

The Pure-Flo product offering continues to evolve to meet the needs of the Bioprocessing industry. A complete line of manual and pneumatically actuated options are available to suit most any requirement. All Pure-Flo top works are robustly designed and constructed of durable FDA compliant materials. With decades of proven reliability and long cycle life, Pure-Flo actuators are the route to trouble free operation and reduced total cost of ownership.

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970 Stainless Steel Manual Bonnet

Resistant to standard washdown protocols, the 970 stainless steel bonnet is the compact, autoclavable solution for Pharmaceutical/ Bioprocessing applications.

Type: 970

Size Range: 0.5–2" (DN15-DN50)

Max Service Pressure:
 0.5–1": 200 psig (13.8 bar)
 1.5–2": 175 psig (12.1 bar)

Max Service Temperature:
 See page D-10

Bonnet Material:
 316 Stainless Steel

Handwheel Material:
 Glass reinforced polyarylsulfane (PAS)
 FDA compliant to 21CFR 177.1660

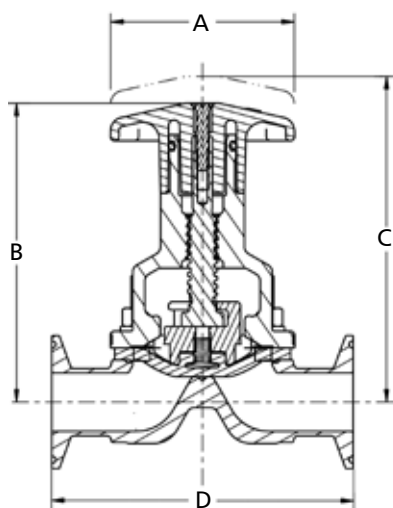
Corrosion Resistance:
 Resists alcohol, chloride and most caustic washdowns. For specific chemical resistance, consult factory.



Standard Features:

- Easy assembly and disassembly
- Rising handwheel
- Adjustable travel stop*
- Visual position indicator
- O-ring splash seal
- Stainless steel stem
- Bronze compressor

* Patent # 6,241,213



Valve Size		Bonnet Weight	
Inch	DN	lb.	kg.
0.50	15	0.97	0,44
0.75	20	1.23	0,56
1.00	25	1.67	0,76
1.50	40	5.00	2,27
2.00	50	6.50	2,95

Valve Size		A		B		C		D ¹		D ²		D ³
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	mm
0.50	15	2.75	69,9	3.65	92,7	3.93	99,7	3.50	89	5.12	130	106
0.75	20	2.75	69,9	3.89	98,8	4.26	108,3	4.00	102	5.50	140	118
1.00	25	2.75	69,9	4.54	115,3	4.99	126,7	4.50	114	5.88	149	127
1.50	40	5.25	133,3	5.86	148,8	6.67	169,4	5.50	140	7.00	178	174
2.00	50	5.25	133,3	6.49	164,8	7.61	193,3	6.25	159	7.62	194	191

Note: Handwheel diameter and assembly heights are from body centerline to top of bonnet assembly.

¹ Tri Clamp, TC x BW, Short Tangent BW

² Extended BW Forging

³ ISO/DIN

Topworks

963 PAS Manual Bonnet

Capable of withstanding typical washdown media, the 963 bonnet is a fully featured, compact, lightweight, yet rugged design. The 963 is packed with features that fulfill the most demanding requirements of today's critical bioprocessing systems.

Type: 963 & 963S

Size Range: 0.5–4" (DN15-DN100)

Service Pressure/Temperature:

Max Service Pressure:

150 psig (10.34 bar)

Max Service Temperature:

300°F (149°C)

External Temperature Limitations:

300°F (149°C)

Bonnet & Handwheel Material:

Glass reinforced polyarylsulfane (PAS)

FDA compliant to 21CFR 177.1660

Corrosion Resistance:

Resists alcohol, chloride and most caustic washdowns.

For specific chemical resistance, consult factory.

Standard Features:

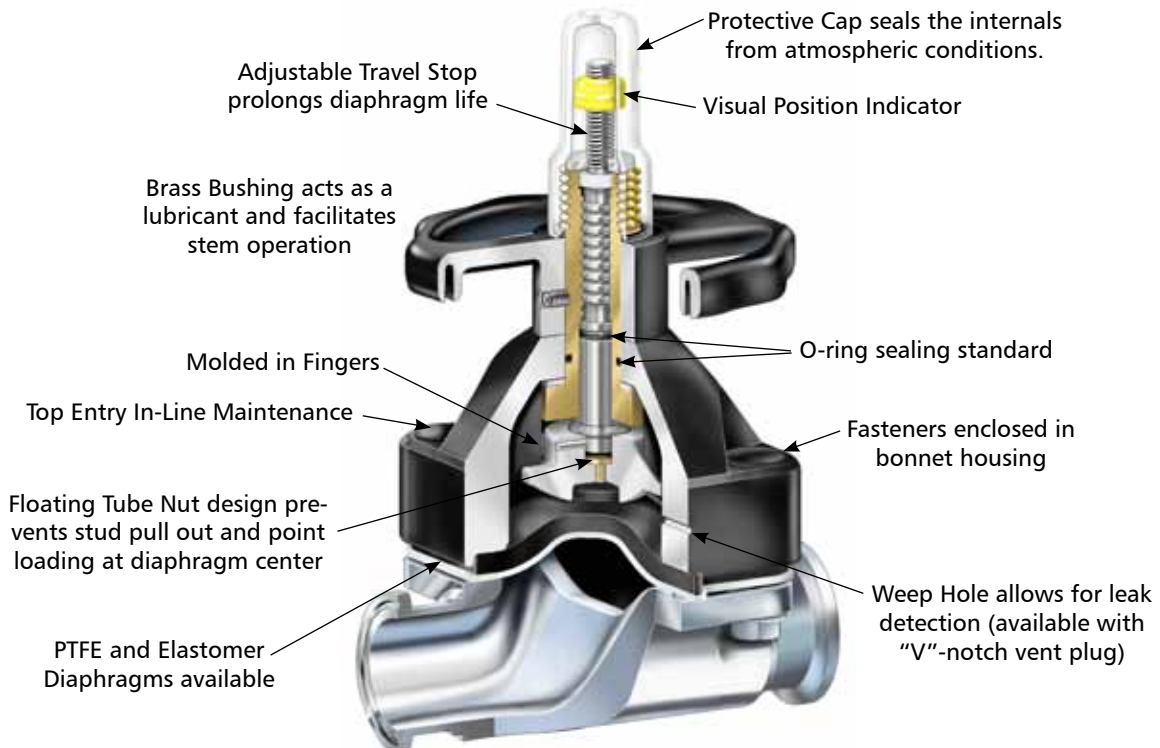
- Autoclavable
- Rising stem
- Adjustable travel stop
- Protective PPS cap
- Brass stem bushing
- Visual position indicator
- Permanent lubrication
- O-ring seals
- Stainless steel compressor
- Enclosed fasteners 0.5–3" (DN15–DN80)
- Hygienic internals: 0.5–2"



