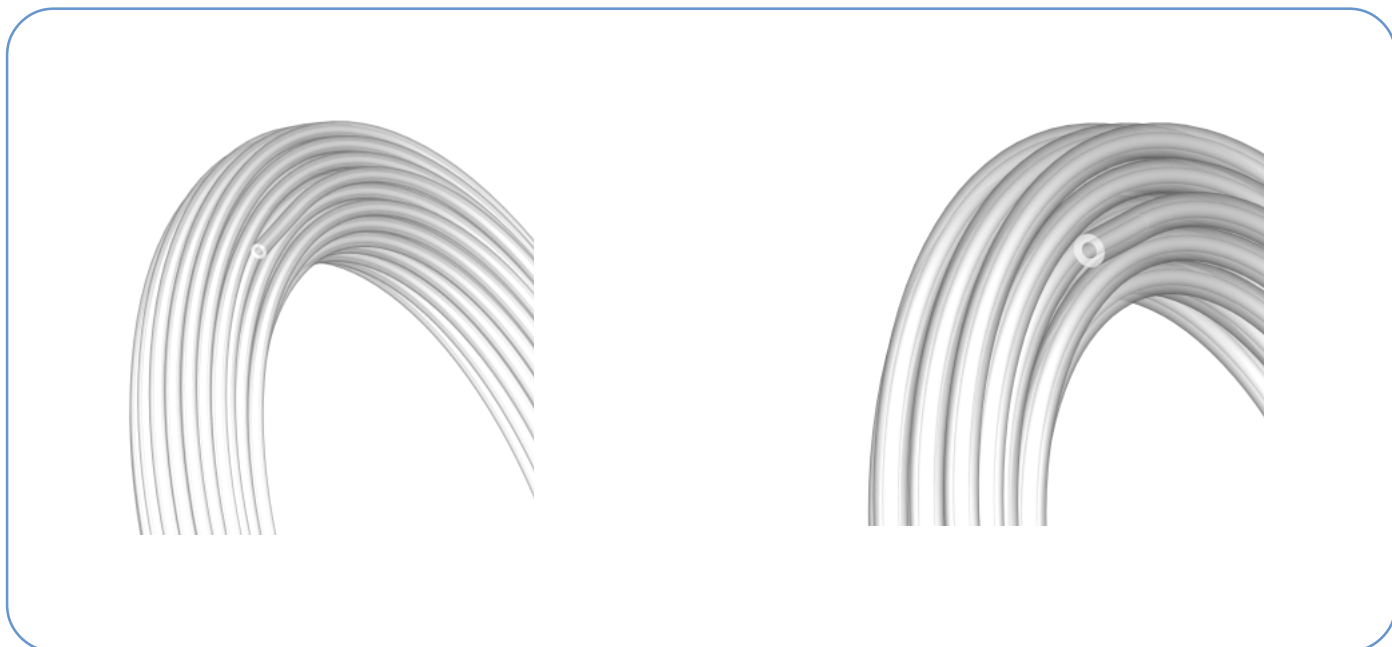
CUSTOMIZED SOLUTIONS

We understand that many applications require customized solutions. Our design and prototyping expertise enables us to offer simple modifications of standard products as well as completely customized designs.

We look forward to working with you to meet your design engineering objectives!

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Chemically resistant softwall and hardwall tubing for demanding applications

- PTFE hardwall tubing in 1/8" (3.2mm) and 1/16" (1.6mm) O.D. sizes
- Silicone Select™ and Bio-Chem (C-Flex®) softwall tubing for use with Pinch Valves
- Cut to specified length in 50 foot increments (softwall) and 20 or 200m lengths (hardwall)
- Available assembled with fittings (see Tubing Sets spec sheet)

Hardwall PTFE

Almost totally inert, PTFE tubing can be used with virtually all chemicals, solvents and corrosive materials, even at elevated temperatures. It can be sterilised in line by steam, chemical methods, or autoclaving. PTFE tubing is ideal for use with all 'Omnifit Cap' connectors and valves and with Gripper, Omni-Lok™ or inverted cone fittings.

