

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: ½"-2" (DN 8-DN50)

Mode of Operation:

Reverse acting (fail closed) pneumatic piston actuator.

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 washdowns. For specific chemical resistance, consult factory.

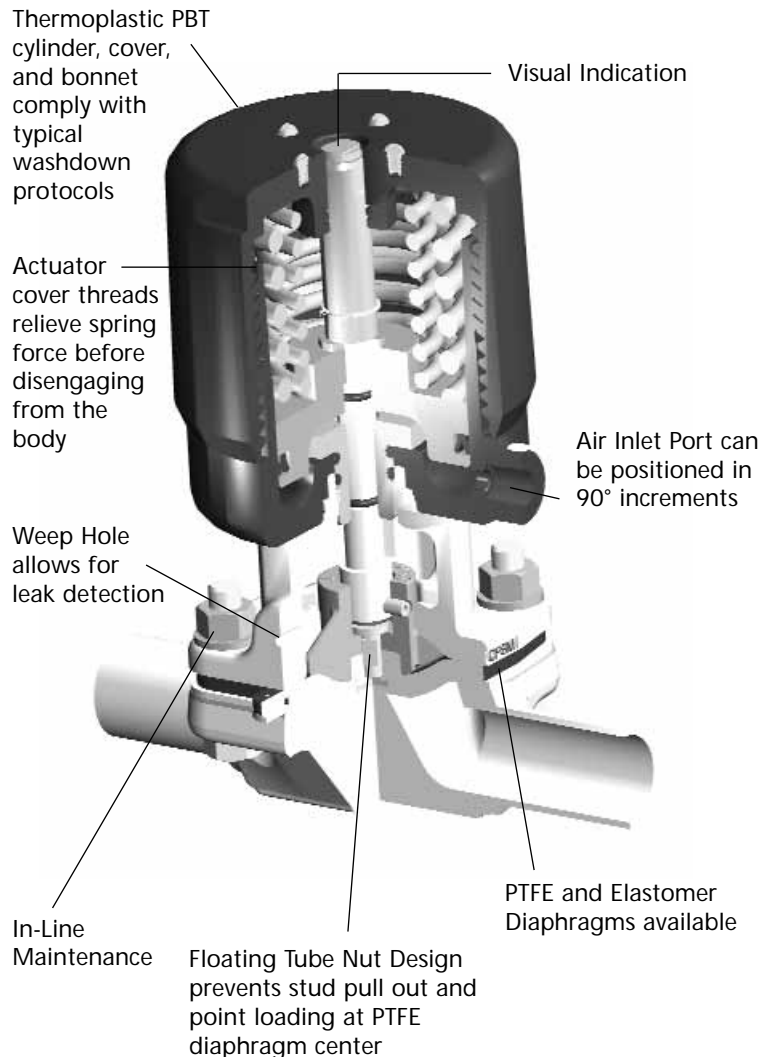
Standard Features:

- Visual position indicator
- Permanent lubrication
- "O" Ring seals
- Switch mounting bolt pattern

Optional Features:

- Adjustable opening stop
- Hygienic internals
- Switch packages

Note: See page 22 and 24 for Dimensions and Bill of Materials. See page 16 for Actuator sizing.





Stainless Steel Bonnet (31)

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.

Type: Advantage[®]

Size Range: ¼"-2" (DN6-DN50)

Operating Modes:

Fail Closed, Fail Open, Double Acting

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 Material (Bonnet Code 36):

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:

- Visual position indicator
- "O" Ring seals
- Hygienic internals
- Autoclavable ¼"-2"
- Switch mounting bolt pattern

Optional Features:

- Adjustable opening stop
- Stainless steel bonnet (Bonnet Code 31)
- Adjustable travel stop

Note: See page 20 and 25 for Dimensions and Bill of Materials. See pages 17-19 for Actuator sizing.

www.ittpureflo.com

Series 33 and 47 Advantage® Actuator

The 33 & 47 Advantage Actuators extend the size range of the Advantage Actuator product line to 3" and 4" valves.