Optional Features:

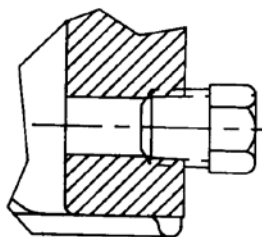
- Sealed bonnets: 963S
- Hygienic internals (M2): 3–4"
- Lockable: 0.5, 0.75, 1, 1.5, 2, 3, 4 in. sizes

Note: Bonnets manufactured 2010 and beyond with model number 963 and 963S and stainless compressor are autoclavable as standard. Bronze compressor versions are autoclavable only with S2-M2-M17 options.

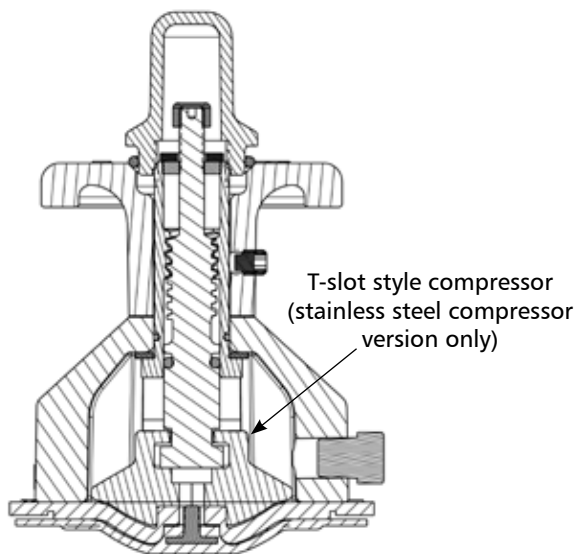


Sealed Bonnet Option:

A sealed bonnet provides a secondary containment area for process fluids if the diaphragm should ever fail. A v-notch vent plug is provided to serve as a leak detector and prevents the release of process fluids into the atmosphere. Sealed bonnets are an available option on 963 manual bonnets.

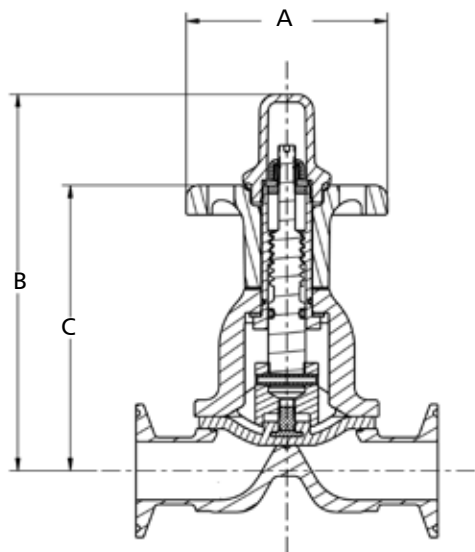


V-Notch Vent Plug Detail



Sealed Bonnet - V-Notch Vent Plug

Weights and Dimensions for 963 Manual Bonnets



Valve Size		A		B		C		Bonnet Weight	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	lb	kg
0.50	15	3.00	76,2	3.65	92,7	2.78	70,6	0.6	0,27
0.75	20	3.00	76,2	4.57	116,0	3.44	87,2	0.9	0,41
1.00	25	3.00	76,2	5.54	140,8	4.21	107,0	1.3	0,59
1.50	40	5.50	139,7	8.44	214,2	5.34	135,5	3.9	1,77
2.00	50	5.50	139,7	9.06	230,0	5.96	151,3	5.3	2,41
2.50 ¹	65	7.75	196,8	11.85	300,9	7.77	197,4	NA	NA
3.00 ¹	80	7.75	196,8	11.85	300,9	7.77	197,4	11.7	5,32
4.00	100	10.00	254,0	14.90	378,6	10.24	260,2	16.2	7,36

¹ The 2.5 in. (DN65) valve is a 3 in. (DN80) body and topworks with 2.5 in. (DN65) end connections.

Bio-Pure® Manual Bonnet

The Bio-Pure is the compact solution for the most demanding Biopharm applications. Available in fractional sizes and a wide selection of body materials and end connections the Bio-Pure is the ideal choice for sampling and other low flow, high value processes. Bioreactors, chromatography systems, filtration skids are just a small number of applications that will benefit from the compact, reliable performance. Bio-Pure is capable of withstanding typical Steam in Place (SIP) and Clean in Place (CIP) protocols. For demanding Clean out of Place (COP) requirements the manual BPMC option is the solution for reliable trouble free operation. A standard 2 piece PTFE diaphragm prevents separation of the diaphragm, which is common in laminated diaphragm designs.

Typical Applications

- Sampling
- Bioreactors
- Chromatography systems
- Filtration skids
- Portable vessels

Size Range

0.25", 0.31" 0.375", 0.5" (DN 6, 8, 10, 15)

Service Pressure/Temperature

150 psi at 220°F (10.34 bar at 104°C)



Standard Body Materials:

