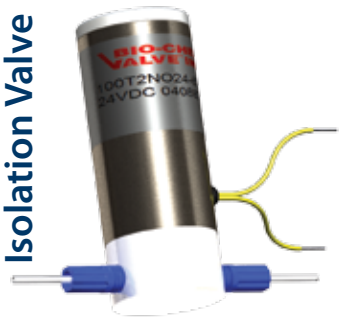
BIO-CHEM VALVE™

Solenoid Operated
Isolation Valves

100T2NC, Normally Closed Isolation Valve

100T2NO, Normally Open Isolation Valve



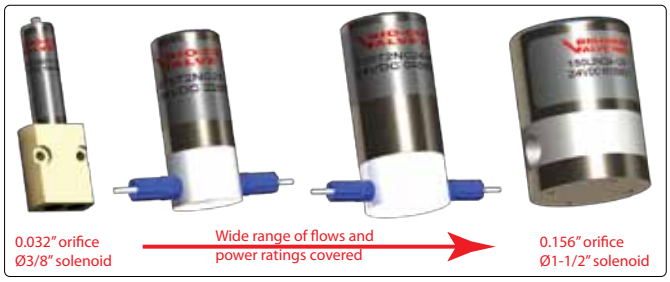
100T3MP, 3-Way Isolation Valve

Bio-Chem Valve™ Isolation Valves offer instrument designers a completely inert, non-metallic fluid path. The valves use a flexible diaphragm to isolate the solenoid actuation mechanism from the fluid path. Isolation valves offer low internal volumes, precise flow control and excellent ease of installation.

Bio-Chem Valve™ Isolation Valves are particularly suitable for use in highly aggressive and / or high purity fluid applications such as analytical chemistry and clinical diagnostics. The highly inert fluid path is especially useful in liquid chromatography, genomics and protein synthesis applications. The high flow factor makes these valves well suited to environmental and water analysis applications.

FEATURES

- **Choice of valve function**
  - 2-way normally closed
  - 2-way normally open
  - 3-way
- **Inert fluid path** - The fluid path in a Bio-Chem Valve™ Isolation Valve can be made entirely from extremely inert materials such as PTFE (polytetrafluoroethylene) and PEEK (polyetheretherketone).
- **Choice of materials**
  Valve bodies are available in PPS (polyphenelyne sulfide), PEEK and PTFE. Diaphragms are available in FFKM (perfluoro elastomer), EPDM (ethylene-propylene-diene) and PTFE. (Not all combinations of materials are available in all sizes or configurations).
- **Choice of valve orifice sizes**
  Precisely machined valve orifice sizes from 0.032" (0.81mm) to 0.156" (3.96mm) in four different dimensional frames ensures that the most appropriate design for your application can be selected from standard configurations.



- **Long life cycles**
  The actuation mechanism in our Bio-Chem Valve™ Isolation Valves is rated to over 20 million cycles.

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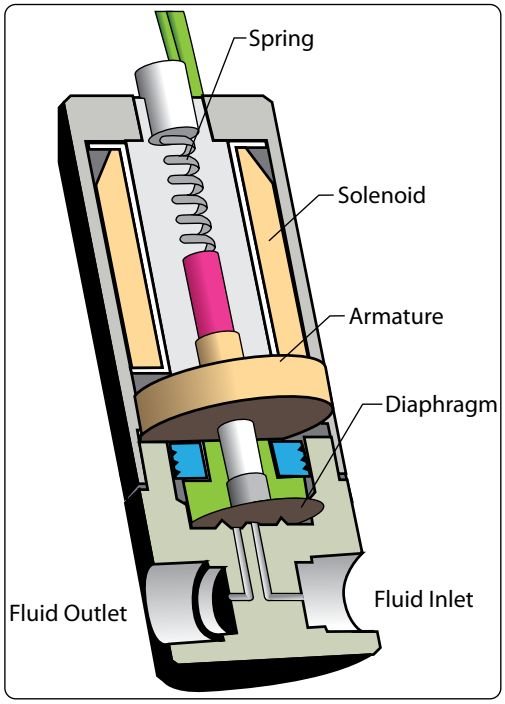
ISOLATION VALVE - OPERATION

Bio-Chem Valve™ Isolation Valves are available in three different configurations; normally closed, normally open and 3-way. When the valve is energized, the solenoid retracts the armature that is attached to a flexible diaphragm. In a normally closed valve, this raises the diaphragm allowing fluid to flow between the inlet and outlet ports. For a normally open valve, the operation is reversed. When the valve is energized, the diaphragm presses down to close the fluid path.

