

# Series 1 & 2 Miniature Inert PTFE Isolation Valves

## 2-Way and 3-Way Solenoid Valves




### Typical Applications

- Reagent Control
- Solvent Management
- Aggressive Liquid Control

The 2-Way & 3-Way inert Series 1 & 2 valves have been designed for systems where chemical compatibility is most important. The wetted path is isolated from the solenoid and only PTFE and borosilicate glass are in contact with the media passing through the valve. Low internal volume and fast response time ensure repeatable, accurate volumes. Valves will actuate without any pressure or vacuum applied.

### Features

- Provides unsurpassed chemical compatibility for a wide range of media with PTFE and borosilicate glass as the only wetted parts
- 100% continuous duty rating in ambient temperatures up to 66°C
- Low power for reduced heat generation and power consumption
- Fast response times for accurate repeatable results
- Direct acting: does not require pressure or vacuum to operate
- 100% tested leak rate provides assurance of a quality seal
- Provides reliable operation for the life of your instrument
- RoHS compliant 

## Product Specifications

### Physical Properties

<b>Valve Type:</b>	Diaphragm Isolation Valve
<b>Valve Configuration:</b>	3-Way (Series 1) 2-Way, Normally Closed (Series 2)
<b>Media:</b>	Liquids
<b>Operating Environment:</b>	40 to 150°F (4 to 66°C)
<b>Dimensions:</b>	Width: 1.0" (25.4 mm) Height: 2.1" (53.34 mm) Length: 1.0" (25.4 mm)
<b>Porting:</b>	1/4-28 Threaded Ports
<b>Weight:</b>	2.7 oz (76.5 g)
<b>Internal Volume (µL):</b>	96 (3-Way) 49 (2-Way)

### Electrical

<b>Voltage (VDC):</b>	12	24
<b>Power (Watts):</b>	2.5	4.2
<b>Current (mA):</b>	211	173
<b>Resistance (Ohm):</b>	57	139
(Ω±5% @ 70°F, 21.1°C)		
<b>Connections:</b>	12" Lead Wire Standard 26 AWG, PTFE Insulated	

### Wetted Materials\*

<b>Seals:</b>	PTFE
<b>Body Options:</b>	PTFE
<b>All Others:</b>	Borosilicate Glass (3 - Way only)
* See Chemical Compatibility Page Consult factory for other options	