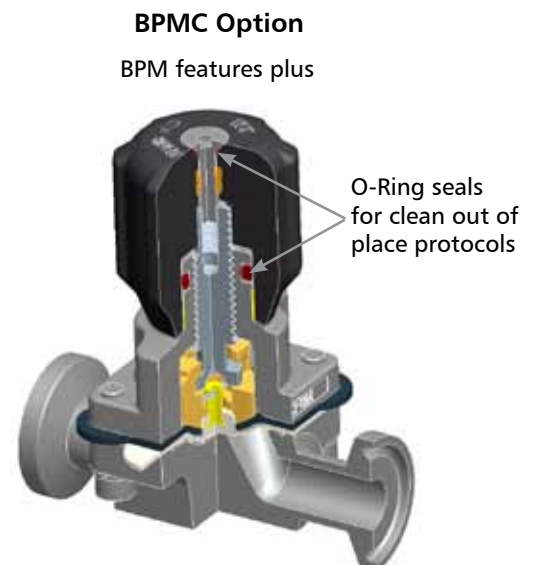
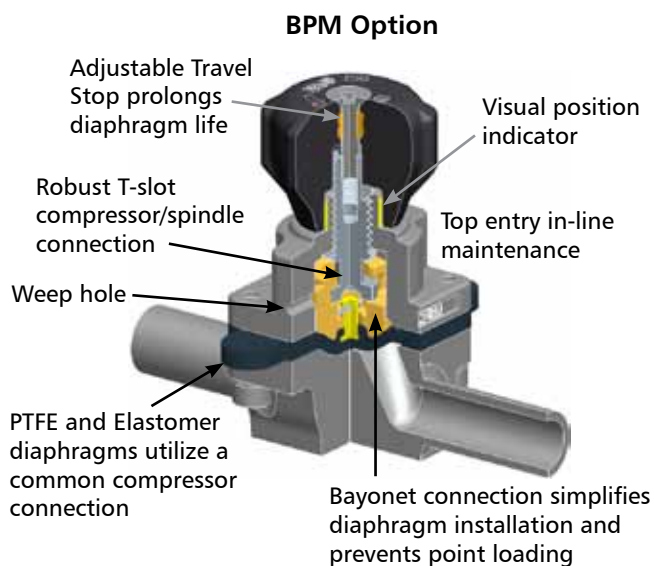
- ASTM A182 Grade 316, DIN 17440. 1.4435
- ASTM A479
- Other materials available upon request

Available End Connections:

- 0.5" (DN 15) 16 Gauge
- 0.25", 0.375" (DN 8, 10) 20 Gauge
- DIN/ISO
- Tri-Clover Tri-Clamp®

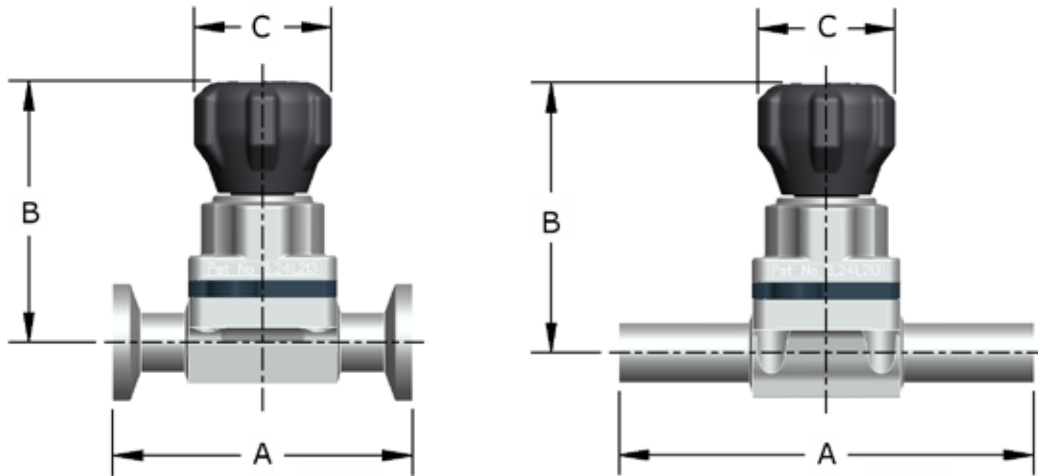
Corrosion Resistance:

Resists alcohol, chloride and most caustic wash-downs.



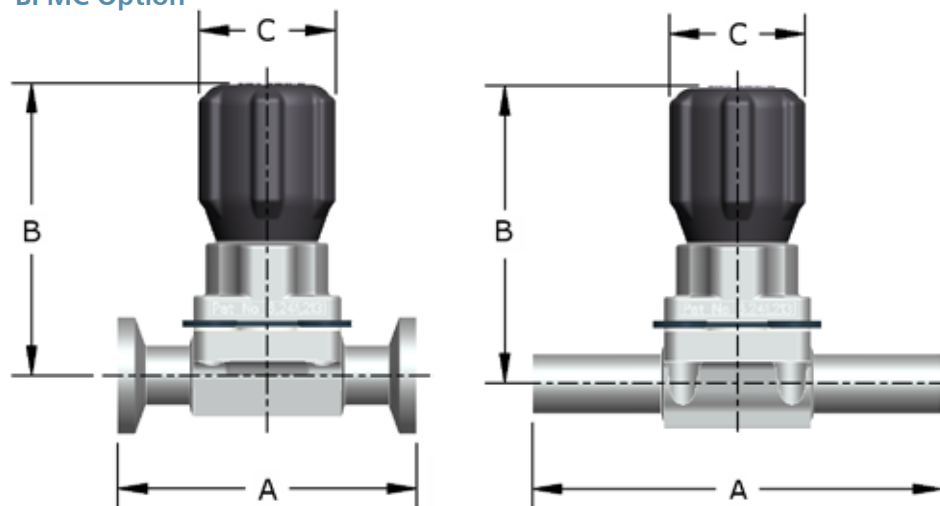
Dimensions

BPM Option



	ANSI (USOD)		DIN/ISO	B Closed	B Open	C
	A Tri-Clamp	A Buttweld	A			
In.	2.53	3.50	3.50	2.23	2.39	1.25
mm	64,3	89,0	64,3/89,0	56,6	60,7	31,8

BPMC Option



	ANSI (USOD)		DIN/ISO	B Closed	B Open	C
	A Tri-Clamp	A Buttweld	A			
In.	2.53	3.50	3.50	2.61	2.77	1.25
mm	64,3	89,0	64,3/89,0	66,4	70,4	31,8

Bio-Tek® Manual Bonnet

The Bio-Tek is a compact, lightweight solution ideal for Bioprocessing applications and utilized frequently as a sample or drain port in Pharmaceutical process systems and Pure-Flo fabrications.

