



ITT

Engineered Valves

BioviZion®

EnviZion® Performance in a Small Package

Experience the Future with the new BioviZion fractional size diaphragm valve from ITT, the latest addition to the EnviZion product line.

The BioviZion packs all of the industry leading breakthrough technology of the EnviZion valve platform into a small package developed specifically to address the critical reliability needs of sampling and low flow bioprocess applications.

Traditionally, small 4-bolt fractional size diaphragm valves utilized for sampling applications have been challenged to achieve the performance and reliability of traditional diaphragm valves simply because of dimensional limitations. Four small screws prone to galling just can't provide the force required to achieve consistent and reliable seat and shell sealing.

Enter the BioviZion with high strength stainless steel studs which eliminate small fasteners prone to galling, snapping, and being lost. The patented diaphragm stud makes diaphragm installation a quick and reliable process. The efficient mechanical thermal compensation system applies sealing force constantly only where it is needed. Best of all no torquing or re-torquing is required. All of these features add up to a more reliable and less costly valve to operate and maintain.

**QUICK
CHANGE
BONNET**

**TOOL-LESS
ASSEMBLY**

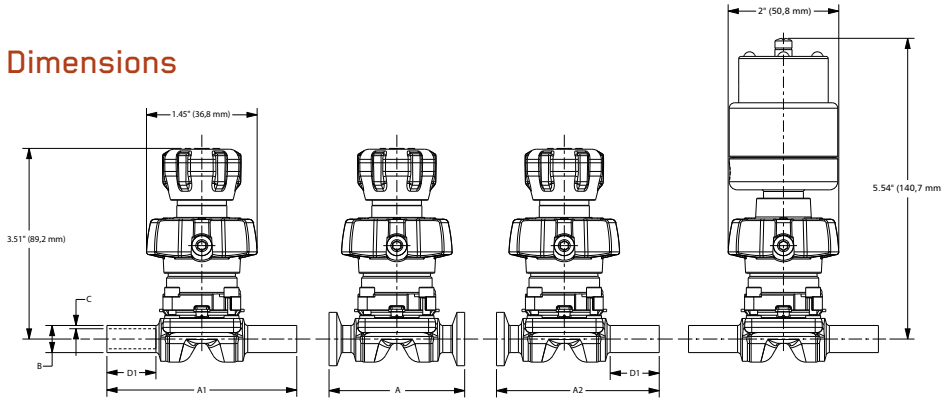
**CONTAMINATION
FREE**

**LEAK FREE
SEAL INTEGRITY**

FASTENER FREE

**ZERO
RETORQUES**

Dimensions



USOD (ANSI)							
B	A	A1	D1	A2	C		
End Connection Size	Overall Length	Overall Length	Weld Tangent	Overall Length	20 GA.	18 GA.	Drain Angle
IN	DN	Tri Clamp	Extended BW	Extended BW	TC x BW	Extended BW	ANSI
Forgings							
BV 0.25"	DN6	2.5" (64)	3.5" (89)	1" (25)	3.0" (76,2)	.035 (0,89)	34°
BV 0.375"	DN10	2.5" (64)	3.5" (89)	1" (25)	3.0" (76,2)	.035 (0,89)	27°
BV 0.5"	DN15	2.5" (64)	3.5" (89)	1" (25)	3.0" (76,2)	.065 (1,65)	23°

Note: Drain angle tolerances of +/- 2° will assure optimal drainability
Dimensions in () are mm

Cv/Kv Ratings

Size (in)	BV 0.5" (DN15)	
Cv/Kv	Cv	Kv
100% Open	2.1	1.83

Valve Size		BV 0.5" (DN 15)			
ΔP		100%	0%		
Actuator Model	Line Pressure	Fail Closed -Reverse Acting - Spring to Close Maximum Line Pressure (psi/(bar))			
		ZA2/ZA2S	1	150 (10.3)	150 (10.3)
		ZA26/ZA26S	1	65 (4.5)	58 (4.0)
Actuator Model	Line Pressure	Fail Open - Direct Acting - Spring to Open Air pressure required to shut-off line pressure (psi/(bar))			
		ZA1/ZA1S	20	67 (4.6)	66 (4.5)
		ZA1/ZA1S	40	69 (4.8)	69 (4.7)
		ZA1/ZA1S	60	72 (5.0)	72 (5.0)
		ZA1/ZA1S	80	74 (5.1)	74 (5.1)
		ZA1/ZA1S	100	76 (5.2)	77 (5.3)
		ZA1/ZA1S	125	79 (5.4)	81 (5.6)
Actuator Model	Line Pressure	Double Acting - Air to Open Air to Close Air pressure required to shut-off line pressure (psi/(bar))			
		ZA3/ZA3S	20	43	40 (2.8)
		ZA3/ZA3S	40	45	43 (3.0)
		ZA3/ZA3S	60	48	46 (3.2)
		ZA3/ZA3S	80	50	49 (3.4)
		ZA3/ZA3S	100	52	52 (3.6)
		ZA3/ZA3S	125	55	56 (3.9)
ZA3/ZA3S	150	58	60 (4.1)		

