



Partek

PFA/PTFE Valves

Catalog 4182/USA
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WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Parker Hannifin Corporation
Partek Operation
Tucson, AZ

Technical Information

Overview

Partek produces products that are made from only the finest Fluoropolymers available. These Fluoropolymers are resistant to numerous chemicals and solvents. This information provides only a brief technical overview. For more comprehensive technical and chemical compatibility information, please ask for Technical Bulletin 0002-T1/USA.

Fluorinated Polymers

Chemical Properties

- Resistivity to corrosive agents
- Non-solubility
- Long term weatherability
- Non-adhesiveness
- Nonflammability

Electrical Properties

- Low dielectric constant
- Low dissipation factor
- High arc resistance
- High surface resistance
- High volume resistivity

Mechanical Properties

- Flexibility at low temperatures
- Low coefficient of friction
- Stability at high temperatures

PTFE is a fluorocarbon resin that is isostatically compression molded into various shapes and configurations. It is chemically resistant to all chemicals and solvents with the exception of some molten alkali metals, molten sodium hydroxide, elemental fluorine and certain fluorinating agents. At Partek we use PTFE for machining the bodies and components of various valves and manifolds. It offers chemical resistance and stability at high temperatures.

Modified PTFE material is used primarily for diaphragms and bellows in our products. This material has the same processing and chemically resistant characteristics as the standard product but offers superior cycle life and integrity in diaphragm products.

PFA is a copolymer of tetrafluoroethylene and perfluoroalkyl vinyl ether. The resultant polymer contains the carbon-fluorine backbone chain typical of PTFE, but unlike PTFE, does not require special fabricating techniques. PFA pellets have good melt flow characteristics that allow for processing via extrusion, compression, blow, transfer and injection molding methods. It has outstanding chemical and solvent resistant characteristics over a temperature range even greater than PTFE. PFA is offered in various grades of purity and cleanliness making it the material of choice for the semiconductor market.

C_V and K_V Formulas

$$Q = C_V \sqrt{\frac{\Delta P}{SG}}$$

Q = Flow (GPM)
 ΔP = Pressure Drop (PSIG)
 SG = Specific Gravity

$$Q = K_V \sqrt{\frac{\Delta P}{Y}}$$

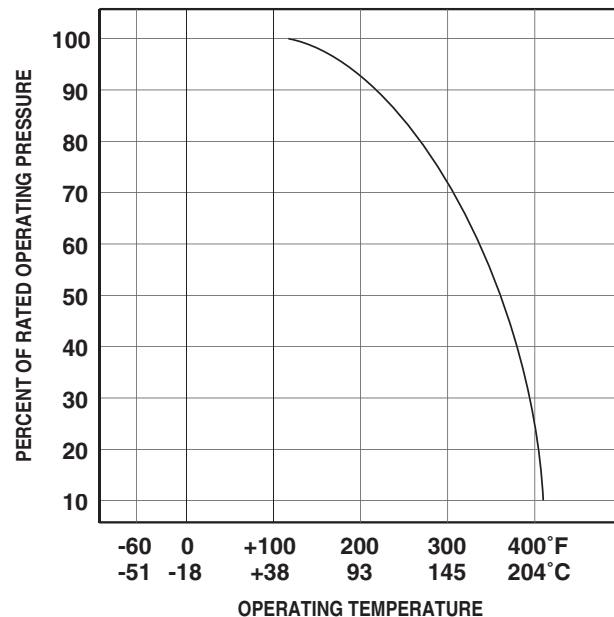
Q = Flow (LPM)
 ΔP = Pressure Drop (BAR)
 Y = Specific Gravity (kg/cm³)

$$1 K_V = 14.26 C_V$$

"C_V" flow factor is the number of gallons of fluid that pass through a given orifice area in one minute, at a pressure drop of 1 PSIG.

"K_V" flow factor is the number of liters of fluid that pass through a given orifice area in one minute, at a pressure drop of 1 bar.

PERCENT OF RATED PRESSURE VS. TEMPERATURE



For operation at temperatures above ambient conditions, please refer to the chart above for reduced pressure ratings.

MV-1 Manual Stop Cock Valve

Product Overview

The MV-1 PTFE Stop Cock Valve is designed for use in high purity semiconductor fluid applications, and is also ideally suited for ultra-pure water and aggressive chemicals. A precision-machined PTFE body with a straight through flowpath is combined with a PTFE full flow orifice stem for maximum flow, minimum pressure drop and 1/4" turn operation. The MV-1 is offered for inline and panel mounted applications.



Features

Full flow orifice.

The precision machined stem and body provide tight shut off and 1/4 turn operation.

Parofluor O-Ring stem seals.

Benefits

Maximum flow at the desired size.

Minimum pressure drop. High cycle life.

Positive body to stem seal.

Specifications

Materials of Construction

Wetted: PTFE, Parker Parofluor™

Non-wetted: HDPE, PFA, PVC, PVDF, Titanate

Pressure Ranges

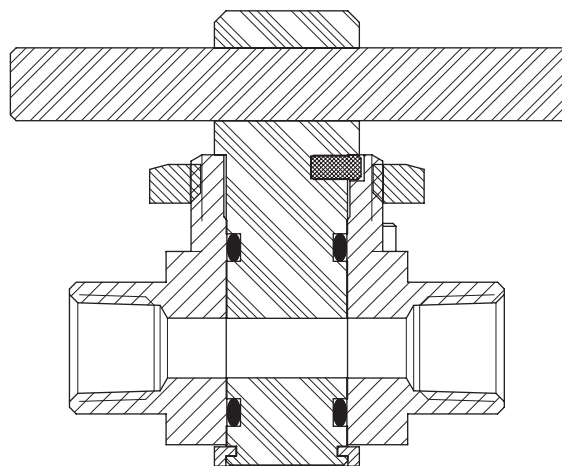
0 to 60 PSIG (4.1 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

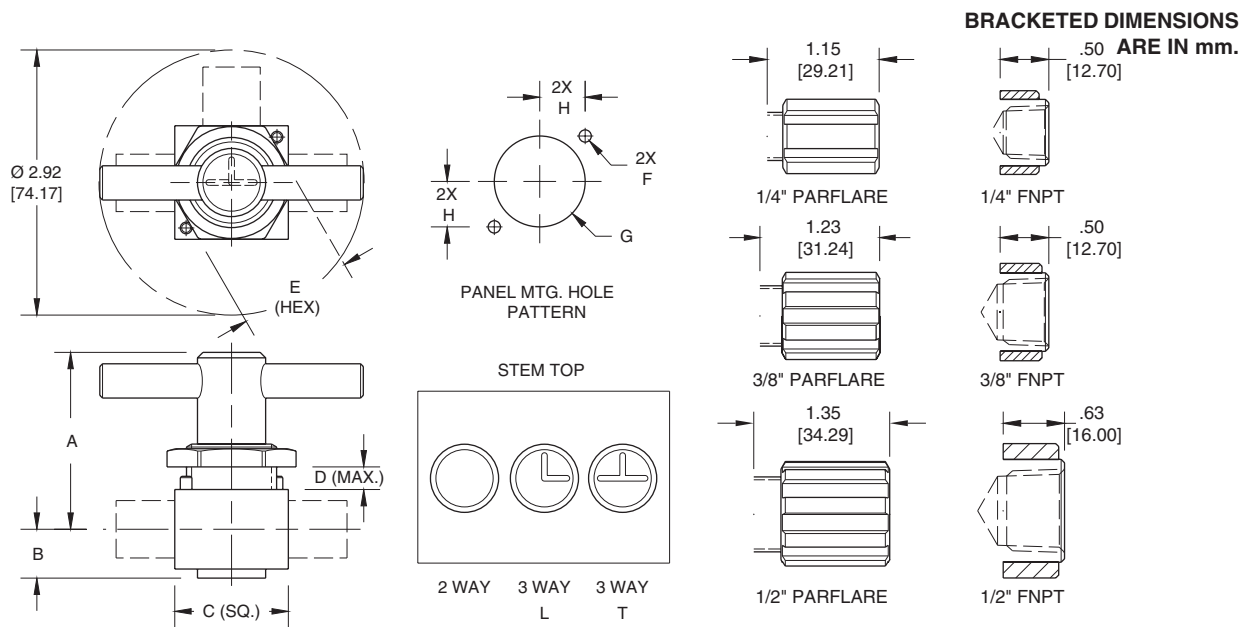
Temperature Ranges

Ambient: -60° - 212° F (-51° - 100° C)

Fluid: -60° - 400° F (-51° - 204° C)

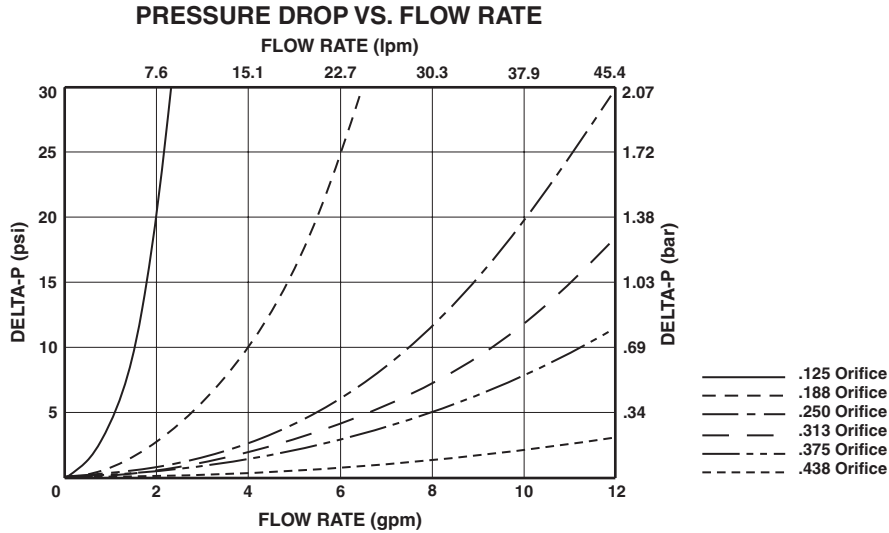


MV-1 Manual Stop Cock Valve



Model Number	Cv	Kv	Orifice	Flow Config.	Port Config.	Dimensions in [mm]							
						A	B	C	D	E	F	G	H
MV-1-1414	1.95	27.8	.250	2 WAY	1/4" FNPT	1.78 [45.21]	.61 [15.49]	1.25 [31.75]	.25 [6.35]	1.31 [33.27]	Ø .14 [3.56]	Ø 1.00 [25.40]	.50 [12.70]
MV-1-1424	1.95	27.8	.250	3 WAY L	1/4" FNPT	1.78 [45.21]	.61 [15.49]	1.25 [31.75]	.25 [6.35]	1.31 [33.27]	Ø .14 [3.56]	Ø 1.00 [25.40]	.50 [12.70]
MV-1-1434	1.95	27.8	.250	3 WAY T	1/4" FNPT	1.78 [45.21]	.61 [15.49]	1.25 [31.75]	.25 [6.35]	1.31 [33.27]	Ø .14 [3.56]	Ø 1.00 [25.40]	.50 [12.70]
MV-1-6214	.36	5.1	.125	2 WAY	1/4" Parflare	1.78 [45.21]	.61 [15.49]	1.25 [31.75]	.25 [6.35]	1.31 [33.27]	Ø .14 [3.56]	Ø 1.00 [25.40]	.50 [12.70]
MV-1-6224	.36	5.1	.125	3 WAY L	1/4" Parflare	1.78 [45.21]	.61 [15.49]	1.25 [31.75]	.25 [6.35]	1.31 [33.27]	Ø .14 [3.56]	Ø 1.00 [25.40]	.50 [12.70]
MV-1-6234	.36	5.1	.125	3 WAY T	1/4" Parflare	1.78 [45.21]	.61 [15.49]	1.25 [31.75]	.25 [6.35]	1.31 [33.27]	Ø .14 [3.56]	Ø 1.00 [25.40]	.50 [12.70]
MV-1-1616	3.00	42.8	.375	2 WAY	3/8" FNPT	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-1626	3.00	42.8	.375	3 WAY L	3/8" FNPT	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-1636	3.00	42.8	.375	3 WAY T	3/8" FNPT	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-6416	1.95	27.8	.250	2 WAY	3/8" Parflare	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-6426	1.95	27.8	.250	3 WAY L	3/8" Parflare	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-6436	1.95	27.8	.250	3 WAY T	3/8" Parflare	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-1818	6.55	93.4	.438	2 WAY	1/2" FNPT	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-1828	6.55	93.4	.438	3 WAY L	1/2" FNPT	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-1838	6.55	93.4	.438	3 WAY T	1/2" FNPT	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-6618	3.00	42.8	.375	2 WAY	1/2" Parflare	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-6628	2.50	35.7	.313	3 WAY L	1/2" Parflare	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]
MV-1-6638	2.50	35.7	.313	3 WAY T	1/2" Parflare	2.24 [56.90]	.74 [18.80]	1.50 [38.10]	.50 [12.70]	1.75 [44.45]	Ø .20 [5.08]	Ø 1.44 [36.58]	.60 [15.24]

Parflare model numbers are supplied with PVDF nuts. For PFA nuts add -T to model number.



MV-6 Manual Ball Valve

Product Overview

The MV-6 PTFE Ball Valves are designed for use in high purity semiconductor applications, and are also ideally suited for use in ultra-pure water and aggressive chemicals. All sizes have wetted parts made entirely of PTFE. All valves are designed full port for minimal flow restrictions and are operated 1/4 turn with minimal torque.



Features

Floating ball design without o-rings ensures bubble tight sealing at high pressure.

Full port design; 1/4 turn operation with low torque tee handle.

Panel mounting is an option on all sizes.

Benefits

Bidirectional flow to 120 psi liquid or gas; High cycle life.

Ideal for quick shut-off in contamination-free applications.

Ideal for process instrumentation applications.

Specifications

Materials of Construction

Wetted: PTFE
Non-wetted: HDPE, PVDF and PVC

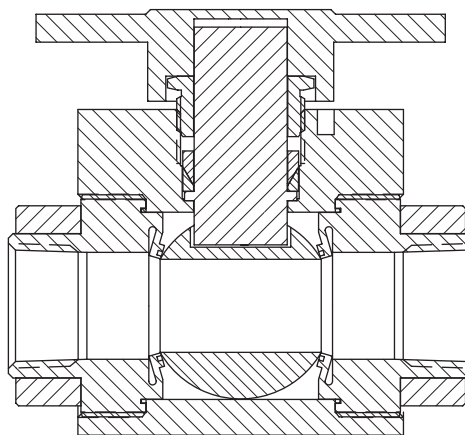
Pressure Ranges

25" HG vacuum (846 mbar) to 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

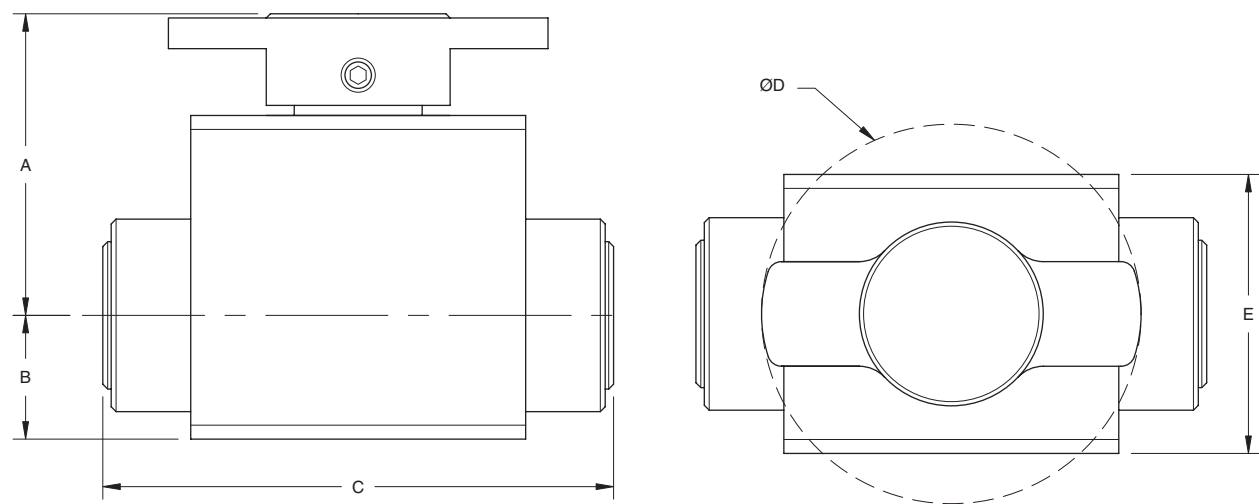
Temperature Ranges

Ambient: -60° - 176° F (-51° - 80° C)
Fluid: -60° - 400° F (-51° - 204° C)

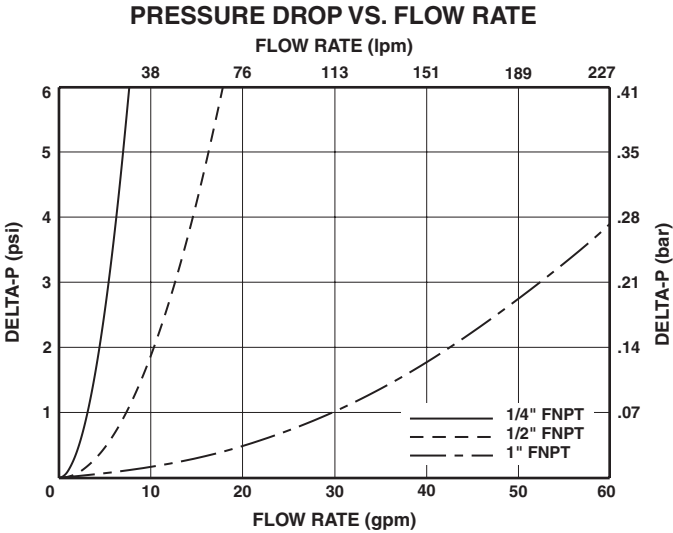


MV-6 Manual Ball Valve

BRACKETED DIMENSIONS
ARE IN mm.



Model Number	Cv	Kv	Flow Config.	Port Config.	Dimensions in [mm]				
					A	B	C	D	E
MV-6-1414-0	1.88	26.81	ON/OFF	1/4" FNPT	1.73 [43.94]	.66 [16.76]	2.91 [73.91]	Ø 1.98 [50.29]	1.31 [33.27]
MV-6-1818-0	6.59	93.97		1/2" FNPT	2.24 [56.89]	.89 [22.60]	3.72 [94.49]	Ø 2.72 [69.08]	2.00 [50.80]
MV-6-116116-0	28.06	400.14		1" FNPT	3.18 [80.77]	1.39 [35.30]	5.00 [127.00]	Ø 4.40 [111.76]	2.53 [64.26]



MV-8 Manual Sampling Valve

Product Overview

The MV-8 PTFE Sampling Valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water or aggressive chemicals. The design utilizes a machined PTFE body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. The valve incorporates a full flow through port with a low dead volume down leg. The purge port option makes this the valve of choice for valve manifold boxes and distribution systems.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE, provides over five times the flexural life as compared to conventional PTFE.

Full flow through port.

Purge port option.

Benefits

Higher cycle life resulting in less downtime and lower replacement costs.

Reduced pressure drop.

Allows system maintenance downstream of valve without disrupting main flow.