Type: Advantage® 33 & 47

Size Range: 3"-4" (DN80-DN100)

Operating Modes:

Fail Closed*, 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 washdowns. For specific chemical resistance, consult factory.

Standard Features:

- Visual position indicator
- "O" Ring seals
- Adjustable Travel Stop (47 series only)
- Switch mounting bolt pattern

Optional Features:

- Hygienic internals

*Springs self-contained (Fail closed only)

Note: See page 21 and 22 for Dimensions and Bill of Materials. See pgs 17-19 for Actuator sizing.

www.ittpureflo.com



Series 47

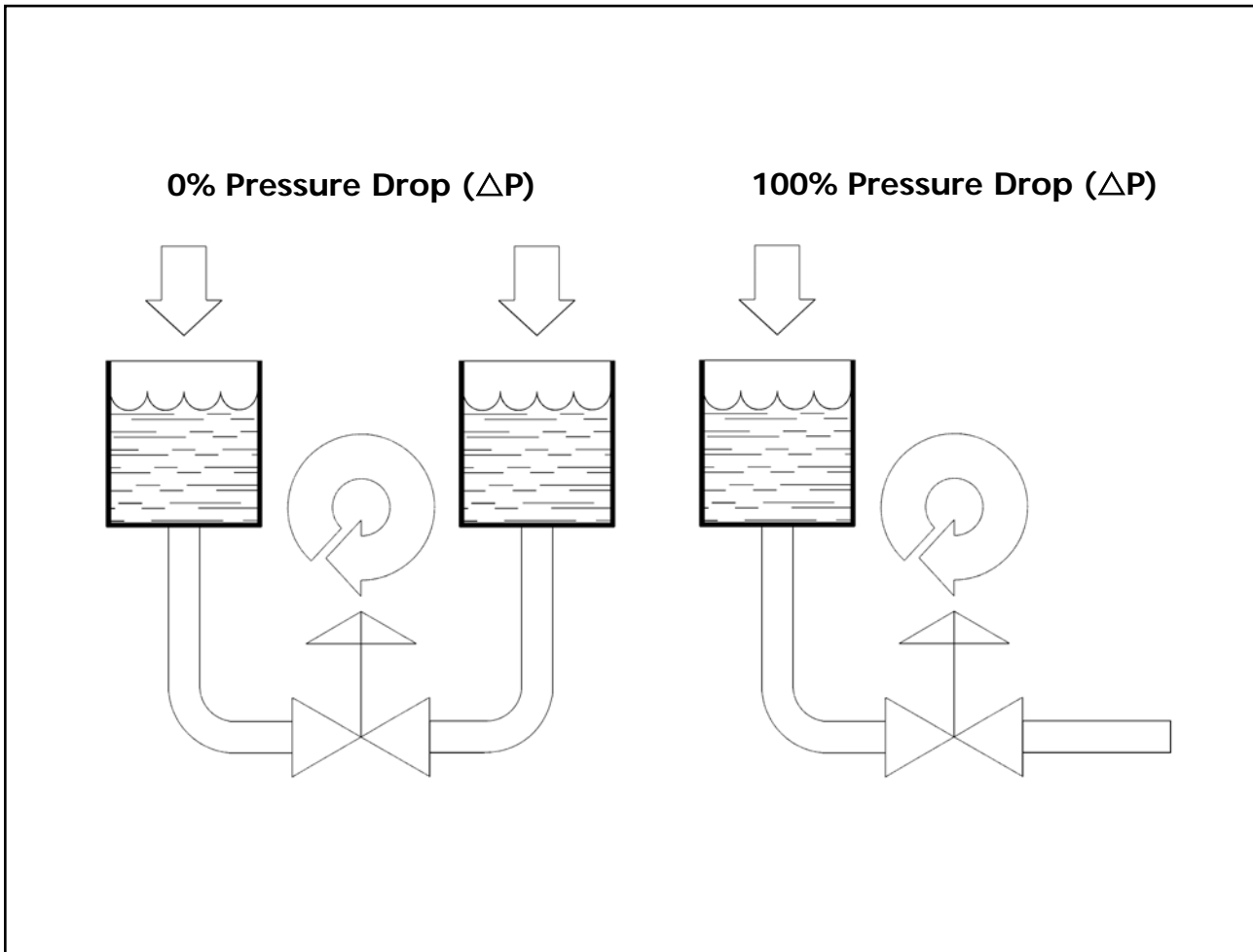
Similar to the smaller valve sized Advantage Actuators, the 3"-4" series 47 (DN80-DN100) actuator is also diaphragm driven, "O" ring furnished and available in three modes of operation. The actuator design features the same dimensional envelope regardless of operation mode.