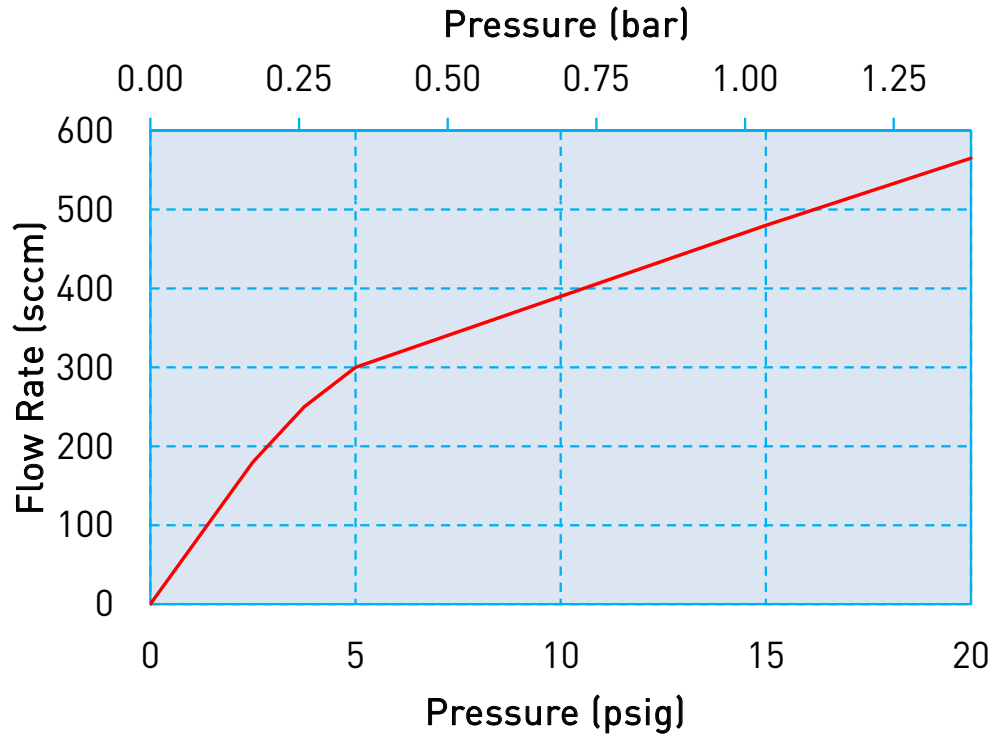
### Performance Characteristics

<b>Operating Pressure/ Orifice Diameters:</b>	Vacuum - 20 psig (1.4 bar) / 0.060" (1.52 mm)
<b>Proof Pressure:</b>	1.5X rated pressure
<b>Leak Rate:</b>	Bubble Tight
<b>Response Time:</b>	3-Way: <12 ms cycling 2-Way: <20 ms cycling
<b>Recommended Filtration:</b>	10 µm min
<b>Reliability:</b>	Life Cycle Rating of 10 million (Application dependent)

## Series 1 & 2 Miniature Inert PTFE Isolation Valves

### Typical Flow Curve

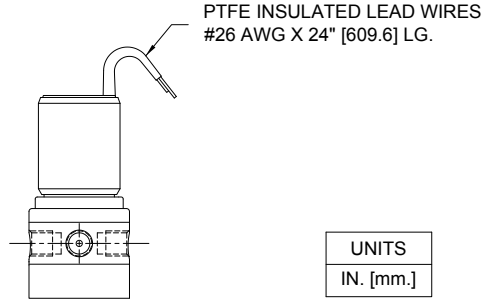
All Models  
Orifice: 0.060" (1.52 mm)  
(Tested w/water 24° C)



# Series 1 & 2 Miniature Inert PTFE Isolation Valves

## Electrical Interface

### Series 1: 3-Way Wire leads



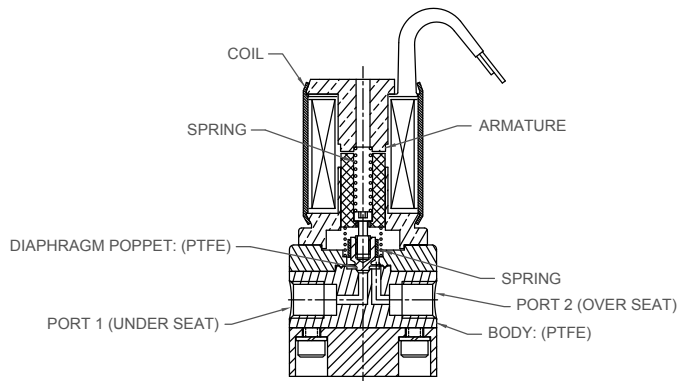
Custom connections available upon request