Specifications

Materials of Construction

Wetted: PTFE, Modified PTFE
Non-wetted: PVDF

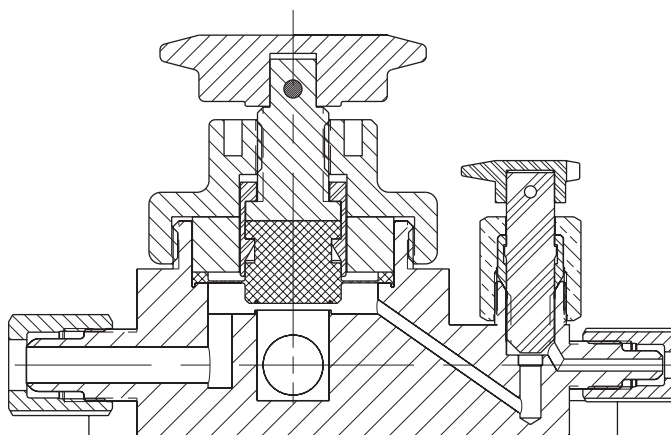
Pressure Ranges

27" HG vacuum (913 mbar) to 120 PSIG (8.3 bar)

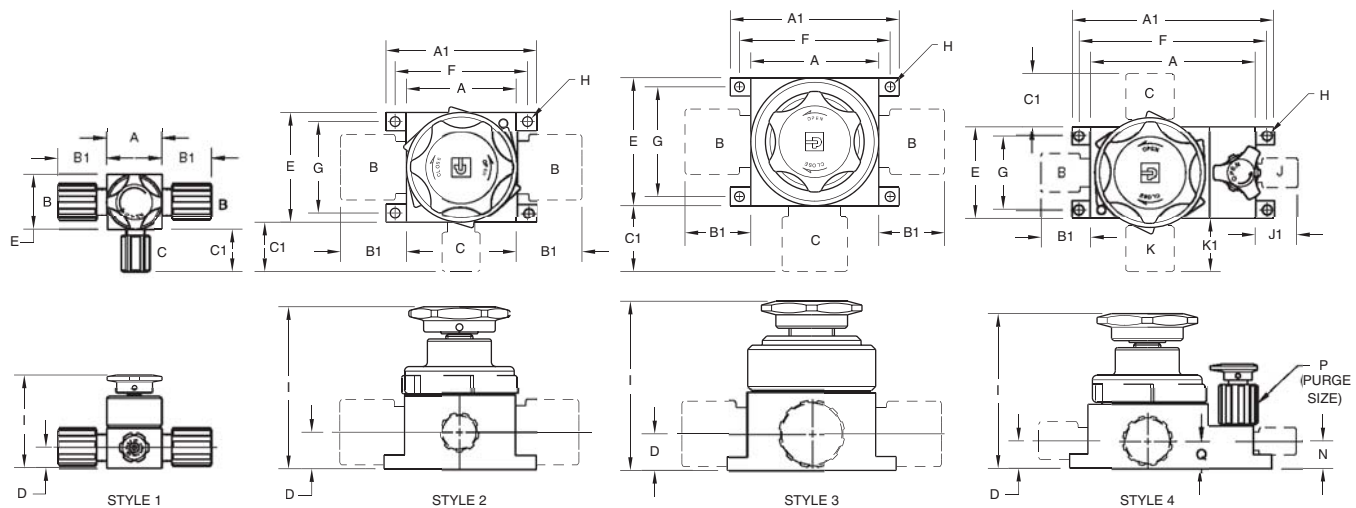
Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

Ambient: 0° - 212° F (17° - 100° C)
Fluid: 0° - 400° F (17° - 204° C)



MV-8 Manual Sampling Valve



DIMENSIONS (in)

STYLE		A	A1	B	B1	C	C1	D	E	F	G	H	I	J	J1	K	K1	N	P	Q
MV-8-6684-1	1	1.50	-	1/2"	1.35	1/4"	1.15	.56	1.50	-	-	-	2.57							
MV-8-661212-1	2	3.50	4.62	3/4"	1.46	3/4"	1.46	1.00	3.50	4.12	3.00	Ø .266	4.51							
MV-8-66128-1	2	3.00	4.12	3/4"	1.46	1/2"	1.35	1.00	3.00	3.62	2.50	Ø .266	4.51							
MV-8-66164-1	2	3.00	4.12	1"	1.80	1/4"	1.15	1.00	3.00	3.62	2.50	Ø .266	4.51							
MV-8-661616-1	3	3.50	4.12	1"	1.80	1"	1.80	1.00	3.50	4.12	3.00	Ø .266	4.63							
MV-8-66128-1-01	4	4.50	5.50	1/2"	1.35	3/4"	1.46	.75	2.50	5.13	2.00	Ø .266	4.50	1/4"	1.15	3/4"	1.46	.75	1/4"	.75
MV-8-66128-1-05	4	4.63	5.75	1/2"	1.35	3/4"	1.46	.75	2.50	5.37	2.00	Ø .266	4.50	1/2"	1.35	3/4"	1.46	.88	1/2"	.92
MV-8-661212-1-01	4	4.50	5.50	3/4"	1.46	3/4"	1.46	.75	2.50	5.13	2.00	Ø .266	4.50	1/4"	1.15	3/4"	1.46	.75	1/4"	.75
MV-8-66168-1-01	4	4.63	5.75	1/2"	1.35	1"	1.80	.75	3.00	5.37	2.00	Ø .266	4.60	1/2"	1.35	1"	1.80	.88	1/2"	.92
MV-8-661612-1-01	4	4.50	5.50	3/4"	1.46	1"	1.80	.93	3.00	5.13	2.04	Ø .266	4.60	1/4"	1.15	1"	1.80	.75	1/4"	.93
MV-8-661616-1-01	4	4.50	5.50	1"	1.80	1"	1.80	.93	3.00	5.13	2.54	Ø .266	4.60	1/4"	1.15	1"	1.80	.75	1/4"	.93

DIMENSIONS (mm)

	STYLE	A	A1	B	B1	C	C1	D	E	F	G	H	I	J	J1	K	K1	N	P	Q
MV-8-6684-1	1	38.1	-	1/2"	34.3	1/4"	29.2	14.2	38.1	-	-	-	65.3							
MV-8-661212-1	2	88.9	117.3	3/4"	37.1	3/4"	37.1	25.4	88.9	104.6	76.2	Ø 6.76	114.6							
MV-8-66128-1	2	76.2	104.6	3/4"	37.1	1/2"	34.3	25.4	76.2	91.9	63.5	Ø 6.76	114.6							
MV-8-66164-1	2	76.2	104.6	1"	45.7	1/4"	29.2	25.4	76.2	91.9	63.5	Ø 6.76	114.6							
MV-8-661616-1	3	88.9	104.6	1"	45.7	1"	45.7	25.4	88.9	104.6	76.2	Ø 6.76	117.6							
MV-8-66128-1-01	4	114.3	139.7	1/2"	34.3	3/4"	37.1	19.1	63.5	130.3	50.8	Ø 6.76	114.3	1/4"	29.2	3/4"	37.1	19.1	1/4"	19.1
MV-8-66128-1-05	4	117.6	146.0	1/2"	34.3	3/4"	37.1	19.1	63.5	136.4	50.8	Ø 6.76	114.3	1/2"	34.3	3/4"	37.1	22.4	1/2"	23.4
MV-8-661212-1-01	4	114.3	139.7	3/4"	37.1	3/4"	37.1	19.1	63.5	130.3	50.8	Ø 6.76	114.3	1/4"	29.2	3/4"	37.1	19.1	1/4"	19.1
MV-8-66168-1-01	4	117.6	146.0	1/2"	34.3	1"	45.7	19.1	76.2	136.4	50.8	Ø 6.76	116.8	1/2"	34.3	1"	45.7	22.4	1/2"	19.1
MV-8-661612-1-01	4	114.3	139.7	3/4"	37.1	1"	45.7	23.6	76.2	130.3	51.8	Ø 6.76	116.8	1/4"	29.2	1"	45.7	19.1	1/4"	23.6
MV-8-661616-1-01	4	114.3	139.7	1"	45.7	1"	45.7	23.6	76.2	130.3	64.5	Ø 6.76	116.8	1/4"	29.2	1"	45.7	19.1	1/4"	23.6

Model Number	Through Port		Sampling Port		Purge Port		Through Port	Sampling Port	Purge Port
	Cv	Kv	Cv	Kv	Cv	Kv			
MV-8-6684-1	3.2	45.7	.2	2.8	N/A	N/A	1/2" Parflare	1/4" Parflare	N/A
MV-8-661212-1	13.0	185.6	4.6	65.7	N/A	N/A	3/4" Parflare	3/4" Parflare	N/A
MV-8-66128-1	13.0	185.6	2.3	32.8	N/A	N/A	3/4" Parflare	1/2" Parflare	N/A
MV-8-66164-1	37.3	532.6	.2	2.8	N/A	N/A	1" Parflare	1/4" Parflare	N/A
MV-8-661616-1	37.3	532.6	7.2	102.8	N/A	N/A	1" Parflare	1" Parflare	N/A
MV-8-66128-1-01	13.0	185.6	2.3	32.8	.2	2.8	3/4" Parflare	1/2" Parflare	1/4" Parflare
MV-8-66128-1-05	13.0	185.6	2.3	32.8	1.1	15.7	3/4" Parflare	1/2" Parflare	1/2" Parflare
MV-8-661212-1-01	13.0	185.6	4.6	65.7	.2	2.8	3/4" Parflare	3/4" Parflare	1/4" Parflare
MV-8-66168-1-01	37.3	532.6	2.3	32.8	1.1	15.7	1" Parflare	1/2" Parflare	1/2" Parflare
MV-8-661612-1-01	37.3	532.6	4.6	65.7	.2	2.8	1" Parflare	3/4" Parflare	1/4" Parflare
MV-8-661616-1-01	37.3	532.6	7.2	102.8	.2	2.8	1" Parflare	1" Parflare	1/4" Parflare

Parflare model numbers are supplied with PVDF nuts. For PFA nuts add -T to model number.

MV-10 1/4" Manual 2 Way Valve

Product Overview

The MV-10 PFA 2 Way Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 1/4" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragms manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Quarter turn operation with removable handle for tamper resistance.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Eliminates need for separate lockout device.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, 18-8 SS, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

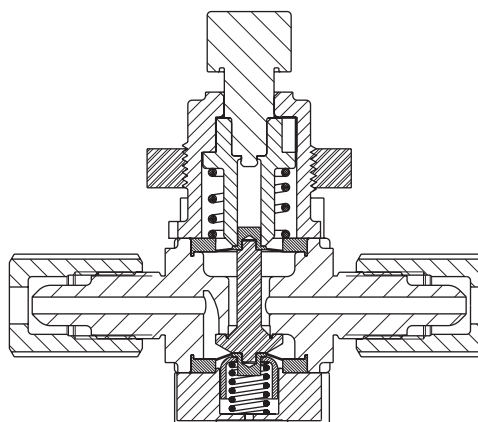
Backward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

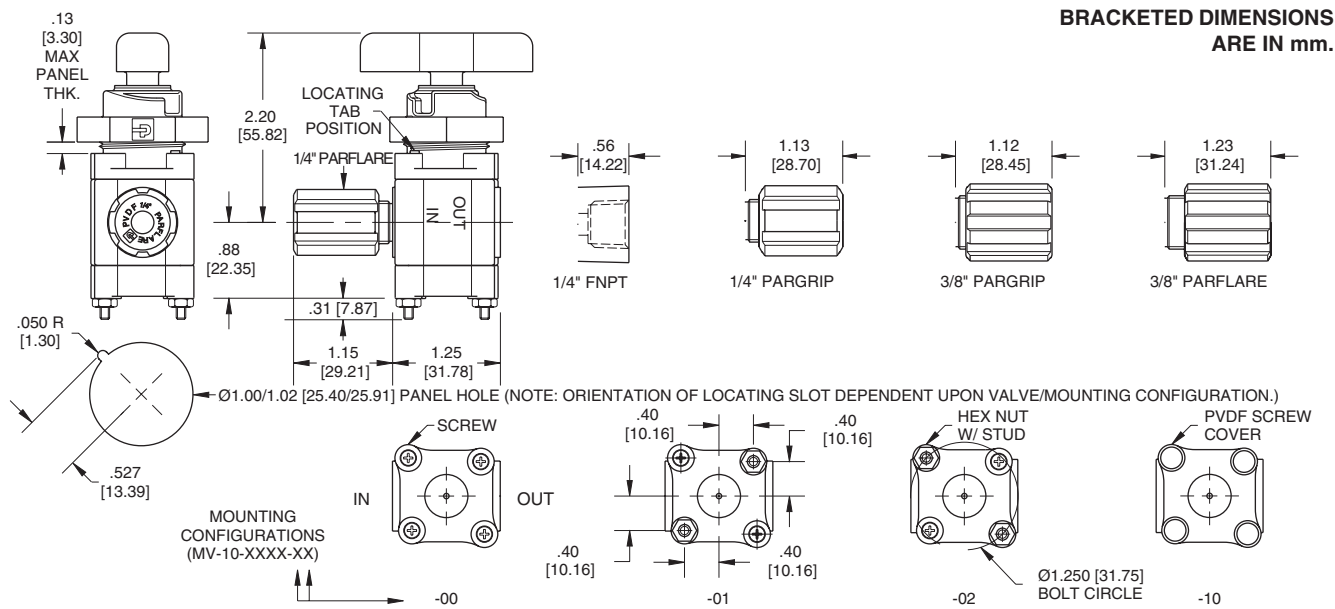
Temperature Ranges

Ambient: 0° - 150° F (17° - 66° C)

Fluid: 0° - 266° F (17° - 130° C)

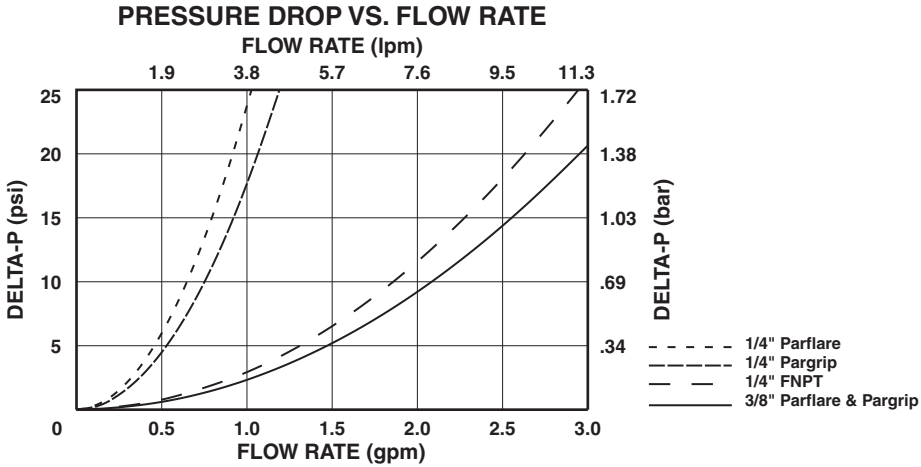


MV-10 1/4" Manual 2 Way Valve

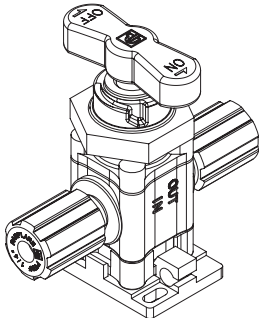
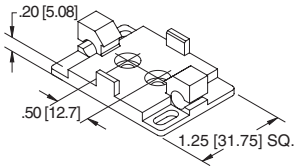
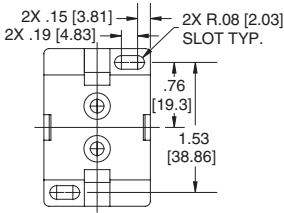


Model Number	Cv	Kv	Flow Configuration	Port Configuration	Mounting Configuration-XX (Depicted Above)
MV-10-1044-XX	.60	8.6	ON/OFF	1/4" FNPT	00 = Screw 01 = Screw/Stud .80 Square 02 = Screw/Stud Ø1.25 Bolt Circle 10 = PVDF Screw Covers
MV-10-2034-XX	.24	3.4		1/4" Pargrip	
MV-10-2046-XX	.62	8.8		3/8" Pargrip	
MV-10-6024-XX	.20	2.8		1/4" Parflare	
MV-10-6046-XX	.62	8.8		3/8" Parflare	

Pargrip models are supplied with PFA nuts. Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



Accessories	Description
SB-10	PVDF Snap-in Mounting Base. For use with MV-10-XXXX-00 and MV-10-XXXX-10 models only. (Sold separately)



MV-10 1/4" Manual 3 Way Valve

Product Overview

The MV-10 PFA 3 Way Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 1/4" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragms manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Quarter turn operation with removable handle for tamper resistance.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Eliminates need for separate lockout device.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, 18-8 SS, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

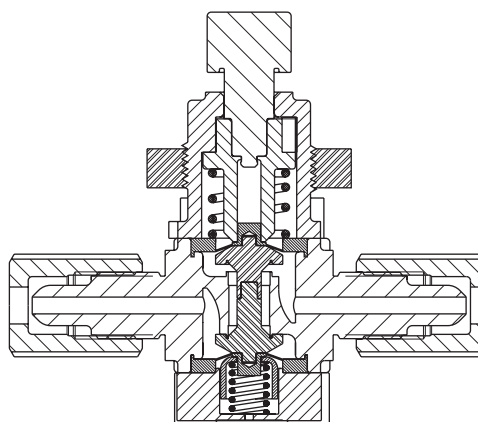
Backward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

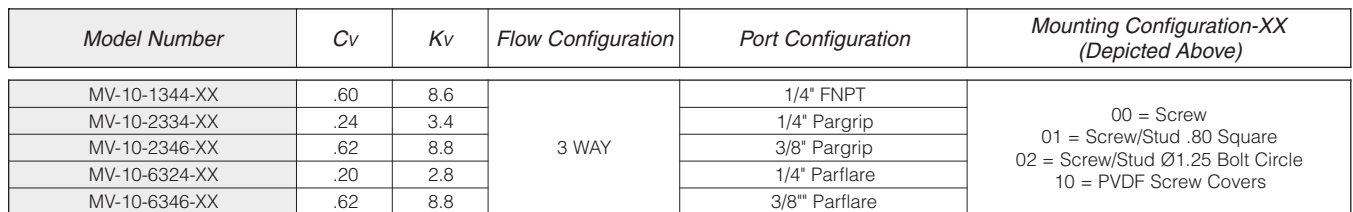
Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

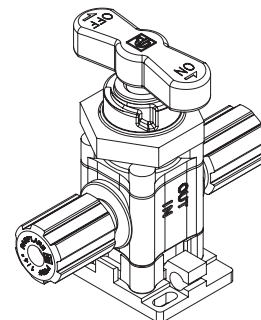
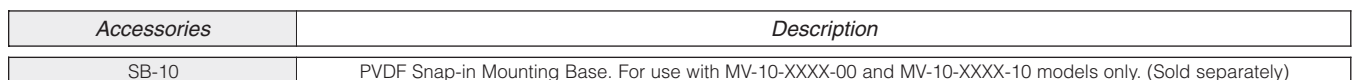
Ambient: 0° - 150° F (17° - 66° C)

Fluid: 0° - 266° F (17° - 130° C)





PRESSURE DROP VS. FLOW RATE



MV-11 1/2" Manual 2 Way Valve

Product Overview

The MV-11 PFA 2 Way Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 1/2" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Submersible option isolates all valve components from the external environment.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Valve remains functional while operating in wet or gaseous corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

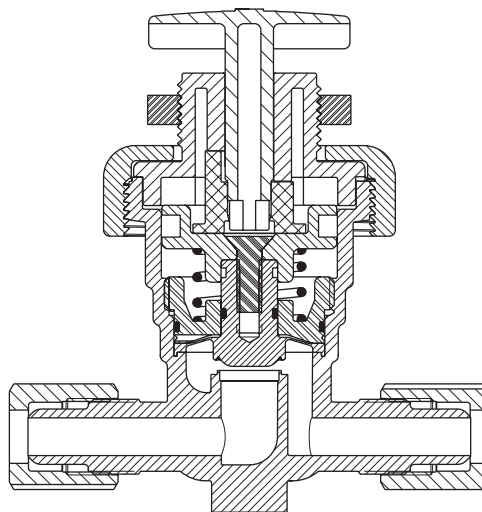
Backward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

