BIOTECHNOLOGY & PHARMACEUTICAL APPLICATIONS

Product Index

MANUAL VALVES («PRESSURE OPERATED VALVES» see page II)

					
Type		**Bio-Pure COP**	**913**	**963**	**970**
Page		**1**	**5**	**9**	**13**
Size range	0.25" (DN6)	✔			
	0.38" (DN10)	✔			
	0.5" (DN15)	✔	✔	✔	✔
	0.75" (DN20)		✔	✔	✔
	1" (DN25)		✔	✔	✔
	1.5" (DN32/40)		✔	✔	✔
	2" (DN50)		✔	✔	✔
	2.5" (DN65)		✔	✔	
	3" (DN80)		✔	✔	
	4" (DN100)		✔	✔	
Material		Bonnet: 316 Stainless steel Handwheel: Polyesthersulfone (PES)	Bonnet and Handwheel: Stainless steel	Bonnet and Handwheel: Glass reinforced Polyesthersulfone (PES)	Bonnet: 316 Stainless steel Handwheel: Glass reinforced Polyesthersulfone (PES)
Max. service pressure		10,34 bar (150 psi)	0.5" - 1": 13,8 bar (200 psi) 1.5" - 2": 12,1 bar (175 psi) 3" - 4": 10,3 bar (150 psi)	10,34 bar (150 psi)	0.5" - 1": 13,8 bar (200 psi) 1.5" - 2": 12,1 bar (175 psi)
Max. service temperature		165°C	**Page: 5**	149°C	**Page: 13**
Pressure/Temperature limitations		**Page: 4**	**Page: 8**	**Page: 12**	**Page: 16**
Autoclavable		✔	✔	✔	✔
Sealed option		✔	✔	✔	
Body type		Forged			
Body material		316L stainless steel, tri certified to ASTM A182 grade 316L S9, EN 10222-5, EN 1.4435 BN2			
End connections		Hygienic clamp ends / Buttweld / 14, 16, 18, 20 O.D Gauge tubing / ISO ends / SMS 1146 Ends / DIN 11850 Ends			

PRESSURE OPERATED VALVES

Type		 Advantage 2.1 Actuator	 Advantage Compact Stainless steel	 Advantage Actuator Series 33
Page		17	21	25
Size range	BP - 0,25-0,5 (DN6-15)		✔	
	0.5" (DN15)	✔	✔	
	0.75" (DN20)	✔	✔	
	1" (DN25)	✔	✔	
	1.5" (DN32/40)	✔	✔	
	2" (DN50)	✔	✔	
	2.5" (DN65)			✔
	3" (DN80)			✔
	4" (DN100)			✔
Material		Bonnet: 316 Stainless steel Actuator: Polyesthersulfone (PES)	Bonnet: 316 Stainless steel Actuator: 316 Stainless steel	Bonnet: Nylon coated ductile iron (4¨) Stainless steel (3¨) Actuator: Vinyl-Ester Thermoset
Max. service pressure		10,34 bar (150 psi)		
Max. service temperature		149°C		
Autoclavable		✔	✔	
Sealed option		✔	✔	✔
Body type		Forged		
Body material		316L stainless steel, tri certified to ASTM A182 grade 316L S9, EN 10222-5, EN 1.4435 BN2		
End connections		Hygienic clamp ends / Buttweld / 14, 16, 18, 20 O.D Gauge tubing / ISO ends / SMS 1146 Ends / DIN 11850 Ends		

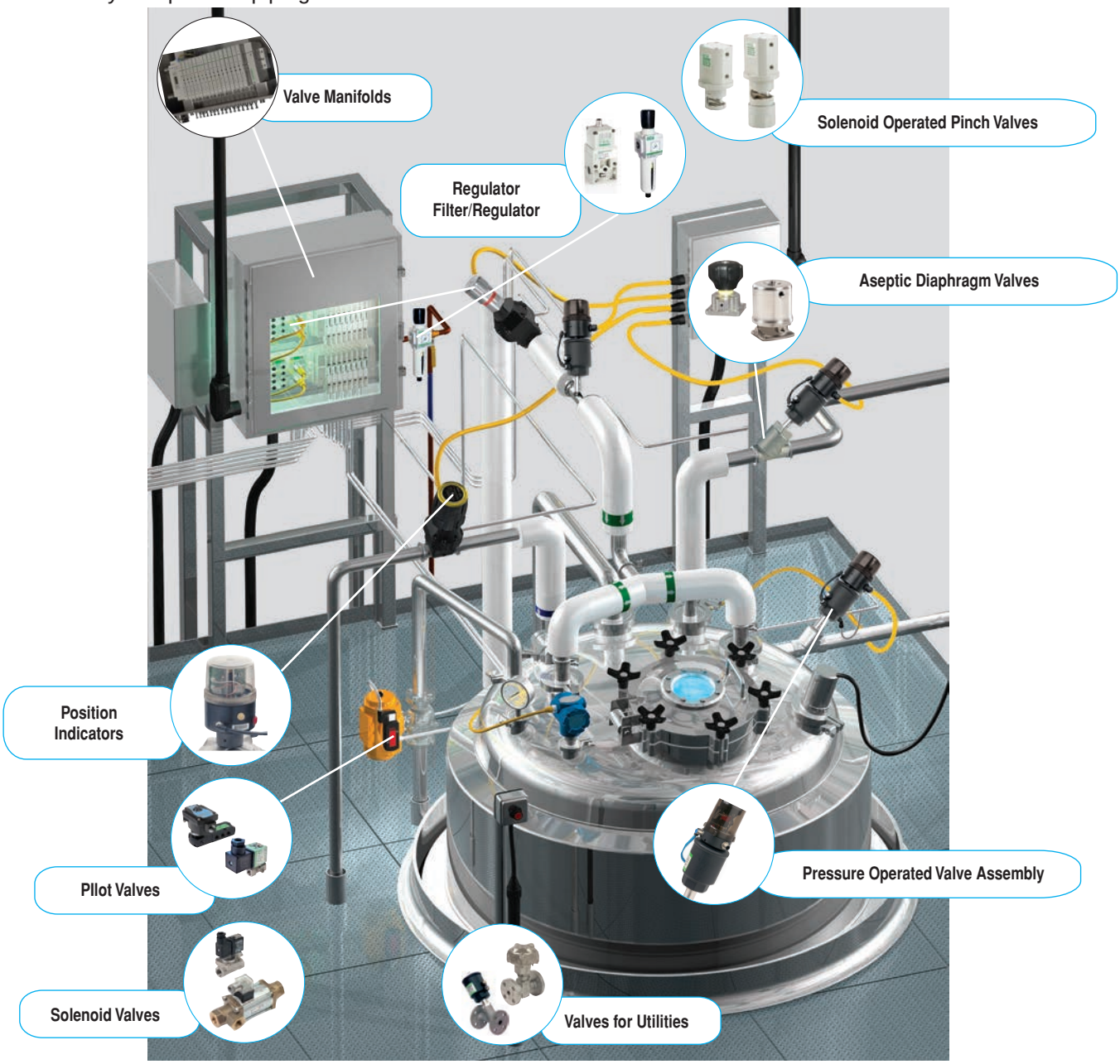
At Emerson we understand that Pharmaceutical and Biotechnology products have to be manufactured under the most stringent of conditions to ensure the safety and quality of the final product.

We know that each manufacturer and plant will adopt different and unique processes and we have the certified and high quality products and solutions to meet the needs of all of them.

We offer products for the chemical processes, used mainly within the pharmaceutical industry to manufacture therapeutic and health-related products. We also offer products for the biological processes used within biotechnology plants to create products used in pharmacology, medicine, agriculture, and more.

Pharmaceutical process

In addition to understanding your industry, we also understand automation and control. We have a broad range of products and solutions for the process areas, as well as the anciliary areas, such as control of utilities. Our systems control, measure, and treat - with renowned accuracy and reliability - the flows of liquid, steam, air and other gases in laboratory and process piping.

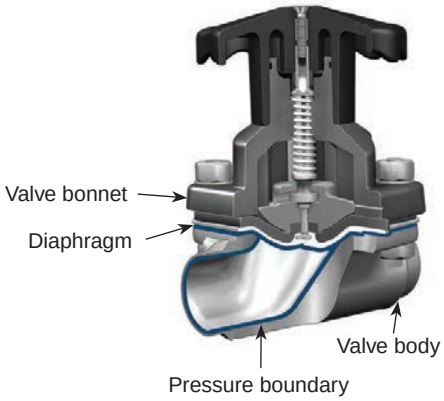


Emerson offers a full range of products suitable for aseptic processes in the pharmaceutical and biotechnological market.

Diaphragm valves comply with:

- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 “Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products” available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

ASCO products range from standard forged valves to the most innovative block technology, each valve is engineered to the highest standard.

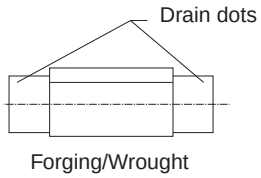


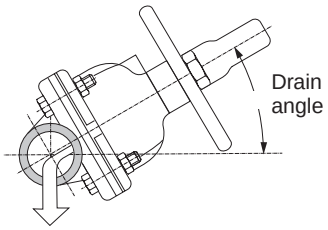
- Bonnet isolation: The diaphragm isolates the working parts of the valve from process fluids.
- Streamlined fluid passage: The smooth contoured body, streamlined flow path, and high quality interior surface prevents accumulation of process fluids or contaminants.
- Minimal contact surface: The process contact surface (i.e. body and diaphragm) are minimal, enhancing the ease of cleaning and sterilization.
- Positive closure: The resilient diaphragm bead in contact with the metal weir assures positive closure.
- Ideal for CIP and SIP: Clean in place and steam in place operations may be performed in line without valve disassembly or operation.
- In-line maintenance: The top entry design allows for in-line maintenance.

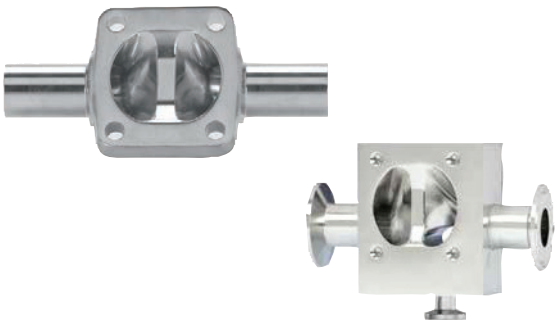
ASCO diaphragm valve body

Drainability:

ASCO diaphragm valves may be installed in vertical or horizontal lines. Drain marks are provided as standard to facilitate installation and optimize drainability.







Forged body

The selection of process components in the pharmaceutical and biotechnological industry demonstrate a distinct movement toward lower ferrite materials. Ferrite is depleted as the material is worked, casting has the highest content, while forging has the lowest. Our standard valves include forged bodies. The Ferrite content for the ANSI and ISO/DIN forged product lines is 0.5%.