Softwall Silicone Select™

Bio-Chem Valve Silicone Select™ tubing is platinum cured silicone tubing designed for high-purity medical grade applications, complies with USP XXII, Class VI, FDA and USDA standards and is FDA master file listed. This tubing has been specially developed to withstand the rigors of usage with pinch valves and is recommended for most pinch valve applications.

Softwall Bio-Chem (C-Flex®)

Bio-Chem (C-Flex®) tubing is designed for high-purity medical grade applications, complies with USP XXII, Class VI, FDA and USDA standards and is FDA master file listed. This tubing has been specially developed to withstand the rigors of usage with pinch valves and is recommended for pinch valve applications where gas permeability is an issue.

Tubing Cutter

A handy cutter is available to ensure clean square cuts. Replacement blades are also available.

Ordering Information

Hardwall Omnifit PTFE Tubing

Part Number	Description	Length	Old Part Number
008T16-030-20	1.6mm (1/16") O.D. x 0.3mm (.012") I.D.	20m	3005
008T16-030-200	1.6mm (1/16") O.D. x 0.3mm (.012") I.D.	200m	3006
008T16-050-20	1.6mm (1/16") O.D. x 0.5mm (.02") I.D.	20m	3003
008T16-050-200	1.6mm (1/16") O.D. x 0.5mm (.02") I.D.	200m	3004
008T16-080-20	1.6mm (1/16") O.D. x 0.8mm (.031") I.D.	20m	3001
008T16-080-200	1.6mm (1/16") O.D. x 0.8mm (.031") I.D.	200m	3002
008T16-100-20	1.6mm (1/16") O.D. x 1.0mm (.039") I.D.	20m	3007
008T16-100-200	1.6mm (1/16") O.D. x 1.0mm (.039") I.D.	200m	3008
008T32-150-10	3.2mm (1/8") O.D. x 1.5mm (.059") I.D.	10m	3011
008T32-150-100	3.2mm (1/8") O.D. x 1.5mm (.059") I.D.	100m	3012

Tolerances:

Inside diameter: $\pm 0.08\text{mm}$ (0.00275")

Outside diameter: $\pm 0.08\text{mm}$ (0.00275")

Softwall Bio-Chem Valve Silicone Select™ Tubing

Part Number	Description	Length	Old Part Number
10025-10S	0.093" (2.36mm) O.D. x 0.010" (0.25mm) I.D.	50 feet	10025-010093S
10025-23S	0.093" (2.36mm) O.D. x 0.023" (0.58mm) I.D.	50 feet	10025-01-23S
10025-50S	0.134" (3.40mm) O.D. x 0.050" (1.27mm) I.D.	50 feet	10025-01-50S
10025-01S	3/32" (2.38mm) O.D. x 1/32" (0.79mm) I.D.	50 feet	-
10025-02S	1/8" (3.17mm) O.D. x 1/16" (1.59mm) I.D.	50 feet	-
10025-03S	3/16" (4.76mm) O.D. x 1/16" (1.59mm) I.D.	50 feet	-
10025-04S	1/4" (6.35mm) O.D. x 3/16" (4.76mm) I.D.	50 feet	-
10025-05S	1/4" (6.35mm) O.D. x 1/8" (3.17mm) I.D.	50 feet	-
10025-06S	3/8" (9.52mm) O.D. x 1/4" (6.35mm) I.D.	50 feet	-
10025-07S	7/16" (11.1mm) O.D. x 5/16" (7.94mm) I.D.	50 feet	-