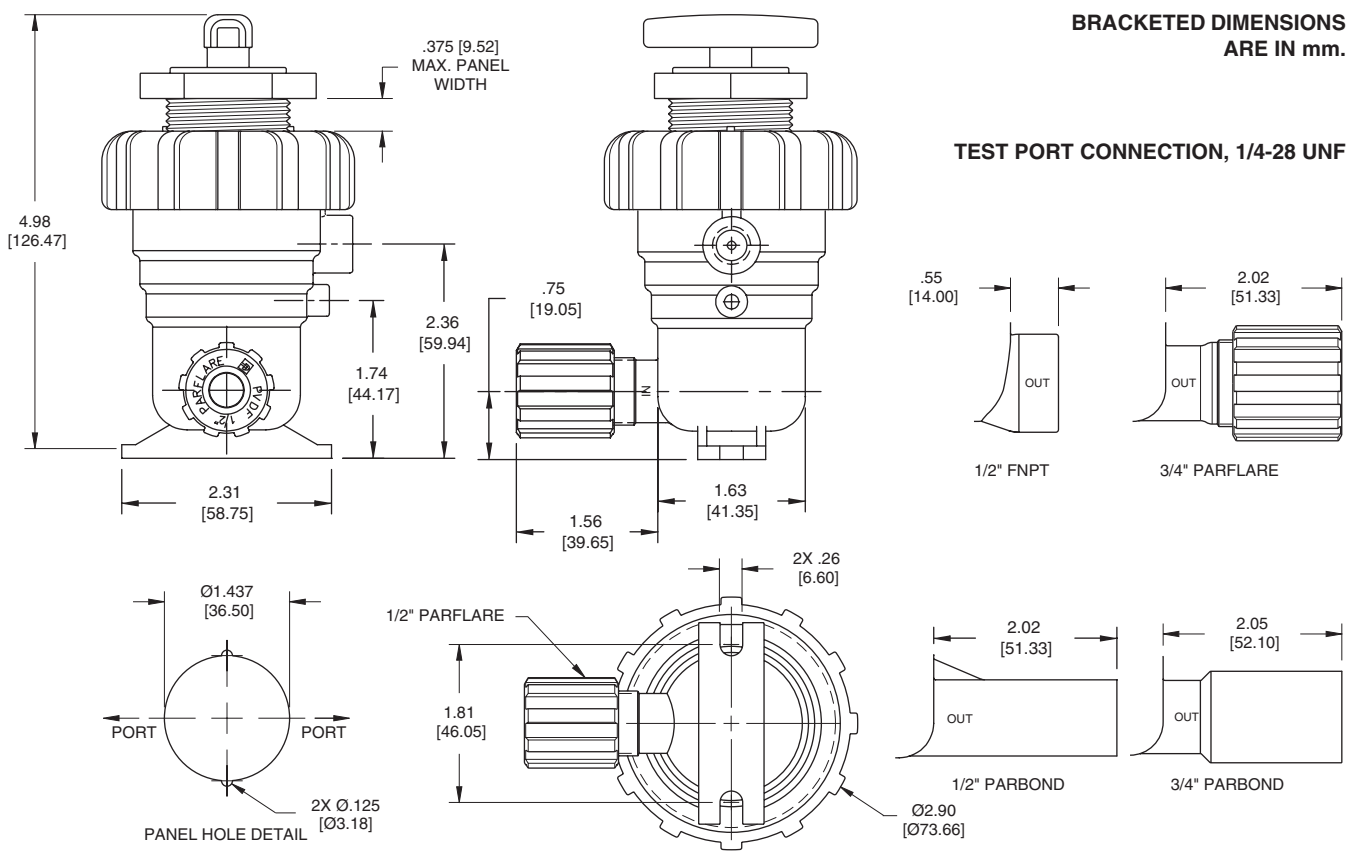
Temperature Ranges

Ambient: 0° - 150° F (17° - 66° C)

Fluid: 0° - 266° F (17° - 130° C)

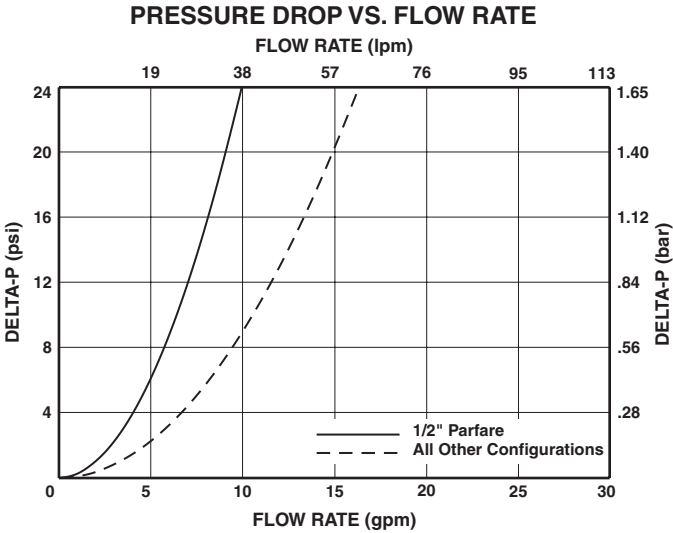


MV-11 1/2" Manual 2 Way Valve



Model Number	Cv	Kv	Flow Configuration	Port Configuration
MV-11-001	2.3	32.8	ON/OFF	1/2" Parflare
MV-11-002	3.7	52.8		3/4" Parflare
MV-11-003	3.7	52.8		1/2" Parbond
MV-11-004	3.7	52.8		3/4" Parbond
MV-11-005	3.7	52.8		1/2" FNPT

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



MV-11 1/2" Manual 3 Way Valve

Product Overview

The MV-11 PFA 3 Way Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined sealing areas. One piece machined modified PTFE diaphragms are also utilized for excellent flexibility and life. A full 1/2" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Submersible option isolates all valve components from the external environment.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Valve remains functional while operating in wet or gaseous corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

COM to NO: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

COM to NC: 27" HG vacuum (913 mbar) to 25 PSIG (1.7 bar) minimum

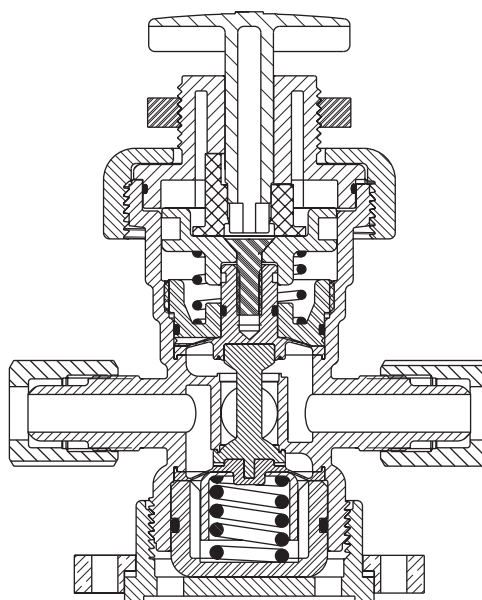
NC to COM: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar) with 50 PSIG (3.4 bar) maximum back pressure

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

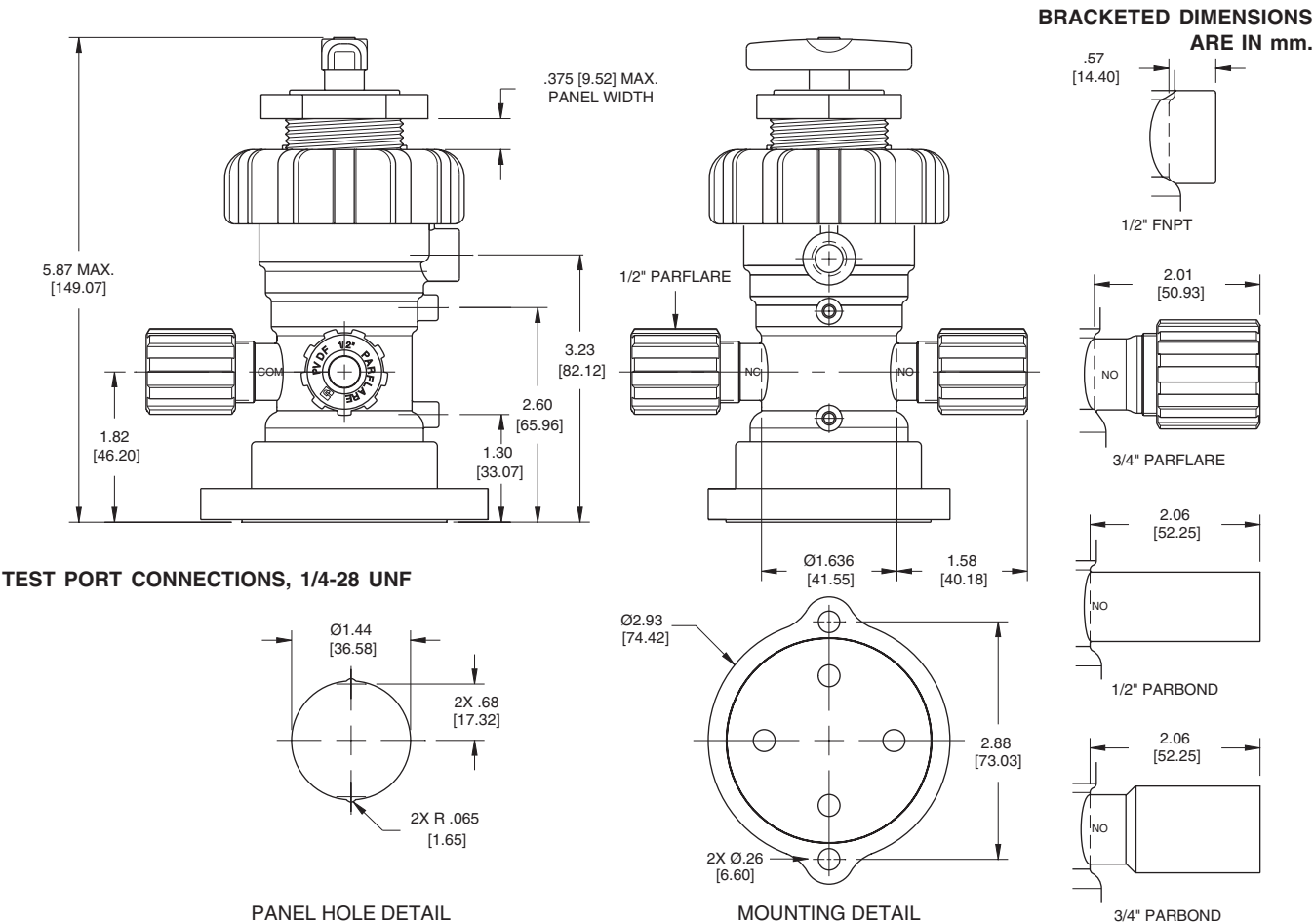
Temperature Ranges

Ambient: 0° - 150° F (17° - 66° C)

Fluid: 0° - 266° F (17° - 130° C)

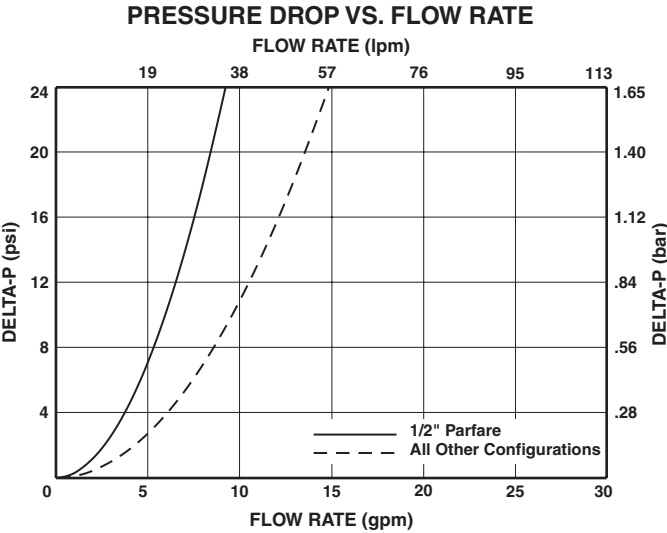


MV-11 1/2" Manual 3 Way Valve



Model Number	Cv	Kv	Flow Configuration	Port Configuration
MV-11-021	1.9	27.1	3 WAY	1/2" Parflare
MV-11-022	2.8	40.0		3/4" Parflare
MV-11-023	2.8	40.0		1/2" Parbond
MV-11-024	2.8	40.0		3/4" Parbond
MV-11-025	2.8	40.0		1/2" FNPT

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



MV-11 1/2" Manual 2 Way Adjustable Valve

Product Overview

The MV-11 PFA Adjustable Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. Multi-turn capability allows precise flow adjustment. A full 1/2" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as

compared to conventional PTFE.

Tongue and groove diaphragm to body seal assures leak free operation.

PVDF coated stainless steel spring.

Multi-turn operation.

Removable handle.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Precise flow adjustment.

Eliminates need for separate lockout device.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

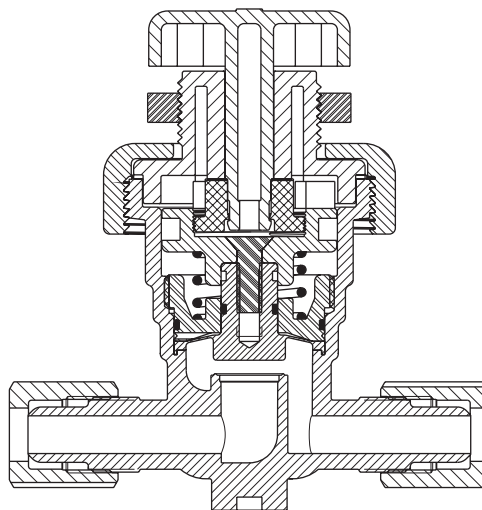
Backward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

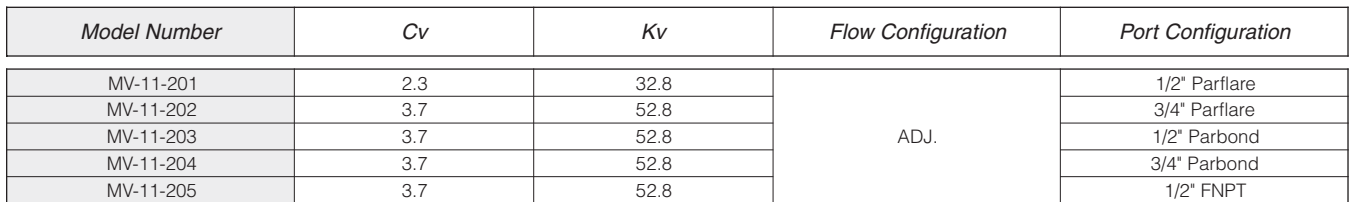
Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

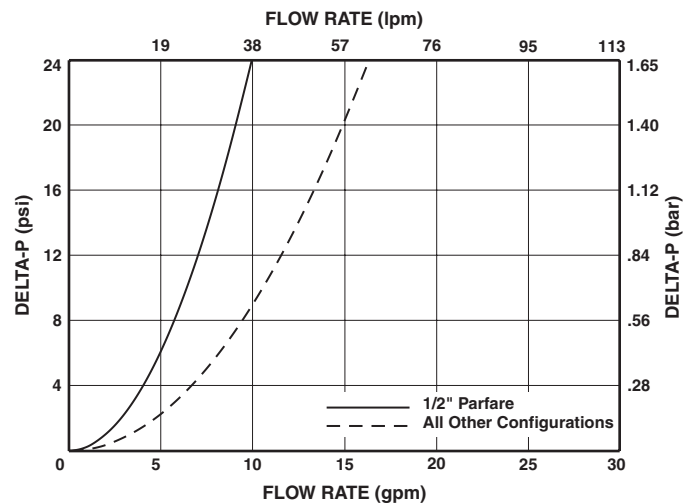
Ambient: 0° - 150° F (17° - 66° C)

Fluid: 0° - 266° F (17° - 130° C)





PRESSURE DROP VS. FLOW RATE



MV-12 1" Manual 2 Way Valve

Product Overview

The MV-12 PFA Diaphragm Valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. The valve requires three full turns from the fully closed to fully open position. A full 1" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Submersible option isolates all valve components from the external environment.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Valve remains functional while operating in wet or gaseous corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

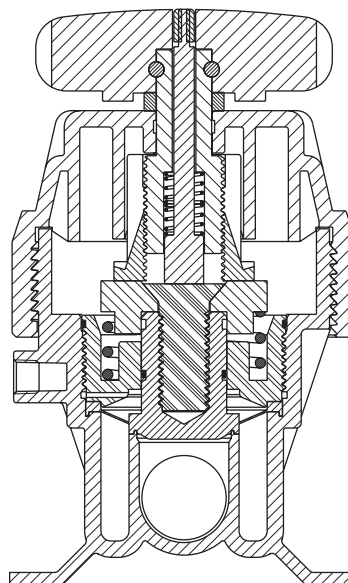
Backward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

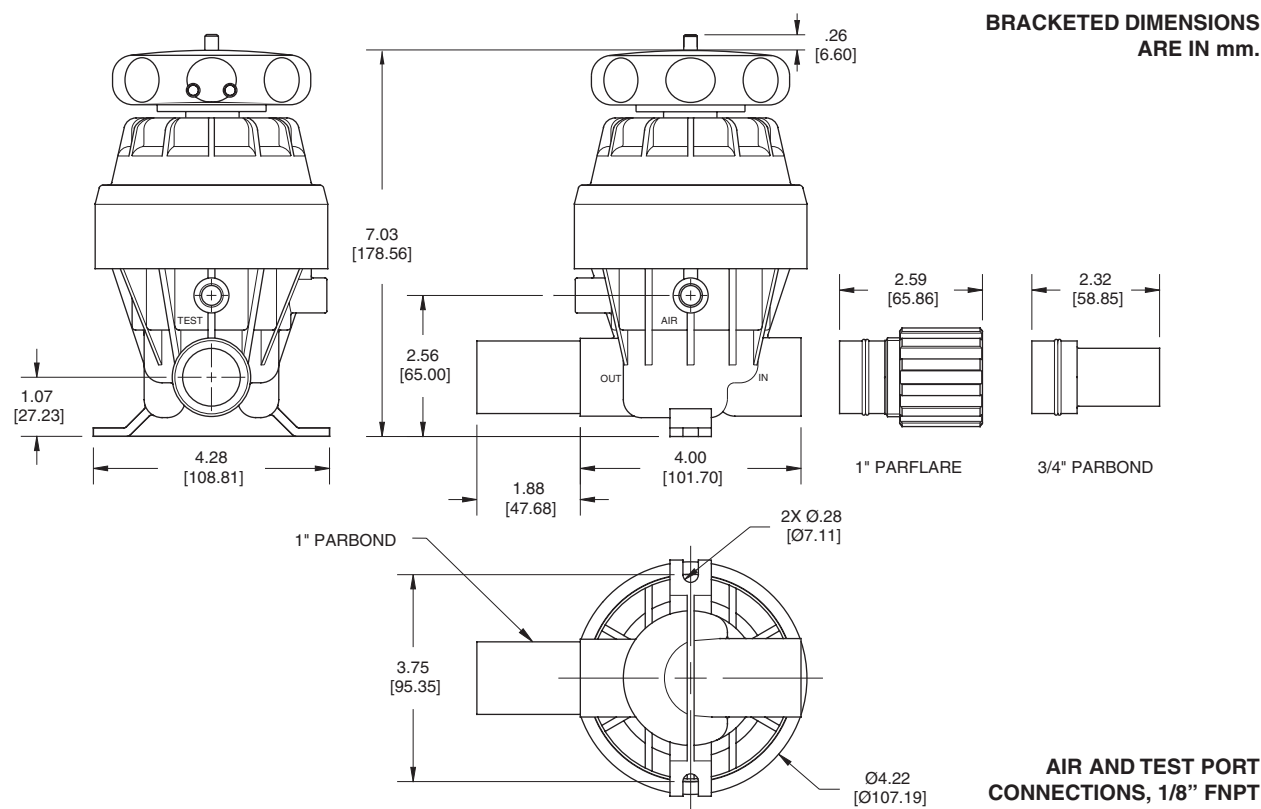
Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)

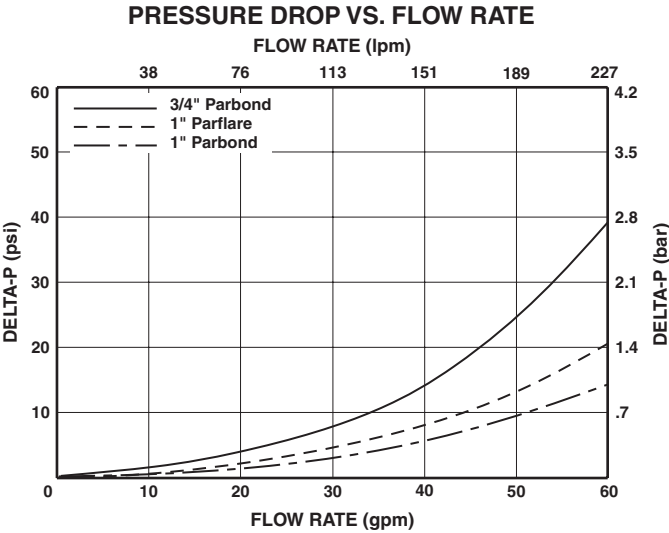


MV-12 1" Manual 2 Way Valve



Model Number	Cv	Kv	Flow Configuration	Port Configuration
MV-12-001	15.7	224.2	ON/OFF	1" Parbond
MV-12-002	13.3	189.9		1" Parflare
MV-12-003	9.6	142.8		3/4" Parbond

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



MV-13 Manual Needle Valve

Product Overview

The MV-13 PFA Needle Valve is designed for high purity or aggressive chemical and gas applications. The design utilizes a molded high purity PFA body and stem as the only wetted components. The stem sealing area is precision machined for smooth, consistent flow. A PTFE ferrule assures a leak tight seal between stem and body. A PFA stem stop prevents removal of stem from body during operation. The MV-13 is available in straight through and angle configurations, several orifice sizes, and numerous end connections.