3-way valves have three ports referred to as normally closed, normally open and common. When the valve is de-energized, fluid flows between the normally open and the common port. When the valve is energized, the valve switches and fluid flows between the normally closed and the common port.

Bio-Chem Valve™ Isolation Valves identify the preferred inlet port on the valve label. However, all valves can be used in any flow direction.



ISOLATION VALVE - SELECTION GUIDE

2- way Normally Closed Valves

Valve Part number	Max Pressure	Valve Orifice	Cv / Int. Vol.	Material Options: PTFE body diaphragm	Material Options: PPS body diaphragm	Material Options: PEEK body diaphragm
038T2Bxx-32	20 psi	0.032″	0.008 / 18µl	- NA -	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
038T2Bxx-54	20 psi	0.054″	0.015 / 35µl	- NA -	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
038T2Sxx-32	20 psi	0.032″	0.008 / 20µl	- NA -	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
038T2Sxx-54	20 psi	0.054″	0.015 / 42µl	- NA -	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
075T2NCxx-32	20 psi	0.032″	0.011 / 19µl	PTFE	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
075T2NCxx-62	20 psi	0.062″	0.030 / 54µl	PTFE	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
100T2NCxx-62	30 psi	0.062″	0.042 / 55µl	PTFE	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
100T2NCxx-92	15 psi	0.092″	0.080 / 133µl	PTFE	- NA -	PTFE
100T2NCxx-125	10 psi	0.125″	0.105 / 296µl	PTFE	- NA -	- NA -
150L2NCxx-156	15 psi	0.156″	0.110 / 293µl	PTFE	- NA -	- NA -

MANIFOLD MOUNTING

The Bio-Chem Valve™ Isolation Valves described here are supplied with threaded ports making them suitable for installation with standard ¼"-28 UNF fittings (⅛" NPT on 150L series valves). Custom manifolds save space and eliminate complicated plumbing inside instruments. To meet this demand, Bio-Chem Fluidics offers both normally closed and normally open isolation valves with a manifold mounting option.

Typically, manifold mounted valves have a threaded collar that attaches the valve to the manifold. A locating pin ensures the correct orientation and an elastomer gasket seals the flow path. Contact your local Bio-Chem Fluidics office for more information and complete manifold interface details.