Type: 18 & 18S

Size Range: 0.25", 0.375", 0.5"
(DN6-DN15)

Service Pressure/Temperature:
150 psi at 220°F (10.34 bar, 104°C)
Maximum external temperature: 300°F (149°C)

Bonnet Materials:

Model 18

- Bonnet: 316 Stainless Steel
- Spindle: Stainless Steel
- Compressor: Stainless Steel

Model 18S

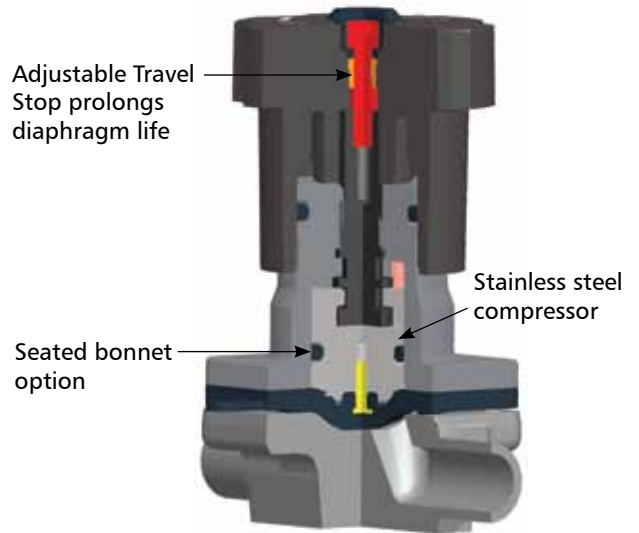
- Bonnet: 316 Stainless Steel
- Spindle: Stainless Steel
- Compressor: Stainless Steel
- O-rings: Fluoropolymer, FDA compliant

Handwheel Material:
PAS (Polyarylsulphone)

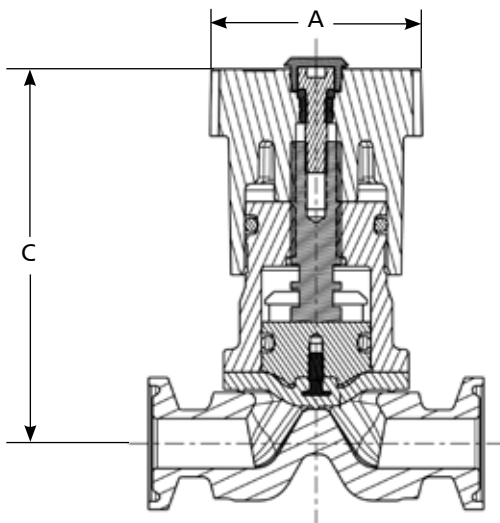
Standard Features:

- Adjustable travel stop
- Autoclavable

Note: This bonnet is available for Bio-Tek type bodies only.



Dimensions for Bio-Tek Bonnet



Valve Size		A		C	
Inch	DN	Inch	mm	Inch	mm
0.25, 0.375, 0.5	8, 10, 15	1.61	41,1	2.62	66,5

913 Stainless Steel Manual Bonnet

Satisfying the most stringent biopharm processing requirements, the 913 is available with many standard and optional features. Stainless steel construction and the availability of a sealed option make the 913 bonnet an excellent choice for critical applications requiring reliability, corrosion resistance and secondary product containment.

Type: 913 & 913S

Size Range: 0.5"–4" (DN15-DN100)

Max Service Pressure:
 0.5–1": 200 psig (13.8 bar)
 1.5–2": 175 psig (12.1 bar)
 3–4": 150 psig (10.3 bar)

Max Service Temperature:
 See Page D-10

Bonnet and Handwheel Material:
 316 Stainless Steel

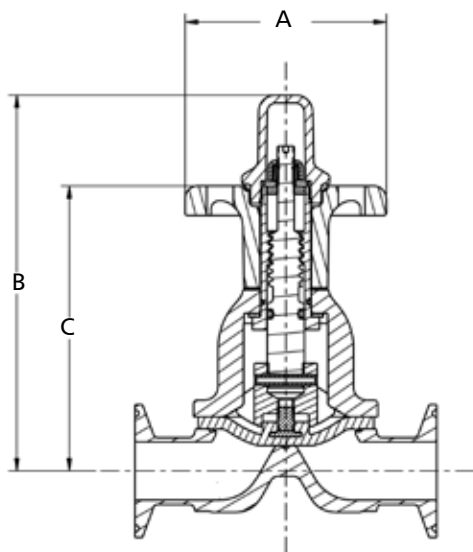
Corrosion Resistance:
 Resists alcohol and most caustic washdowns.
 For specific chemical resistance, consult factory.



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

- Optional Features:
- Sealed bonnets: 913S
 - Adjustable opening stop
 - Lockable
 - Extended handwheel

- Autoclavable Options:
- 913 (Unsealed)
 - 913S (Sealed)



Valve Size		A		B		C		Weight	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	lb	kg
0.50	15	3.00	76,2	3.65	92,7	2.78	70,6	0.72	0,33
0.75	20	3.00	76,2	4.57	116,0	3.44	87,2	1.8	0,82
1.00	25	3.00	76,2	5.54	140,8	4.21	107,0	2.3	1,05
1.50	40	5.50	139,7	8.44	214,2	5.34	135,5	7.8	3,55
2.00	50	5.50	139,7	9.06	230,0	5.96	151,3	8.4	3,82
2.50 ¹	65	7.75	196,8	11.85	300,9	7.77	197,4	13.0	5,90
3.00 ¹	80	7.75	196,8	11.85	300,9	7.77	197,4	19.0	8,64
4.00	100	10.00	254,0	14.90	378,6	10.24	260,2	32.0	14,55

903 Cast Iron Bonnet

The 903 is an economical option for applications that do not require autoclavability. A selection of coatings makes the 903 suitable for a range of sanitary service including USDA 3A requirements.

Type: 903 & 903S

Size Range: 0.5–4" (DN15–DN100)

Max Service Pressure:

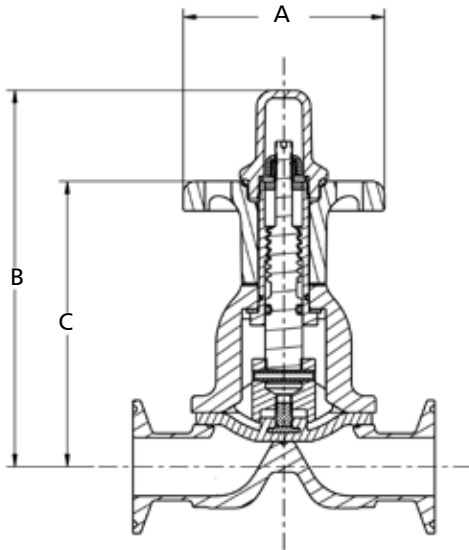
0.5–1": 200 psig (13.8 bar)

1.5–2": 175 psig (12.1 bar)

3–4": 150 psig (10.3 bar)

Max Service Temperature:

See Page D-10



Bonnet Material:

Cast iron with coating

Coatings available: Atmospheric white epoxy and PVDF

Handwheel Material:

Glass reinforced polyarylsulfane (PAS) coated to match bonnet 0.5–1" (DN15–DN25)

Cast iron with coating 1.5–4" (DN40–DN100)

Corrosion Resistance:

Resists alcohol and most semi-caustic wash-downs. For specific chemical resistance, consult factory.