Features

One piece PFA stem/handle and bodies.

PFA stem stop.

Angle and straight through configurations, with numerous end configurations including Parflare available.

Benefits

High strength and corrosion resistance.

Safer operation.

Reduces connections, mounting space, and overall cost.

Specifications

Materials of Construction

Wetted: PFA, PTFE

Non-wetted: PFA, ETFE, PVDF

Pressure Ranges

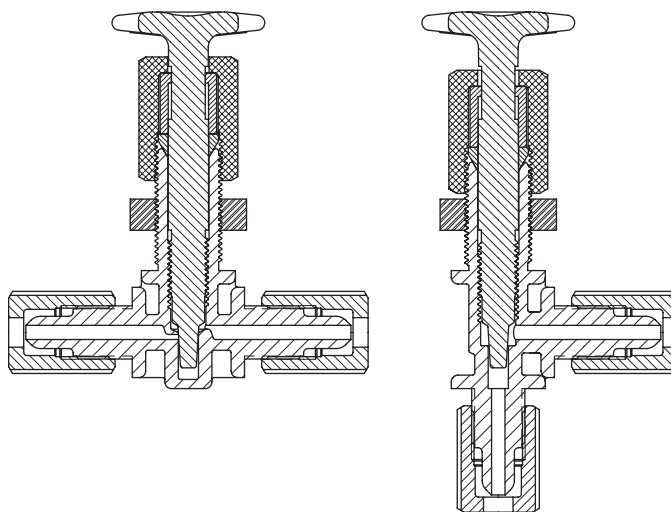
27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

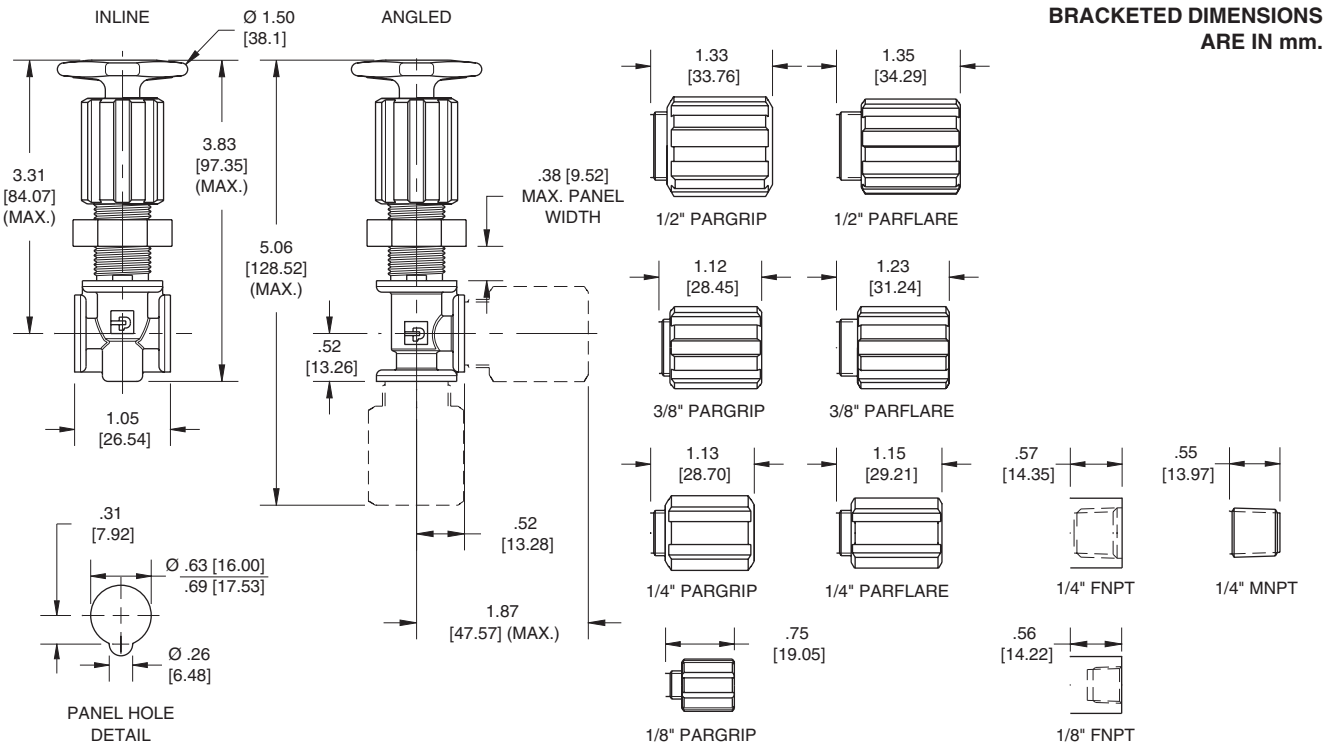
Temperature Ranges

Ambient: 0° - 212° F (17° - 100° C)

Fluid: 0° - 266° F (17° - 130° C)

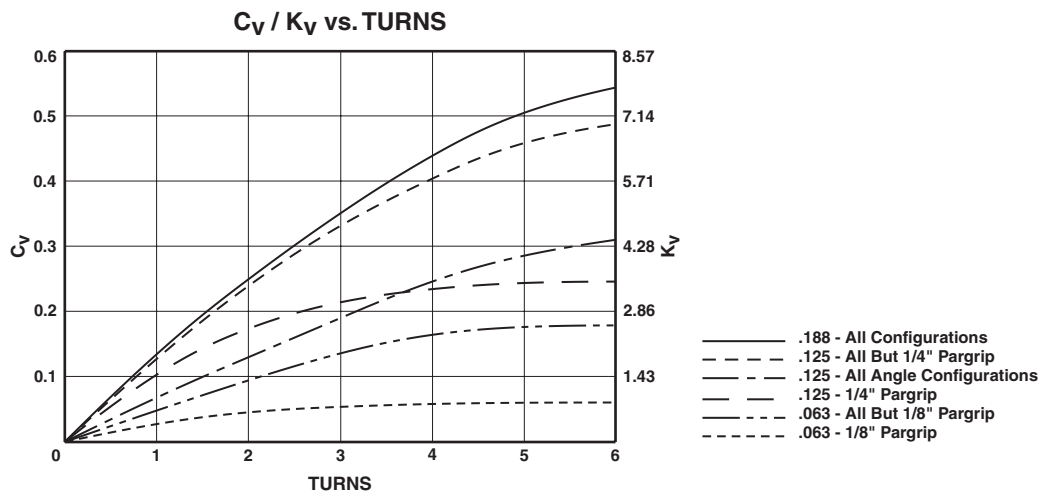


MV-13 Manual Needle Valve



Model Number	Orifice Size	Inlet / Outlet Port Configuration	Flow Configuration
MV-13-100	.063	1/8" Pargrip X 1/8" Pargrip	Straight
MV-13-104	.063	1/4" Parflare X 1/4" Parflare	
MV-13-105	.063	1/4" MNPT X 1/4" Parflare	
MV-13-120	.125	1/4" Pargrip X 1/4" Pargrip	
MV-13-124	.125	3/8" Parflare X 3/8" Parflare	
MV-13-125	.125	1/2" Parflare X 1/2" Parflare	
MV-13-126	.125	1/8" FNPT X 1/8" FNPT	
MV-13-163	.188	3/8" Pargrip X 3/8" Pargrip	
MV-13-166	.188	1/2" Pargrip X 1/2" Pargrip	
MV-13-170	.188	1/4" FNPT X 1/4" FNPT	Angle
MV-13-222	.125	1/4" Parflare X 1/4" Parflare	
MV-13-223	.125	1/4" FNPT X 1/4" FNPT	
MV-13-225	.125	3/8" Parflare X 3/8" Parflare	

Parflare and Pargrip model numbers are supplied with PFA nuts.



MV-14 Manual 2 Way Stop Cock Valve

Product Overview

The MV-14 PFA 2 Way Stop Cock Valve is designed for use in high purity semiconductor applications. The design utilizes a molded high purity PFA body, and a machined PTFE stem. The press-fit stem assures a leak tight seal between it and the body during operation. Valve operates with a quick 90° turn operation and has a full 1/8" orifice.



Features

One piece precision machined stem and molded high purity PFA body.

All components made of chemical resistant materials.

Numerous end configurations, including Parflare available.

Benefits

Maintains system purity.

Suitable for use in corrosive environments.

Allows direct installation, minimizing additional connections, reducing cost.

Specifications

Materials of Construction

Wetted: PFA, PTFE
Non-wetted: PFA, PVDF

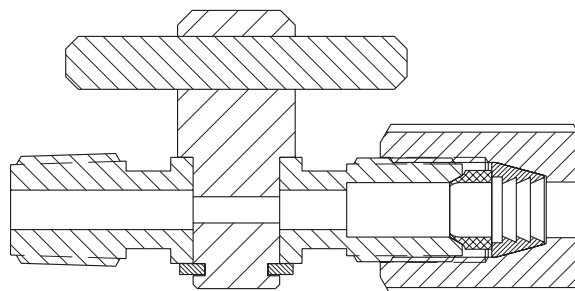
Pressure Ranges

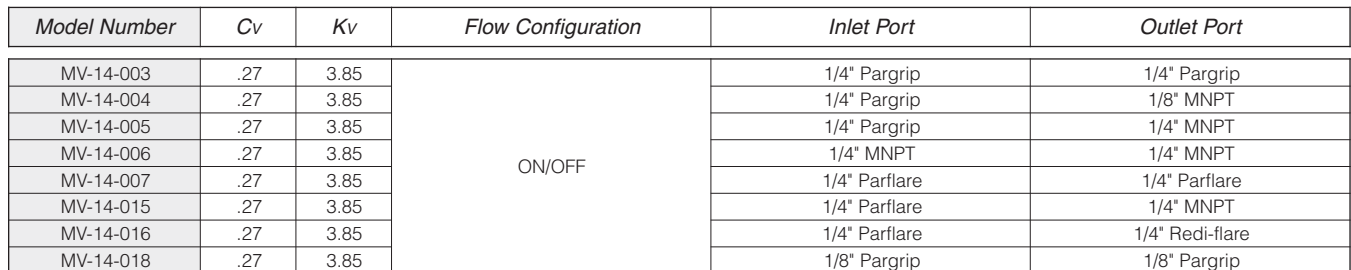
0 to 60 PSIG (4.1 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

Ambient: 0° - 150° F (17° - 66° C)
Fluid: 0° - 266° F (17° - 130° C)





PRESSURE DROP VS. FLOW RATE

FLOW RATE (lpm)

DELTA-P (psi)

DELTA-P (bar)

FLOW RATE (gpm)

All Configurations

Flow Rate (gpm)	Flow Rate (lpm)	Pressure Drop (psi)	Pressure Drop (bar)
0.5	1.9	~1.5	~0.1
1.0	3.8	~6.0	~0.4
1.5	5.7	~15.0	~1.0
2.0	7.6	~25.0	~1.7

MV-16 3/4" Manual PFA 2 Way Valve

Product Overview

The MV-16 PFA diaphragm valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. The MV-16's multi-turn capability allows precise flow adjustment. A full 3/4" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE. Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

Halar coated stainless steel spring.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PVDF, Viton, PTFE coated SS spring

Pressure Ranges

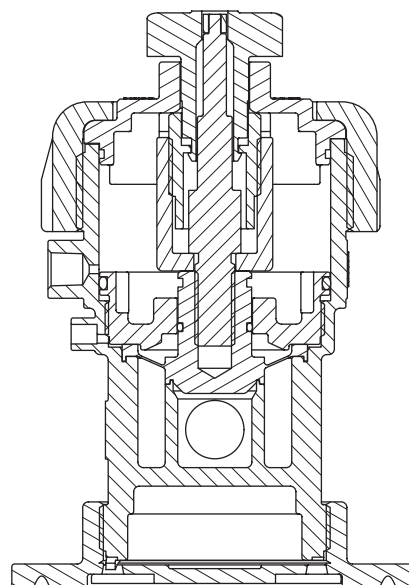
0 - 120 PSIG (8.3 bar) See Cracking Pressure Chart on next page.

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

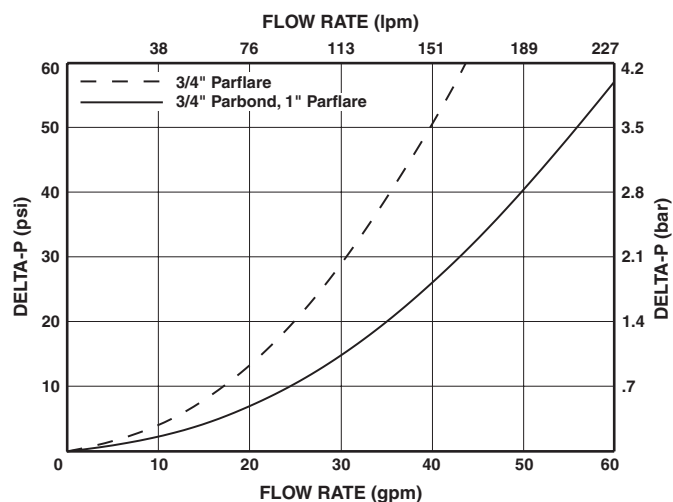
Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)





Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.
*Ends are fused on.



MV-16 3/4" Manual PFA 3 Way Valve

Product Overview

The MV-16 PFA diaphragm valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. The MV-16's multi-turn capability allows precise flow adjustment. A full 3/4" orifice provides maximum flow capability in a compact package.

Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE. Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

Halar coated stainless steel spring.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.



Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PVDF, Viton, PTFE coated SS spring

Pressure Ranges

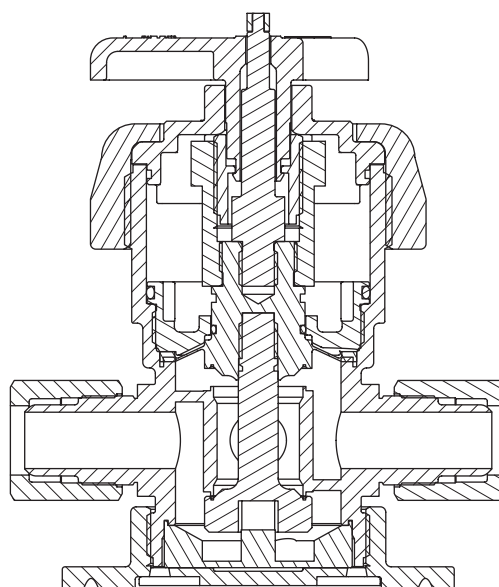
0 - 120 PSIG (8.3 bar) See Cracking Pressure Chart on next page.

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

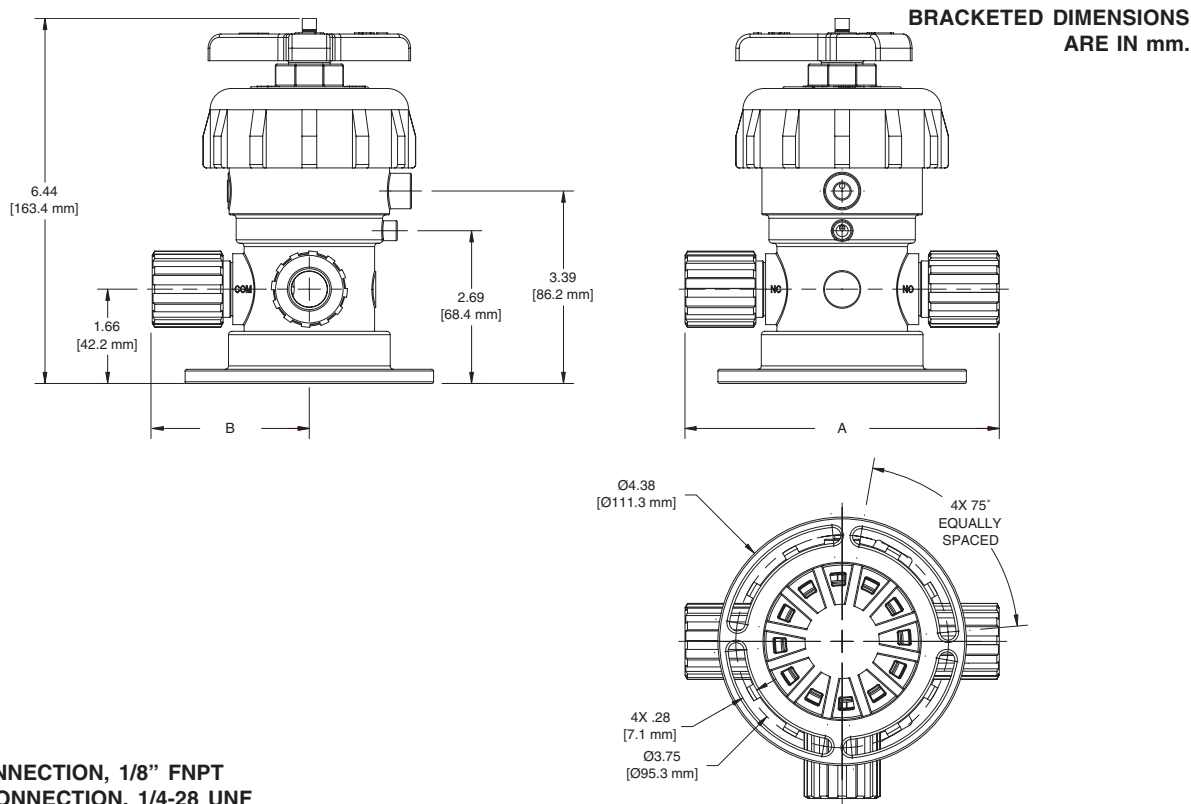
Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)

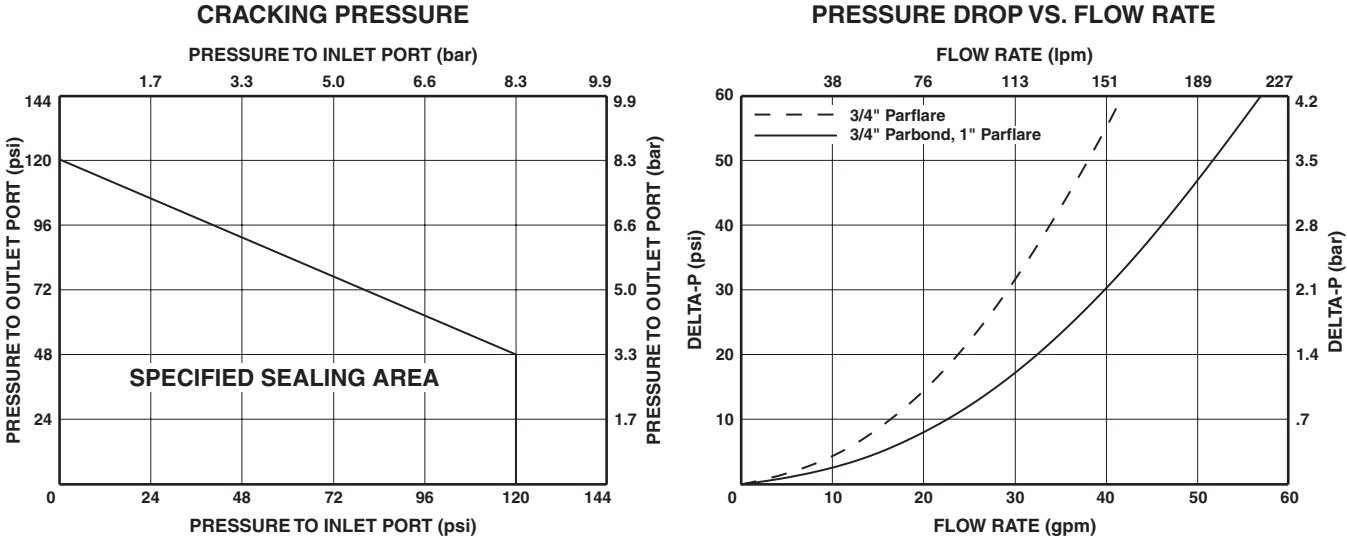


MV-16 3/4" Manual PFA 3 Way Valve



Model Number	Cv	Kv	Flow Configuration	Port Configuration	Dimensions in [mm]	
					A	B
MV-16-3612	5.4	77.0	3 WAY COM NC NO	3/4" Parflare	5.54 [140.72]	2.81 [71.37]
MV-16-3612-01	5.4	77.0		3/4" Parflare Long	6.48 [164.59]	2.81 [71.37]
MV-16-3616	7.3	104.1		1" Parflare*	9.12 [231.65]	4.56 [115.82]
MV-16-3712	7.3	104.1		3/4" Parbond	5.90 [149.86]	2.95 [74.93]
MV-16-4612	5.4	77.0	3 WAY Reversed Ports COM NO NC	3/4" Parflare	5.54 [140.72]	2.81 [71.37]
MV-16-4612-01	5.4	77.0		3/4" Parflare Long	6.48 [164.59]	2.81 [71.37]
MV-16-4616	7.3	104.1		1" Parflare*	9.12 [231.65]	4.56 [115.82]
MV-16-4712	7.3	104.1		3/4" Parbond	5.90 [149.86]	2.95 [74.93]

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.
*Ends are fused on.