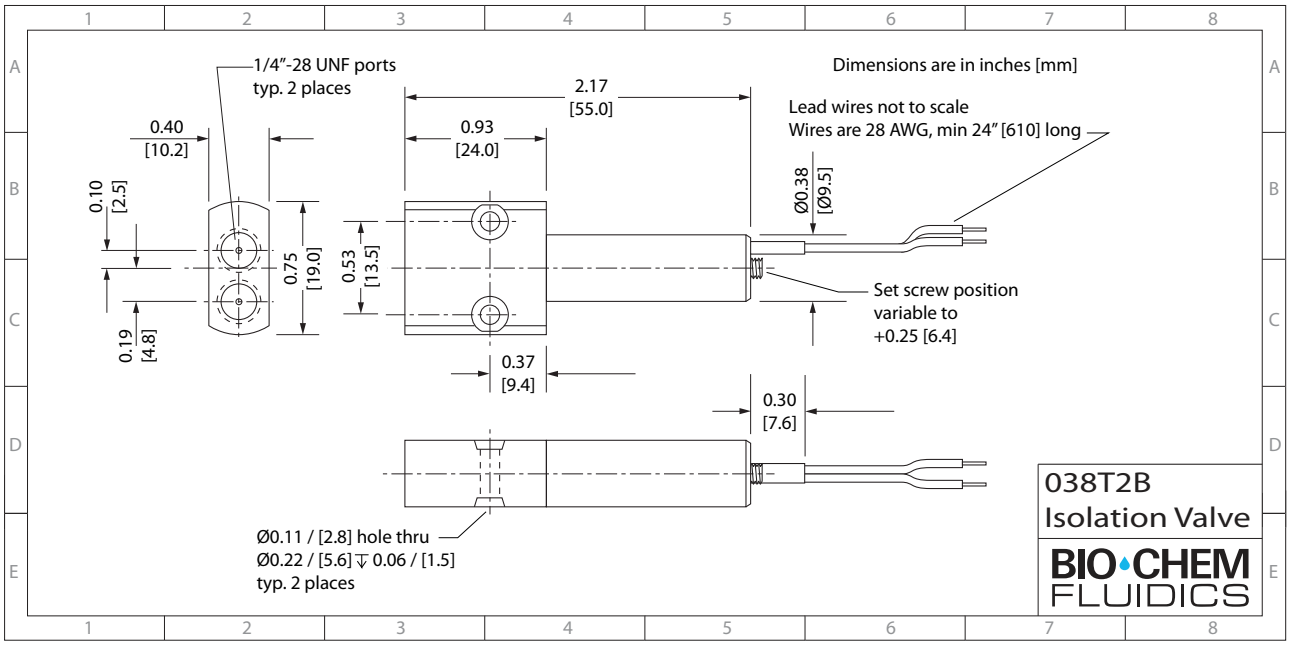
2-way Normally Open Valves

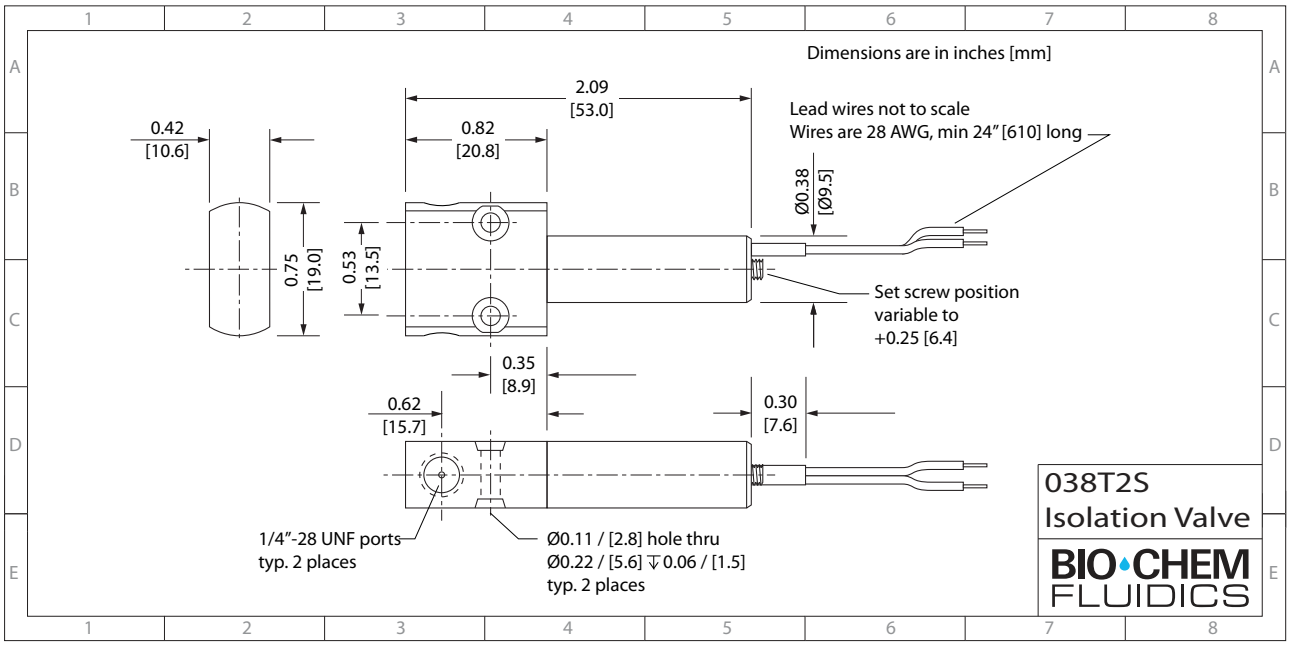
Valve Part number	Max Pressure	Valve Orifice	Cv / Int. Vol.	Material Options: PTFE body diaphragm	PPS body diaphragm	PEEK body diaphragm
075T2NOxx-32	20 psi	0.032"	0.011 / 19µl	PTFE	PTFE	PTFE
075T2NOxx-62	20 psi	0.062"	0.030 / 54µl	PTFE	PTFE	PTFE
100T2NOxx-62	30 psi	0.062"	0.042 / 55µl	PTFE	PTFE | EPDM | FFKM	PTFE | EPDM | FFKM
100T2NOxx-92	10 psi	0.092"	0.080 / 133µl	PTFE	- NA -	PTFE