Standard Features:

- Adjustable travel stop
- Protective cap
- Brass stem bushing
- Visual position indicator
- Permanent lubrication
- O-ring seals
- Cast iron or zinc compressor

Optional Features:

- Sealed bonnets: 903S
- Hygienic internals
- Adjustable opening stop
- Bronze compressor
- Extended handwheel
- Lockable

Valve Size		A		B		C		Weight	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	lb	kg
0.50	15	3.00	76,2	3.65	92,7	2.78	70,6	0.72	0,33
0.75	20	3.00	76,2	4.57	116,0	3.44	87,2	1.8	0,82
1.00	25	3.00	76,2	5.54	140,8	4.21	107,0	2.3	1,05
1.50	40	5.50	139,7	8.44	214,2	5.34	135,5	7.8	3,55
2.00	50	5.50	139,7	9.06	230,0	5.96	151,3	8.4	3,82
2.50 ¹	65	7.75	196,8	11.85	300,9	7.77	197,4	13.0	5,90
3.00 ¹	80	7.75	196,8	11.85	300,9	7.77	197,4	19.0	8,64
4.00	100	10.00	254,0	14.90	378,6	10.24	260,2	32.0	14,55

Advantage[®] 2.0 and Advantage[®] Actuator

The Advantage is a diaphragm driven, compact, lightweight actuator designed to meet the stringent space constraints of the Bioprocessing and Pharmaceutical Industries. The unit is designed as an on/off pneumatic actuator available with three modes of closure.

Corrosion Resistance:

Resists alcohol, chloride and most caustic wash-downs. For specific chemical resistance, consult factory.

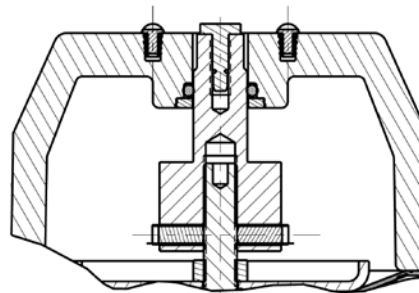
Standard Features:

- Max air pressure: 90 psi
- Stainless steel bonnet
- Visual position indicator
- O-ring seals
- Hygienic internals
- Autoclavable
- Switch mounting bolt pattern

Optional Features:

- Adjustable opening stop
- Adjustable travel stop
- Solenoids available

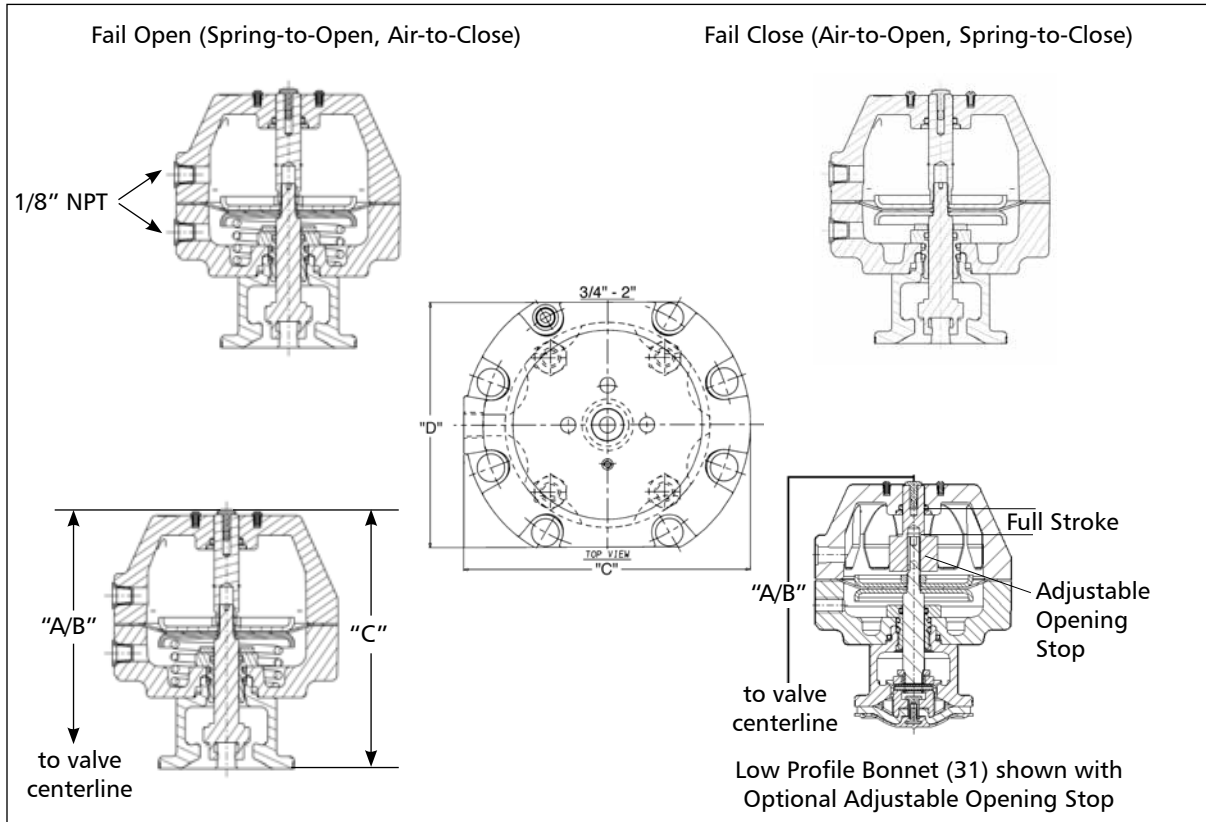
Note: See page G-3-G-5 for actuator sizing.