MV-16 3/4" Manual PFA Sampling Valve

Product Overview

The MV-16 PFA sampling valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. The MV-16's multi-turn capability allows precise flow adjustment. The valve incorporates a full flow through port with a low dead volume down leg.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE.

Halar coated stainless steel spring.

Full flow through port.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Reduced pressure drop.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PVDF, Viton, PTFE coated SS spring

Pressure Ranges

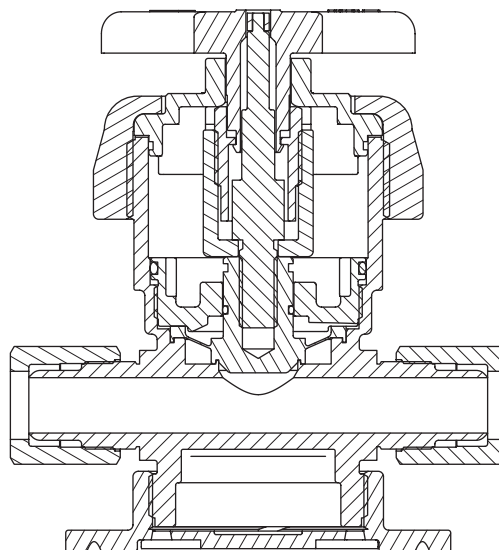
0 - 120 PSIG (8.3 bar) See Cracking Pressure Chart on next page.

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

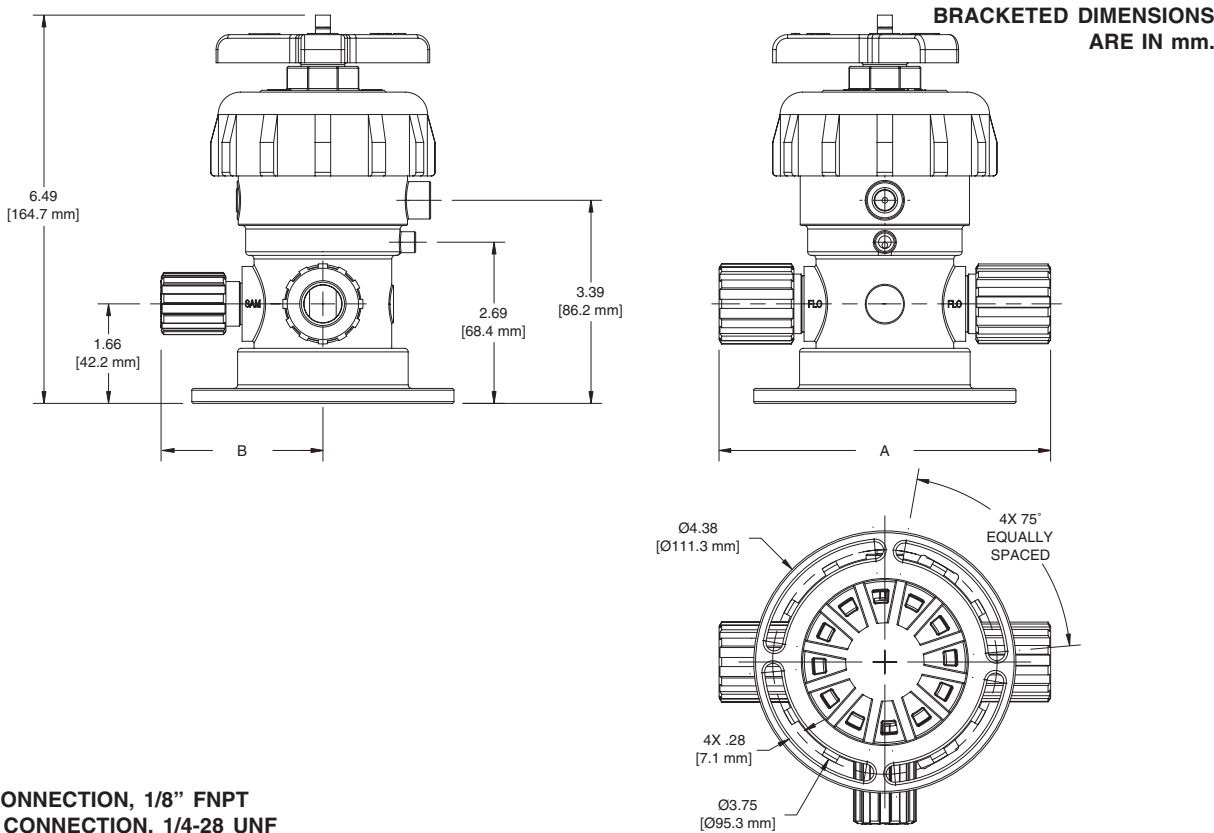
Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)

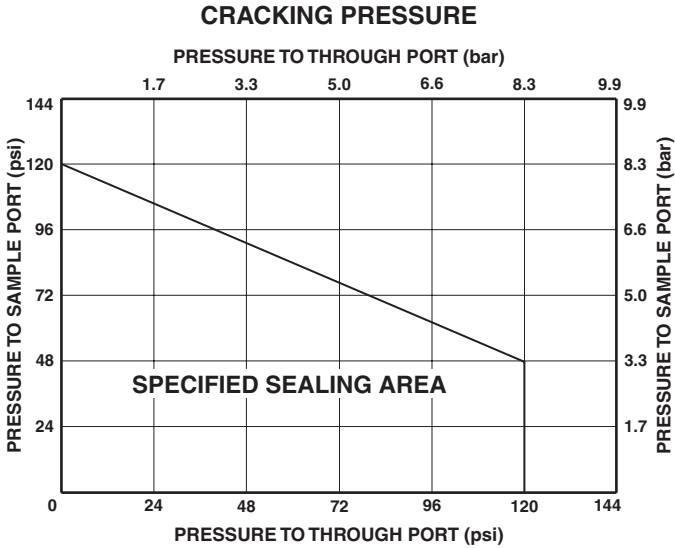


MV-16 3/4" Manual PFA Sampling Valve



Model Number	Through Port		Sample Port		Through Port	Sample Port	Dimensions in [mm]	
	Cv	Kv	Cv	Kv			A	B
MV-16-5612-608	13.0	185.4	2.3	32.8	3/4" Parflare	1/2" Parflare	5.54 [140.72]	2.71 [68.83]
MV-16-5612-612	13.0	185.4	4.6	65.6	3/4" Parflare	3/4" Parflare	5.54 [140.72]	2.81 [71.37]
MV-16-5612-712	13.0	185.4	6.9	98.7	3/4" Parflare	3/4" Parbond	5.54 [140.72]	2.95 [74.93]
MV-16-5712-608	25.2	359.92	2.3	32.8	3/4" Parbond	1/2" Parflare	5.90 [149.86]	2.71 [68.83]
MV-16-5712-612	25.2	359.92	4.6	65.6	3/4" Parbond	3/4" Parflare	5.90 [149.86]	2.81 [71.37]
MV-16-5712-712	25.2	359.92	6.9	98.7	3/4" Parbond	3/4" Parbond	5.90 [149.86]	2.95 [74.93]

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



PV-1 Miniature Pneumatic Valve

Product Overview

The PV-1 PTFE Miniature Diaphragm Valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical systems. The design utilizes a machined modified PTFE body, seat and diaphragm ensuring excellent flexibility and long life. The valve is available in 2 and 3 way configurations. It is ideal for low flow and small dose injection applications.



Features

Precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE. Tongue and groove seal for positive diaphragm to body seal.

Compact design actuator works on as little as 20 psi.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Isolates media from actuator.

Ease of installation and maintenance.

Specifications

Materials of Construction

Wetted: PTFE, Modified PTFE

Non-wetted: Anodized Aluminum, SS, Nitrile

Pressure Ranges

Forward: 25" HG vacuum (846 mbar) to 20 PSIG (1.4 bar)

Back: 25" HG vacuum (846 mbar) to 20 PSIG (1.4 bar)

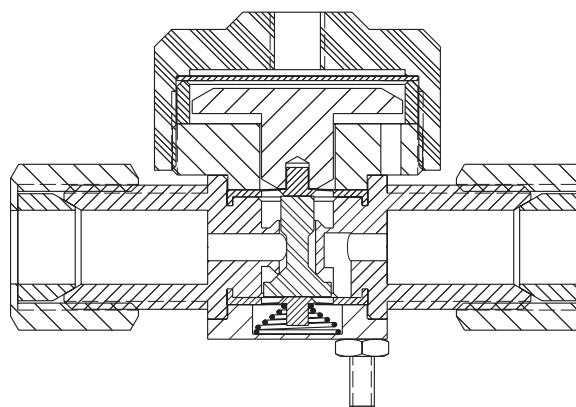
Actuator: 20 PSIG (1.4 bar) to 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

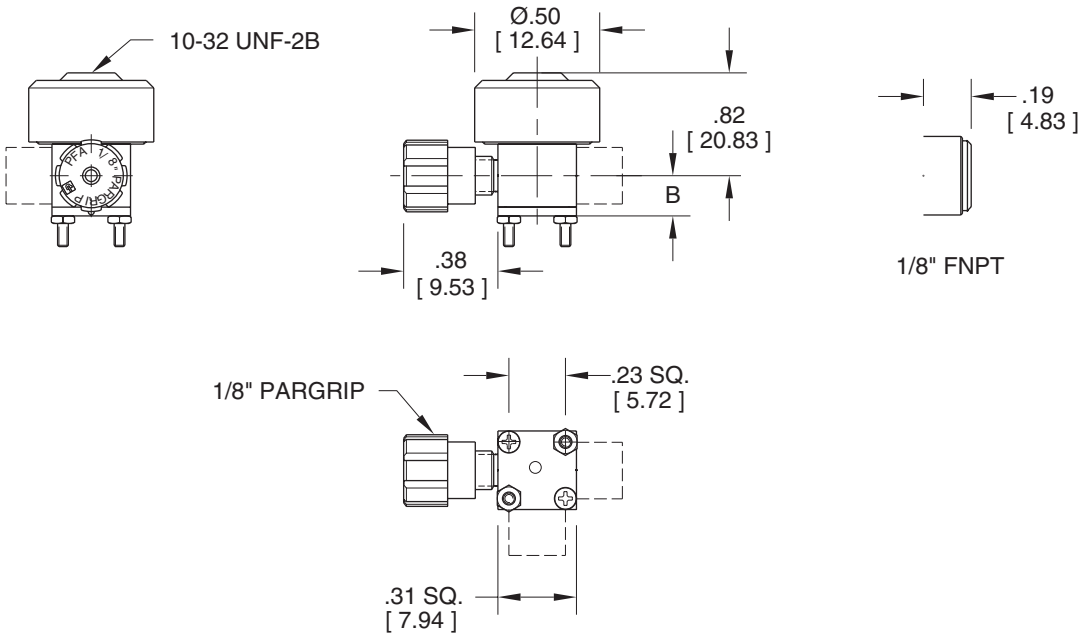
Ambient: -60° - 212° F (-51° - 100° C)

Fluid: -60° - 400° F (-51° - 204° C)

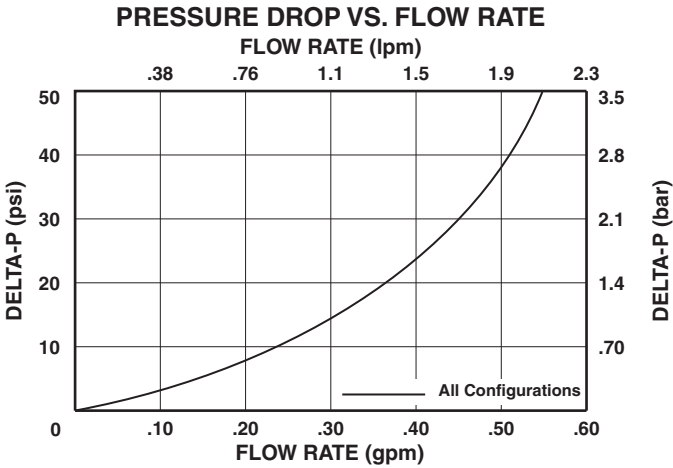


PV-1 Miniature Pneumatic Valve

BRACKETED DIMENSIONS
ARE IN mm.



Model Number	Cv	Kv	Flow Configuration	Orifice Size	Port Configuration	Dimension B
PV-1-1134	.08	1.1	NC	.094	1/8" FNPT	.38 [9.65]
PV-1-1334-03	.08	1.1	3 WAY	.094	1/8" FNPT	.38 [9.65]
PV-1-2134	.08	1.1	NC	.094	1/8" Pargrip	.32 [8.13]
PV-1-2334-03	.08	1.1	3 WAY	.094	1/8" Pargrip	.32 [8.13]



PV-10 1/4" Pneumatic 2 Way Valve

Product Overview

The PV-10 PFA Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 1/4" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragms manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, 18-8 SS, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

Back: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

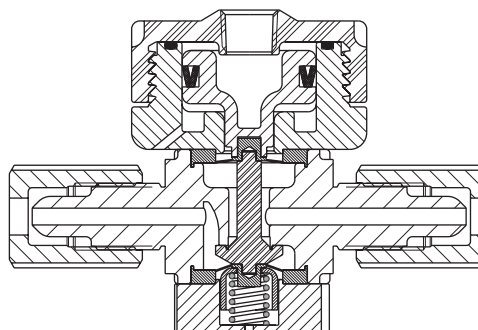
Actuator: 20 PSIG (1.4 bar) to 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

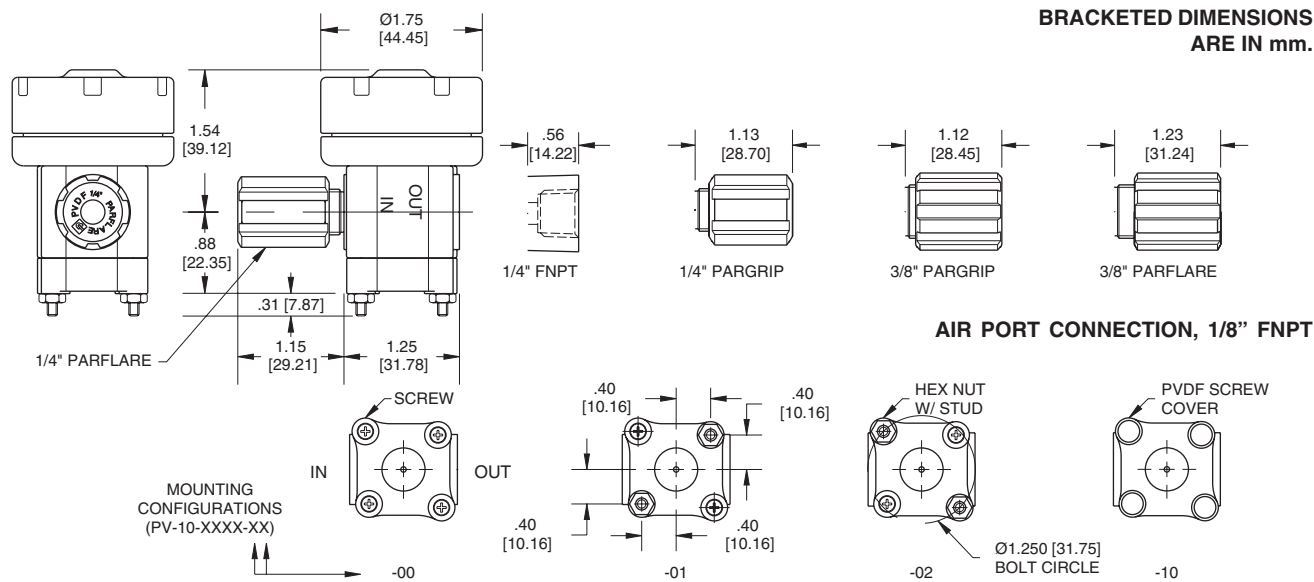
Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)



Normally Closed shown

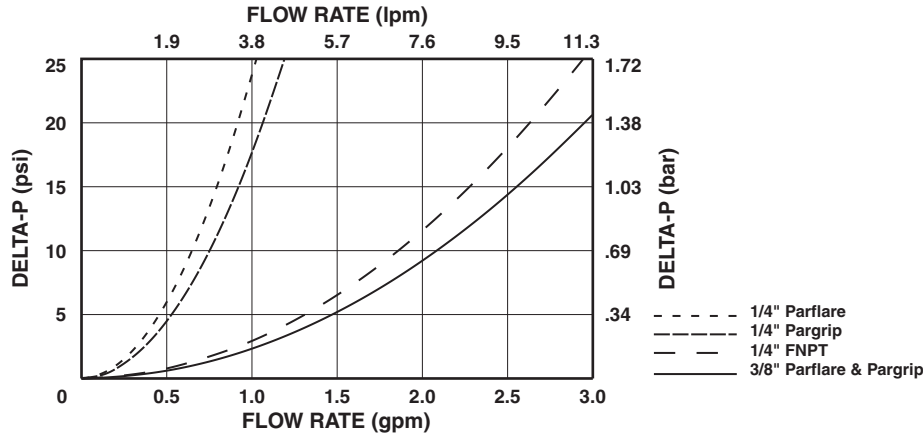
PV-10 1/4" Pneumatic 2 Way Valve



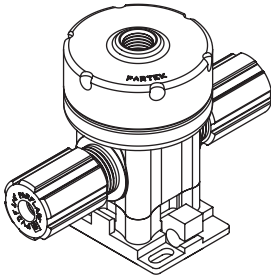
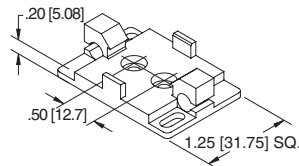
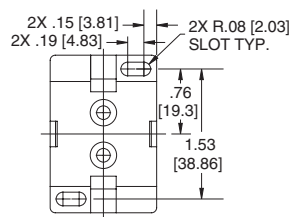
Model Number	Cv	Kv	Flow Configuration	Port Configuration	Mounting Configuration-XX (Depicted Above)
PV-10-1144-XX	.60	8.6	NC	1/4" FNPT	00 = Screw 01 = Screw/Stud .80 Square 02 = Screw/Stud Ø1.25 Bolt Circle 10 = PVDF Screw Covers
PV-10-1244-XX	.60	8.6	NO	1/4" FNPT	
PV-10-2134-XX	.24	3.4	NC	1/4" Pargrip	
PV-10-2234-XX	.24	3.4	NO	1/4" Pargrip	
PV-10-2146-XX	.62	8.8	NC	3/8" Pargrip	
PV-10-2246-XX	.62	8.8	NO	3/8" Pargrip	
PV-10-6124-XX	.20	2.8	NC	1/4" Parflare	
PV-10-6224-XX	.20	2.8	NO	1/4" Parflare	
PV-10-6146-XX	.62	8.8	NC	3/8" Parflare	
PV-10-6246-XX	.62	8.8	NO	3/8" Parflare	

Pargrip models are supplied with PFA nuts. Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.