Softwall Bio-Chem (C-Flex®) Tubing

Part Number	Description	Length	Old Part Number
10025-23B	0.093" (2.36mm) O.D. x 0.023" (0.58mm) I.D.	50 feet	10025-01-23B
10025-01B	3/32" (2.38mm) O.D. x 1/32" (0.79mm) I.D.	50 feet	-
10025-02B	1/8" (3.17mm) O.D. x 1/16" (1.59mm) I.D.	50 feet	-
10025-03B	3/16" (4.76mm) O.D. x 1/16" (1.59mm) I.D.	50 feet	-
10025-05B	1/4" (6.35mm) O.D. x 1/8" (3.17mm) I.D.	50 feet	-
10025-06B	3/8" (9.52mm) O.D. x 1/4" (6.35mm) I.D.	50 feet	-
10025-07B	7/16" (11.1mm) O.D. x 5/16" (7.94mm) I.D.	50 feet	-

Tubing Cutter

Part Number	Description
3062	tubing cutter
3063	replacement blades



Trademarks:

C-Flex® is a registered trademark of Consolidated Polymer Technologies

Omni-Lok™ is a trademark of Omnifit Ltd.

Silicone Select™ is a trademark of Bio-Chem Valve Inc.

Rev. 0205



Bubble Trap



In-line trap eliminates solvent line gas bubbles upstream of sensitive

- Effective removal of gas bubbles
- Prevents system running dry
- Inert materials (PTFE and PEEK™)
- Zero dead volume
- Pressure rated to 30psi (2 bar)
- Easy-change membranes
- 1/4"-28 UNF threaded ports

Problem solving

Gas bubbles moving through a system can damage equipment and cause signal errors. The Omnifit Bubble Trap connects in-line to provide an effective, time-saving and cost-efficient method of bubble removal upstream of sensitive detectors. If gas bubbles are formed in-line, or your pump delivers air instead of liquid, the resulting bubbles will be removed completely by the Trap, the outlet flow will stop and your device remain protected.

Simple to use

The Omnifit Bubble Trap requires no intervention to operate after it has been installed. The unit is quickly and easily connected in-line using the 1/4"-28 UNF female threaded ports and fittings such as Omni-Lok™. Spare membranes are available and can be replaced quickly and easily.

Many applications

The Trap is ideal for use in any fluid handling application where the presence of bubbles would negatively impact results or damage sensitive detectors, specifically flow analysis systems, flow-through biosensors or enzyme reactors. The Trap can be used as a guard



Assembled 006BT with
Omni-Lok™ fittings

Operation

The Trap uses a micro-porous, hydrophobic membrane held between two PEEK™ plates. When a fluid containing bubbles flows through the unit, the bubbles are forced through the membrane as the pressure within the system is higher than atmospheric pressure outside. The hydrophobic properties of the membrane retain the aqueous fluid within the Trap. Because the membrane function depends on its hydrophobicity, the Trap is only suitable for use with aqueous systems and NOT with organic solvents.

Maintenance

If salts are present in the fluid, it is advisable to flush the Trap with de-ionized/distilled water after use to prevent any salt crystals forming on or in the membrane. The lifetime of the membranes strongly depends on the kind of fluid being used. If pure water is to be de-bubbled, the lifetime may be several months or years. If buffer solutions are used, the life will be reduced.

Technical Specifications

Pressure

- Omnifit Bubble Traps are pressure rated to 30psi.
- It is possible to de-bubble a fluid even if only a small system pressure is available, but positive pressure only must be applied to the Trap. It is not possible to apply a vacuum and pull liquid through the Trap as this would introduce bubbles into the fluid.
- If the system back-pressure is insufficient to enable the Trap to function, a 1m length of 0.5mm bore tube can be fitted on the outlet side of the Trap to create more back-pressure.

Flow

- The maximum flow rate is dependent upon the amount of bubbles in the liquid. Typically the Bubble Trap is used in the range of 0.5 - 2.0 ml/min, but 6ml/min can be achieved if few bubbles are present in the liquid.

Media

- The Trap must be used with aqueous fluids, if any other liquids are used, they will break through the membrane.