Series 33

The 3"-4" Pure-Flo 33 series Advantage Actuators have been introduced to further reduce the dimensional envelope and weight for installations in the Pharmaceutical/Bioprocessing industries. The 33 series 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" 47 series actuator.

Pressure Drop Definition



Approximate Maximum Chamber Volume

Valve Size		Advantage Actuator				APA	
		Upper Chamber		Lower Chamber		Lower Chamber	
Inch	DN	in ³	cm ³	in ³	cm ³	in ³	cm ³
.25, .375, .50*	6, 10, 15*	2.62	43	2.26	37		
0.50	15	5.49	90	4.27	70	3.22	52.8
0.75	20	12.51	205	7.63	125	3.72	61.0
1.00	25	12.08	198	9.15	150	4.06	66.5
1.50	40	71.00	1163	34.78	570	14.6	239
2.00	50	71.00	1163	38.75	635	18.3	300
3.00 (47)	80	463.80	7600	250.20	4100	NA	NA
4.00 (47)	100	463.80	7600	250.20	4100	NA	NA

*Bio-Tek sizes

Advantage Piston Actuator (APA) Sizing

Reverse Action Actuators - Air-To-Open, Spring-To-Close (APA only)													
DIAPHRAGM	Actuator Model	Maximum Line Pressure											Air Pressure required to open, for full stroke at 0 psi line pressure
		Valve Size											
		100% ΔP					0% ΔP						
		Bio-Tek**	0.50	0.75	1.00	1.50	2.00	Bio-Tek**	0.50	0.75	1.00	1.50	
Bio-Tek**	15	20	25	40	50	Bio-Tek**	15	20	25	40	50		
ELASTOMER	AP0506	80						60					60
		5.52						4.14					4.14
	AP0509	150						100					85
		10.34						6.89					5.86
	AP0756		100						50				60
			6.89						3.45				4.14
	AP0759		150						100				85
			10.34						6.89				5.86
	AP1006			130						70			60
				8.96						4.83			4.14
	AP1009			150						110			88
				10.34						7.58			6.07
	AP1506				100						50		54
					6.89						3.45		3.72
AP1509				150						120		82	
				10.34						8.27		5.65	
AP2006					70						30	58	
					4.83						2.07	4.00	
AP2009					140						75	90	
					9.65						5.17	6.21	
PTFE*	AP0506	50						30					60
		3.45						2.07					4.14
	AP0509	150						70					85
		10.34						4.83					5.86
	AP0756		60						60				60
			4.14						4.14				4.14
	AP0759		105						80				85
			7.24						5.52				5.86
	AP1006			40						35			60
				2.76						2.41			4.14
	AP1009			110						75			88
				7.58						5.17			6.07
	AP1506				40						40		54
					2.76						2.76		3.72
AP1509				150						90		82	
				10.34						6.21		5.65	
AP2006					40						20	58	
					2.76						1.38	4.00	
AP2009					90						35	90	
					6.21						2.41	6.21	

Legend

psig
bar

Note: See page 14 for ΔP Pressure Drop definition.

* The exposure of the diaphragm to steam may increase the air requirements to close by as much as 30%.