Advantage AOS



Weights and Dimensions for Advantage® Actuator 0.25" - 2"



Dimensions

Valve Size		A Valve Open		B With Limit Switch, SP2		C		D	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm
TC 0.25, 0.375, 0.5 ¹	8, 10, 15 ¹	4.33	110	9.23	234	2.84	72	2.50	63
BW 0.25, 0.375, 0.5 ²	8, 10, 15 ²	4.40	112	9.30	236	2.84	72	2.50	63
0.50	15	4.90	124	9.77	248	3.34	85	3.00	76
0.75	20	5.99	152	10.78	274	4.56	116	3.88	98
1.00	25	6.60	168	11.19	284	4.56	116	3.88	98
1.50	40	10.55	268	14.89	378	6.41	163	5.94	151
2.00	50	11.31	287	15.37	390	6.41	163	5.94	151

¹ Bio-Tek valve series tri-clamp ends

² Bio-Tek valve series butt-weld ends

Actuator Weights (less body)

Valve Size		Double Acting		Fail Open		Fail Close	
Inch	DN	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
0.25, 0.375, 0.5 ¹	8, 10, 15 ¹	1.25	0,57	1.31	0,59	1.37	0,62
0.50	15	2.00	0,91	2.09	0,95	2.34	1,06
0.75	20	3.69	1,67	3.78	1,71	4.34	1,97
1.00	25	4.47	2,03	4.59	2,08	5.16	2,34
1.50	40	12.10	5,49	12.60	5,71	16.44	7,46
2.00	50	15.16	6,88	15.66	7,10	19.50	8,84

¹ Bio-Tek sizes

Series 33 Advantage® Actuator

The Series 33 Advantage Actuators extend the size range of the Advantage Actuator product line to 3" and 4" valves. The Series 33 Advantage Actuators have been introduced to further reduce the dimensional envelope and weight for installations in the Pharmaceutical/ Bioprocessing industries. The Series 33 4" Spring to Close actuator is 25% smaller in diameter, has 22% reduction in height and offers a 32% reduction in weight than a comparable 4" Series 47 actuator.

Type: Series 33 Advantage Actuator

Size Range: 3–4" (DN80–DN100)

Operating Modes:

Fail Close*, Fail Open, Double Acting

Max Service Pressure/Temperature:

150 psig (10.34 bar)

300°F (149°C)

External Temperature Limitations:

150°F (66°C)

Actuator Cover Material:
Vinyl-Ester Thermoset
(FDA compliant)

Bonnet Material:
Nylon coated ductile
iron

Corrosion Resistance:
Resists alcohol, chloride
and most caustic wash-
downs.

For specific chemical resistance, consult factory.



Standard Features:

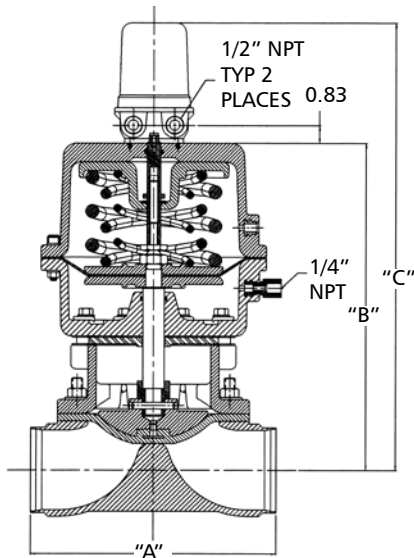
- Visual position indicator
- O-ring seals
- Switch mounting bolt pattern

Optional Features:

- Hygienic internals
- Solenoids available

*Springs self-contained (Fail close only)

Note: See page H-3-H-5 for actuator sizing.



Dimensions

Valve Size		A		B		C ¹		D	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm
3.00	80	10.00	254,0	14.44	366,7	19.64	498,8	10.57	268,5
4.00	100	13.00	230,2	15.82	401,7	21.02	533,8	10.57	268,5

¹ With Limit Switch SP2

Actuator Weights (less body)

Valve Size		Double Acting		Fail Open		Fail Close			
						60#		90#	
Inch	DN	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
3.00 (33)	80	39.00	17,69	42.30	19,19	54.20	24,59	58.00	26,31
4.00 (33)	100	44.00	19,96	47.30	21,46	59.20	26,85	63.00	28,58

Series 47 Advantage® Actuator

The Series 47 Advantage Actuators extend the size range of the Advantage Actuator product line to 3" and 4" valves. Similar to the smaller valve sized Advantage Actuators, the 3–4" series 47 (DN80–DN100) actuator is also diaphragm driven, o-ring furnished and available in three modes of operation. The actuator design features the same dimensional envelope regardless of operation mode.

Type: Series 47 Advantage Actuator

Size Range: 3–4" (DN80–DN100)

Operating Modes:
Fail Close*, Fail Open, Double Acting

Max Service Pressure/Temperature:
150 psig (10.34 bar)
300°F (149°C)

External Temperature Limitations:
150°F (66°C)

Actuator Cover Material:
Vinyl-Ester Thermoset (FDA compliant)

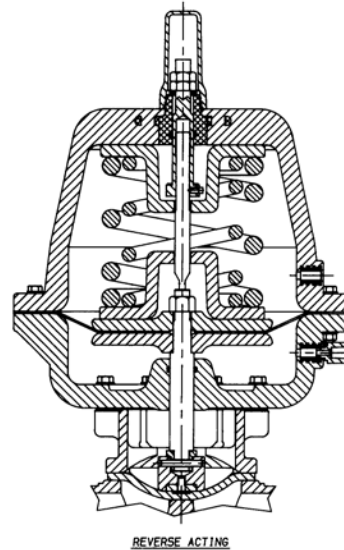
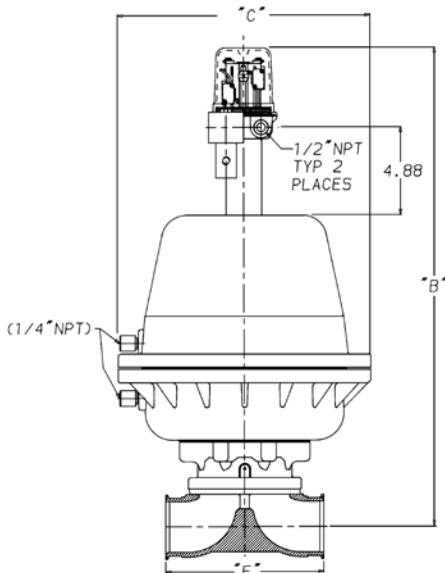
Bonnet Material:
Nylon coated ductile iron

Corrosion Resistance:
Resists alcohol, chloride and most caustic wash-downs.
For specific chemical resistance, consult factory.

- Standard Features:
- Visual position indicator
 - O-ring seals
 - Adjustable Opening Stop (AOS)
 - Adjustable Travel Stop (ATS)
 - Switch mounting bolt pattern

- Optional Features:
- Hygienic internals
 - Solenoids available

*Springs self-contained (Fail close only)
Note: See page G3-G-5 for actuator sizing.



Dimensions

Valve Size		A		B ¹		C		D	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm
3.00	80	21.51	546	27.08	688	14.00	356	8.75	222
4.00	100	22.90	582	28.47	723	14.00	356	11.50	292

¹ With Limit Switch SP2

Advantage Piston Actuator - APA®

The APA was designed to provide a smaller dimensional envelope than the Advantage Actuator product line while satisfying the basic needs of the Bioprocessing and Pharmaceutical industries.