## Mechanical Integration

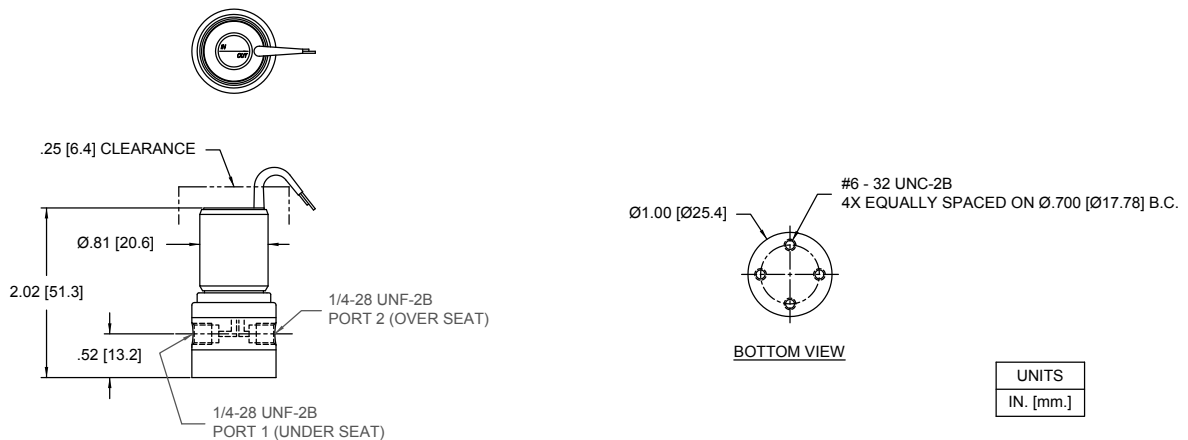
### Dimensions

### Series 1: 3-Way Cross-Section

### Wetted Material and Dimensions



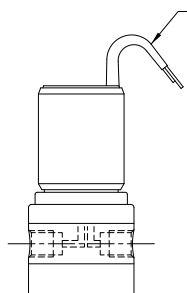
### 3-Way, 0.060" (1.52 mm) Orifice



## Series 1 & 2 Miniature Inert PTFE Isolation Valves

### Electrical Interface

#### Series 2: 2-Way Wire leads



PTFE INSULATED LEAD WIRES  
#26 AWG X 24" [609.6] LG.

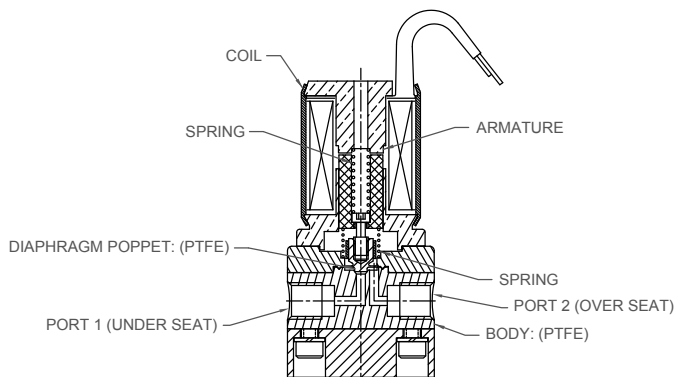
UNITS
IN. [mm.]

Custom connections available upon request

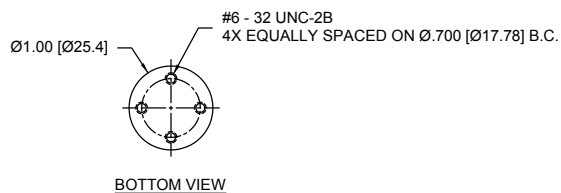
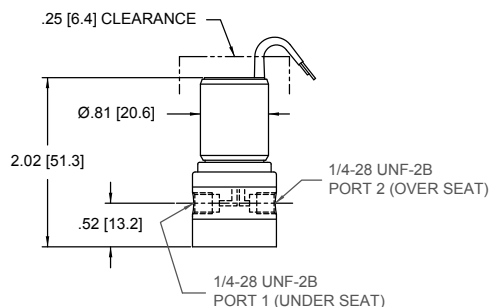
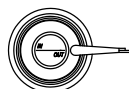
### Mechanical Integration

