



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

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# 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.

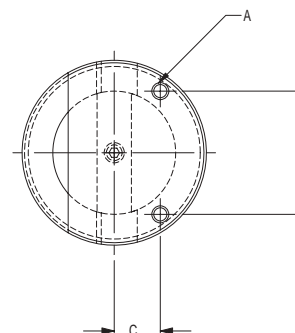
# Specifications (contd.)

## 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 Omnifit 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)

Part Number Example:

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

Consult Bio-Chem Valve for further options concerning:

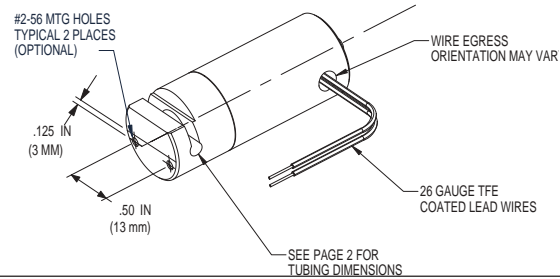
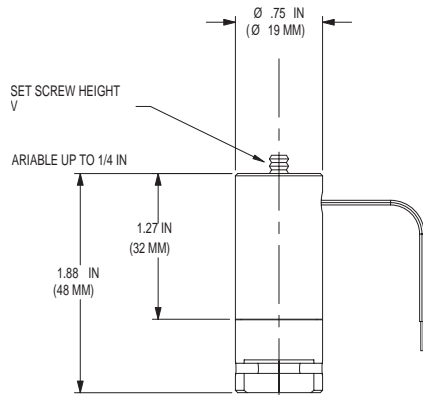
- Terminal connectors and non-standard lead wire lengths.
- Above standard operating pressure requirements.
- Custom tubing.

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

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

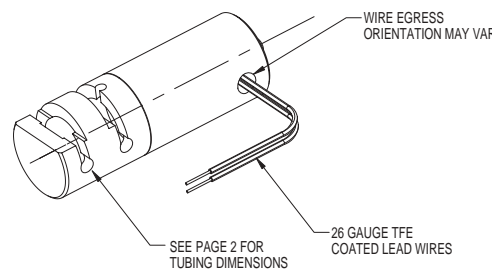
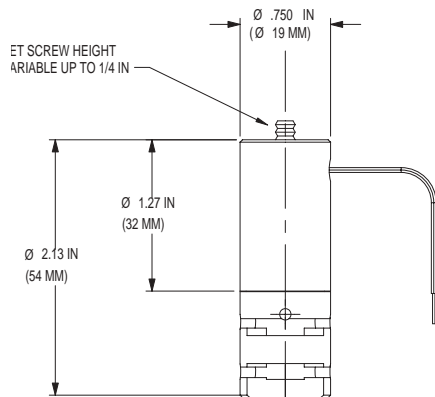
# Installation Drawings

## 075P2NC



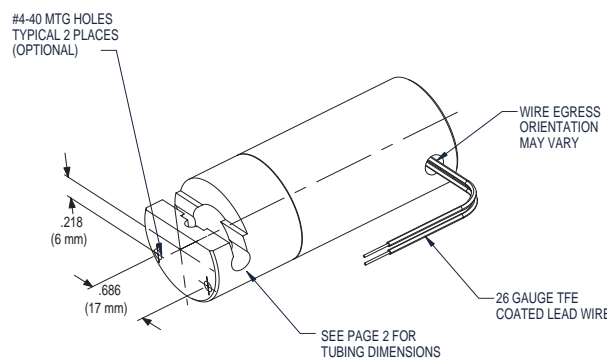
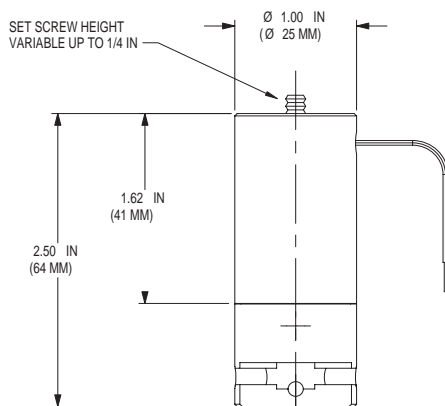
FOR MOUNTING ACCESSORIES  
AND OPTIONS, SEE DATA SHEET