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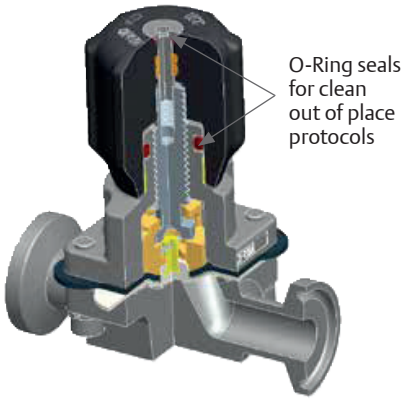
ASCO™ ASEPTIC VALVES

MANUAL OPERATED, STAINLESS STEEL AND PES OPERATOR, DN 6 TO DN 15

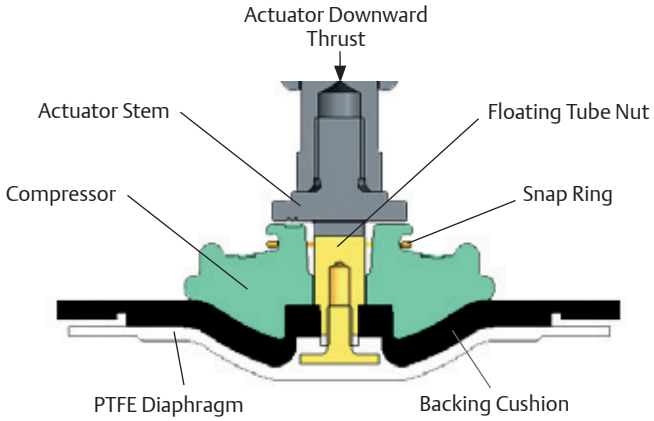
SERIES
224

- Manual operated aseptic valve, designed for the bioprocessing industry.
- The diaphragm separates the piloting from the fluid. It ensures safety and quality of the final product.
- Forged body in-line with the highest material standards. Complies with stainless steel 316L, 1.4435 sulfur controlled to ASME BPE standards, and contain under 0.5% of ferrite.
- Designed for sampling and other low flow, high value process like bioreactors, chromatography systems, filtration skids...

General Valve Information	
Size range	DN 6 to DN 15
Max. service pressure	10,34 bar
Max. service temperature	+165°C
Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C
Pressure/Temperature limitations	See page 4
Bonnet material	316 Stainless steel
Handwheel material	Polyesthersulfone (PES)
Corrosion resistance	Alcohol, chloride and most caustic washdowns



Diaphragm material compatibility *			
Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R



*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory

Diaphragm certifications

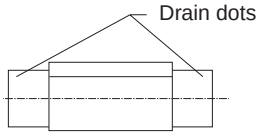
- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 "Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products" available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

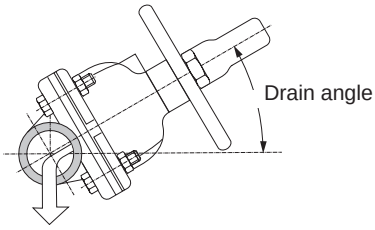
FDA Ex USP Class VI CE

Drain angle

Aseptic valve may be installed in vertical or horizontal lines, as required. Drain marks are provided as a standard on a forged body to facilitate installation and optimized drainability. One mark must be located in the vertical plane, cutting the centerline of the pipe.

Valve Size (IN)	Valve Size (DN)	ANSI	ISO	DIN
0.25”	6	30°	20°	20°
0.375”	10	30°	20°	20°
0.5”	15	30°	20°	20°





Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

Mechanical Polish	EU Service Micron Max.
	§No Mechanical Polish§
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish

How To Order

Product Code

A 224 B 2 1 P 0000001

A = All connexion possible

Product series
224 = Aseptic Valve

Revision letter
B = ITT supplier identification

Actuator type
2 = Manual Operated Actuator BIO-PURE COP

Series
Sequential

Diaphragm material
P = E (PTFE)
E = E (EDPM)

Valve Size
1 = 1/4¨ (DN6) 0.25¨
3 = 3/8¨ (DN10) 0.375¨
4 = 1/2¨ (DN15) 0.5¨

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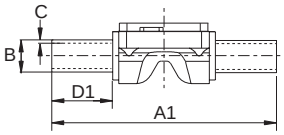
服务热线：4006-918-365
网址：http://www.ivalve.cc
Asco
传真：(86-532)585-10-365
Email：sales@bechinas.com

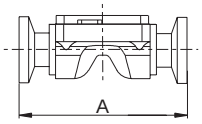
Dimensions: mm (Body)

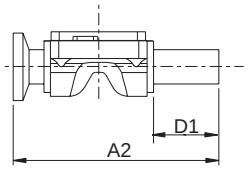
Type 01
butt welding connection

Type 02
clamp connection

Type 03
clamp connection +
butt welding connection





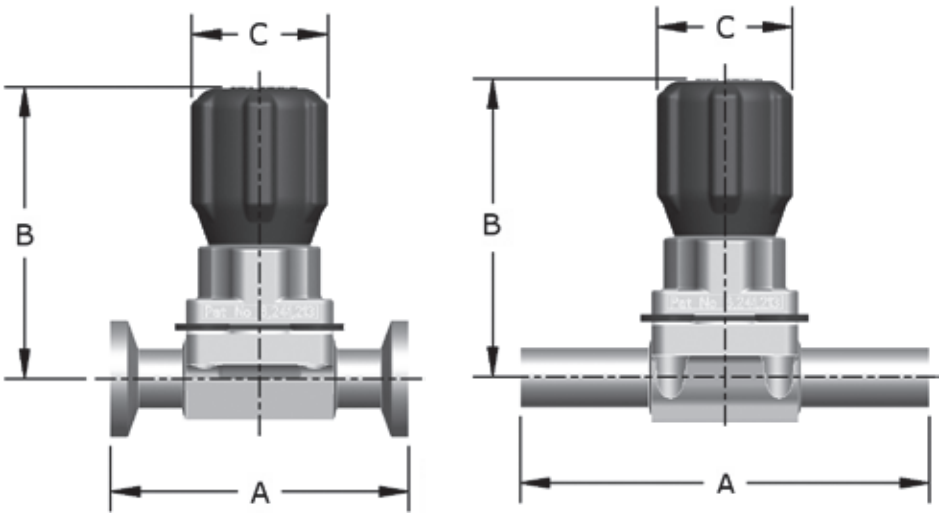


ANSI Forging										SMS	
B		A	A1	D1	A2	C				B	C
End connection size		Overall length (mm)	Overall length (mm)	Weld Tangent (mm)	Overall length (mm)	20 GA 0.812	18 GA 1.02	16 GA 1.29	14 GA 1.63		
IN	DN	Clamp	Extended BW Forging	Extended BW Forging	Clamp x butt welding connection (BW)	Extended BW	Extended BW ASME BPE	Extended BW	Extended BW ASME BPE	butt welding connection (BW)	
0.25”	6	64	89	25	76,2	S	O				
0.375”	15	64	89	25	76,2	S	O				
0.5”	15	89	128	38	108,7		O	S			

ISO										DIN Serie 1		DIN Serie 2		DIN Serie 3	
End connection size	A	D1	B	C						B	C	B	C	B	C
	(mm)	(mm)	(mm)	1	1.2	1.6	2	2.3	2.6	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
DN6	89	25	8	S	O					8	1				
DN10	89	25	13,5	O		S	O			10	1				
DN15	89	25	17,2	O		S	O								

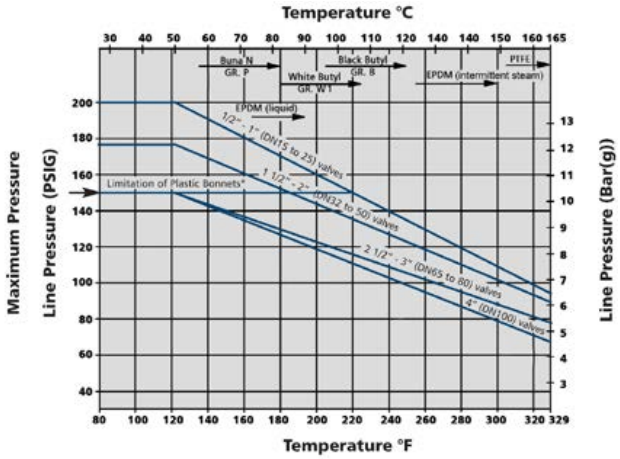
O = Optional
S = Standard

Dimensions: mm (Actuator)



	ANSI		DIN / ISO	B (Open)	C
	A (Tri-Clamp)	A (Buttweld)	A		
(mm)	63,5	89	89	68,9	31,8

Pressure/Temperature Limitations



* This line shows the limitation of plastic bonnets including the 963 and Advantage Actuators.

Note: Elastomer diaphragms may be used in vacuum service within above temperature recommendations. For services exceeding charted pressure/temperature recommendations, consult factory. The chart does not pertain to steam or corrosive services.

ASCO™ ASEPTIC VALVES

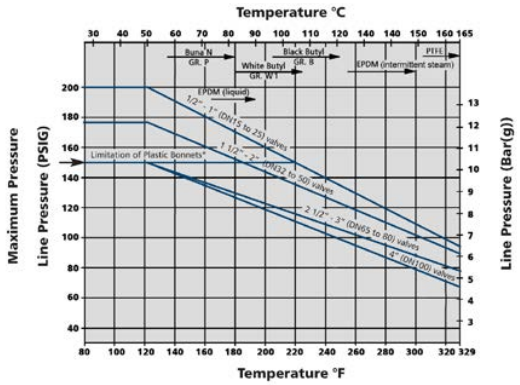
MANUAL OPERATED, DN 15 TO DN 100

SERIES
224

- Manual operated aseptic valve, designed for the bioprocessing industry.
- The diaphragm separates the piloting from the fluid. It ensures safety and quality of the final product.
- Forged body in-line with the highest material standards. Complies with stainless steel 316L, 1.4435 sulfur controlled to ASME BPE standards, and contain under 0.5% of ferrite.
- Resistant to standard washroom protocols, this valve is the compact, autoclavable solution for Pharmaceutical / Bioprocessing applications.

General Valve Information

Size range	DN 15 to DN 100
Max. service pressure	DN 15-20-25: 13,8 bar / DN 40-50: 12,1 bar / DN 80-100: 10,3 bar
Max. service temperature	



Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C
Pressure/Temperature limitations	See page 8
Bonnet and Handwheel material	Stainless steel
Corrosion resistance	Alcohol, chloride and most caustic washdowns

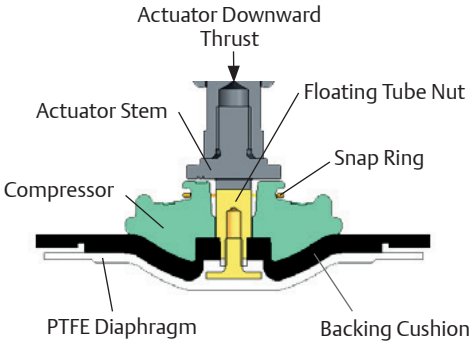
Standard features

- Adjustable travel stop
- Protective cap
- Brass stem bushing
- Visual position indicator
- Permanent lubrication
- O-ring seals
- Bronze compressor
- Hygienic internals

Diaphragm material compatibility *

Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R

*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory



Diaphragm certifications

- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
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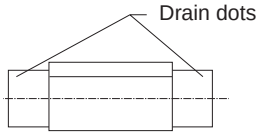
- Certificate of traceability to EN 10204 3.1 B available upon request.

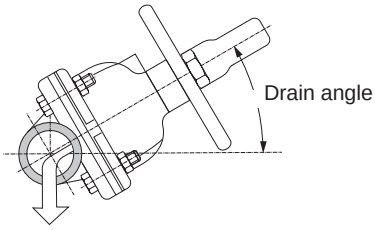
FDA Ex USP Class VI CE

Drain angle

Aseptic valve may be installed in vertical or horizontal lines, as required. Drain marks are provided as a standard on a forged body to facilitate installation and optimized drainability. One mark must be located in the vertical plane, cutting the centerline of the pipe.