** Bio-Tek includes size 0.25" (DN8), 0.38" (DN10), and 0.50" (DN15).

Advantage[®] Actuator Sizing

Direct Acting Actuators - Air-To-Close, Spring-To-Open, Fail-Open

DIAPHRAGM		Air Pressure Required to Close (psig, bar)																				
		Valve Size	Bio-Tek**	0.50	0.75	1.00	1.50	2.00	3.00	4.00	3.00	4.00										
		Bio-Tek**	15	20	25	32-40	50	80	100	80	100											
		Actuator Model	A103	A105	A108	A108	A116	A116	A133	A133	A147	A147										
ELASTOMER		Line Pressure	% ΔP																			
			100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0
ELASTOMER	20	38	40	38	45	38	55	28	40	36	40	40	45	44	46	48	55	32	37	30	40	
	1.38	2.62	2.76	2.62	3.10	2.62	3.79	1.93	2.76	2.48	2.76	2.76	3.10	3.03	3.17	3.31	3.79	2.21	2.55	2.07	2.76	
	40	40	42	40	50	42	60	32	45	38	44	45	50	50	58	55	69	41	44	36	47	
	2.76	2.76	2.90	2.21	3.45	2.70	4.14	2.21	3.10	2.62	3.03	3.10	3.45	3.45	4.00	3.79	4.76	2.83	3.03	2.48	3.24	
	60	42	44	44	55	46	65	36	55	42	48	50	60	55	66	64	85	42	49	42	56	
	4.14	2.90	3.03	3.03	3.79	3.17	4.48	2.48	3.79	2.90	3.31	3.45	4.14	3.79	4.55	4.41	5.86	2.90	3.38	2.90	3.86	
	80	46	48	48	60	50	70	40	60	44	52	56	70	61	76	72	90	44	56	48	66	
	5.52	3.17	3.31	3.31	4.14	3.45	4.83	2.76	4.14	3.03	3.59	3.86	4.83	4.21	5.24	4.97	6.21	3.03	3.86	3.31	4.55	
	100	48	52	50	65	52	75	45	70	48	56	60	75	66	90	80	—	52	65	53	79	
	6.90	3.31	3.59	3.45	4.48	3.59	5.17	3.10	4.83	3.31	3.86	4.14	5.17	4.55	6.21	5.52	—	3.59	4.48	3.65	5.45	
	125	52	56	54	70	60	85	50	75	50	60	64	80	78	—	90	—	63	73	59	90	
	8.62	3.59	3.86	3.72	4.83	4.14	5.86	3.45	5.17	3.45	4.13	4.41	5.52	5.38	—	6.21	—	4.34	5.03	4.07	6.21	
	150	56	60	58	75	68	—	55	85	52	65	68	—	81	—	—	—	71	83	65	—	
	10.34	3.86	4.14	4.00	5.17	4.70	—	3.79	5.86	3.59	4.48	4.69	—	5.59	—	—	—	4.90	5.72	4.48	—	
PTFE*	20	42	50	46	66	55	55	50	55	45	52	48	50	64	60	78	80	36	53	46	48	
	1.38	2.90	3.45	3.17	4.55	3.79	3.79	3.45	3.79	3.10	3.59	3.31	3.45	4.41	4.14	5.38	5.52	2.48	3.65	3.17	3.31	
	40	44	52	50	68	58	60	55	60	50	56	50	60	68	78	84	90	44	60	52	66	
	2.76	3.03	3.59	3.45	4.70	4.00	4.14	3.79	4.14	3.45	3.86	3.45	4.14	4.69	5.38	5.79	6.21	3.03	4.14	3.59	4.55	
	60	48	56	52	72	60	65	60	65	55	60	56	70	74	88	90	—	51	75	56	74	
	4.14	3.31	3.86	3.59	4.97	4.14	4.48	4.14	4.48	3.79	4.14	3.86	4.83	5.10	6.07	6.21	—	3.52	5.17	3.86	5.10	
	80	52	60	56	76	65	70	65	70	60	64	64	80	78	—	—	—	55	85	62	81	
	5.52	3.59	4.14	3.86	5.24	4.48	4.83	4.48	4.83	4.14	4.41	4.41	5.52	5.38	—	—	—	3.79	5.86	4.27	5.58	
	100	54	65	60	82	68	75	70	80	64	68	70	90	84	—	—	—	57	—	70	90	
	6.90	3.72	4.48	4.14	5.65	4.69	5.17	4.83	5.52	4.41	4.69	4.83	6.21	5.79	—	—	—	3.93	—	4.83	6.21	
	125	58	70	64	86	74	80	75	—	68	72	76	—	90	—	—	—	59	—	79	—	
	8.62	4.00	4.83	4.41	5.93	5.10	5.52	5.17	—	4.69	4.69	5.24	—	6.21	—	—	—	4.07	—	5.45	—	
	150	62	75	68	—	80	85	80	—	72	76	82	—	—	—	—	—	63	—	83	—	
	10.34	4.27	5.17	4.70	—	5.52	5.86	5.52	—	4.96	5.24	5.65	—	—	—	—	—	4.34	—	5.72	—	