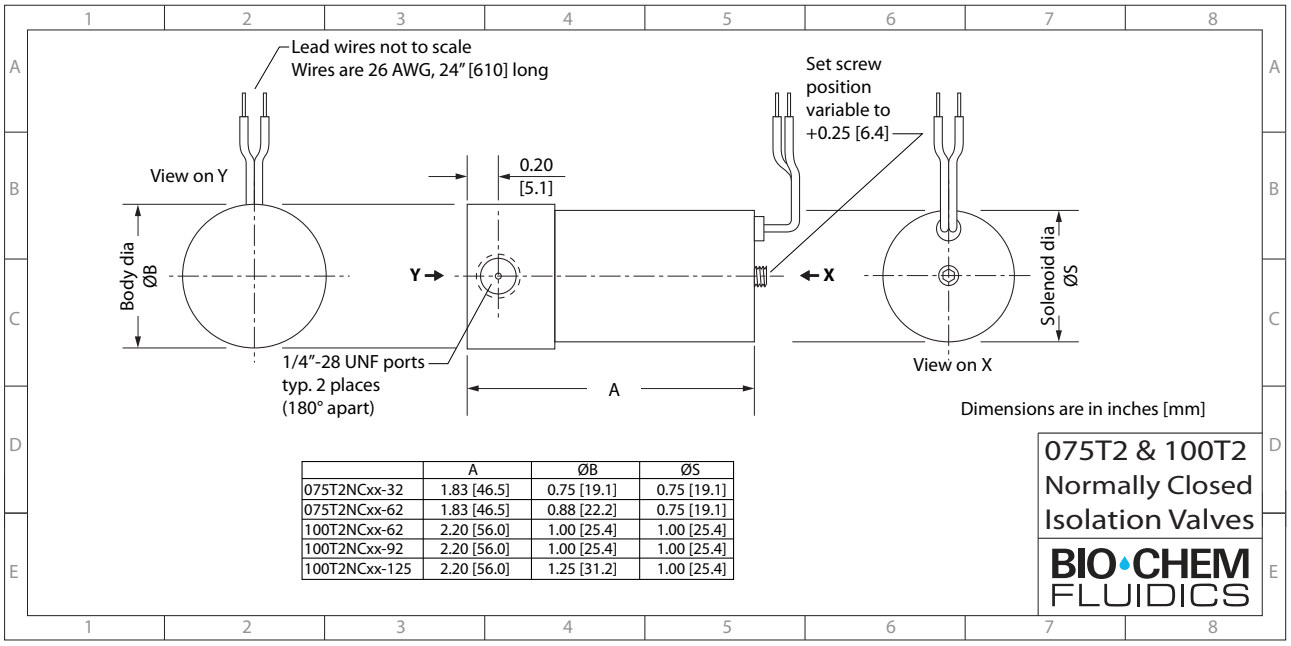
3-way Valves

Valve Part number	Max Pressure	Valve Orifice	Cv / Int. Vol.	Material Options: PTFE body diaphragm	PPS body diaphragm	PEEK body diaphragm
075T3MPxx-32	15 psi	0.032"	0.010 / 45µl	PTFE	PTFE | EPDM*| FFKM*	PTFE | EPDM*| FFKM*
075T3MPxx-46	15 psi	0.046"	0.023 / 52µl	PTFE	PTFE | EPDM*| FFKM*	PTFE | EPDM*| FFKM*
100T3MPxx-32	30 psi	0.032"	0.010 / 47µl	PTFE	PTFE	PTFE
100T3MPxx-62	30 psi	0.062"	0.028 / 87µl	PTFE	PTFE	PTFE