#### Dimensions

#### Series 2: 2-Way Cross-Section Wetted Material and Dimensions



#### 2-Way, 0.060" (1.52 mm) Orifice

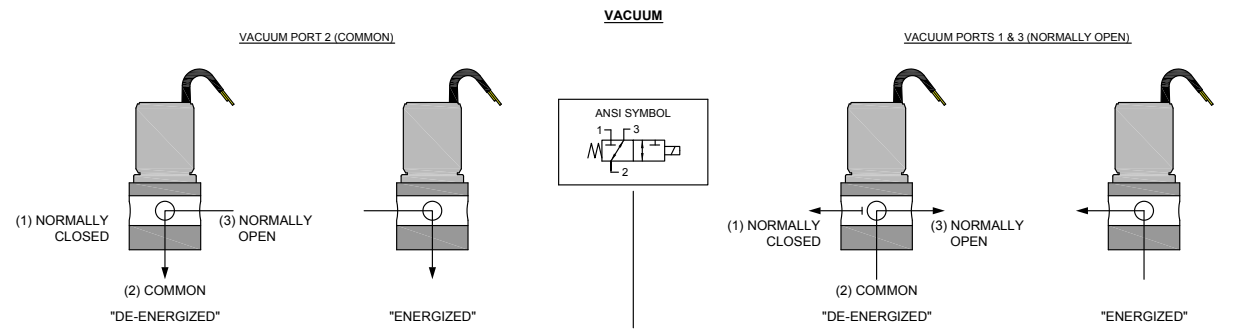
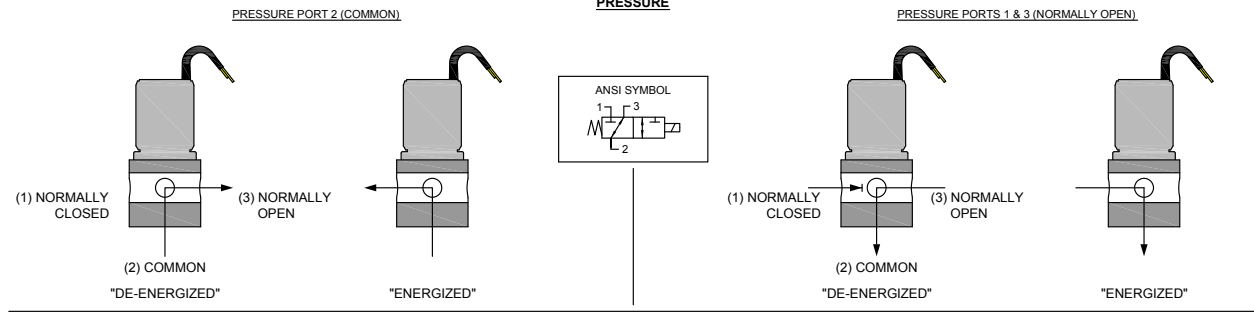


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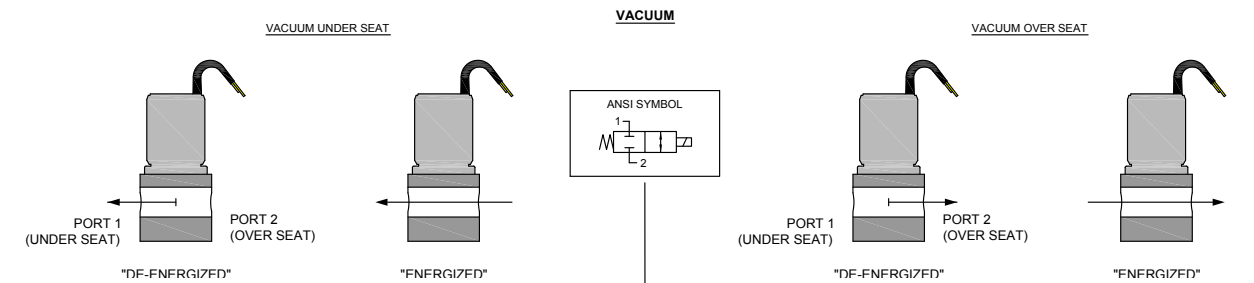
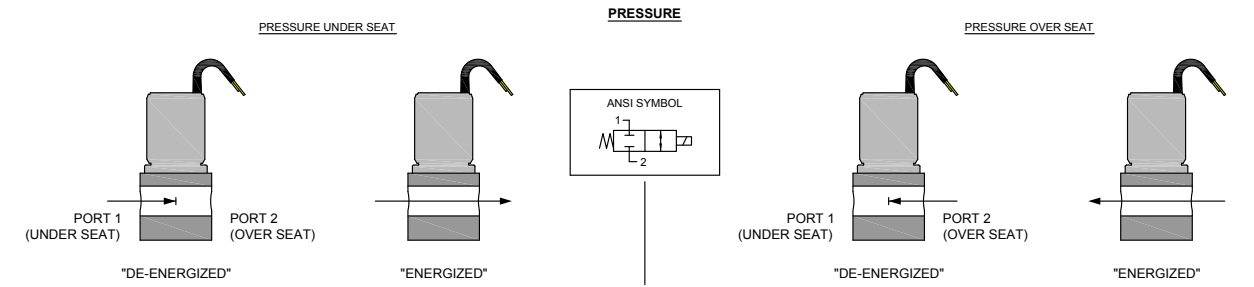
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## ANSI Symbols