Legend

psig
bar

Note: See page 14 for ΔP Pressure Drop definition

* The exposure of the diaphragm to steam may increase the air requirements to close by as much as 30%.

** Bio-Tek includes size 0.25" (DN8), 0.38" (DN10), and 0.50" (DN15).

Advantage® Actuator Sizing

Reverse Action Actuators - Air-To-Open, Spring-To-Close, Fail-Close

DIAPHRAGM	Maximum Line Pressure																Air Pressure Required to open, for full stroke at 0 PSI Line Pressure	
	Valve Size																	
	100% ΔP								0% ΔP									
	Actuator Model	Bio-Tek**	0.50	0.75	1.00	1.50	2.00	3.00	4.00	Bio-Tek**	0.50	0.75	1.00	1.50	2.00	3.00		4.00
	Bio-Tek**	15	20	25	32-40	50	80	100	Bio-Tek**	15	20	25	32-40	50	80	100		
ELASTOMER	A203	150 10.34							150 10.34								55 3.79	
	A204	150 10.34							150 10.34								75 5.17	
	A205		110 7.58							90 6.21							50 3.45	
	A206		150 10.34							150 10.34							90 6.21	
	A208			100 6.89							60 4.14						45 3.10	
	A208				150 10.34							80 5.52					60 4.14	
	A209			150 10.34	150 10.34						120 8.27	130 8.96					90 6.21	
	A216					100 6.89							65 4.48				50 3.45	
	A216						70 4.83							30 2.07			60 4.14	
	A217					150 10.34	150 10.34						130 8.96	75 5.17			90 6.21	
	A233							95 6.55	70 4.83							60 4.14	35 2.41	62 4.28
	A234							150 10.34	110 7.59							92 6.34	50 3.45	85 5.86
	A247							150 10.34								92 6.34		57 3.93
	A247								119 8.20								59 4.07	60 4.14
	A248							150 10.34								150 10.34		76 5.24
	A248								150 10.34								93 6.41	82 5.65
	PTFE*	A203	70 10.34							55 3.79								55 3.79
		A204	150 10.34							125 8.62								75 5.17
		A206		150 10.34							150 10.34							90 6.21
		A208		150 10.34	140 9.65						100 6.89	70 4.83						60 4.14
A208					100 6.89							35 2.41					70 4.83	
A209				150 10.34	150 10.34						80 5.52	80 5.52					90 6.21	
A216						125 8.62							70 4.83				50 3.45	
A216							60 4.14							45 3.10			60 4.14	
A217						150 10.34	150 10.34						125 8.82	70 4.83			90 6.21	
A233							50 3.45	30 2.07							20 1.38	15 1.03	62 4.28	
A234								105 7.24	60 4.14						45 3.10	30 2.07	85 5.86	
A247								133 9.17	70 4.83							68 4.69		61 4.21
A247																41 2.83	62 4.27	
A248								150 10.34	126 8.69							114 7.86		82 5.65
A248																70 4.83	90 6.21	

Legend

psig
bar

Note: See page 14 for ΔP Pressure Drop definition

* The exposure of the diaphragm to steam may derate the shut-off line pressure by as much as 30%.