Valve Size (IN)	Valve Size (DN)	ANSI	ISO	DIN
0.5”	15	30°	20°	20°
0.75”	20	30°	21°	25°
1”	25	30°	22°	26°
1.5”	40	28°	17°	22°
2”	50	23°	16°	19°
2.50”	65	28°	23°	23°
3”	80	23°	14°	18°
4”	100	16°	11°	14°





Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

	EU Service Micron Max.
Mechanical Polish	No Mechanical Polish
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish

How To Order

Product Code

A	224	B	5	4	P	0000001

A = All connexion possible

Product series
224 = Aseptic Valve

Revision letter
B = ITT supplier identification

Actuator type
5 = Manual Operated Actuator 913

Valve Size
4 = 1/2¨ (DN15) 0.5¨
5 = 3/4¨ (DN20) 0,75¨
6 = 1¨ (DN25)
8 = 1 1/2¨ (DN40) 1.5¨
9 = 2¨ (DN50)
A = 2 1/2¨ (DN65) 2,5¨
C = 3¨ (DN80)
D = 4¨ (DN100)

Diaphragm material
P = E (PTFE)
E = E (EDPM)

Series
Sequential

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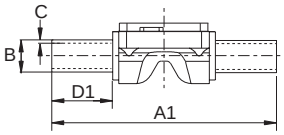
Visit our website at www.emerson.com/asco
Designed and manufactured by ITT
服务热线：4006-918-365
网址：http://www.ivalve.cc
Asco
传真：(86-532)585-10-365
Email：sales@bechinas.com

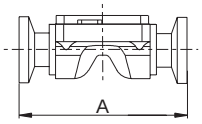
Dimensions: mm (Body)

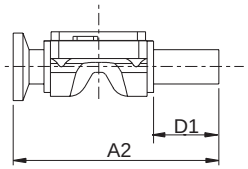
Type 01
butt welding connection

Type 02
clamp connection

Type 03
clamp connection +
butt welding connection







ANSI Forging										SMS	
B		A	A1	D1	A2	C				B	C
End connection size		Overall length (mm)	Overall length (mm)	Weld Tangent (mm)	Overall length (mm)	20 GA 0.812	18 GA 1.02	16 GA 1.29	14 GA 1.63		
IN	DN	Clamp	Extended BW Forging	Extended BW Forging	Clamp x butt welding connection (BW)	Extended BW	Extended BW ASME BPE	Extended BW	Extended BW ASME BPE	butt welding connection (BW)	
0.5”	15	89	128	38	108,7	O	O	S	O		
0.75”	20	102	140	38	120,7	O	O	S	O		
1”	25	114	151	38	132,6		O	S	O	25	1,2
1.5”	40	140	173	38	156,2		O	S	O	38	1,2
2”	50	159	188	38	173,7			S	O	51	1,2
2.5”	65	222	252	44,5	237,2			S		63,5	1,6
3”	80	222	252	44,5	237,2			S	O	76,1	2
4”	100	292	330	51	311,2			O	S		

ISO										DIN Serie 1		DIN Serie 2		DIN Serie 3	
End connection size	A	D1	B	C						B	C	B	C	B	C
	(mm)	(mm)	(mm)	1	1.2	1.6	2	2.3	2.6	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
DN15	106	25	21.3			S	O			18	1	19	1.5	20	2
DN20	118	25	26.9			S	O			22	1	23	1.5	24	2
DN25	127	25	33.7			O	S			28	1	29	1.5	30	2
DN40	174	35	48.3			O	S			40	1	41	1.5	42	2
DN50	191	35	60.3				S	O	O	52	1	53	1.5	54	2
DN65	254	44.5	76.1				O	S	O	70	2				
DN80	254	44.5	88.9					S	O	85	2				
DN100	330	51	114.3					S	O	104	2				

O = Optional
S = Standard

Asco BCAE Automation Solutions
青岛秉诚自动化设备有限公司
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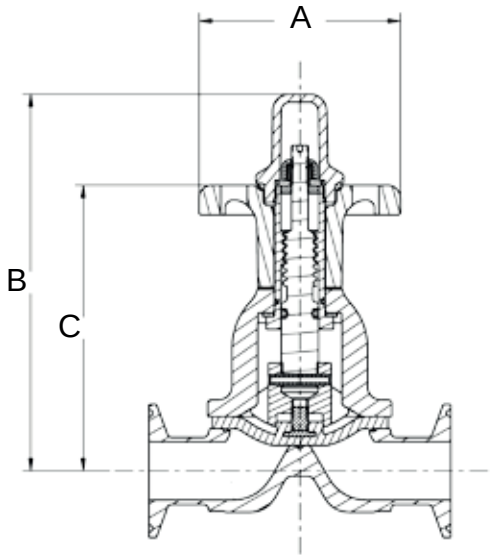
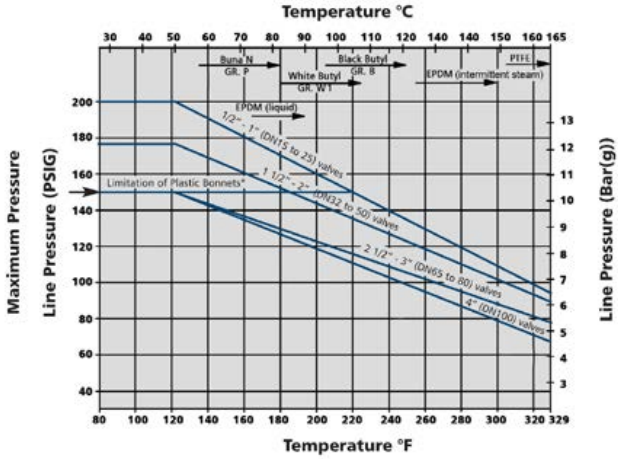
服务热线：4006-918-365
网址：http://www.ivalve.cc
EMERSON
传真：(86-532)585-10-365
Email：sales@bechinas.com

Dimensions: mm (Actuator)



Valve Size (DN)	A (mm)	B (mm)	C (mm)
15	76,2	92,1	70,0
20	76,2	117,5	88,8
25	76,2	139,8	106,0
40	136,7	210,9	132,3
50	139,7	226,2	147,4
65	196,8	294,9	191,3
80	196,8	294,9	191,3
100	257,8	378,6	260,2

Pressure/Temperature Limitations



* This line shows the limitation of plastic bonnets including the 963 and Advantage Actuators.

Note: Elastomer diaphragms may be used in vacuum service within above temperature recommendations. For services exceeding charted pressure/temperature recommendations, consult factory. The chart does not pertain to steam or corrosive services.

ASCO™ ASEPTIC VALVES

MANUAL OPERATED, DN 15 TO DN 100

SERIES **224**

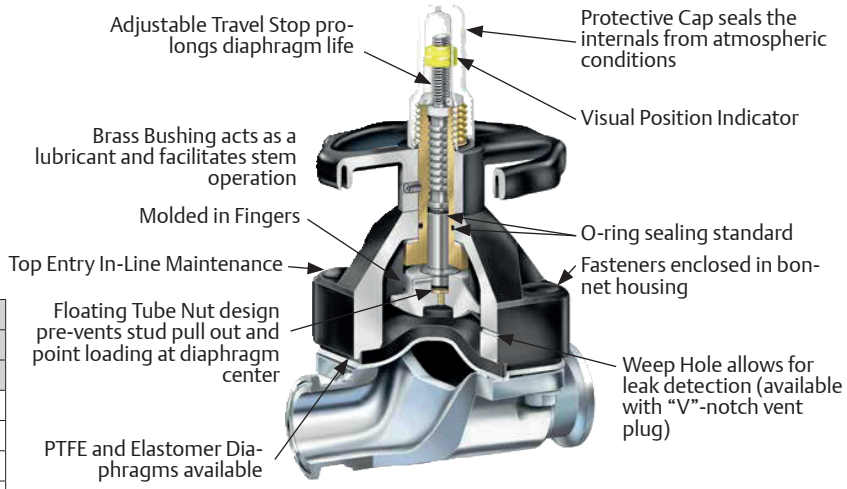
- Manual operated aseptic valve, designed for the bioprocessing industry.
- The diaphragm separates the piloting from the fluid. It ensures safety and quality of the final product.
- Forged body in-line with the highest material standards. Complies with stainless steel 316L, 1.4435 sulfur controlled to ASME BPE standards, and contain under 0.5% of ferrite.
- Resistant to standard washroom protocols, this valve is the compact, autoclavable solution for Pharmaceutical / Bioprocessing applications.

General Valve Information

Size range	DN 15 to DN 100
Max. service pressure	10,34 bar
Max. service temperature	+149°C
Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C
Pressure/Temperature limitations	See page 12
Bonnet and Handwheel material	Glass reinforced Polyesthersulfone (PES)
Corrosion resistance	Alcohol, chloride and most caustic washdowns

Standard features

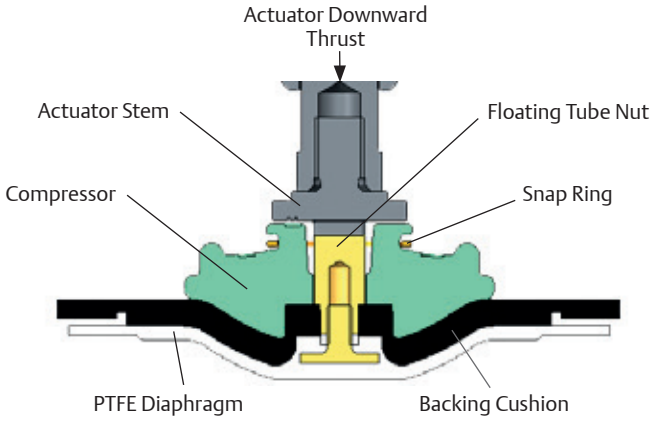
- Autoclavable1
- Rising stem
- Adjustable travel stop
- Protective PPS cap
- Brass stem bushing
- Visual position indicator
- Permanent lubrication
- O-ring seals
- Stainless steel compressor 0.5 - 2" (DN 15 to DN 50), bronze compressor 3 - 4" (DN 80 - DN 100)
- Enclosed fasteners 0.5 to 3" (DN 15 to DN 80)
- Hygienic internals: 0.5–4" (DN 15 to DN 100)



Diaphragm material compatibility *

Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R

*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory



Diaphragm certifications

- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 "Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products" available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

Class VI

Asco BCAE Automation Solutions
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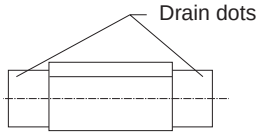
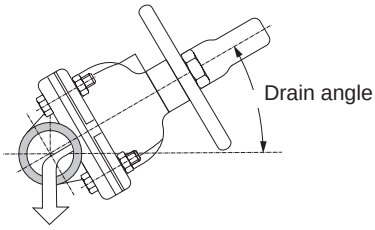
服务热线：4006-918-365
网址：http://www.ivalve.cc
EMERSON
传真：(86-532)585-10-365
Email：sales@bechinas.com

Drain angle

Aseptic valve may be installed in vertical or horizontal lines, as required. Drain marks are provided as a standard on a forged body to facilitate installation and optimized drainability. One mark must be located in the vertical plane, cutting the centerline of the pipe.