### Series 1



### Series 2



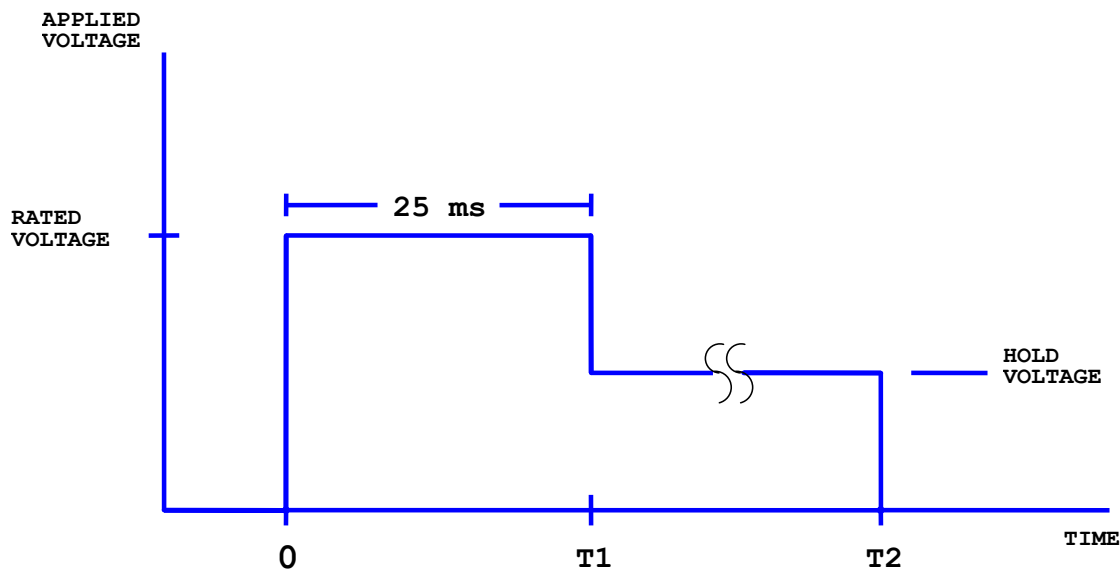
## Series 1 & 2 Miniature Inert PTFE Isolation Valves

### Hit and Hold Specifications

Hit and Hold is a method for driving valves that can be used to reduce power consumption and heat generation while maintaining valve performance specifications. The valve is "hit" with the full rated voltage for some time period to open it (T1 in the graph) and then "held" open with substantially reduced voltage until the desired pulse length is reached (T2 in the graph). The following table shows the possible holding voltages and power consumption for our standard 12 and 24 VDC solenoids.

<b>Rated Voltage (volts)</b>	<b>3-way</b>		<b>2-way</b>	
	<b>Hold Voltage</b>	<b>Hold Power</b>	<b>Hold Voltage</b>	<b>Hold Power</b>
24	12 volts	1.04 watts	8 volts	0.46 watts
12	6 volts	0.63 watts	5 volts	0.44 watts