Type: Advantage Piston Actuator (APA)

Size Range: 0.5–2" (DN15–DN50)

Mode of Operation:
Fail close (Reverse acting) pneumatic piston actuator.

Service Pressure/Temperature:

Max Service Pressure:
150 psig (10.34 bar)

Max Service Temperature:
292°F (145°C)

Bonnet Material:
316 Stainless Steel

Cylinder/Cover Material:
Polybutylene terephthalate (PBT)
FDA compliant to 21CFR 177.1660

Corrosion Resistance:
Resists alcohol, chloride and most caustic wash-downs. For specific chemical resistance, consult factory.

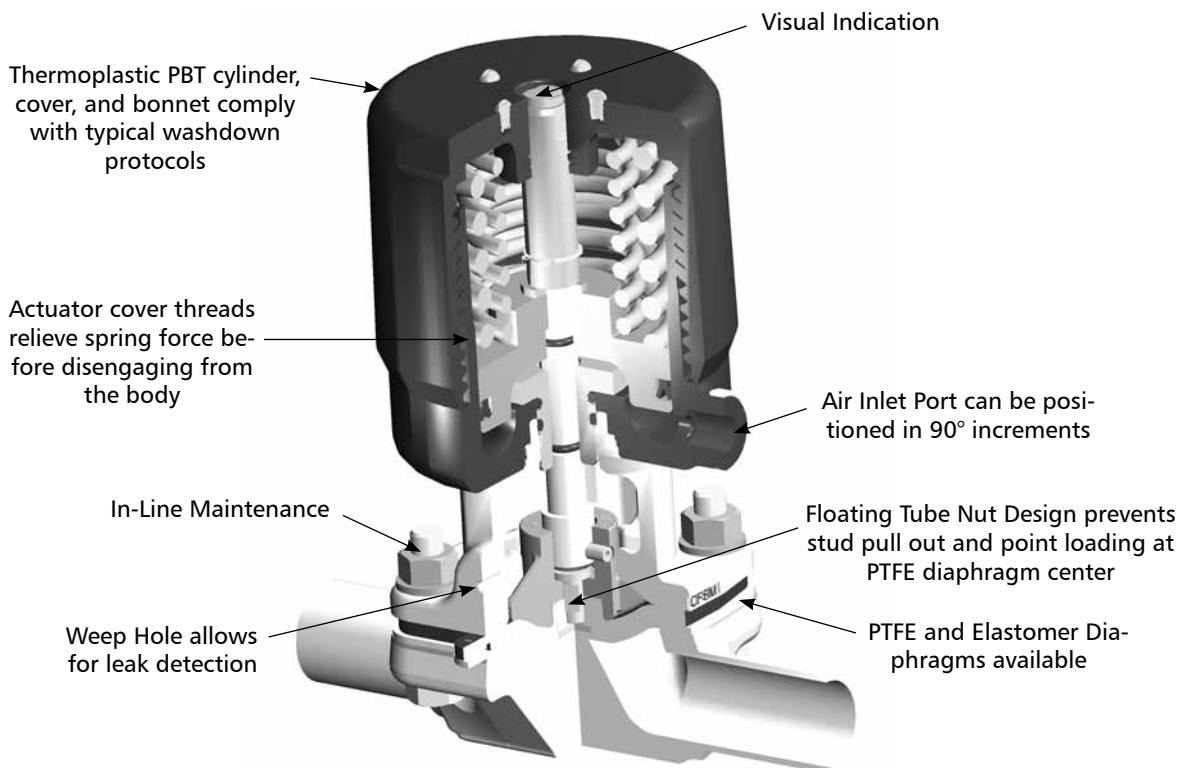
Standard Features:

- Visual position indicator
- Permanent lubrication
- O-ring seals
- Switch mounting bolt pattern
- Hygienic internals

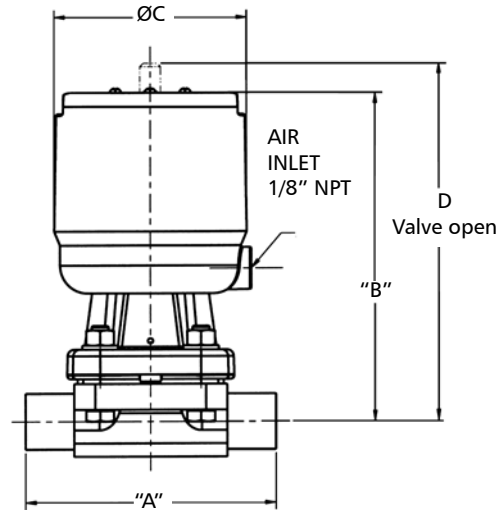
Optional Features:

- Adjustable opening stop
- Switch packages
- Solenoids available

Note: See page G-8 for actuator sizing.



Weights and Dimensions for Advantage Piston Actuator (APA)



Dimensions

Valve Size		A		B		C		D	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm
0.50	15	3.50	89,8	4.53	115,0	2.75	69,9	4.90	124,4
0.75	20	4.00	101,6	5.34	135,6	3.38	85,9	5.80	147,3
1.00	25	4.50	114,3	5.90	149,8	3.38	85,9	6.42	163,0
1.50	40	5.50	139,7	9.53	242,0	5.00	127,0	10.34	262,7
2.00	50	6.25	158,7	10.07	255,8	5.00	127,0	11.18	284,1

Actuator Weights (less body)

Valve Size		Actuator Weight	
Inch	DN	lb.	Kg.
0.50	15	1.80	0,81
0.75	20	3.23	1,46
1.00	25	3.62	1,64
1.50	40	11.75	5,32
2.00	50	13.30	6,03

Advantage Excel - Series S Actuator (AXS)

The Advantage Excel - Series S (AXS) is the latest addition to the process proven Advantage Actuator product line. Designed as a maintenance free actuator, it is engineered to handle the most demanding requirements of the bio-processing and pharmaceutical industries. The stainless steel construction of the AXS is suited for severe duty applications, such as SIP and high cycle applications. It has been subjected to extensive life cycle testing far exceeding industry requirements.

The compact size of the AXS provides the utmost in design flexibility. It allows for space saving process designs further minimizing hold up volumes which are critical to increasing efficiency and in the end saving time and money. Engineering improvements in the AXS offer a cost-effective alternative for clean room use, lab environments and other critical applications. With a stainless steel exterior the AXS is perfect for clean room applications requiring both aesthetics and wash down compatibility.