## 075P3



FOR MOUNTING ACCESSORIES  
AND OPTIONS, SEE DATA SHEET

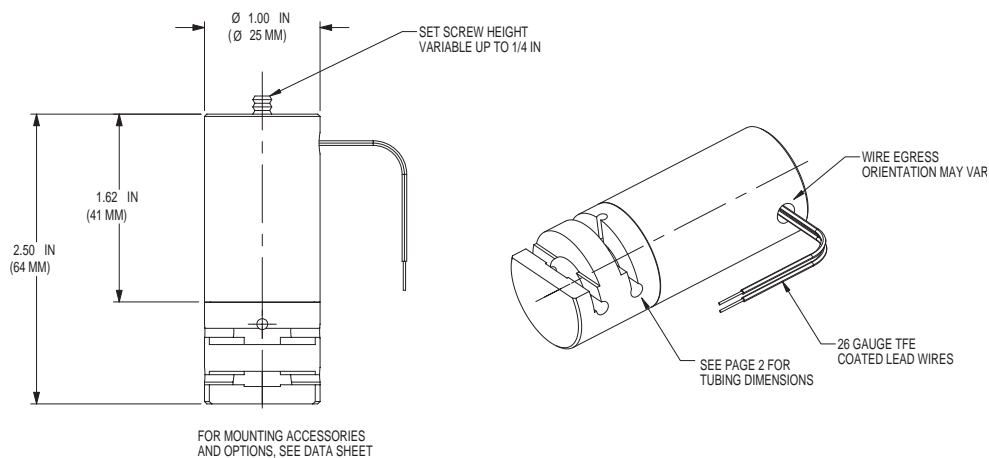
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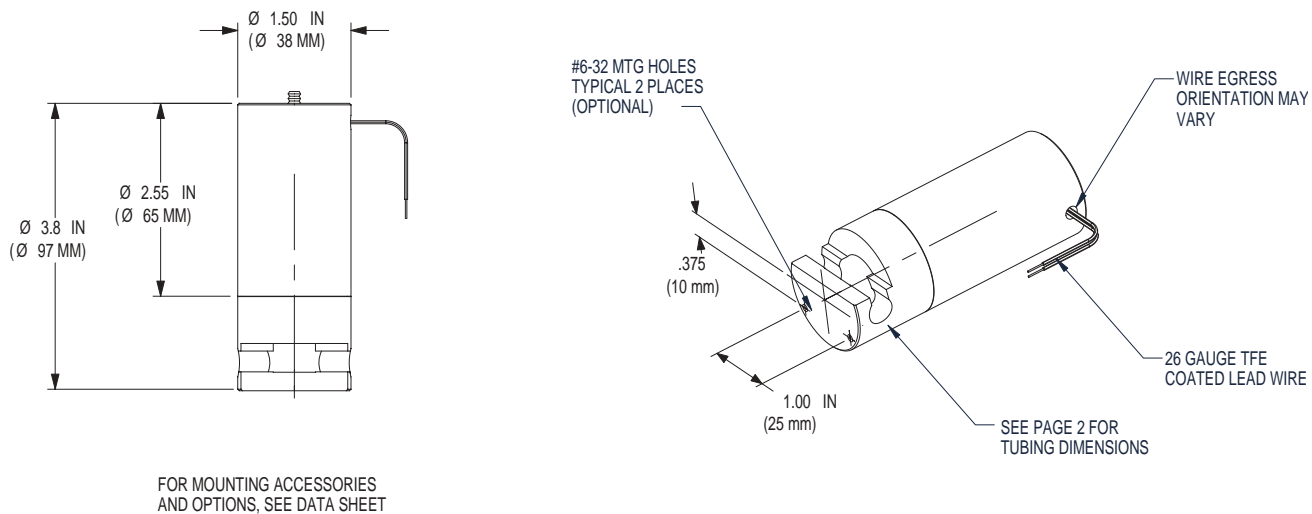
FOR MOUNTING ACCESSORIES  
AND OPTIONS, SEE DATA SHEET

# Installation Drawings (contd.)

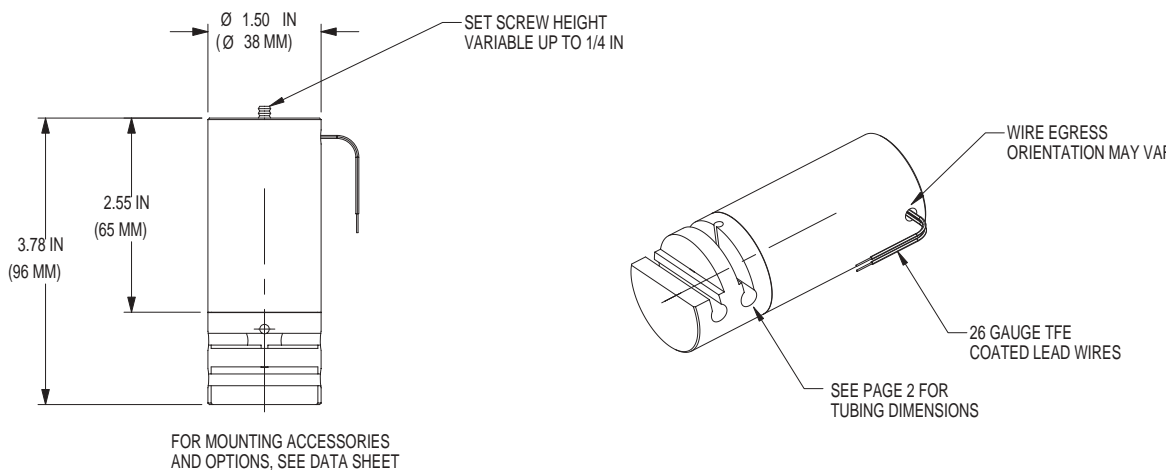
## 100P3



## 150P2NC



## 150P3



## Polypropylene Connectors and Fittings for Soft Tubing

### Reducer



R-02/-01P



R-05/-02P

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

### Straight



S-01P



S-02P



S-05P

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

### "Y"



Y-01P



Y-02P



Y-04P



Y-05P

Part Number	Intended Tube Size
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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



B-062ID



B-095ID



B-125ID

Part Number	Intended Tube Size
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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.  
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Rev. 1104