Valve Size (IN)	Valve Size (DN)	ANSI	ISO	DIN
0.5”	15	30°	20°	20°
0.75”	20	30°	21°	25°
1”	25	30°	22°	26°
1.5”	40	28°	17°	22°
2”	50	23°	16°	19°
2.50”	65	28°	23°	23°
3”	80	23°	14°	18°
4”	100	16°	11°	14°





Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

Mechanical Polish	EU Service Micron Max.
	§No Mechanical Polish§
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish

How To Order

Product Code

A 224 B 6 4 P 0000001

A = All connexion possible

Product series
224 = Aseptic Valve

Revision letter
B = ITT supplier identification

Actuator type
6 = Manual Operated Actuator 963

Series
Sequential

Diaphragm material
P = E (PTFE)
E = E (EDPM)

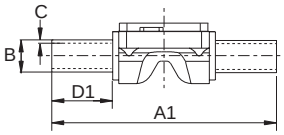
Valve Size
4 = 1/2¨ (DN15) 0.5¨
5 = 3/4¨ (DN20) 0,75¨
6 = 1¨ (DN25)
8 = 1 1/2¨ (DN40) 1.5¨
9 = 2¨ (DN50)
A = 2 1/2¨ (DN65) 2,5¨
C = 3¨ (DN80)
D = 4¨ (DN100)

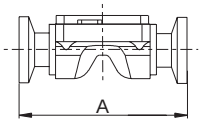
Dimensions: mm (Body)

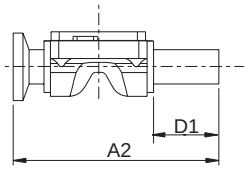
Type 01
butt welding connection

Type 02
clamp connection

Type 03
clamp connection +
butt welding connection





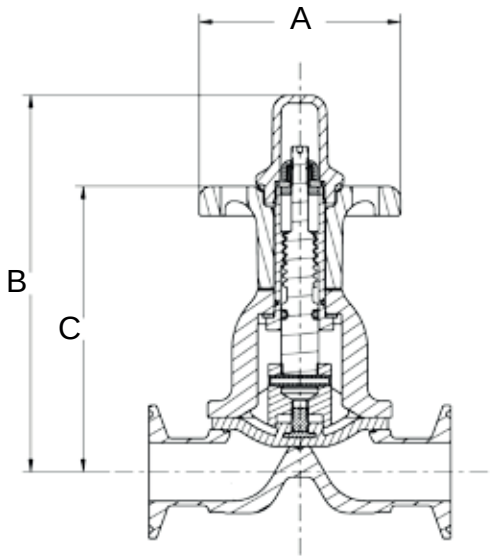


ANSI Forging										SMS	
B		A	A1	D1	A2	C				B	C
End connection size		Overall length (mm)	Overall length (mm)	Weld Tangent (mm)	Overall length (mm)	20 GA 0.812	18 GA 1.02	16 GA 1.29	14 GA 1.63		
IN	DN	Clamp	Extended BW Forging	Extended BW Forging	Clamp x butt welding connection (BW)	Extended BW	Extended BW ASME BPE	Extended BW	Extended BW ASME BPE	butt welding connection (BW)	
0.5”	15	89	128	38	108,7	O	O	S	O		
0.75”	20	102	140	38	120,7	O	O	S	O		
1”	25	114	151	38	132,6		O	S	O	25	1,2
1.5”	40	140	173	38	156,2		O	S	O	38	1,2
2”	50	159	188	38	173,7			S	O	51	1,2
2.5”	65	222	252	44,5	237,2			S		63,5	1,6
3”	80	222	252	44,5	237,2			S	O	76,1	2
4”	100	292	330	51	311,2			O	S		

ISO										DIN Serie 1		DIN Serie 2		DIN Serie 3	
End connection size	A	D1	B	C						B	C	B	C	B	C
	(mm)	(mm)	(mm)	1	1.2	1.6	2	2.3	2.6	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
DN15	106	25	21.3			S	O			18	1	19	1.5	20	2
DN20	118	25	26.9			S	O			22	1	23	1.5	24	2
DN25	127	25	33.7			O	S			28	1	29	1.5	30	2
DN40	174	35	48.3			O	S			40	1	41	1.5	42	2
DN50	191	35	60.3				S	O	O	52	1	53	1.5	54	2
DN65	254	44.5	76.1				O	S	O	70	2				
DN80	254	44.5	88.9					S	O	85	2				
DN100	330	51	114.3					S	O	104	2				

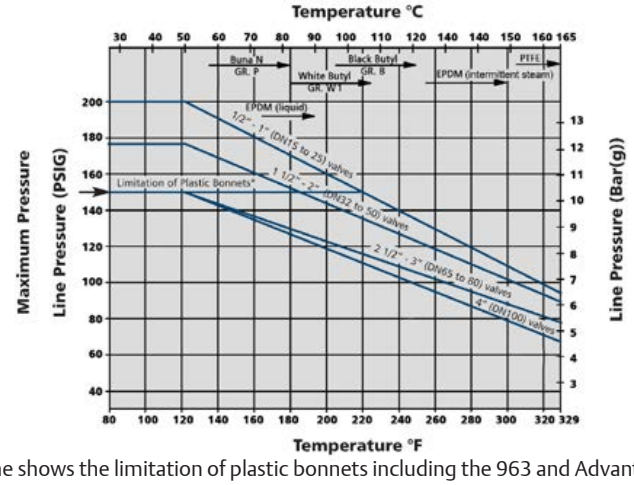
O = Optional
S = Standard

Dimensions: mm (Actuator)



Valve Size (DN)	A (mm)	B (mm)	C (mm)
15	76,2	92,1	70,0
20	76,2	117,5	88,8
25	76,2	139,8	106,0
40	136,7	210,9	132,3
50	139,7	226,2	147,4
65	196,8	294,9	191,3
80	196,8	294,9	191,3
100	257,8	378,6	260,2

Pressure/Temperature Limitations



* This line shows the limitation of plastic bonnets including the 963 and Advantage Actuators.

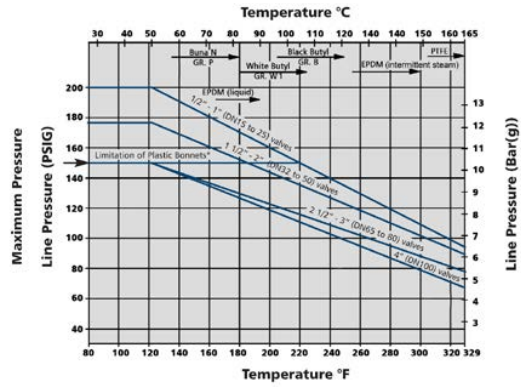
Note: Elastomer diaphragms may be used in vacuum service within above temperature recommendations. For services exceeding charted pressure/temperature recommendations, consult factory. The chart does not pertain to steam or corrosive services.

ASCO™ ASEPTIC VALVES

MANUAL OPERATED, DN 15 TO DN 50

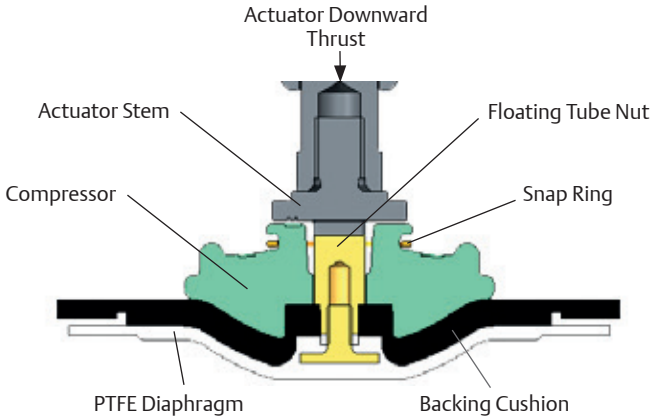
SERIES
224

- Manual operated aseptic valve, designed for the bioprocessing industry.
- The diaphragm separates the piloting from the fluid. It ensures safety and quality of the final product.
- Forged body in-line with the highest material standards. Complies with stainless steel 316L, 1.4435 sulfur controlled to ASME BPE standards, and contain under 0.5% of ferrite.
- Resistant to standard washroom protocols, this valve is the compact, autoclavable solution for Pharmaceutical / Bioprocessing applications.

General Valve Information	
Size range	DN 15 to DN 50
Max. service pressure	DN 15-20-25: 13,8 bar / DN 40-50: 12,1 bar
Max. service temperature	
Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C
Pressure/Temperature limitations	See page 16
Bonnet material	316 Stainless steel
Handwheel material	Polyesthersulfone (PES), FDA compliant
Corrosion resistance	Alcohol, chloride and most caustic washdowns

Diaphragm material compatibility *			
Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R

*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory



Diaphragm certifications

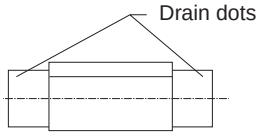
- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 "Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products" available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

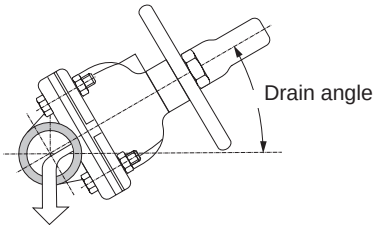
Class VI

Drain angle

Aseptic valve may be installed in vertical or horizontal lines, as required. Drain marks are provided as a standard on a forged body to facilitate installation and optimized drainability. One mark must be located in the vertical plane, cutting the centerline of the pipe.

Valve Size (IN)	Valve Size (DN)	ANSI	ISO	DIN
0.5”	15	30°	20°	20°
0.75”	20	30°	21°	25°
1”	25	30°	22°	26°
1.5”	40	28°	17°	22°
2”	50	23°	16°	19°





Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

	EU Service Micron Max.
Mechanical Polish	No Mechanical Polish
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish

How To Order

Product Code

A 224 B 7 4 P 0000001

A = All connexion possible

Product series
224 = Aseptic Valve

Revision letter
B = ITT supplier identification

Actuator type
7 = Manual Operated Actuator 970

Valve Size
4 = 1/2¨ (DN15) 0.5¨
5 = 3/4¨ (DN20) 0,75¨
6 = 1¨ (DN25)
8 = 1 1/2¨ (DN40) 1.5¨
9 = 2¨ (DN50)

Diaphragm material
P = E (PTFE)
E = E (EDPM)

Series
Sequential

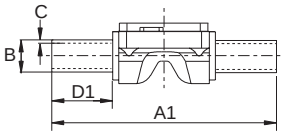
EMERSON BCAE Automation Solutions
青岛秉诚自动化设备有限公司
地址：中国.青岛市重庆南路99号海尔云街甲3号楼7F
Visit our website at www.emerson.com/asco
Designed and manufactured by ITT
服务热线：4006-918-365
网址：http://www.ivalve.cc
Asco
传真：(86-532)585-10-365
Email：sales@bechinas.com

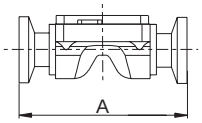
Dimensions: mm (Body)