Materials

Body front - PEEK™

Body back - PEEK™

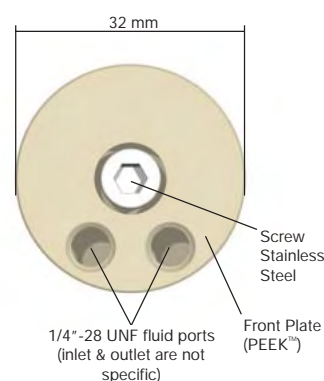
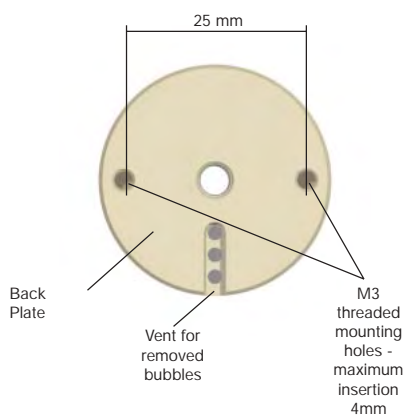
Membrane - PTFE

Retaining screw - 316 Stainless steel (not wetted)

Installation Information

For best results this face should be vertical, with the fluid ports at the lowest position.

The 006BT Bubble Trap is supplied with two spare membranes, mounting screws not supplied.



Ordering Information

Part Number	Description	Pack Size
006BT	Bubble Trap	1
006BTM	Spare membrane	5

Trademarks:

Omnifit™ is a trademark of Omnifit Ltd.

PEEK™ is a trademark of Victrex plc

Rev. 0206



Chromatography Columns & Accessories



Inside.....
Specifications 2
Size Options and
Bed Heights 2
Ordering Information 3
Accessories 4

Precision glass columns for low and mid-pressure liquid chromatography

- Pressure ratings to 1200 psi (80 bar)*
- Solvent resistant
- Biocompatible
- Fixed or adjustable height
- Robust and easy to use

Adjustable height

Up to 80 mm of height adjustment is possible with an adjustable endpiece (plunger). Our design gives the user fine control over the adjustment, minimizing the risk of disturbance to the packed bed. Whether you choose a fixed or adjustable height column, you will have the following options available:

Standard aqueous system

Made from borosilicate glass and PTFE, and supplied with 25 µm polyethylene (PE) frits fitted, the columns are ready for use in the majority of applications.

Solvent resistant system

Simply replacing the PE frit fitted in each endpiece, with the PTFE version supplied in the frit kit gives a totally inert system able to cope with the harshest laboratory chemicals

Column tubing connections

All columns are supplied with a ready-assembled tubing set to connect into each end of the column. 1/4"-28 UNF fittings are supplied as standard and connect straight into the colored cap on each end of the column. Alternatively, M6 caps are supplied, enabling you to easily change the column over to an M6 fitting system.

Replacement parts and accessories

Replacement glass columns, fixed endpieces, adjustable endpieces, frits and 'o'-rings are available separately. Accessories include frit tools, packing sleeves, column jackets, silicone seals, septum injectors and a bleed valve.

* See page 2 for specific pressure ratings.

Specifications

Series	006	
Wetted materials	Chromatographic tube:	Borosilicate glass
	Plunger:	PTFE
	Frit:	PTFE and PE
Connection options:	¼-28" UNF M6	
Frit options	Porosity:	5, 10, 25, 40, 70, or 100 µm
	Material:	PE and PTFE
Max pressure	3.0 mm bore:	1200 psi (80 bar)
	6.6 mm bore:	900 psi (60 bar)
	10 mm bore:	600 psi (40 bar)
	15 mm bore:	300 psi (20 bar)
	25, 35 and 50.0 mm bores:	150 psi (10 bar)

Size Options and Bed Heights

Available Configuration (Orange)
Not available (White)