150L3MPxx-156	15 psi	0.156"	xxx / xxxµl	PTFE	- NA -	- NA -

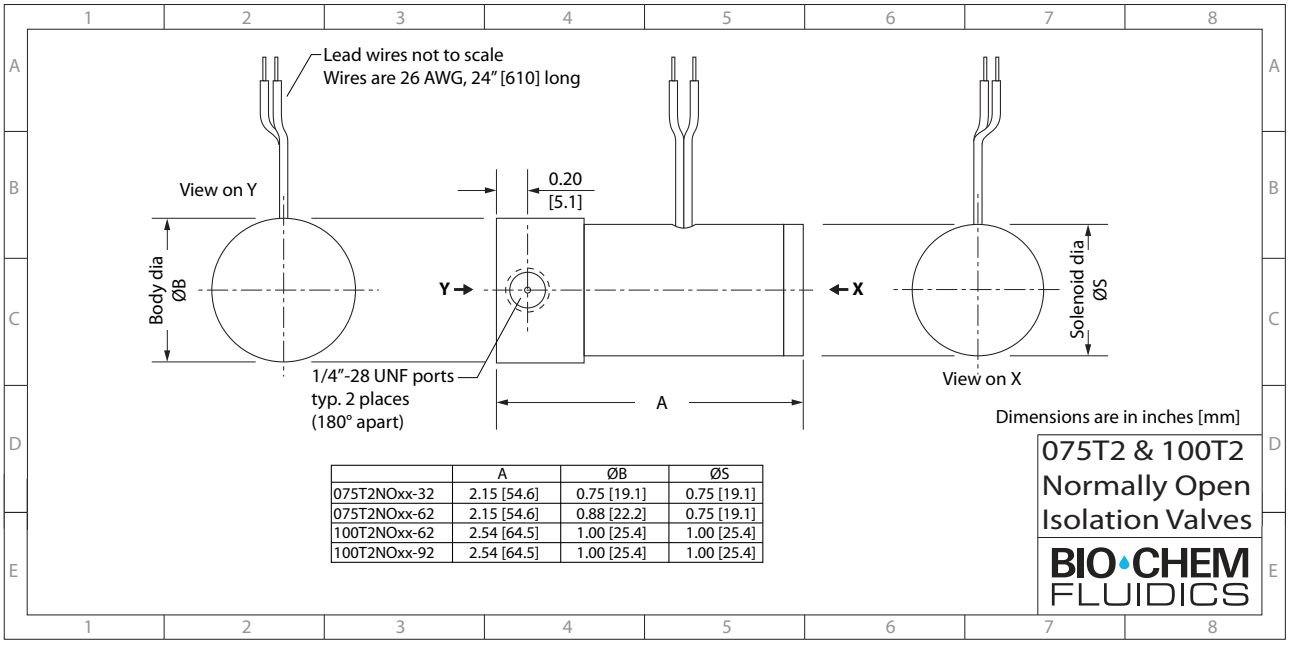
* EPDM & FFKM diaphragms rated to 10 psi in 075T2MP valves







	A	ØB	ØS
075T2NCxx-32	1.83 [46.5]	0.75 [19.1]	0.75 [19.1]
075T2NCxx-62	1.83 [46.5]	0.88 [22.2]	0.75 [19.1]
100T2NCxx-62	2.20 [56.0]	1.00 [25.4]	1.00 [25.4]
100T2NCxx-92	2.20 [56.0]	1.00 [25.4]	1.00 [25.4]
100T2NCxx-125	2.20 [56.0]	1.25 [31.2]	1.00 [25.4]