PRESSURE DROP VS. FLOW RATE



Accessories	Description
SB-10	PVDF Snap-in Mounting Base. For use with PV-10-XXXX-00 and PV-10-XXXX-10 models only. (Sold separately)



PV-10 1/4" Pneumatic 3 Way Valve

Product Overview

The PV-10 PFA 3 Way Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined areas. One piece machined modified PTFE diaphragms are also utilized for excellent flexibility and life. A full 1/4" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragms manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel springs.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, 18-8 SS, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

Back: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

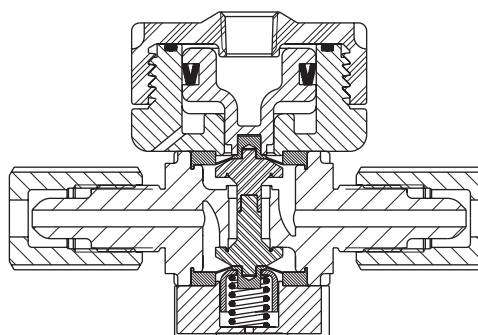
Actuator: 20 PSIG (1.4 bar) to 120 PSIG (8.3 bar)

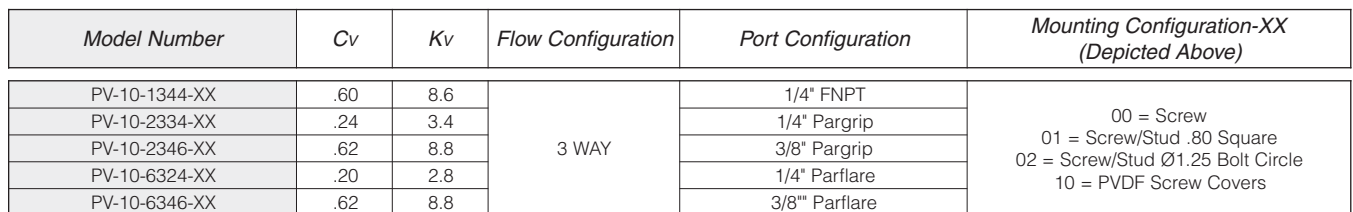
Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)





PRESSURE DROP VS. FLOW RATE

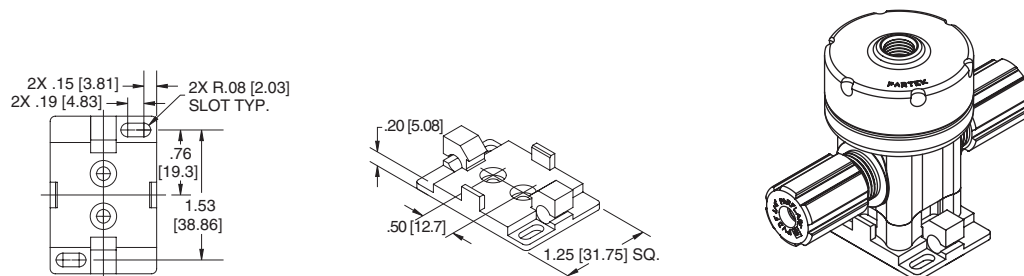
Flow Rate (lpm) and Flow Rate (gpm) are shown on the top and bottom x-axes respectively. Delta-P (psi) and Delta-P (bar) are shown on the left and right y-axes respectively.

Legend:

- 1/4" Parflare (dashed line)
- 1/4" Pargrip (dashed line)
- 1/4" FNPT (solid line)
- 3/8" Parflare & Pargrip (solid line)

Flow Rate (gpm)	Flow Rate (lpm)	1/4" Parflare (psi)	1/4" Pargrip (psi)	1/4" FNPT (psi)	3/8" Parflare & Pargrip (psi)
0.5	1.9	5.0	4.0	1.0	0.5
1.0	3.8	25.0	18.0	2.0	1.0
1.5	5.7	-	-	4.0	2.0
2.0	7.6	-	-	8.0	4.0
2.5	9.5	-	-	14.0	7.0
3.0	11.3	-	-	22.0	11.0

<i>Accessories</i>	<i>Description</i>
SB-10	PVDF Snap-in Mounting Base. For use with PV-10-XXXX-00 and PV-10-XXXX-10 models only. (Sold separately)



PV-11 1/2" Pneumatic 2 Way Valve

Product Overview

The PV-11 PFA Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 1/2" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Submersible option isolates all valve components from the external environment.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Valve remains functional while operating in wet or gaseous corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

Back: 80 PSIG (5.5 bar) with 80 PSIG (5.5 bar) inlet pressure

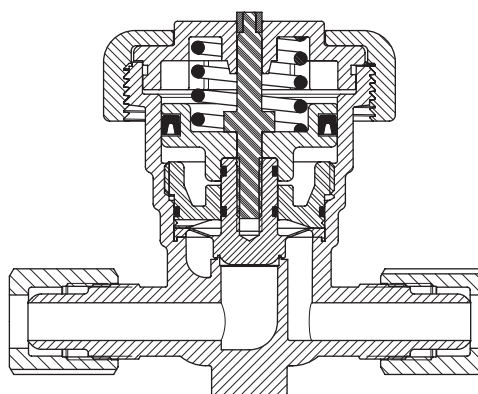
Actuator: 60 PSIG (4.2 bar) to 100 PSIG (7 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

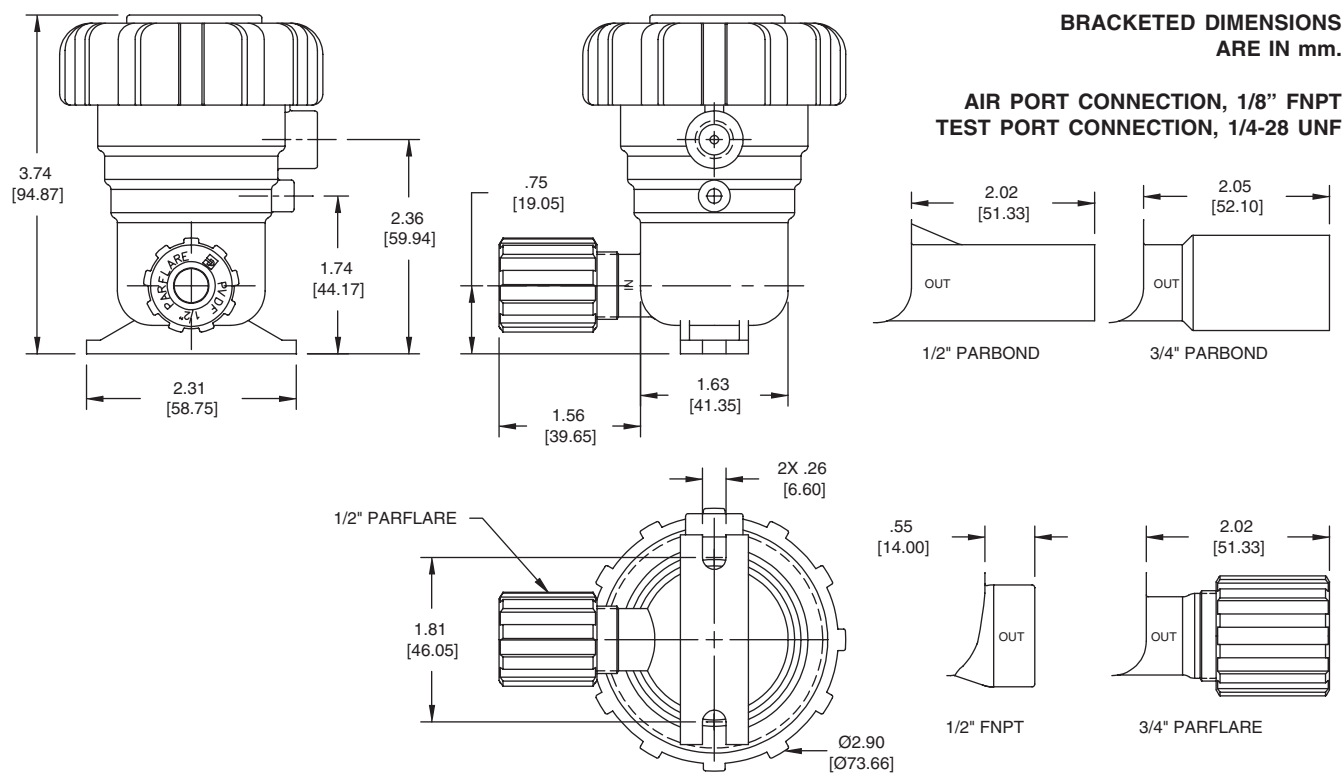
Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)



Normally Closed Shown

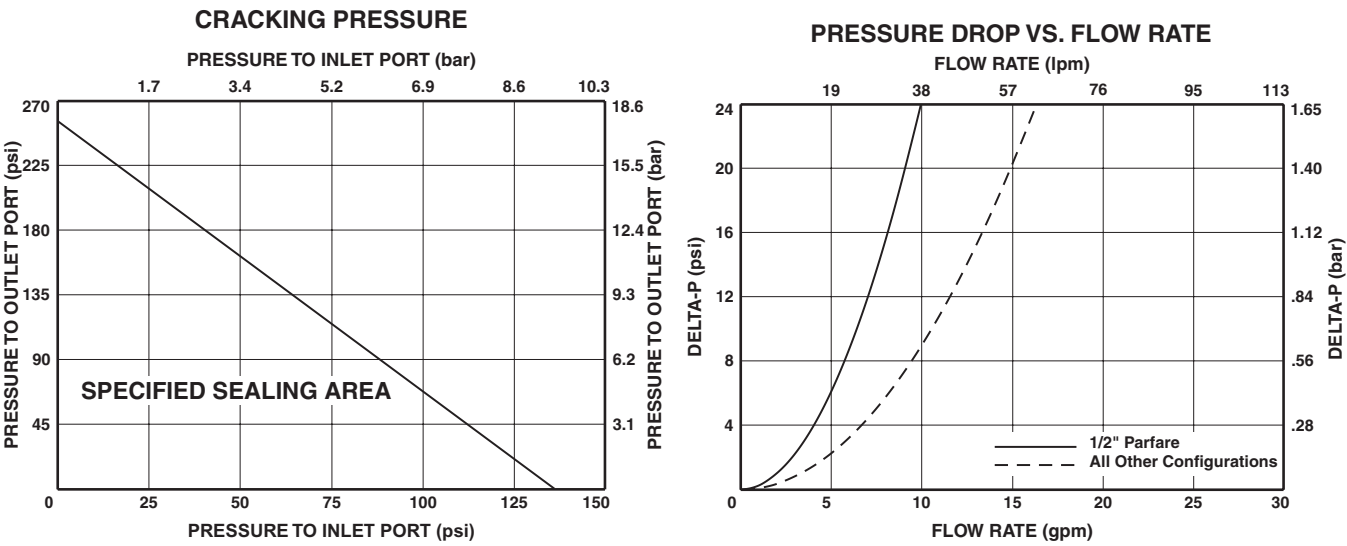
PV-11 1/2" Pneumatic 2 Way Valve



Model Number	Cv	Kv	Flow Config.	Port Config.
PV-11-001	2.3	32.8	N C	1/2" Parflare
PV-11-002	3.7	52.8		3/4" Parflare
PV-11-003	3.7	52.8		1/2" Parbond
PV-11-004	3.7	52.8		3/4" Parbond
PV-11-005	3.7	52.8		1/2" FNPT

Model Number	Cv	Kv	Flow Config.	Port Config.
PV-11-011	2.3	32.8	N O	1/2" Parflare
PV-11-012	3.7	52.8		3/4" Parflare
PV-11-013	3.7	52.8		1/2" Parbond
PV-11-014	3.7	52.8		3/4" Parbond
PV-11-015	3.7	52.8		1/2" FNPT

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



PV-11 1/2" Pneumatic 3 Way Valve

Product Overview

The PV-11 PFA 3 Way Diaphragm Valve is designed for use in high purity semiconductor applications. It is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined areas. One piece machined modified PTFE diaphragms are also utilized for excellent flexibility and life. A full 1/2" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragms manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel springs.

Submersible option isolates all valve components from the external environment.

Multi-position mounting base.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Valve remains functional while operating in wet or gaseous corrosive environments.

Allows for more mounting flexibility and connector fitting reduction.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

COM to NO: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

NO to COM: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar)

COM to NC: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar) with 20 PSIG (1.4 bar) maximum back pressure

NC to COM: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar) with 50 PSIG (3.4 bar) maximum back pressure

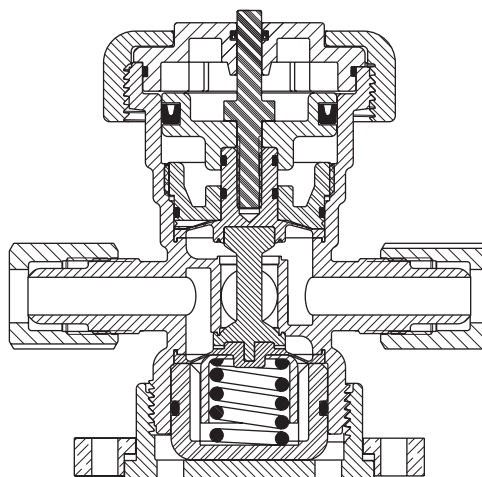
Actuator: 60 PSIG (4.2 bar) to 100 PSIG (7 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

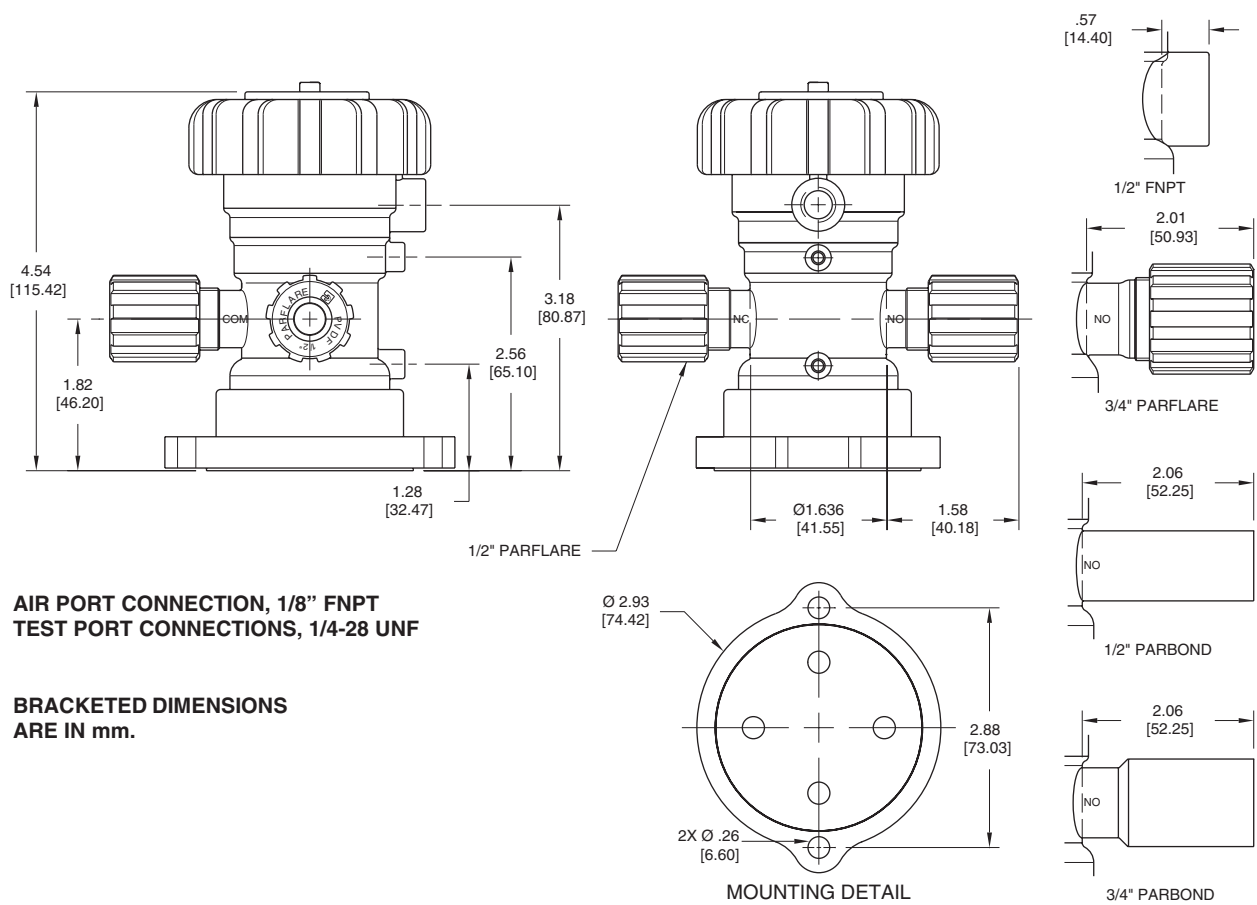
Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)

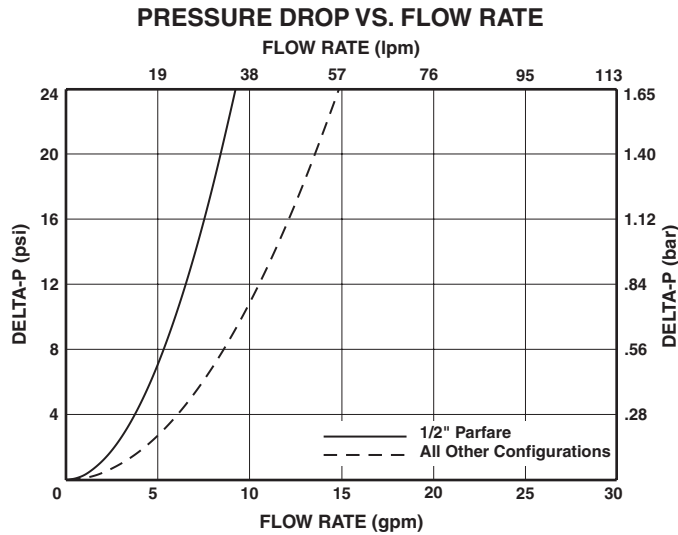


PV-11 1/2" Pneumatic 3 Way Valve



Model Number	Cv	Kv	Flow Configuration	Port Configuration
PV-11-021	1.9	27.1	3 WAY	1/2" Parflare
PV-11-022	2.8	40.0		3/4" Parflare
PV-11-023	2.8	40.0		1/2" Parbond
PV-11-024	2.8	40.0		3/4" Parbond
PV-11-025	2.8	40.0		1/2" FNPT

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



PV-11 1/2" Pneumatic Adjustable Bypass Valve

Product Overview

The PV-11 Adjustable Bypass Valve is designed for use in ultra-pure water applications. The design utilizes a molded high purity PFA body with precision machined seats. A machined modified PTFE diaphragm is also utilized for excellent flexibility and life. The integral bypass valve prevents the stagnation and deadheading of media in an ultra-pure water system.



Features

Precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE. Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Bypass integral to valve body to prevent stagnation of ultra-pure water.

Modified flow configurations with numerous end connections including Parflare available.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environment.

Prevents contamination of media.