		Column Length (mm)										Max Min	
		25	50	100	150	250	400	500	750	1000			
Bore (mm)	3	Endpiece Combination	25	50	100	150	250						
		2 fixed	25	50	100	150	250						
	6.6	2 fixed		20	70	120	220	370					
		1 fixed, 1 adjustable		20	70	120	220	370					
		2 adjustable		20	70	120	220	370					
		2 adjustable		20	70	120	220	370					
	10	2 fixed		20	70	120	220	370	470	720	970		
		1 fixed, 1 adjustable		20	70	120	220	370	470	720	970		
		2 adjustable		20	70	120	220	370	470	720	970		
		2 adjustable		20	70	120	220	370	470	720	970		
	15	2 fixed		20	70	120	220	370	470	720	970		
		1 fixed, 1 adjustable		20	70	120	220	370	470	720	970		
		2 adjustable		20	70	120	220	370	470	720	970		
		2 adjustable		20	70	120	220	370	470	720	970		
	25	2 fixed			70	120	220	370	470	720	970		
		1 fixed, 1 adjustable			70	120	220	370	470	720	970		
		2 adjustable			70	120	220	370	470	720	970		
		2 adjustable			70	120	220	370	470	720	970		
35	2 fixed			70	120	220	370	470	720	970			
	1 fixed, 1 adjustable			70	120	220	370	470	720	970			
	2 adjustable			70	120	220	370	470	720	970			
	2 adjustable			70	120	220	370	470	720	970			
50.5	2 fixed			70	120	220	370	470	720	970			
	1 fixed, 1 adjustable			70	120	220	370	470	720	970			
	2 adjustable			70	120	220	370	470	720	970			
	2 adjustable			70	120	220	370	470	720	970			

Achievable Bed Height (mm)

Bed height of 2.4 shown in table is the minimum and is when the two endpieces touch.

Adjustable endpieces provide 80mm of movement into the column.

Achievable bed heights are calculated with the endpieces in their standard configuration, i.e. with the Polyethylene frit fitted.

Minor changes in bed height may be experienced when frits other than the standard fitment Polyethylene type are retro-fitted.

Each column assembly includes:

Assembled column

- 1 x precision-bore borosilicate glass column
- 1 x PTFE fixed endpiece with 25 µm PE frit OR adjustable endpiece
- 1 x PTFE fixed endpiece with 25 µm PE frit OR adjustable endpiece
- 2 x 1/4"-28 UNF endcaps

Frit kit

- 2 x 25 µm PTFE frits
- 2 x 10 µm PTFE frits
- 2 x 10 µm PE frits

Fittings kit

- 2m x 1/16" OD PTFE tubing with 1/4"-28 UNF fitting
- 0.5m x 1/16" OD PTFE tubing with 1/4"-28 UNF fitting
- 2 x M6 endcap

Note: 3.0 mm columns do not include a frit kit and use fixed endpieces only.
Note 2: Frit kits are not included with 3 mm columns.

Ordering Information

Complete Column Assemblies

Series

1	006	Chromatography Columns
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Part Type

2	CC	Complete Column
---	----	-----------------

Bore Size

3	03	3.0 mm bore
	06	6.6 mm bore
	10	10 mm bore
	15	15 mm bore
	25	25 mm bore
	35	35 mm bore
	50	50 mm bore

Length

4	02	25 mm
	05	50 mm
	10	100 mm
	15	150 mm
	25	250 mm
	40	400 mm
	50	500 mm
	100	1000 mm

Endpiece Type

5	FF	Fixed / Fixed
	AF	Adjustable / Fixed
	AA	Adjustable / Adjustable

Note: 3.0 mm columns use fixed endpieces

Example P/N: 006 CC - 10 - 40 - AF
 Series Part Bore Length Endpieces
 Type Size

Part Number 006CC-10-40-AF consists of a 10 mm bore size, 400 mm length, one adjustable endpiece and one fixed endpiece.