Dimensions are in inches [mm]

	A	ØB	ØS
075T2NOxx-32	2.15 [54.6]	0.75 [19.1]	0.75 [19.1]
075T2NOxx-62	2.15 [54.6]	0.88 [22.2]	0.75 [19.1]
100T2NOxx-62	2.54 [64.5]	1.00 [25.4]	1.00 [25.4]
100T2NOxx-92	2.54 [64.5]	1.00 [25.4]	1.00 [25.4]

075T2 & 100T2
Normally Open
Isolation Valves

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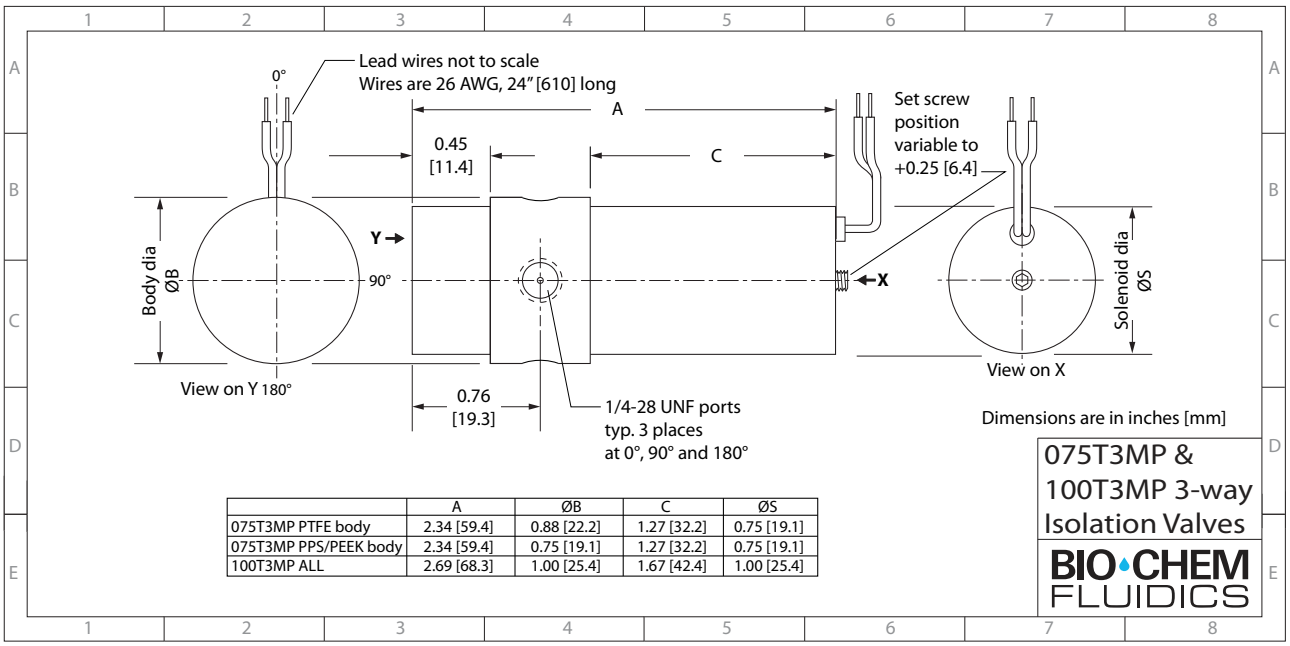
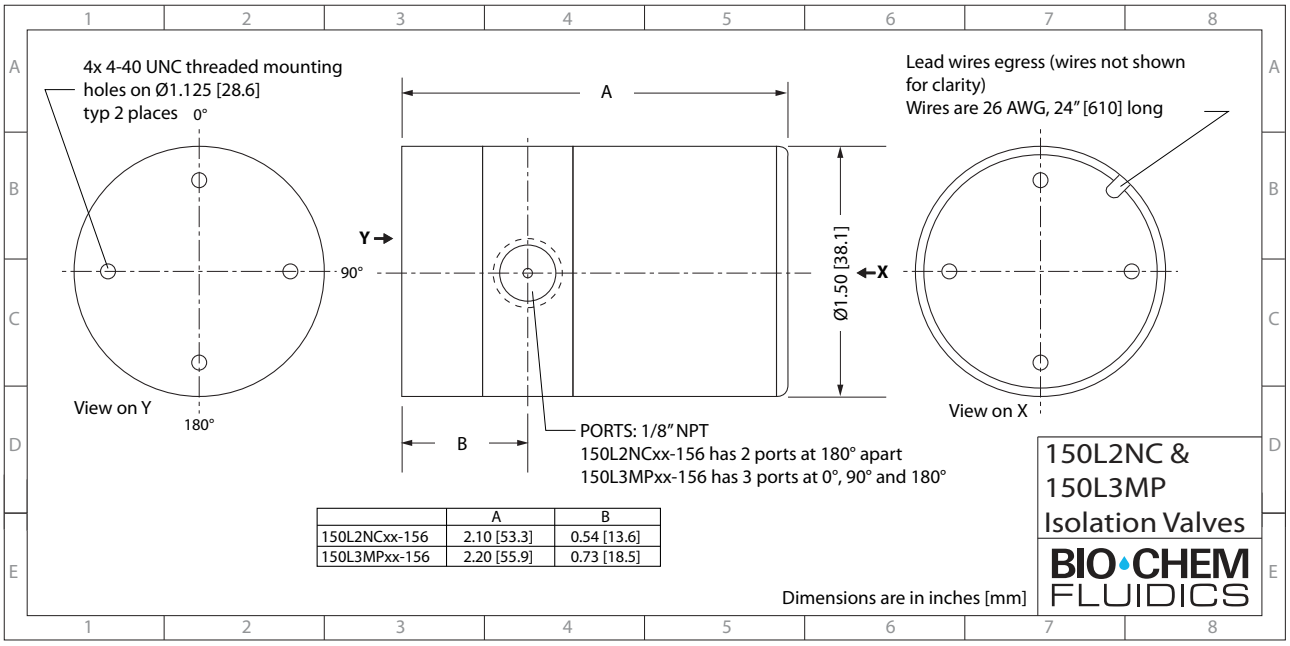