All of this makes the AXS a versatile, feature packed, cost effective option for the demanding Biopharm industry

Type: Piston Actuator

Size Range: BP, 0.5-2" (DN8-50) ¹

¹ Not available in Bio-Tek size.

Operating Modes:

Fail Close, Fail Open, Double Acting

Max Service Pressure:

150 psig (10 bar)

See sizing charts on pg. G-6-G-8 for exact shut-off pressures

Max Service Temperature:

300°F (150°C)



Max Autoclave Temperature:
300°F (150°C)

Max Actuator Chamber Pressure:
100 psig (7 bar)

Corrosion Resistance:
Resists alcohol, chloride and most caustic wash-downs.

Approximate Maximum Chamber Volume

Valve Size		Fail Close				Fail Open				Double Acting			
		Upper Chamber		Lower Chamber		Upper Chamber		Lower Chamber		Upper Chamber		Lower Chamber	
Inch	DN	in ³	cm ³	in ³	cm ³	in ³	cm ³	in ³	cm ³	in ³	cm ³	in ³	cm ³
BP	BP	1.49	24,47	1.08	17,70	1.60	26,24	1.27	20,86	1.60	26,24	1.48	24,20
0.50	15	4.2	68,7	1.9	31,8	2.8	46,0	3.8	61,6	3.8	62,1	2.4	39,4
0.75	20	12.1	197,8	4.0	65,7	6.4	104,9	10.1	166,1	13.1	214,8	4.7	76,3
1.00	25	12.8	209,0	4.7	76,6	7.1	116,2	10.8	177,0	13.8	226,0	5.3	87,2
1.50	40	30.1	493,5	11.0	179,8	19.6	321,2	24.5	401,3	36.2	593,0	11.7	191,3
2.00	50	48.5	794,7	20.8	340,7	37.5	614,1	39.1	641,0	59.2	970,3	21.6	354,8

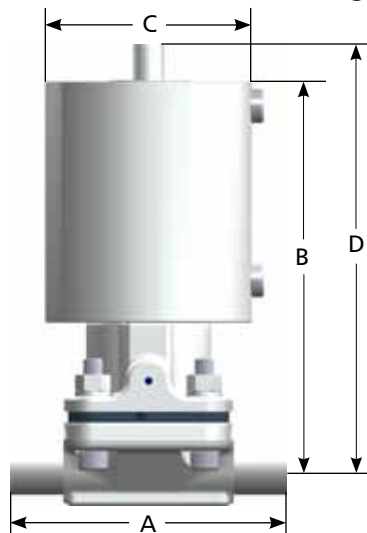
Actuator Weights (Including Actuator and Forged Body)

Valve Size		Fail Close		Fail Open		Double Acting	
Inch	DN	Lbs.	Kg	Lbs.	Kg	Lbs.	Kg
BP	BP	1.5	0,7	1.5	0,7	1.5	0,7
0.50	15	4.0	1,8	3.9	1,8	3.9	1,8
0.75	20	7.3	3,3	7.1	3,2	6.6	3,0
1.00	25	8.4	3,8	8.2	3,7	7.7	3,5
1.50	40	16.6	7,5	15.5	7,0	14.4	6,5
2.00	50	24.7	11,2	22.4	10,2	21.0	9,5

Actuator Weights (Less Body and Diaphragm)

Valve Size		Fail Close		Fail Open		Double Acting	
Inch	DN	Lbs.	Kg	Lbs.	Kg	Lbs.	Kg
BP	BP	1.2	0,55	1.2	0,55	1.2	0,55
0.50	15	3.5	1,6	3.4	1,5	3.4	1,5
0.75	20	6.4	2,9	6.2	2,8	5.7	2,6
1.00	25	6.8	3,1	6.6	3,0	6.1	2,8
1.50	40	13.3	6,0	12.2	5,5	11.1	5,0
2.00	50	19.3	8,7	16.9	7,7	15.5	7,0

Dimensional Data with Forged Body



Valve Stroke

Valve Size	Approx. Stroke
BP	0.16"
BP	4,1 mm
0.50"	0.25"
DN 15	6,3 mm
0.75"	0.30"
DN 20	7,6 mm
1.00"	0.40"
DN 25	10,1 mm
1.50"	0.56"
DN 40	14,2 mm
2.00"	0.78"
DN 50	19,8 mm

Valve Size		A		B		C		D (open)	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm
BP	BP	3.5	89,0	3.55	90,2	1.75	44,5	3.9	99,1
0.50	15	3.50	88,9	4.43	112,5	2.61	66,3	4.80	121,8
0.75	20	4.00	101,6	5.62	142,6	3.36	85,3	6.01	152,8
1.00	25	4.50	114,3	6.26	159,0	3.36	85,3	6.78	172,2
1.50	40	5.50	139,7	8.49	215,5	4.15	105,4	9.18	233,1
2.00	50	6.25	158,8	9.39	238,6	4.90	124,5	10.30	261,7

Dia-Flo® Actuator

The Dia-Flo actuator, diaphragm driven and pneumatically operated, is a process proven actuator suitable for both the Pure-Flo and Dia-Flo product lines. The Dia-Flo actuator is recommended as an alternative to the Advantage Actuator for applications in which the line pressure or available plant air pressure is not within the advantage actuator parameters.

Type: Dia-Flo

Size Range:

Available in seven interchangeable sizes and can be readily mounted to any size valve with the proper size bonnet. See Dia-Flo catalog DV for actuator sizing

Actuator Materials:

Aluminum
Ductile iron - optional

Corrosion Resistant Coatings:

White epoxy
PVDF
Nylon

Bonnet Materials:

Ductile iron
Stainless steel – optional

Actuator Air Pressure:

85 psi (5.9 bar) max

Options:

- Adjustable opening stop
- Adjustable travel stop¹
- Hygienic internals
- Visual position indicator
- Wrench or handwheel operated
- Manual overrides
- Solenoids available

¹Adjustable travel stop is standard on all fail close actuators (except 3212)

Dualrange® Control Valve

The Dualrange control valve is the first diaphragm valve designed expressly for control work. Available in 1–6" sizes, it combines all the advantages of ITT weir-type diaphragm valves with greatly improved throttling characteristics. The Dualrange utilizes the Dia-Flo actuator and has greater rangeability than other diaphragm valves, due to the dual nested compressors unique to Pure-Flo. Refer to the Dia-Flo catalog DV at www.engvalves.com for more information.