** Bio-Tek includes size 0.25" (DN8), 0.38" (DN10), and 0.50" (DN15).

Advantage[®] Actuator Sizing

Double Acting Actuators - Air-To-Close, Air-To-Open

DIAPHRAGM	Air Pressure Required to Close (psig, bar)																				
	Valve Size	Bio-Tek**	0.50	0.75	1.00	1.50	2.00	3.00	4.00	3.00	4.00										
	Bio-Tek**	15	20	25	32-40	50	80	100	80	100											
Actuator Model	A303	A305	A308	A308	A316	A316	A333	A333	A347	A347											
Line Pressure	% ΔP																				
	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	
ELASTOMER	20	22	26	24	30	18	25	12	20	16	20	22	40	18	24	16	25	11	14	9	25
	1.38	1.51	1.79	1.65	2.07	1.24	1.72	0.83	1.38	1.10	1.38	1.52	2.76	1.24	1.66	1.10	1.72	0.76	0.79	0.62	1.72
	40	24	28	26	35	20	30	16	25	20	25	26	45	26	29	24	38	17	21	15	30
	2.76	1.65	1.93	1.79	2.41	1.38	2.07	1.10	1.72	1.38	1.72	1.79	3.10	1.79	2.00	1.66	2.62	1.17	1.45	1.03	2.07
	60	26	30	28	40	24	35	20	35	24	30	30	50	32	38	30	55	22	28	22	46
	4.14	1.79	2.07	1.93	2.75	1.65	2.41	1.38	2.41	1.65	2.07	2.07	3.45	2.21	2.62	2.07	3.79	1.52	1.93	1.52	3.17
	80	28	32	32	45	26	40	24	40	28	35	35	55	38	48	38	68	23	35	27	60
	5.52	1.93	2.21	2.21	3.10	1.79	2.76	1.65	2.76	1.93	2.41	2.41	3.79	2.62	3.31	2.62	4.69	1.59	2.41	1.86	4.14
	100	30	34	34	50	30	50	28	50	32	40	40	60	42	58	48	84	26	43	32	68
	6.90	2.07	2.34	2.34	3.45	2.07	3.45	1.93	3.45	2.21	2.76	2.76	4.14	2.90	4.00	3.31	5.79	1.79	2.96	2.21	4.69
	125	32	38	38	55	34	55	36	55	36	45	45	70	52	68	58	—	34	53	40	76
	8.62	2.21	2.62	2.62	3.79	2.34	3.79	2.48	3.79	2.48	3.10	3.10	4.83	3.59	4.69	4.00	—	2.34	3.65	2.76	5.24
	150	34	44	42	60	38	60	44	65	40	50	50	80	57	80	68	—	37	61	49	88
10.34	2.34	3.03	2.90	4.14	2.62	4.14	3.03	4.48	2.76	3.45	3.45	5.52	3.93	5.52	4.69	—	2.55	4.21	3.38	6.07	
PTFE*	20	34	36	34	36	28	30	25	35	25	34	35	40	38	38	42	44	19	33	31	37
	1.38	2.34	2.48	2.34	2.48	1.93	2.07	1.72	2.41	1.72	2.34	2.41	2.76	2.62	2.62	2.90	3.03	1.31	2.28	2.14	2.55
	40	36	40	36	40	34	35	35	40	30	38	40	50	41	49	50	60	21	40	35	53
	2.76	2.48	2.76	2.48	2.76	2.34	2.41	2.41	2.76	2.07	2.62	2.76	3.45	2.83	3.38	3.45	4.14	1.45	2.76	2.41	3.66
	60	40	44	40	46	38	40	45	50	35	42	50	60	47	58	56	74	29	46	44	59
	4.14	2.76	3.03	2.76	3.17	2.62	2.76	3.10	3.45	2.41	2.90	3.45	4.14	3.24	4.00	3.86	5.10	2.00	3.17	3.03	4.07
	80	42	46	42	50	40	45	50	55	40	46	55	70	53	67	65	90	32	51	49	65
	5.52	2.90	3.17	2.90	3.45	2.76	3.10	3.45	3.79	2.76	3.17	3.79	4.83	3.66	4.62	4.48	6.21	2.21	3.52	3.38	4.48
	100	44	52	44	54	42	50	55	60	45	50	60	80	58	78	73	—	35	58	54	77
	6.90	3.03	3.57	3.03	3.72	2.90	3.45	3.79	4.14	3.10	3.45	4.14	5.52	4.00	5.38	5.03	—	2.41	4.00	3.72	5.31
	125	46	56	46	58	44	55	60	70	50	55	64	90	64	90	82	—	42	68	62	—
	8.62	3.17	3.86	3.17	4.00	3.03	3.79	4.14	4.83	3.45	3.79	4.41	6.21	4.41	6.21	5.66	—	2.90	4.69	4.28	—
	150	48	62	48	62	46	60	65	80	55	62	68	—	69	—	90	—	45	78	68	—
10.34	3.31	4.27	3.31	4.28	3.17	4.14	4.48	5.52	3.79	4.28	4.69	—	4.76	—	6.21	—	3.10	5.38	4.69	—	