**Note:** Other voltages available



*Hold Voltage Graph*

## Series 1 & 2 Miniature Inert PTFE Isolation Valves

### Chemical Compatibility Chart\*

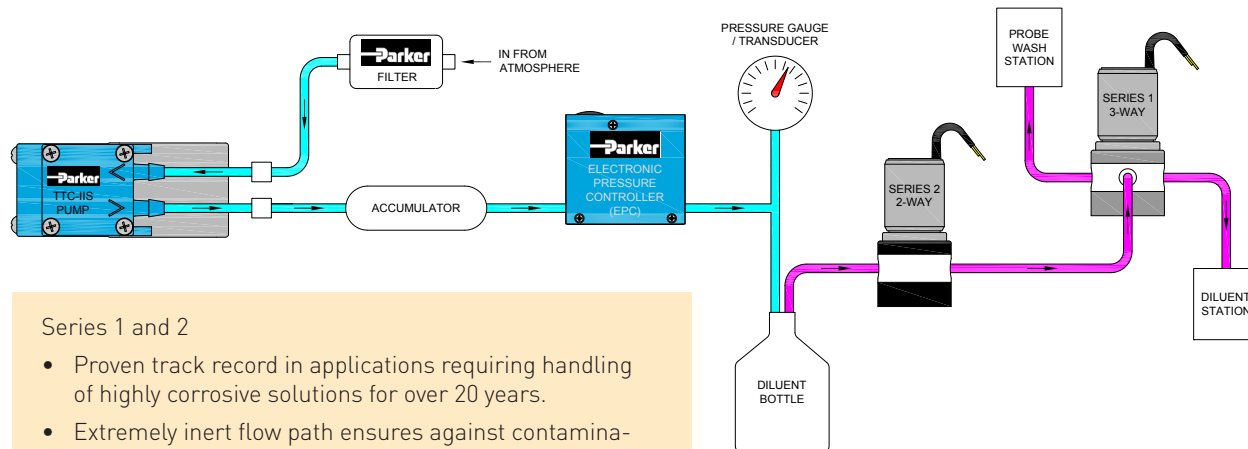
Chemical	Diaphragm and Body	Other Wetted Materials
	PTFE	Borosilicate Glass (3-way version only)
DI Water	1	1
Methanol	1	1
Isopropanol	1	1
Ethanol	1	1
Acetonitrile	1	1
Tetrahydrofuran	1	1
Toluene	1	4
Organic Acids - Dilute	1	1
Non Organic Acids - Dilute	1	1
Bases - Dilute	1	1
Saline	1	1
Bleach 12%	1	1
Sodium Hydroxide 20%	1	4

\*The above is an Abbreviated Chemical Compatibility Chart. Please consult factory for a complete list.

COMPATIBILITY LEGEND	
1 EXCELLENT	Minimal or no effect
2 GOOD	Possible swelling and/or loss of physical properties
3 DOUBTFUL	Moderate or severe swelling and loss of physical properties
4 NOT RECOMMENDED	Severe effect and should not be considered

### Typical Flow Diagram

#### Air Pressure Over Reagent



#### Series 1 and 2

- Proven track record in applications requiring handling of highly corrosive solutions for over 20 years.
- Extremely inert flow path ensures against contamination of sensitive biological fluids.
- Low internal volume reduces carryover and sample/reagent waste.

Highlight test results when available.

## Series 1 & 2 Miniature Inert PTFE Isolation Valves

### Ordering Information

Orifice Size	Pressure	Seal Material	Valve Type	Voltage	Porting	Part Number
0.060"(1.52mm)	Vac-20psig (1.38 bar)	PTFE	3-Way	12V	1/4"-28	001-0017-900
				24V	1/4"-28	001-0028-900
		PTFE	2-Way NC	12V	1/4"-28	002-0017-900
				24V	1/4"-28	002-0010-900

NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

- Media, Inlet & Outlet Pressures
- Minimum Required Flow Rate
- System Supply Voltage
- Media
- Ambient Temperature Range

Please click on the Order On-line button (or go to [www.parker.com/precisionfluidics/series1and2](http://www.parker.com/precisionfluidics/series1and2)) to configure your Series 1 and 2 Miniature Inert PTFE Isolation Valve. For more detailed information, visit us on the Web, or call 603-595-1500.



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For more information call +1 603 595 1500 or email [ppfinfo@parker.com](mailto:ppfinfo@parker.com)  
Visit [www.parker.com/precisionfluidics](http://www.parker.com/precisionfluidics)