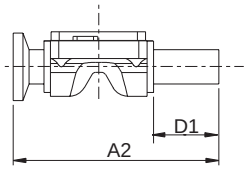
Type 01
butt welding connection

Type 02
clamp connection

Type 03
clamp connection +
butt welding connection





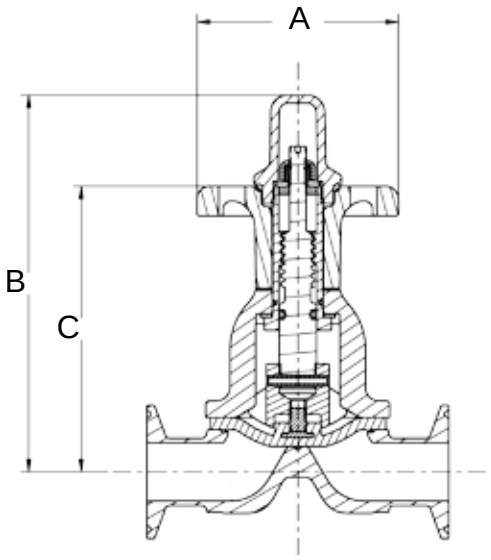


ANSI Forging										SMS	
B		A	A1	D1	A2	C				B	C
End connection size		Overall length (mm)	Overall length (mm)	Weld Tangent (mm)	Overall length (mm)	20 GA 0.812	18 GA 1.02	16 GA 1.29	14 GA 1.63		
IN	DN	Clamp	Extended BW Forging	Extended BW Forging	Clamp x butt welding connection (BW)	Extended BW	Extended BW ASME BPE	Extended BW	Extended BW ASME BPE	butt welding connection (BW)	
0.5”	15	89	128	38	108,7	O	O	S	O		
0.75”	20	102	140	38	120,7	O	O	S	O		
1”	25	114	151	38	132,6		O	S	O	25	1,2
1.5”	40	140	173	38	156,2		O	S	O	38	1,2
2”	50	159	188	38	173,7			S	O	51	1,2

ISO										DIN Serie 1		DIN Serie 2		DIN Serie 3	
End connection size	A	D1	B	C						B	C	B	C	B	C
	(mm)	(mm)	(mm)	1	1.2	1.6	2	2.3	2.6	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
DN15	106	25	21.3			S	O			18	1	19	1.5	20	2
DN20	118	25	26.9			S	O			22	1	23	1.5	24	2
DN25	127	25	33.7			O	S			28	1	29	1.5	30	2
DN40	174	35	48.3			O	S			40	1	41	1.5	42	2
DN50	191	35	60.3				S	O	O	52	1	53	1.5	54	2

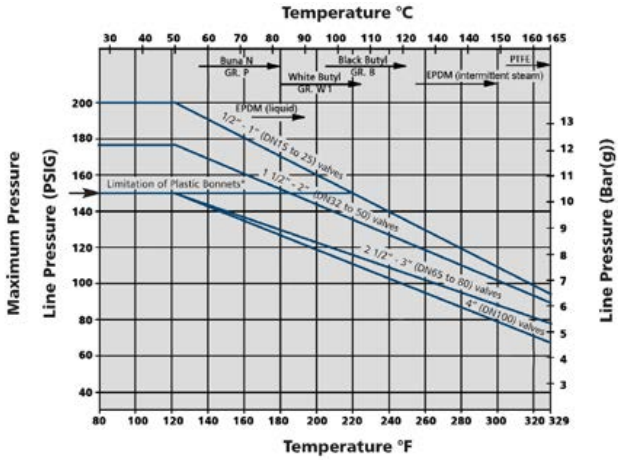
O = Optional
S = Standard

Dimensions: mm (Actuator)



Valve Size (DN)	A (mm)	C (mm)	D (mm)
15	69,9	93,7	99,1
20	69,9	104,4	109,7
25	69,9	120,3	125,7
40	133,3	153,6	165,9
50	133,3	153,6	165,9

Pressure/Temperature Limitations



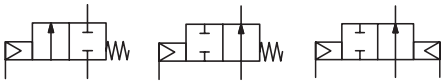
* This line shows the limitation of plastic bonnets including the 963 and Advantage Actuators.

Note: Elastomer diaphragms may be used in vacuum service within above temperature recommendations. For services exceeding charted pressure/temperature recommendations, consult factory. The chart does not pertain to steam or corrosive services.

ASCO™ ASEPTIC VALVES

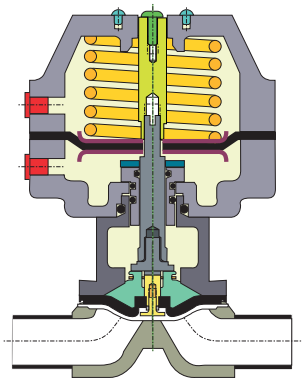
PRESSURE OPERATED, POLYESTHERSULFONE (PES) OPERATOR, DN 6 TO DN 50

SERIES **224**



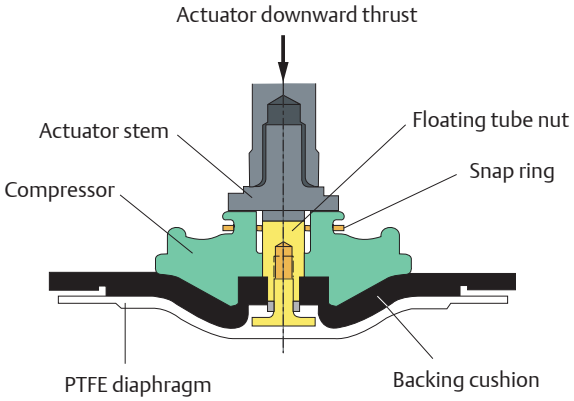
- Pressure operated aseptic valve, designed for the bioprocessing industry.
- The diaphragm separates the piloting from the fluid. It ensures safety and quality of the final product.
- Forged body in-line with the highest material standards. Complies with stainless steel 316L, 1.4435 sulfur controlled to ASME BPE standards, and contain under 0.5% of ferrite.
- Modular compressor design for quick changeover between PTFE and elastomer diaphragm.
- Autoclavable (steam at 125°C for 25 minutes).

General Valve Information	
Size range	DN 6 to DN 50
Operating mode	Normally closed, normally open, double acting
Max. service pressure	10,3 bar
Max. service temperature	+150°C
Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C
Max actuator chamber pressure	6,2 bar
Corrosion resistance	Alcohol, chloride and most caustic washdowns



Diaphragm material compatibility *			
Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R

*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory



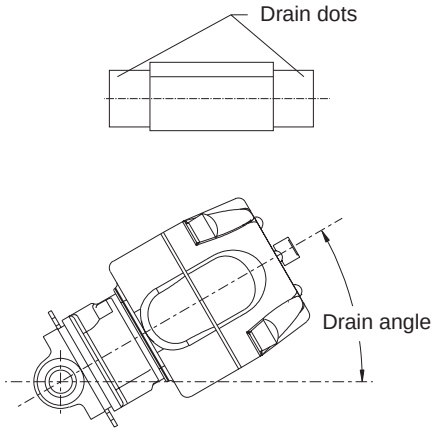
Diaphragm certifications

- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 “Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products” available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

Drain angle

Aseptic valve may be installed in vertical or horizontal lines, as required. Drain marks are provided as a standard on a forged body to facilitate installation and optimized drainability. One mark must be located in the vertical plane, cutting the centerline of the pipe.

Valve Size (IN)	Valve Size (DN)	ANSI	ISO	DIN
0.25”	6	30°	20°	20°
0.375”	10	30°	20°	20°
0.5”	15	30°	20°	20°
0.75”	20	30°	21°	25°
1”	25	30°	22°	26°
1.5”	40	28°	17°	22°
2”	50	23°	16°	19°



Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

Mechanical Polish	EU Service Micron Max.
	No Mechanical Polish
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish

How To Order

Product Code

A 224 B 8 1 P 0000001

A = All connexion possible

Product series
224 = Aseptic Valve

Revision letter
B = ITT supplier identification

Actuator type
8 = Pneumatic Actuator Advantage 2.1

Series
Sequential

Diaphragm material
P = E (PTFE)
E = E (EDPM)

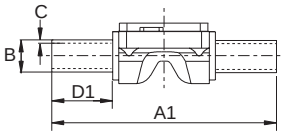
Valve Size
1 = 1/4¨ (DN6) 0.25¨
3 = 3/8¨ (DN10) 0.375¨
4 = 1/2¨ (DN15) 0.5¨
5 = 3/4¨ (DN20) 0,75¨
6 = 1¨ (DN25)
8 = 1 1/2¨ (DN40) 1.5¨
9 = 2¨ (DN50)

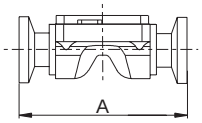
Dimensions: mm (Body)

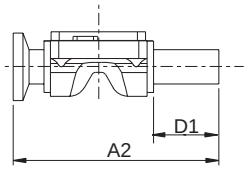
Type 01
butt welding connection

Type 02
clamp connection

Type 03
clamp connection + butt welding connection





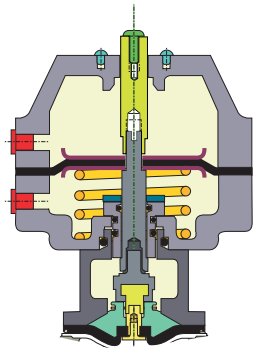


ANSI Forging										SMS	
B		A	A1	D1	A2	C				B	C
End connection size		Overall length (mm)	Overall length (mm)	Weld Tangent (mm)	Overall length (mm)	20 GA 0.812	18 GA 1.02	16 GA 1.29	14 GA 1.63		
IN	DN	Clamp	Extended BW Forging	Extended BW Forging	Clamp x butt welding connection (BW)	Extended BW	Extended BW ASME BPE	Extended BW	Extended BW ASME BPE	butt welding connection (BW)	
0.25”	6	64	89	25	76,2	S	O				
0.375”	10	64	89	25	76,2	S					
0.5”	15	64	89	25	76,2		O	S			
		89	128	38	108,7	O	O	S	O		
0.75”	20	102	140	38	120,7	O	O	S	O		
1”	25	114	151	38	132,6		O	S	O	25	1,2
1.5”	40	140	173	38	156,2		O	S	O	38	1,2
2”	50	159	188	38	173,7			S	O	51	1,2

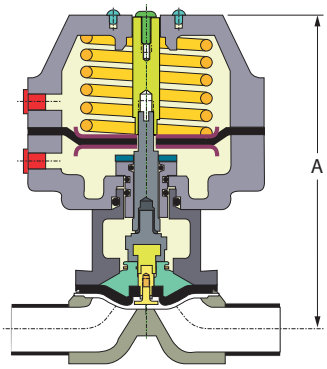
ISO										DIN Serie 1		DIN Serie 2		DIN Serie 3	
End connection size	A	D1	B	C						B	C	B	C	B	C
	(mm)	(mm)	(mm)	1	1.2	1.6	2	2.3	2.6	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
DN6	89	25	8	S	O					8	1				
DN10	89	25	13,5	O		S	O			10	1				
DN15	89	25	17,2	O		S	O								
	106	25	21,3			S	O			18	1	19	1,5	20	2
DN20	118	25	26,9			S	O			22	1	23	1,5	24	2
DN25	127	25	33,7			O	S			28	1	29	1,5	30	2
DN40	174	35	48,3			O	S			40	1	41	1,5	42	2
DN50	191	35	60,3				S	O	O	52	1	53	1,5	54	2

O = Optional
S = Standard

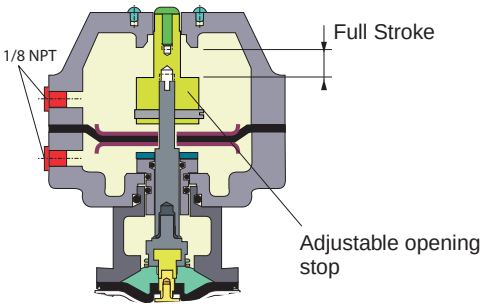
Dimensions: mm (Actuator)