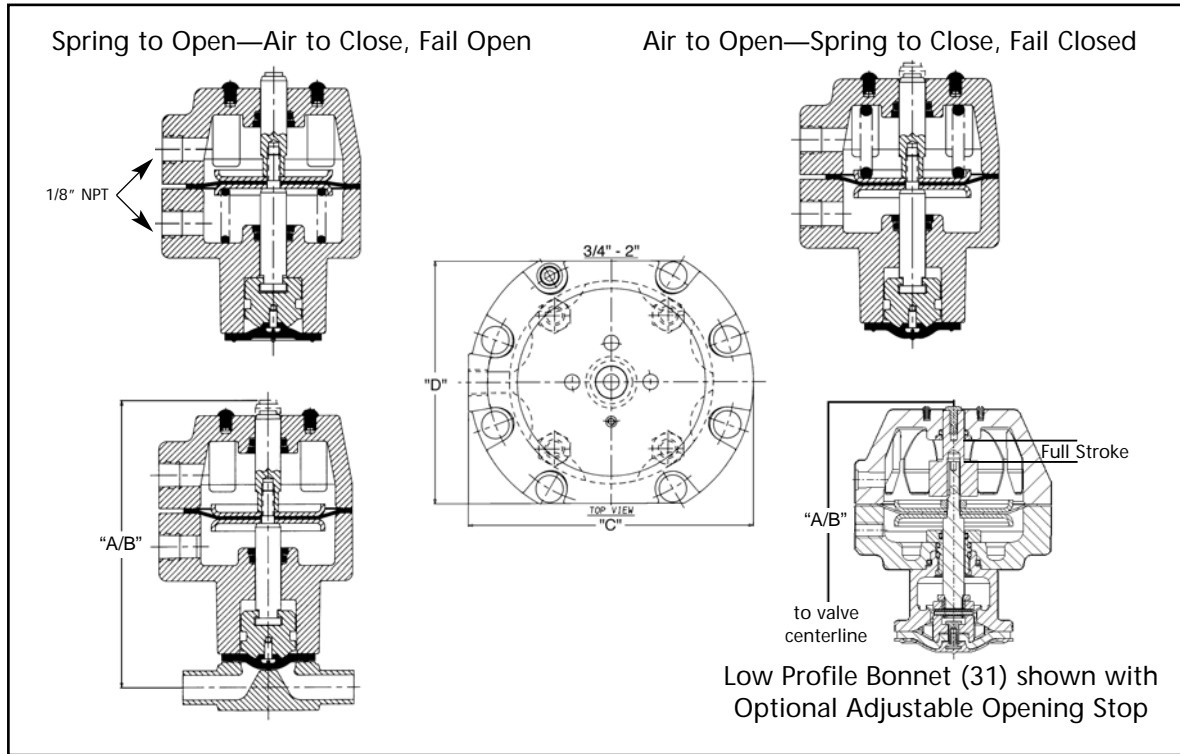
Legend

psig
bar

Note: See page 14 for ΔP Pressure Drop definition
 * The exposure of the diaphragm to steam may increase the air requirements to close by as much as 30%.
 ** Bio-Tek includes size 0.25" (DN8), 0.38" (DN10), and 0.50" (DN15).