Replacement Parts

Endpieces

1	Series	006 (Chromatography)
2	Part Type	FE (Fixed), AE (Adjustable)
3	Bore Size	03, 06, 10, 15, 25, 35 or 50

Note: 3 mm columns use fixed endpieces only

Example P/N: 006 FE - 35
 Series Part Bore
 Type Size

Glass

1	Series	006 (Chromatography)
2	Part Type	RG (Replacement glass)
3	Bore Size	03, 06, 10, 15, 25, 35 or 50
4	Length	02, 05, 10, 15, 40, 50, 75 or 100

Example P/N: 006 RG - 06 - 50
 Series Part Bore Length
 Type Size

Frits

1	Series	006 (Chromatography)
2	Part Type	FR (Frit)
3	Bore Size	06, 10, 15, 25, 35 or 50
4	Pore Size	5, 10, 25, 40, 70
5	Material	Leave blank for PTFE, PE (Polyethylene)

Note: Frits for 3.0 mm columns are not offered. A replacement endpiece must be purchased.

Example P/N: 006 FR - 15 - 25 - PE
 Series Part Bore Pore Material
 Type Size Size (Leave blank for PTFE)

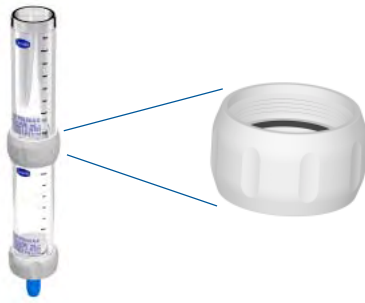
'O'-rings

1	Series	006 (Chromatography)
2	Part Type	OR ('O' - Ring)
3	Bore Size	03, 06, 10, 15, 25, 35 or 50
4	Material	V (Viton), S (Silicone)

Example P/N: 006 OR - 25 - V
 Series Part Bore Material
 Type Size

Accessories

Packing Sleeves (column connecting sleeves)



Part Number	Description
006PS-03	for 3.0mm bore sizes
006PS-06	for 6.6mm bore sizes
006PS-10	for 10mm bore sizes
006PS-15	for 15mm bore sizes
006PS-25	for 25mm bore sizes
006PS-35	for 35mm bore sizes
006PS-50	for 50mm bore sizes

Column Jackets (for temperature control)

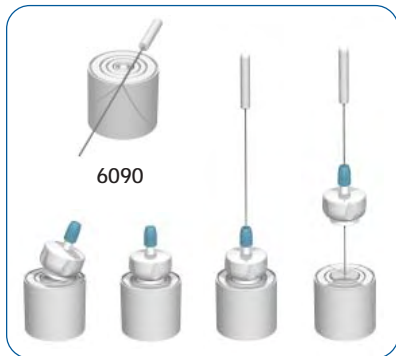


Part Number	Description
6331	100mm length for 3.0, 6.6, and 10mm bore sizes
6332	150mm length for 3.0, 6.6, and 10mm bore sizes
6333	200mm length for 3.0, 6.6, and 10mm bore sizes
6334	250mm length for 3.0, 6.6, and 10mm bore sizes
6342	150mm length for 15 and 25mm bore sizes
6343	250mm length for 15 and 25mm bore sizes

Frit Insertion and Removal Tools



6770NS



6090

Part Number	Description
6770NS	Insertion tool for 6.6mm bore sizes
6170	Insertion tool for 10mm bore sizes
6451	Insertion tool for 15mm bore sizes
6270	Insertion tool for 25mm bore sizes
6951	Insertion tool for 35mm bore sizes
6870	Insertion tool for 50mm bore sizes
6090	Frit removal tool

Silicone Seals



Part Number	Description
6330SS1	for 3.0mm bore sizes
6330SS2	for 6.6mm bore sizes
6330SS3	for 10mm bore sizes
6342SS1	for 15mm bore sizes
6342SS2	for 25mm bore sizes
6951	for 35mm bore sizes

Bleed Valve and Septum Injectors



1131



2508



3301

Part Number	Description
1131	Column bleed valve with one 1/4"-28 male and two 'Omnifit Cap' connections
2508	Septum injector with one 1/4"-28 male connection and one 'Omnifit Cap' connection
3301	Universal septum injector with two 'Omnifit Cap' connections

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