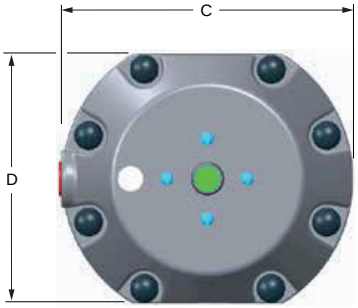
Fail Open
(Spring-To-Open, Air-to-Close)



Fail Close
(Air-to-Open, Spring-to-Close)



Optional Adjustable Opening Stop
(AOS)

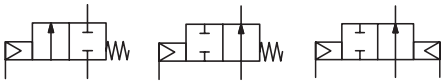


Valve Size (DN)	A (mm) [Valve open]	C (mm)	D (mm)
6	109,5	-	-
10	109,5	-	-
15	109,5	-	-
	123,7	85	76
20	153,9	116	98
25	166,6	116	98
40	264,7	163	151
50	283,5	163	151

ASCO™ ASEPTIC VALVES

PRESSURE OPERATED, STAINLESS STEEL OPERATOR, DN 6 TO DN 50

SERIES
224

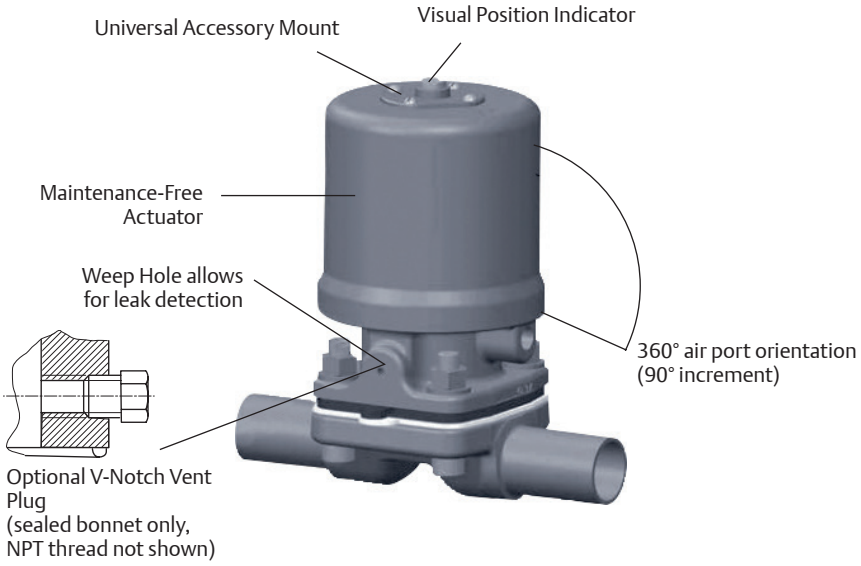


- Pressure operated aseptic valve, designed for the bioprocessing industry.
- The diaphragm separates the piloting from the fluid. It ensures safety and quality of the final product.
- Forged body in-line with the highest material standards. Complies with stainless steel 316L, 1.4435 sulfur controlled to ASME BPE standards, and contain under 0.5% of ferrite.
- Modular compressor design for quick changeover between PTFE and elastomer diaphragm.
- Suited for severe duty applications, such as SIP and high cycle.

General Valve Information	
Size range	DN 6 to DN 50
Operating mode	Normally closed, normally open, double acting
Max. service pressure	10,3 bar
Max. service temperature	+150°C
Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C
Max actuator chamber pressure	6,2 bar
Corrosion resistance	Alcohol, chloride and most caustic washdowns

Diaphragm material compatibility *			
Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R

*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory



Diaphragm certifications

- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 “Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products” available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

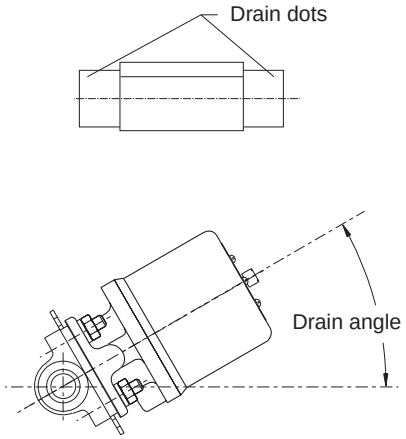
Class VI

Asco BCAE Automation Solutions
青岛秉诚自动化设备有限公司
地址：中国.青岛市重庆南路99号海尔云街甲3号楼7F
服务热线：4006-918-365
网址：http://www.ivalve.cc
EMERSON
传真：(86-532)585-10-365
Email：sales@bechinas.com

Drain angle

Aseptic valve may be installed in vertical or horizontal lines, as required. Drain marks are provided as a standard on a forged body to facilitate installation and optimized drainability. One mark must be located in the vertical plane, cutting the centerline of the pipe.

Valve Size (IN)	Valve Size (DN)	ANSI	ISO	DIN
0.25”	6	30°	20°	20°
0.5”	15	30°	20°	20°
0.75”	20	30°	21°	25°
1”	25	30°	22°	26°
1.5”	40	28°	17°	22°
2”	50	23°	16°	19°



Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

	EU Service Micron Max.
Mechanical Polish	No Mechanical Polish
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish

How To Order

Product Code

A	224	B	9	1	P	0000001

A = All connexion possible

Product series
224 = Aseptic Valve

Revision letter
B = ITT supplier identification

Actuator type
9 = Pneumatic Actuator ACS

Valve Size
1 = 1/4¨ (DN6) 0.25¨
4 = 1/2¨ (DN15) 0.5¨
5 = 3/4¨ (DN20) 0,75¨
6 = 1¨ (DN25)
8 = 1 1/2¨ (DN40) 1.5¨
9 = 2¨ (DN50)

Diaphragm material
P = E (PTFE)
E = E (EDPM)

Series
Sequential

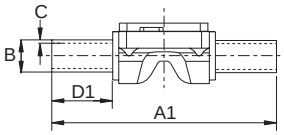
EMERSON BCAE Automation Solutions
青岛秉诚自动化设备有限公司
地址：中国.青岛市重庆南路99号海尔云街甲3号楼7F
Visit our website at www.emerson.com/asco
Designed and manufactured by ITT
服务热线：4006-918-365
网址：http://www.ivalve.cc
Asco
传真：(86-532)585-10-365
Email：sales@bechinas.com

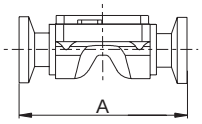
Dimensions: mm (Body)

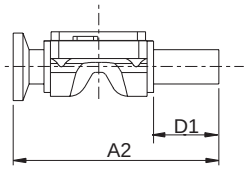
Type 01
butt welding connection

Type 02
clamp connection

Type 03
clamp connection +
butt welding connection





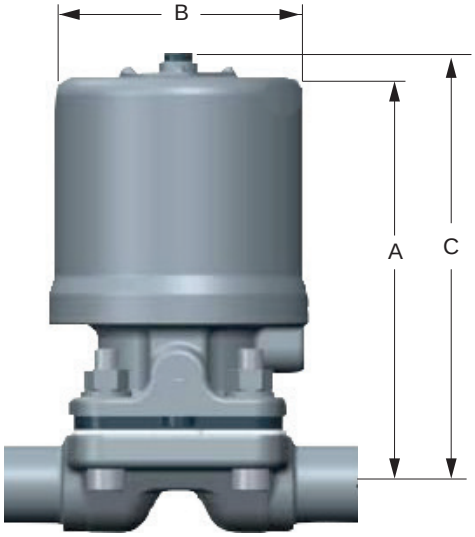


ANSI Forging										SMS	
B		A	A1	D1	A2	C				B	C
End connection size		Overall length (mm)	Overall length (mm)	Weld Tangent (mm)	Overall length (mm)	20 GA 0.812	18 GA 1.02	16 GA 1.29	14 GA 1.63		
IN	DN	Clamp	Extended BW Forging	Extended BW Forging	Clamp x butt welding connection (BW)	Extended BW	Extended BW ASME BPE	Extended BW	Extended BW ASME BPE	butt welding connection (BW)	
0.25”	6	64	89	25	76,2	S	O				
0.5”	15	89	128	38	108,7	O	O	S	O		
0.75”	20	102	140	38	120,7	O	O	S	O		
1”	25	114	151	38	132,6		O	S	O	25	1,2
1.5”	40	140	173	38	156,2		O	S	O	38	1,2
2”	50	159	188	38	173,7			S	O	51	1,2

ISO										DIN Serie 1		DIN Serie 2		DIN Serie 3	
End connection size	A	D1	B	C						B	C	B	C	B	C
	(mm)	(mm)	(mm)	1	1.2	1.6	2	2.3	2.6	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
DN6	89	25	8	S	O					8	1				
DN15	106	25	21,3			S	O			18	1	19	1,5	20	2
DN20	118	25	26,9			S	O			22	1	23	1,5	24	2
DN25	127	25	33,7			O	S			28	1	29	1,5	30	2
DN40	174	35	48,3			O	S			40	1	41	1,5	42	2
DN50	191	35	60,3				S	O	O	52	1	53	1,5	54	2

O = Optional
S = Standard

Dimensions: mm (Actuator)

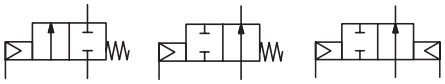


Valve Size (DN)	A (mm)	B (mm)	C (mm)
6	90,2	44,5	99,1
15	107,7	66,5	114
20	131,6	79,2	141,2
25	138,2	79,2	150,9
40	229,9	117,3	250,4

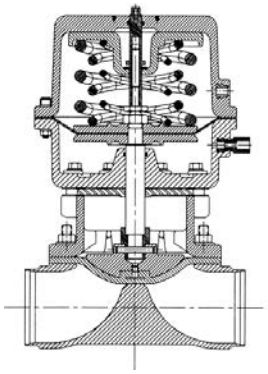
ASCO™ ASEPTIC VALVES

PRESSURE OPERATED, VINYL-ESTHER THERMOSET OPERATOR, DN 80 - DN 100

SERIES **224**



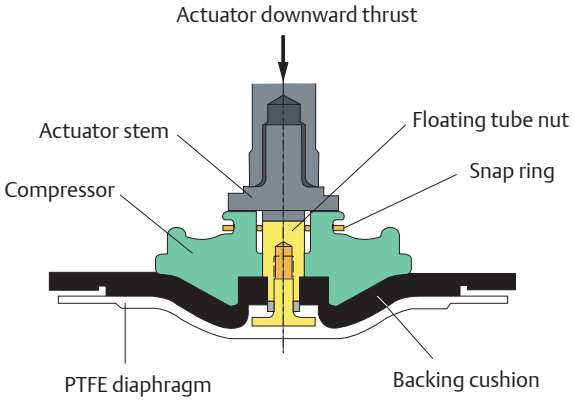
- Pressure operated aseptic valve, designed for the bioprocessing industry.
- The diaphragm separates the piloting from the fluid. It ensures safety and quality of the final product.