Reduces connections, mounting space, and overall cost.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar) with 20 PSIG (1.4 bar) maximum back pressure

Backward: 27" HG vacuum (913 mbar) to 80 PSIG (5.5 bar) with 50 PSIG (3.4 bar) maximum back pressure

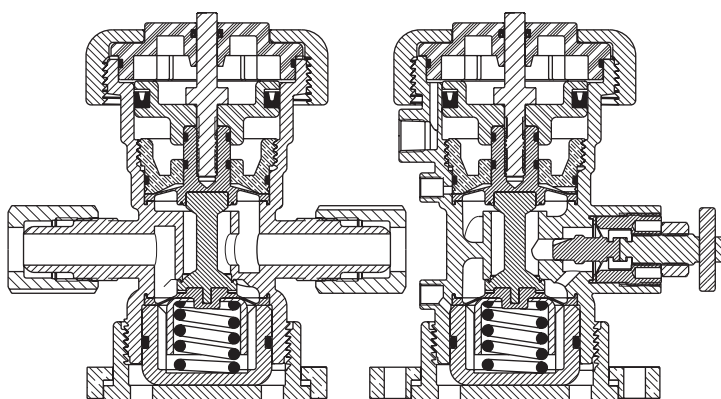
Actuator: 60 PSIG (4.2 bar) to 100 PSIG (7 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

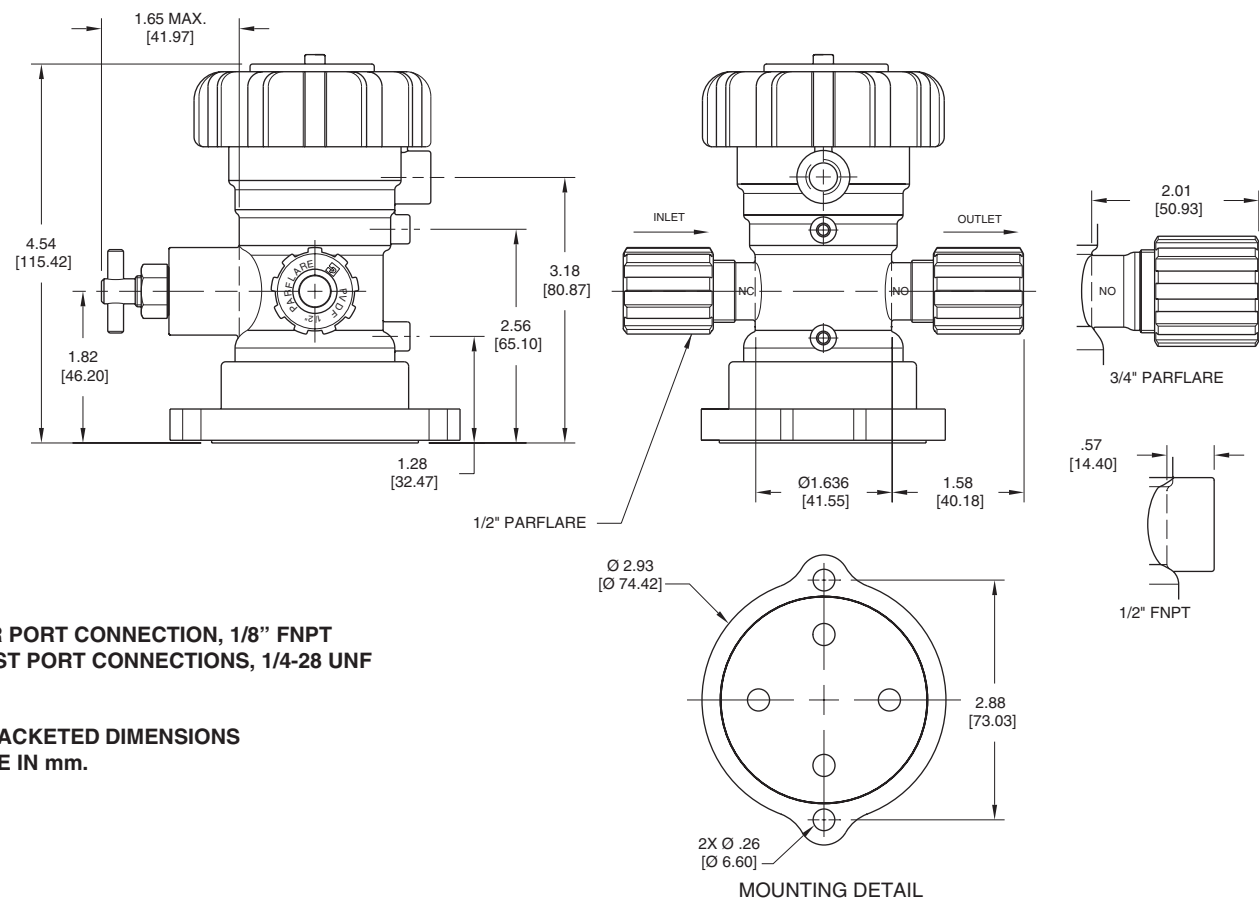
Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)



PV-11 1/2" Pneumatic Adustable Bypass Valve

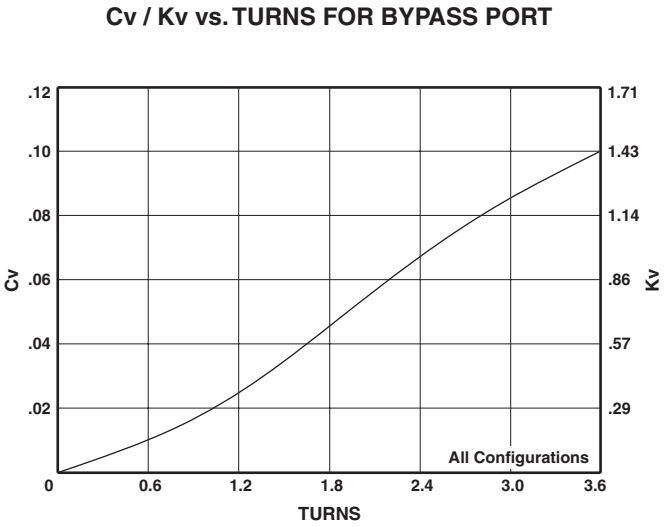
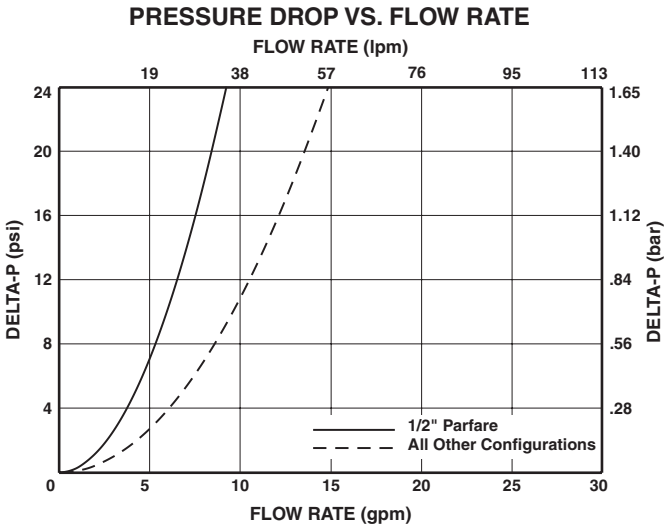


AIR PORT CONNECTION, 1/8" FNPT
TEST PORT CONNECTIONS, 1/4-28 UNF

BRACKETED DIMENSIONS
ARE IN mm.

Model Number	Cv	Kv	Flow Configuration	Port Configuration
PV-11-301	1.9	27.1	NC	1/2" Parflare
PV-11-302	2.8	40.0		3/4" Parflare
PV-11-305	2.8	40.0		1/2" FNPT

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



PV-12 1" Pneumatic 2 Way Valve

Product Overview

The PV-12 Diaphragm Valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 1" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

PVDF coated stainless steel spring.

Submersible option isolates all valve components from the external environment.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Valve remains functional while operating in wet or gaseous corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PFA, PVDF, Viton seals, PTFE coated SS springs

Pressure Ranges

Forward: 27" HG vacuum (913 mbar) to 100 PSIG (7 bar)

Backward: 80 PSIG (5.5 bar) with 100 PSIG (3.4 bar) inlet pressure
100 PSIG (7 bar) with 60 PSIG (4.2 bar) inlet pressure

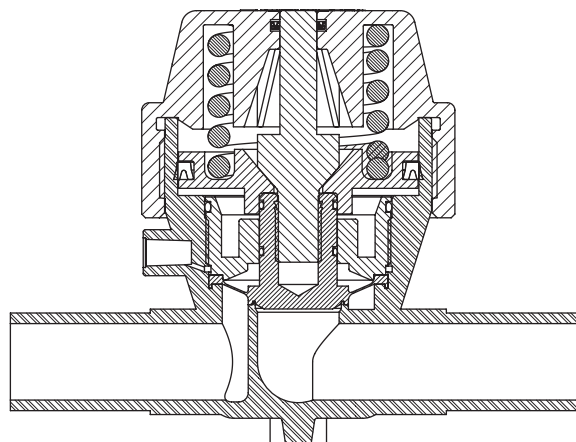
Actuator: 60 PSIG (4.2 bar) to 100 PSIG (7 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

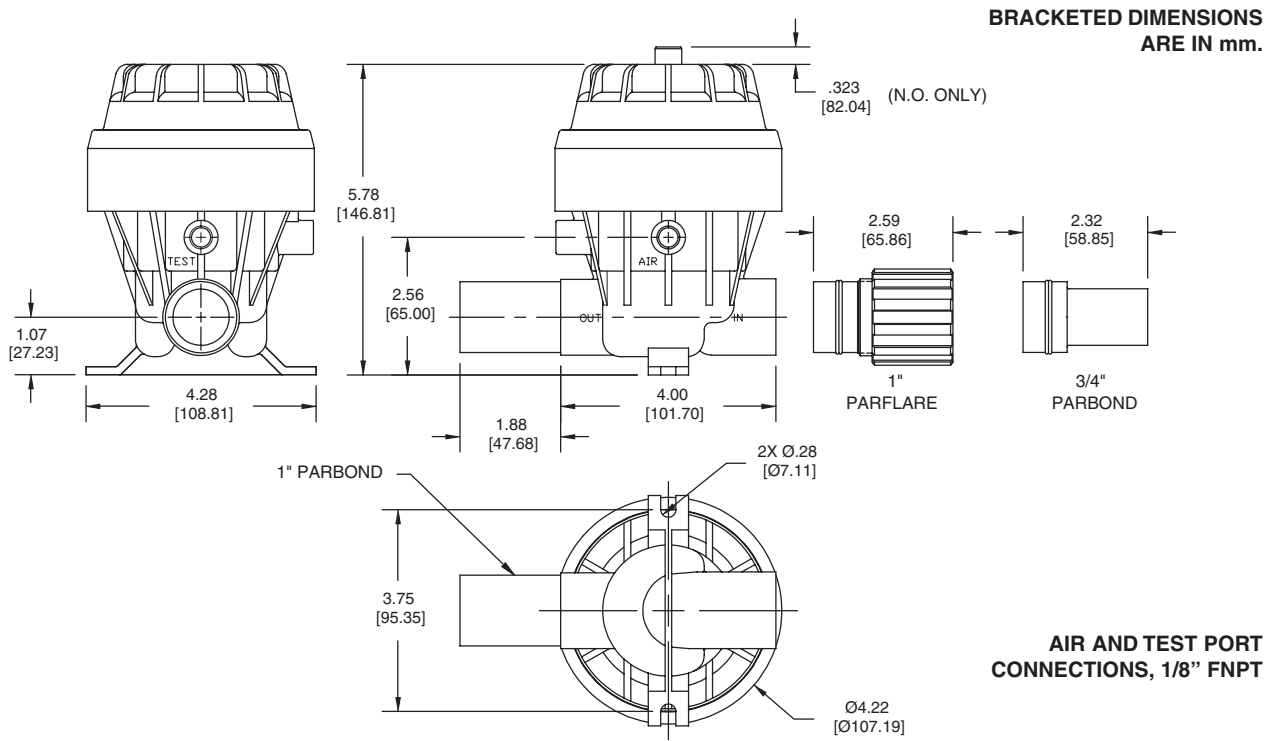
Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)



Normally Closed shown

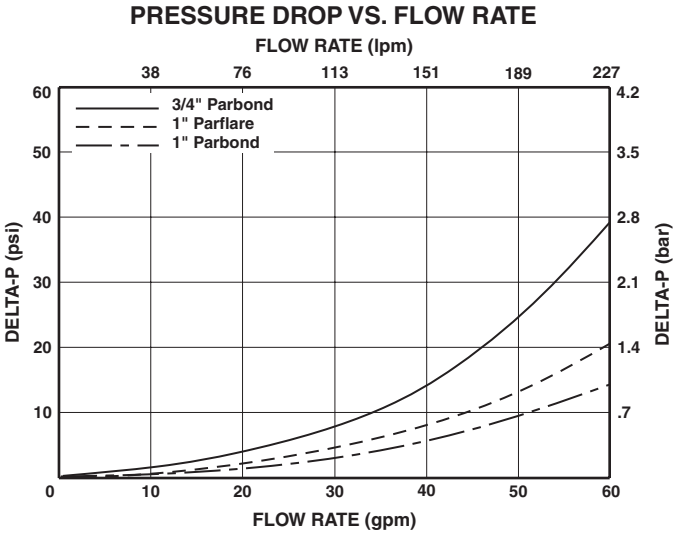
PV-12 1" Pneumatic 2 Way Valve



Model Number	Cv	Kv	Flow Config.	Port Config.
PV-12-001	15.7	224.2	N C	1" Parbond
PV-12-002	13.3	189.9		1" Parflare
PV-12-003	9.6	142.8		3/4" Parbond

Model Number	Cv	Kv	Flow Config.	Port Config.
PV-12-005	15.7	224.2	N O	1" Parbond
PV-12-006	13.3	189.9		1" Parflare
PV-12-007	9.6	142.8		3/4" Parbond

Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.



PV-16 3/4" Pneumatic PFA 2 Way Valve

Product Overview

The PV-16 PFA diaphragm valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 3/4" orifice provides maximum flow capability in a compact package.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE. Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

Halar coated stainless steel spring.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PVDF, Viton, PTFE coated SS spring

Pressure Ranges

0 - 120 PSIG (8.3 bar) See Cracking Pressure Chart on next page.

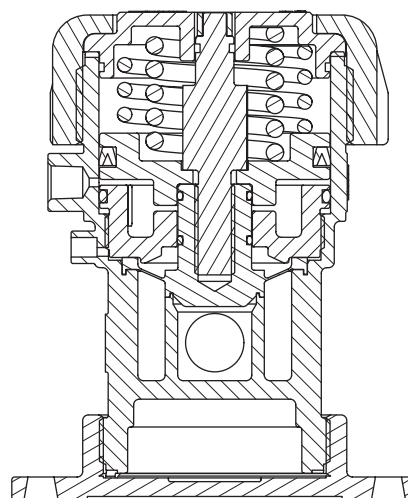
Actuation: 60 PSIG (4.1 bar) - 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

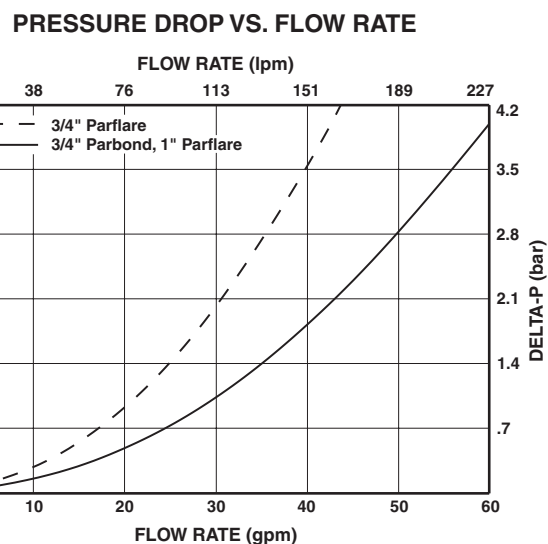
Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)





Parflare model numbers are supplied with PVDF nuts. Also available with PFA (-T) nuts.
*Ends are fused on.



PV-16 3/4" Pneumatic PFA 3 Way Valve

Product Overview

The PV-16 PFA diaphragm valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. A full 3/4" orifice provides maximum flow capability in a compact package.

Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE. Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

Halar coated stainless steel spring.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.



Specifications

Materials of Construction

Wetted: PFA, Modified PTFE
Non-wetted: PVDF, Viton, PTFE coated SS spring

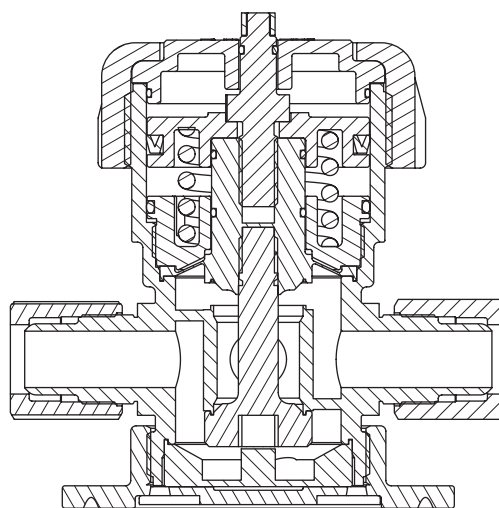
Pressure Ranges

0 - 120 PSIG (8.3 bar) See Cracking Pressure Chart on next page.
Actuation: 60 PSIG (4.1 bar) - 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

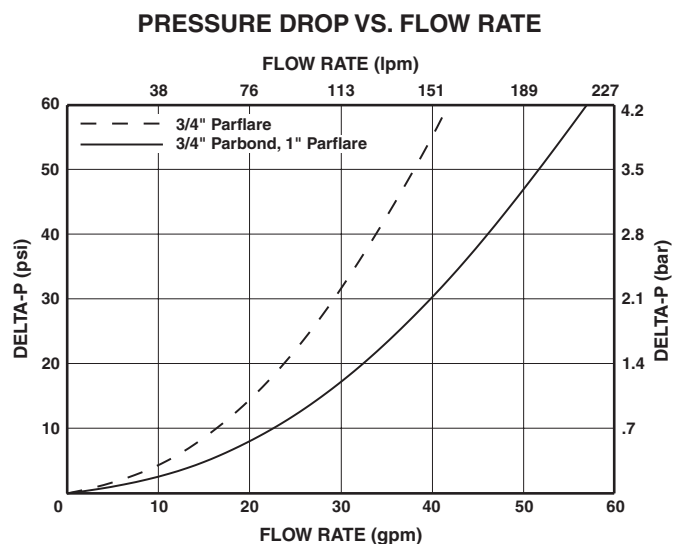
Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)
Fluid: 0° - 266° F (-17° - 130° C)





Parflare model numbers are supplied with PVDF nuts. Also available with PFA (-T) nuts.
*Ends are fused on.



PV-16 3/4" Pneumatic PFA Sampling Valve

Product Overview

The PV-16 PFA sampling valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes a molded high purity PFA body with precision machined seat and diaphragm sealing areas. A one piece machined modified PTFE diaphragm is also utilized for excellent flexibility and life. The valve incorporates a full flow through port with a low dead volume down leg.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE. Provides over five times the flexural life as compared to conventional PTFE.

Halar coated stainless steel spring.

Full flow through port.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Reduces effects of corrosive environments.

Reduced pressure drop.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PVDF, Viton, PTFE coated SS spring

Pressure Ranges

0 - 120 PSIG (8.3 bar) See Cracking Pressure Chart on next page.

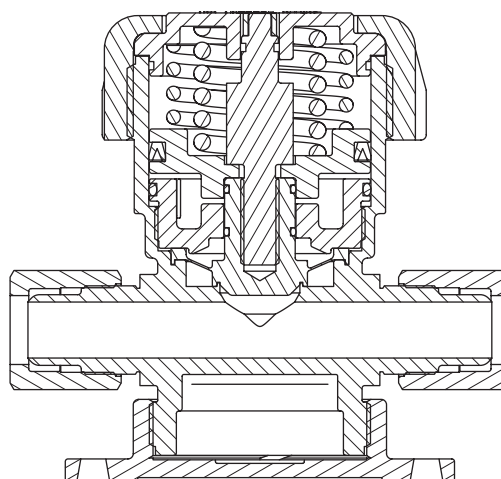
Actuation: 60 PSIG (4.1 bar) - 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

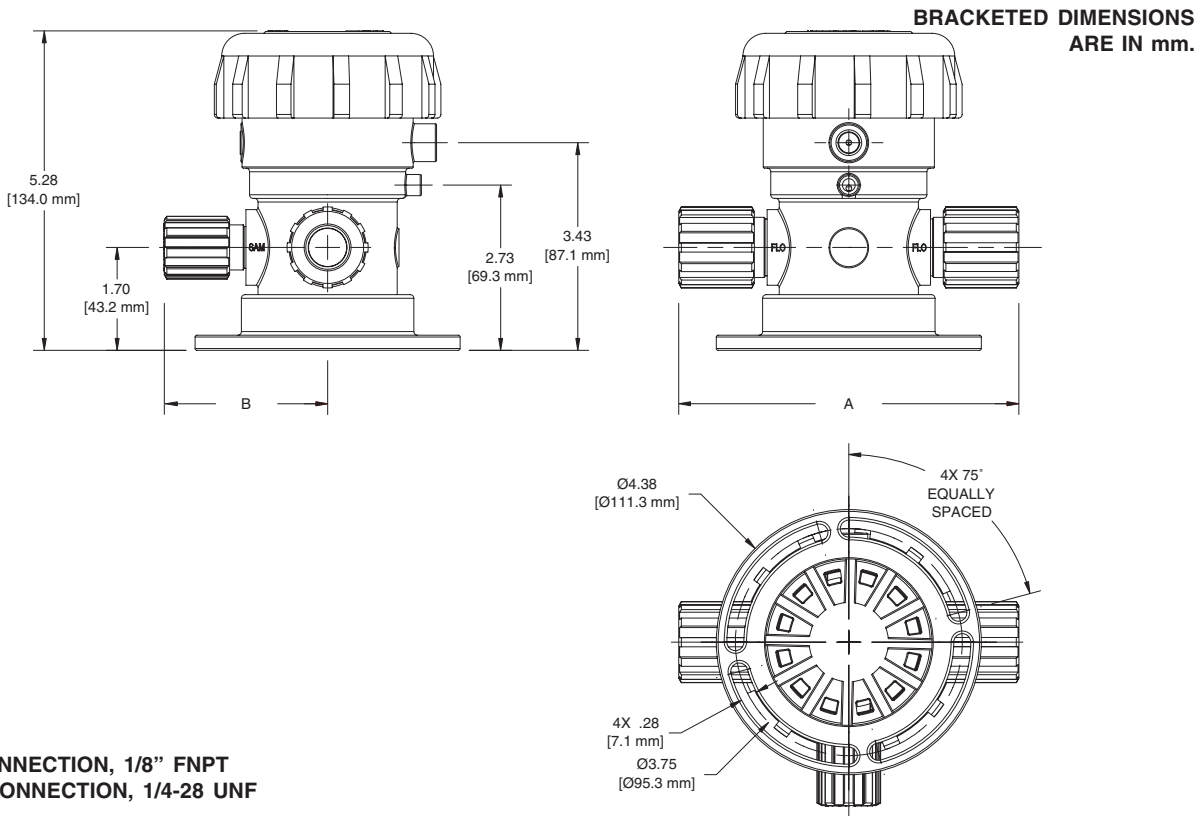
Temperature Ranges

Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)