How to Specify

Envizion configuration numbers follow the same format as the Pure-Flo platform, with the exception of adding the ENV prefix in front of the figure number. In addition, codes have been established for manual bonnets, actuators, and diaphragms as noted below.

Platform	
Code	Description
ENV	Envizion
Body Type	
Code	Description
F	Forged 316L SS
W	Wrought 316L SS
BV	BioVizion 316L SS
Envizion Manual Bonnets	
Code	Description
ZH	Envizion Zero torque Manual
ZHS	Envizion Zero torque Manual sealed

Envizion Actuated Stainless Steel Bonnets	
Code	Description
ZA1	Envizion Zero torque Actuator - FO
ZA2	Envizion Zero torque Actuator - FC (90#)
ZA3	Envizion Zero torque Actuator - DA
ZA1S	Envizion Zero torque Actuator - FO sealed
ZA2S	Envizion Zero torque Actuator- FC (90#) sealed
ZA3S	Envizion Zero torque Actuator - DA sealed

Envizion Advantage Bonnets	
Code	Description
ZB1	Envizion Advantage Zero torque Actuator - FO
ZB2	Envizion Advantage Zero torque Actuator - FC (90#)
ZB3	Envizion Advantage Zero torque Actuator - DA
ZB1S	Envizion Advantage Zero torque Actuator - FO sealed
ZB2S	Envizion Advantage Zero torque Actuator- FC (90#) sealed
ZB3S	Envizion Advantage Zero torque Actuator - DA sealed

Diaphragms	
Code	Description
TMZ	Envizion modified PTFE diaphragm (FDA)/B1 backing cushion

Topworks Options	
Code	Description
AOS	Adjustable Opening Stop
EBG	Envizion Bonnet Guard Tamper Resistant/Submersible

For more information on how to order an Envizion valve, see B.ENV-ORD.2017-11.

Valve Size	
Code	Description
.25	.25 Inch (DN6)
.38	.38 Inch (DN10)
.50	.50 Inch (DN15)
.75	.75 Inch (DN20)
1	1 Inch (DN25)
1.5	1.5 Inch (DN40)
2	2 Inch (DN50)

Body Ends	
Code	Description
Clamp	
419	Tri-Clamp Tube
419S	Tri-Clamp Tube 18 Gauge
419S1	Tri-Clamp Tube 20 Gauge
Buttweld	
423	18 Gauge
424	20 Gauge
428	16 Gauge
428L	16 Gauge Ext. Tangent BW

Surface Finish	
Code	Description
Mechanical Polish - Interior	
6	25 μin Ra (.6 μm) max
7	15 μin Ra (.38 μm) max
8	20 μin Ra (.5 μm) max
10	10 μin Ra (.25 μm) max
SF1	BPE SF1 Ra 20 Max
SF2	BPE SF2 Ra 25 Max
SF4	BPE SF4 Ra 15 Max, EP
SF5	BPE SF5 Ra 20 Max, EP
SF6	BPE SF6 Ra 25 Max, EP

Surface Finish	
Code	Description
Mechanical Polish - Exterior	
0	No Mechanical Polish
1	Scotch Brite
2	25 μin Ra (.6 μm) max, Welds Scotch Brite
3	35 μin Ra (.8 μm) max, Welds Scotch Brite
4	25 μin Ra (.6 μm) max, Welds Removed
6	35 μin Ra (.8 μm) max, Welds Removed
7	Special Polish Requirement

ElectroPolish	
Code	Description
0	No Electropolish
2	Exterior Only
3	Interior and Exterior
4	Interior Only

Figure Number Example: ENV-5-BV-428L-6-0-0-TMZ-ZH

Description: .5" BioVizion manual valve, forged body, 16 gauge buttweld ends, 25 Ra interior polish with PTFE diaphragm with EPDM backing cushion