General Valve Information	
Size range	DN 80 - DN 100
Operating mode	Normally closed, normally open, double acting
Max. service pressure	10,34 bar
Max. service temperature	+149°C
Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C
Actuator cover material	Vinyl-Ester Thermoset (FDA compliant)
Bonnet material	Nylon coated ductile iron (4¨); Stainless steel (3¨)
Corrosion resistance	Alcohol, chloride and most caustic washdowns

Diaphragm material compatibility *			
Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R

*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory



Diaphragm certifications

- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 “Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products” available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

FDA Ex USP Class VI CE

Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

Mechanical Polish	EU Service Micron Max.
	No Mechanical Polish
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish

How To Order

Product Code

A	224	B	A	C	P	0000001

A = All connexion possible

Product series
224 = Aseptic Valve

Revision letter
B = ITT supplier identification

Actuator type
A = Pneumatic Actuator series 33

Valve Size
C = 3¨ (DN80)
D = 4¨ (DN100)

Diaphragm material
P = E (PTFE)
E = E (EDPM)

Series
Sequential

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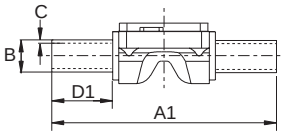
Asco
传真：(86-532)585-10-365
Email：sales@bechinas.com

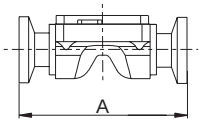
Dimensions: mm (Body)

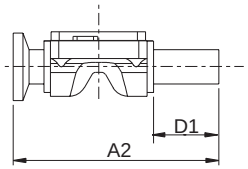
Type 01
butt welding connection

Type 02
clamp connection

Type 03
clamp connection + butt welding connection





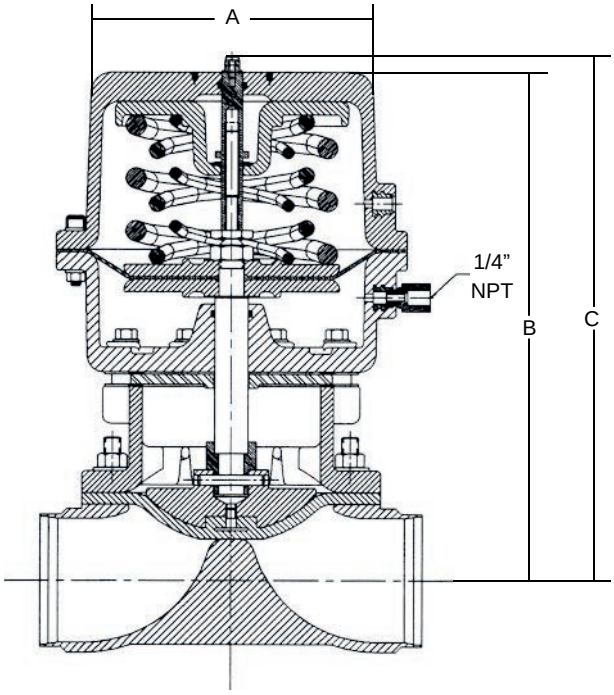


ANSI Forging										SMS	
B		A	A1	D1	A2	C				B	C
End connection size		Overall length (mm)	Overall length (mm)	Weld Tangent (mm)	Overall length (mm)	20 GA 0.812	18 GA 1.02	16 GA 1.29	14 GA 1.63		
IN	DN	Clamp	Extended BW Forging	Extended BW Forging	Clamp x butt welding connection (BW)	Extended BW	Extended BW ASME BPE	Extended BW	Extended BW ASME BPE	butt welding connection (BW)	
3”	80	222	252	44,5	237,2			S	O	76,1	2
4”	100	292	330	51	331,2			O	S		

ISO										DIN Serie 1	
	A	D1	B	C						B	C
End connection size	(mm)	(mm)	(mm)	1	1.2	1.6	2	2.3	2.6	(mm)	(mm)
DN80	254	44,5	88,9					S	O	85	2
DN100	330	51	114,3					S	O	104	2

O = Optional
S = Standard

Dimensions: mm (Actuator)



Valve Size (DN)	A (mm)	B (mm)	C (mm)
80	201,9	360,7	416,8
100	201,9	401,8	452,2

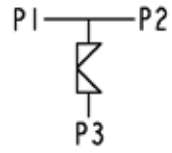
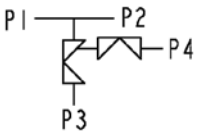
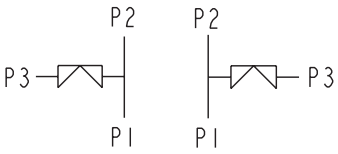
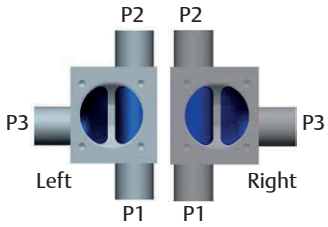
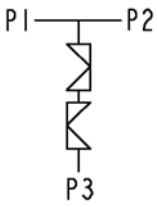
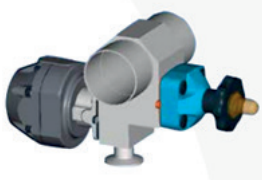
ASCO™ ASEPTIC VALVES
ZERO STATIC USE POINTS

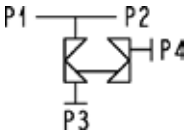
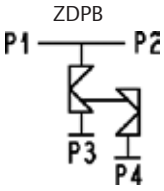
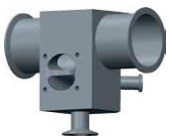
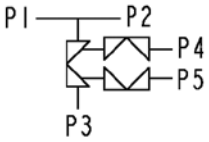
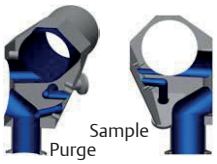
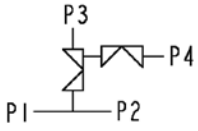
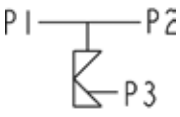
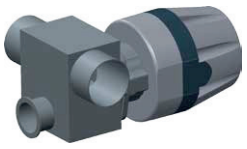
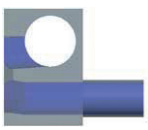
SERIES
224

Features

Zero Static use points are some of the most critical valves utilized in the Biopharmaceutical industry.

Use point valves allow process fluids to be transferred, sampled, drained or diverted with minimal impact on critical systems.

Description	P&ID	Illustration
Zero Static Tee (ZSBT)		
• Reduce dead legs. • Minimize the potential for contamination. • Main applications: WFI, purified water.		 Flow Path 
Zero Static Back to Back Sample (ZSBBS)		
• A modification of the zero static tee. • A second valve located at the back of the block provides access to a sample port. • Use to take samples. • Reduce contact surface and deadlegs.		 Flow Path 
Zero Static with vertical run (ZSBV)		
• Standard zero static valves are limited to horizontal main run by vertical outlet orientations. The ZSBV allows drainability with the main run in vertical orientation. • Minimize the potential for contamination. • Main applications: Sampling and diverting.		 Flow Path 
Zero Static Dual Inline (ZDI)		
• Designed specifically to allow for maintenance of two use points with minimum downtime. • Main applications: where the loop service intervals need to be maximized.		 Flow Path 

Description	P&ID	Illustration
Zero Static with Downstream Purge (ZDPT/ZDPB)		
• An integral valve located at the back of the valve assembly provides access to a purge port down stream. • ZDPT and ZDPB are an essential element of piping systems required to meet ASME BPE standard. • Main applications: CIP, SIP.	ZDPT  ZDPB 	Flow Path ZDPT   Flow Path ZDPB  
Zero Static with Upstream Sample and Downstream Purge (ZUD)		
• Allows for point of use sampling of the upstream flow, purging and sterilization of the downstream process and sampling from the same Zero Static valve. • Main applications: Single use point with multiple outlet, purging and steam sterilization of the downstream line, sampling of the upstream line.		Flow Path  
Zero Static Inverted with Drain (ZID)		
• Integrate the benefits of a zero static for low point feed or return lines while allowing for cleaning, sterilization and draining of the connectd process piping. • Main applications: for line feed applications that require the ability to drain the up stream line.		 Flow Path 
Zero Static Block body with Back Outlet Option (ZSBT-BO)		
• Instead of the standard Zero static Tee, the outlet is at the back of the block. • Minimized the vertical space required. • Reduce the space necessary when piping would require a 90° elbow the change the direction. • Main applications: low clearance areas below WFI and process vessels, skid process systems such as CIP.		 Flow Path 

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ASCO™ ASEPTIC VALVES

DIVERT AND STERILE ACCESS VALVES

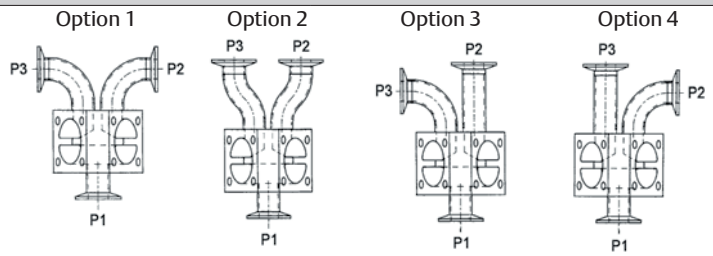
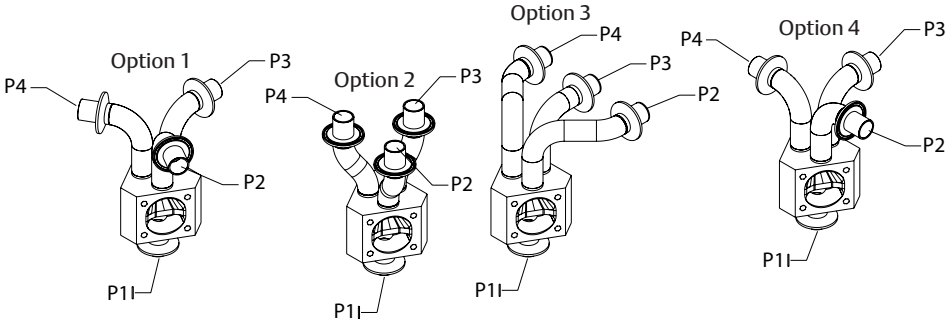
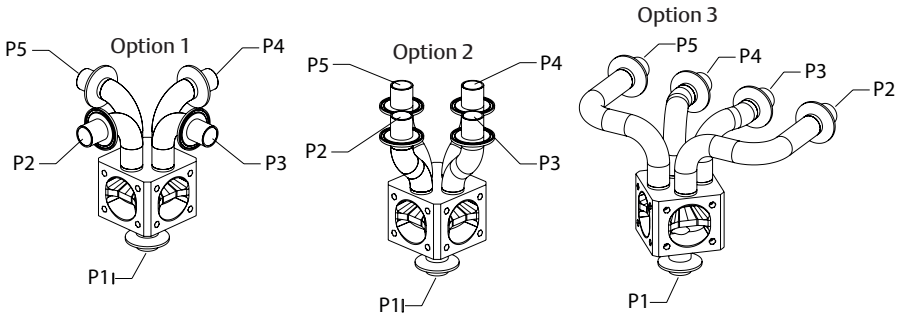
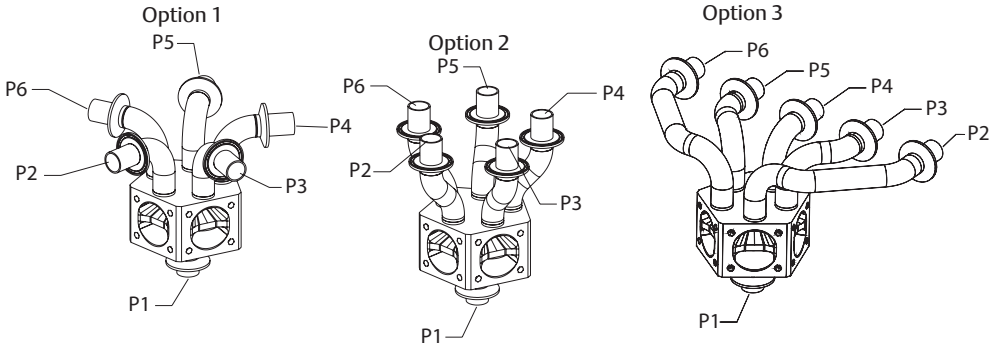
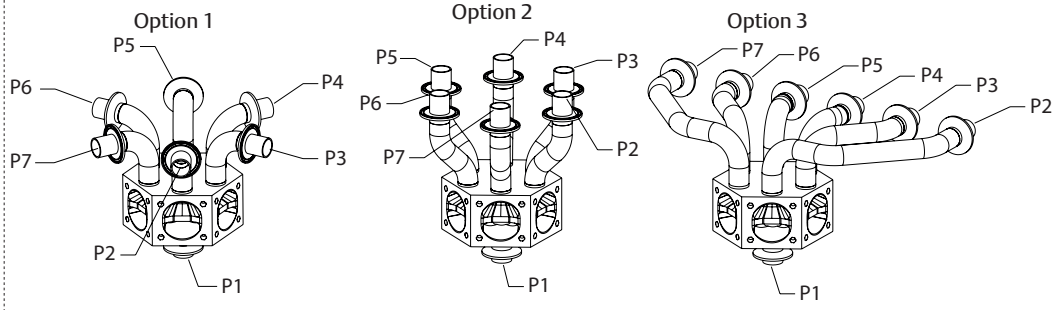
SERIES **224**