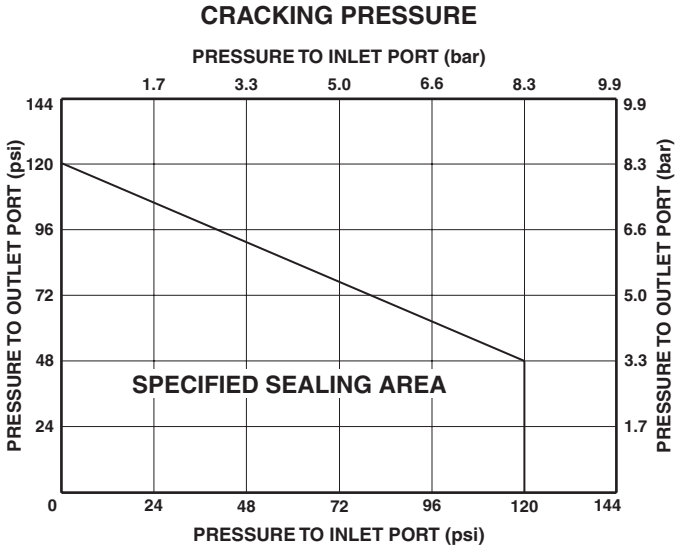


PV-16 3/4" Pneumatic PFA Sampling Valve



Model Number	Through Port		Sample Port		Through Port	Sample Port	Dimensions	
	Cv	Kv	Cv	Kv			A	B
PV-16-5612-608	13.0	185.4	2.3	32.8	3/4" Parflare	1/2" Parflare	5.54" [140.72 mm]	2.71" [68.83 mm]
PV-16-5612-612	13.0	185.4	4.6	65.6	3/4" Parflare	3/4" Parflare	5.54" [140.72 mm]	2.81" [71.37 mm]
PV-16-5612-712	13.0	185.4	6.9	98.7	3/4" Parflare	3/4" Parbond	5.54" [140.72 mm]	2.95 [74.93 mm]
PV-16-5712-608	25.2	359.92	2.3	32.8	3/4" Parbond	1/2" Parflare	5.90" [149.86 mm]	2.71" [68.83 mm]
PV-16-5712-612	25.2	359.92	4.6	65.6	3/4" Parbond	3/4" Parflare	5.90" [149.86 mm]	2.81" [71.37 mm]
PV-16-5712-712	25.2	359.92	6.9	98.7	3/4" Parbond	3/4" Parbond	5.90" [149.86 mm]	2.95 [74.93 mm]

Parflare model numbers are supplied with PVDF nuts. Also available with PFA (-T) nuts.



CV-1 Check Valve

Product Overview

The CV-1 PTFE Check Valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemical or gas applications. The design utilizes machined PTFE components to provide superior chemical resistance and purity without requiring o-rings for sealing. The machined PTFE spring allows for low cracking pressure operation and minimal back pressure for resealing.



Features

Polished sealing surfaces.

Tongue and groove external seal.

Machined PTFE spring.

Numerous end configurations available including Parflare. Available with different configurations on either end.

Benefits

Long life and superior sealing characteristics.

Eliminates o-rings and compatibility problems.

Low cracking pressure.

Reduces connections, mounting space, and overall cost.

Specifications

Materials of Construction

Wetted: PTFE

Non-wetted: PFA, PVDF, ETFE

Cracking Pressure

0.25 PSIG (.017 bar) - 0.75 PSIG (.052 bar)

Back Check Sealing Pressure

5.0 PSIG (.35 bar)

Pressure Range

27" Hg vacuum (913 mbar) - 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

Style 1: 32° - 212° F (0° - 100° C) Ambient

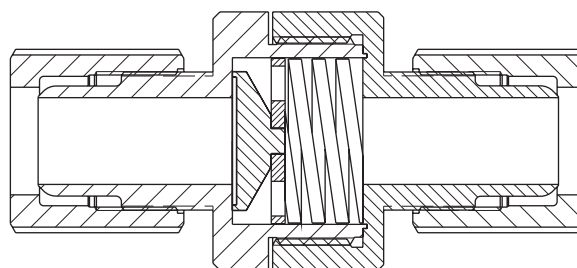
32° - 266° F (0° - 130° C) Fluid

Style 2 & 3: 50° - 212° F (10° - 100° C) Ambient

50° - 266° F (10° - 130° C) Fluid

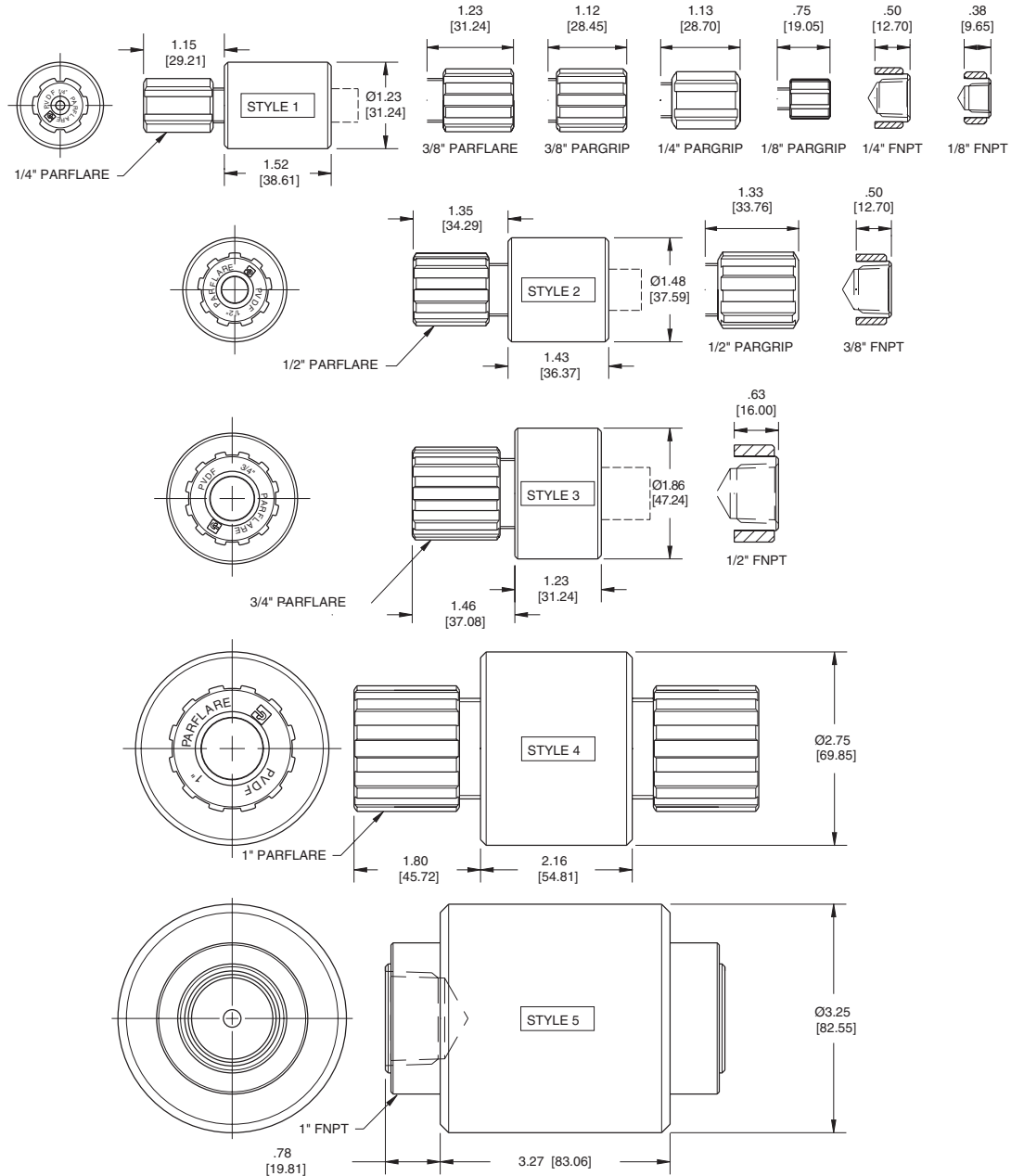
Style 4 & 5: 60° - 212° F (10° - 100° C) Ambient

60° - 266° F (10° - 130° C) Fluid



CV-1 Check Valve

BRACKETED DIMENSIONS ARE IN mm.



Model Number	Cv	Kv	Style	Port Configuration
CV-1-1122	0.61	8.78	1	1/8" FNPT
CV-1-1144	1.51	21.74	1	1/4" FNPT
CV-1-1166	2.43	35.00	2	3/8" FNPT
CV-1-1188	4.22	60.77	3	1/2" FNPT
CV-1-111616	14.00	201.6	5	1" FNPT
CV-1-2222	0.02	0.29	1	1/8" Pargrip
CV-1-2244	0.34	4.90	1	1/4" Pargrip
CV-1-2266	.98	14.11	1	3/8" Pargrip
CV-1-2288	2.17	31.25	2	1/2" Pargrip
CV-1-6644	.26	3.74	1	1/4" Parflare
CV-1-6666	1.11	15.84	1	3/8" Parflare
CV-1-6688	2.03	29.23	2	1/2" Parflare
CV-1-661212	4.13	59.47	3	3/4" Parflare
CV-1-661616	11.85	170.6	4	1" Parflare

Pargrip models are supplied with PFA nuts. Parflare models are supplied with PVDF nuts. For PFA nuts add -T to model number.

RV Relief Valve

Product Overview

The RV Relief Valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemicals. The design utilizes a molded PFA body with precision-machined PTFE seats and diaphragm poppet. When a field set relief pressure is reached, the valve opens and permits flow. The valve resets when 25% of original setpoint is reached.



Features

One piece precision machined diaphragm poppet manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm poppet for positive through flow shut off and diaphragm to body seal.

Field adjustable relief pressure.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Isolates media from adjusting screw.

Prevent over pressurization in critical applications.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: PVDF, SS, Brass, ABS, HDPE

Pressure Ranges

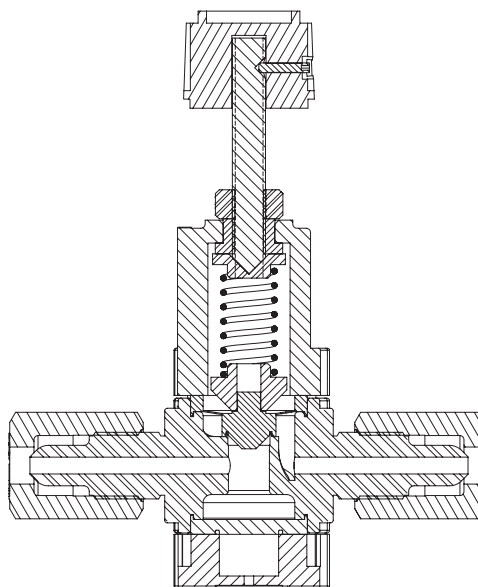
15 PSIG (1.03 bar) - 120 PSIG (8.3 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

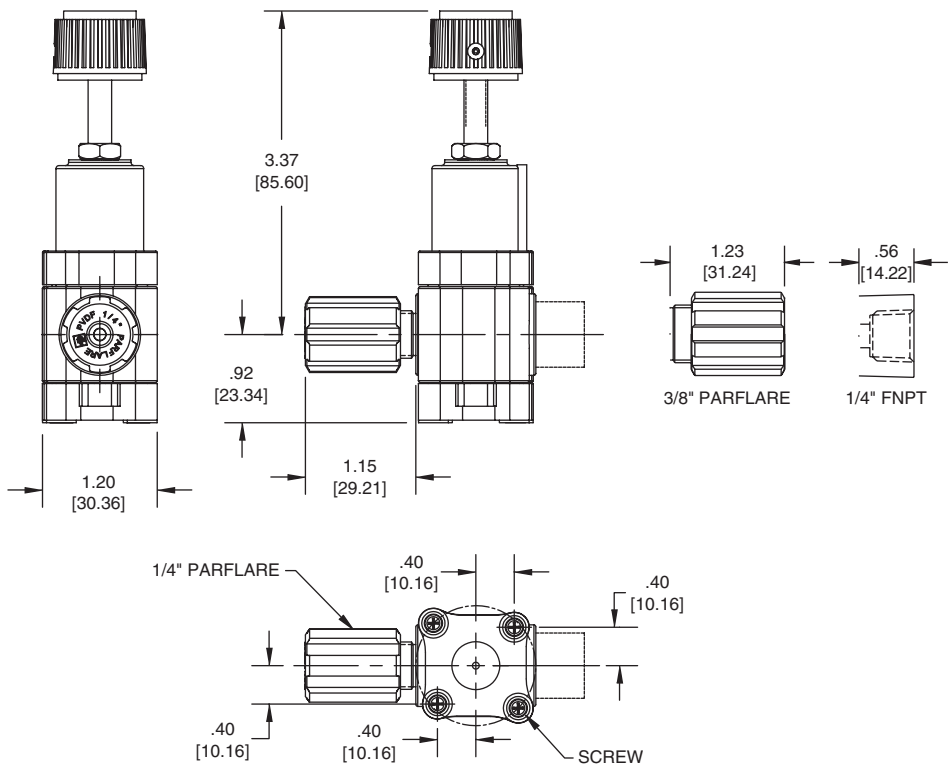
Ambient: 0° - 150° F (-17° - 66° C)

Fluid: 0° - 266° F (-17° - 130° C)



RV Relief Valve

BRACKETED DIMENSIONS
ARE IN mm.



Model Number	Cv	Kv	Flow Configuration	Port Configuration	Relieving Pressure Range-XX
RV-144-XX	.78	11.3	ON/OFF	1/4" FNPT	01 - 15 to 60 PSIG 02 - 60 to 120 PSIG
RV-624-XX	.24	3.5		1/4" Parflare	
RV-646-XX	.70	10.2		3/8" Parflare	

Parflare model numbers are supplied with PVDF nuts. Also available with PFA (-T) nuts.



SV-2 1/4" Solenoid Valve

Product Overview

The SV-2 Solenoid Valve is designed for use in high purity semiconductor applications, and is also ideally suited for ultra-pure water and aggressive chemicals. The design utilizes a molded high purity PFA body with precision machined areas. A one-piece machined modified PTFE diaphragm is also utilized for excellent flexibility and long life. The valve is offered in 2 and 3 way configurations, in 3 orifice sizes, and in 2 standard voltages.



Features

One piece precision machined diaphragm manufactured from the latest technology modified PTFE.

Provides over five times the flexural life as compared to conventional PTFE.

Tongue and groove seat and diaphragm for positive through flow shut off and diaphragm to body seal.

Benefits

High cycle life.

Lower replacement costs.

Less downtime.

Isolates media from solenoid.

Specifications

Materials of Construction

Wetted: PFA, Modified PTFE

Non-wetted: Coated Aluminum, Plated Steel, SS, PFA, PVDF, Titanate

Pressure Ranges

Forward: 0 - 80 PSIG (5.5 bar)

Pressure ranges for operation at ambient temperatures. For use at higher temperatures consult Pressure/Temperature chart on page 3.

Temperature Ranges

Ambient: -60° - 212° F (-51° - 100° C)

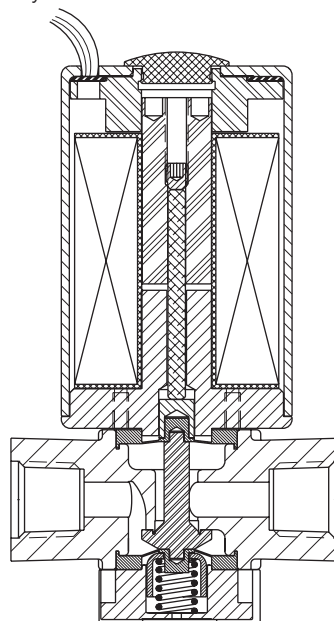
Fluid: -60° - 400° F (-51° - 204° C)

Solenoid Ratings

24 VDC, 115 VAC (Double Wire)

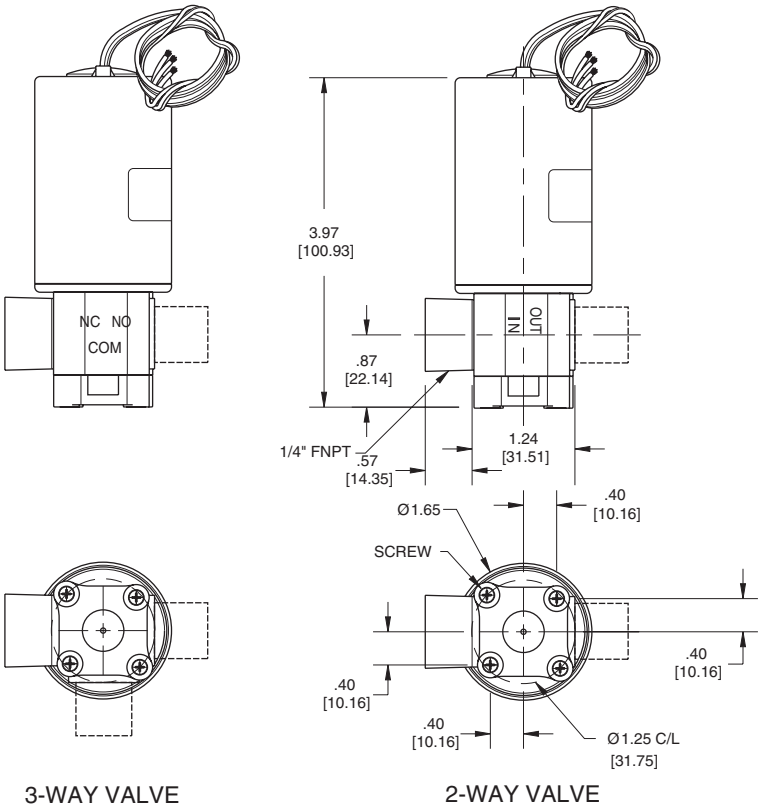
All models rated at 9 watts at 68°F (20°C)

Coil Duty Cycle: 100%, however, 100% continuous duty may affect performance of valve, therefore 50% continuous duty is recommended.

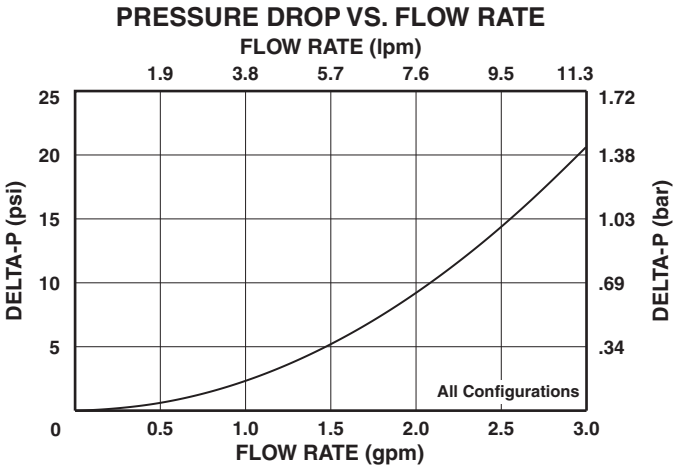


SV-2 1/4" Solenoid Valve

BRACKETED DIMENSIONS
ARE IN mm.



Model Number	Cv	Kv	Flow Configuration	Orifice Size	Port Configuration	Solenoid Voltage-X
SV-2-1144-X	.60	8.6	NC	.250	1/4" FNPT	2 = 24 VDC 7 = 115 VAC
SV-2-1244-X	.60	8.6	NO	.250	1/4" FNPT	
SV-2-1344-X	.60	8.6	3 WAY	.250	1/4" FNPT	



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Parker Hannifin Corporation

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