Dimensions are in inches [mm]

	A	ØB	C	ØS
075T3MP PTFE body	2.34 [59.4]	0.88 [22.2]	1.27 [32.2]	0.75 [19.1]
075T3MP PPS/PEEK body	2.34 [59.4]	0.75 [19.1]	1.27 [32.2]	0.75 [19.1]
100T3MP ALL	2.69 [68.3]	1.00 [25.4]	1.67 [42.4]	1.00 [25.4]

075T3MP &
100T3MP 3-way
Isolation Valves

BIO-CHEM FLUIDICS



	A	B
150L2NCxx-156	2.10 [53.3]	0.54 [13.6]
150L3MPxx-156	2.20 [55.9]	0.73 [18.5]

Dimensions are in inches [mm]

150L2NC &
150L3MP
Isolation Valves

BIO-CHEM FLUIDICS

MOUNTING OPTIONS

Bio-Chem Valve™ Isolation valves are easy to mount using one of our stock mounting accessories. The MU-series mounting flanges allow direct attachment to a bulkhead - either inside or outside the panel.

Features:

- Constructed from sturdy, glass-filled polypropylene
- Spring steel retainer and set screw ensure a secure fit
- Surface withstands alcohol, bleaches and other common cleaning agents
- Screw hole orientation relative to fluid ports can be adjusted to fit available system space.

MU-series flanges

Integrated mounting holes (standard on 038T and 150L models) can be added to all isolation valves as a standard option. Typically 2 or 4 #4-40 UNC threaded holes are machined into the base of the valve providing direct mounting to the instrument.

Aluminum mounting rings (MR-075 & MR-100) and steel mounting clips (MC-075 & MC-100) are also available. Both provide economic options for securing the valves within an instrument.

MR-series ring MC-series clip

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 solenoid valves we sell are customized to one extent or another. Customizable options include (but are not limited to):

- Materials of construction
- Operating voltage
- 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!

BIO·CHEM FLUIDICS

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