Features

Divert valves are instrumental in achieving efficient, cost effective piping design. They allow process fluids to be diverted, mixed, and/or sampled.

Divert valves minimize contact surfaces, minimize hold up volume, minimize piping dimensional envelope, reduce number of system weldments, and are more easily actuated and validated.

Description	P&ID	Illustration
Integral Sterile Access and GMP (ISG)		
• Provide the purge valve integral to the main body design. • Main applications: Process diversion, steam barrier / block sampling.	ISG Left P1 P2 P3 P1 P3 P2 Right P1 P2 P3 P2 P3 P1 Inverted ISG Left P3 P1 P2 P2 P3 P1 Right P3 P1 P2 P1 P3 P2	ISG Flow Path Left hand Right hand Inverted ISG Flow Path Right hand
2 through 6 Ways Multiport Divert Valves		
• Allows process fluids to be diverted, mixed and/or sampled. • Reduce piping. • Cost effective. • Avoid dead legs. • Main applications: Distribution of process flows, use in place of transfer panels, use for by-pass, drain and isolation, CIP distribution, switching between buffers for Chromatography.	DV2W P1 P2 P3 DV3W P1 P2 P3 P4 DV4W P1 P2 P3 P4 P5 DV5W P1 P2 P3 P4 P5 P6 DV6W P1 P2 P3 P4 P5 P6 P7	Pure-Flo 2-Way Divert Patent for 2-Way # 6,237,637 and 5, 427,150 Pure-Flo 5-Way Divert 2-Way (DV2W) 3-Way (DV3W) 4-Way (DV4W) 5-Way (DV5W) 6-Way (DV6W)

Description	P&ID	Illustration
2 through 6 Ways Multiport Divert Valves Outlet Options		
• 2-way		
• 3-way		
• 4-way		
• 5-way		
• 6-way		

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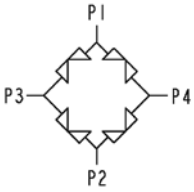
Description	P&ID	Illustration

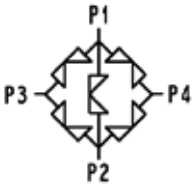
Chromatography Valve (CHRO & CHN)

- In a typical chromatography process, there is an assembly of 5 diaphragm valves that connect the chromatography column to the process piping.
- Minimizing dead legs.
- Reduce the overall space needed for the assembly.
- Main applications: Chromatography.

CHRO

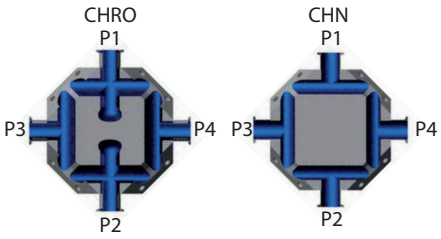


CHN



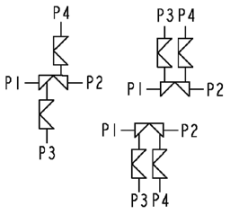
Patent #
6,112,767 and 5,906,223

Flow Path

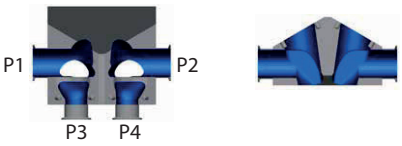


Integral Dual Sterile Access (IDSA)

- Allow access to the process system for sterilizing, sampling, cleaning, diverting or draining.
- Integrate access on either size of the valve.
- Main applications: Cleaning / Sterilization both upstream and downstream.

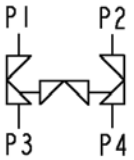


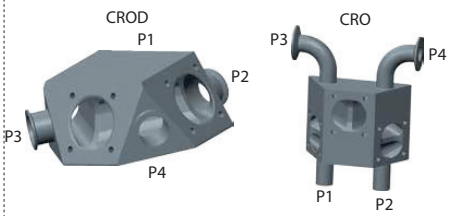
Flow Path



Crossover (CROD & CRO)

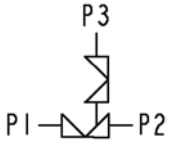
- Facilitate maintenance without shutting down the entire process.
- Main applications: isolation and bypass or equipment such as filter and bubble traps.

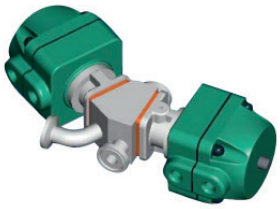




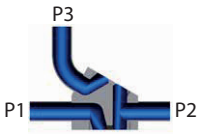
Integral Horizontal Sterile Access (IHSA)

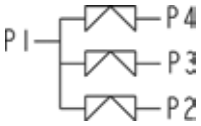
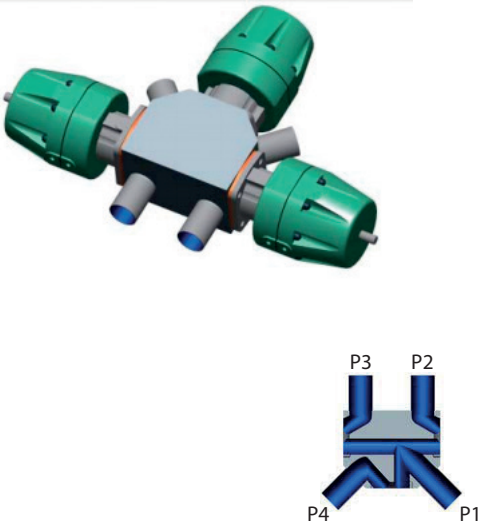
- Integral block incorporating second horizontal valve.
- Ideal for vertical space constraints.





Flow Path



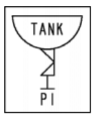
Description	P&ID	Illustration
Horizontal Divert Valve 3-Way (HDV3W)		
• Divert process flow, mixing flow paths, drain and isolation. • Low vertical space installations.		

ASCO™ ASEPTIC VALVES

TANK BOTTOM VALVE

SERIES
224

- The tank bottom diaphragm valve is designed for use at the bottom of a tank or vessel to drain or sample while minimizing the interior sump and preventing any dead leg for bacteria or microorganism entrapment.



General Valve Information	
Size range	DN 15 to DN 100
Operating mode	Normally close, normally open, double acting
Topworks	Manual operating, pressure operated
Max. service pressure	10,34 bar
Max. service temperature	+149°C
Min. service temperature	EPDM diaphragm: -30°C; PTFE diaphragm: -20°C

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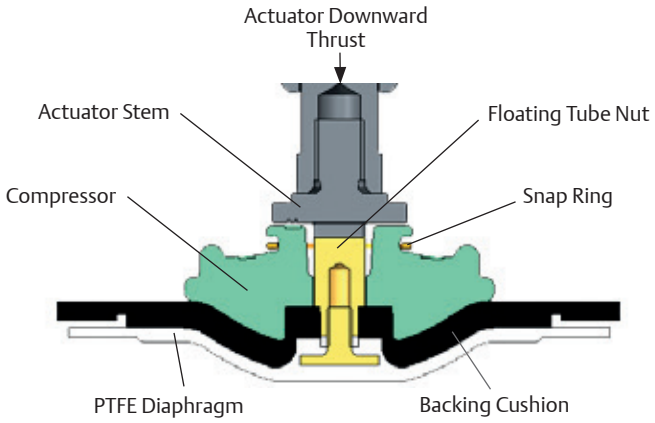
Diaphragm material compatibility *			
Applications		Material	
		EPDM	PTFE
Passivation	Nitric Acid 15% (1)	U	R
	Phosphoric 10% (1)	R	R
	Citric Acid 15% (1)	R	R
	Mixed Chelants (2)	R	R
Cleaning (5)	Sodium Hydroxide	R	R
	Sodium Hypochlorite	R	R
	Potassium Hydroxide	R	R
	Phosphoric Acid	R	R
	Hydrogen Peroxide	R	R
Sterilization	Saturated Steam 1,4 bar (126°C)	R (3)	R
	Saturated Steam 2,1 bar (135°C)	R (3)	R
	Saturated Steam 2,8 bar (142°C)	R (3)	R
	Dry Heat (165°C)	U	R
	Ozone (4)	R	R

*Ensure that the compatibility of the fluids in contact with the diaphragm is verified.
(1) At 60°C
(2) Ammonium citrate base at 80°C
(3) Limited life and undesirable failure mode
(4) 3% at 27°C
(5) Consult factory for specific temperature and concentration limitations.
R = Resistant
U = Unsatisfactory



Diaphragm certifications

- European Union Pressure Equipment directive 2014/68/EU
- FDA compliant
- 21CFR177.2600 – Elastomers
- 21CFR177.1550 – PTFE
- All diaphragms are available with USP class VI certificate of Conformance
- Chapter 87 In-Vitro
- Chapter 88 In-Vivo
- Certificate of compliance to EMEA/410/01 “Guidance on Minimizing the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products” available on demand.
- Certificate of traceability to EN 10204 3.1 B available upon request.

FDA Ex USP Class VI CE

Surface finish

Valve bodies are available in a complete range of mechanically or electropolished surface finishes to satisfy system design requirements.
Electropolishing is the electromechanical method of removing metal from the surface. This surface finishing improves corrosion resistance, removes inclusions and improves the overall surface for cleaning and sterilization.

Mechanical Polish	EU Service Micron Max.
	§No Mechanical Polish§
	0.8Ra
	0.6Ra
	0.5Ra
	0.38Ra
	0.28Ra
	0.25Ra
Electropolish	No Electropolish
	Both Interior and Exterior Electropolish