Dimensional Charts

Advantage Actuator 1/4"-2"



Dimensional Data with Forged Body									
Valve Size		A Valve Open		B With Limit Switch, SP 2		C		D	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm
TC 25, .375, .5 ²	8, 10, 15 ²	4.33	110	9.23	234	2.84	72	2.5	63
BW 25, .375, .5 ¹	8, 10, 15 ¹	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

¹Bio-Tek Valve series BW Ends

²Bio-Tek Valve series TC Ends

Actuator Weights

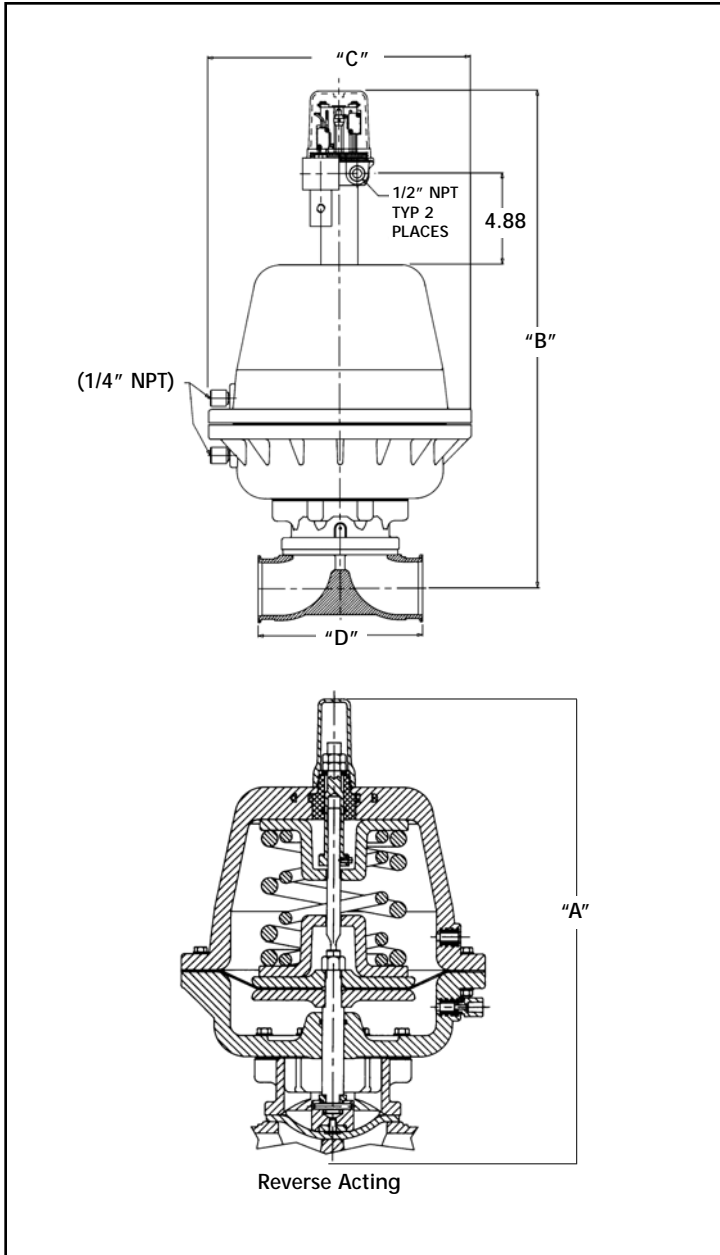
Weights include Actuator and Forged Body							
Valve Size		Double Acting		Spring-to-Open		Spring-to-Close	
Inch	DN	Lbs.	Kg	Lbs.	Kg	Lbs.	Kg
.25, .375, .50*	8, 10, 15	1.25	0.57	1.31	0.59	1.37	0.62
0.50	15	2.00	0.91	2.09	0.95	2.34	1.06
0.75	20	3.69	1.67	3.78	1.71	4.34	1.97
1.00	25	4.47	2.03	4.59	2.08	5.16	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

*Bio-Tek sizes

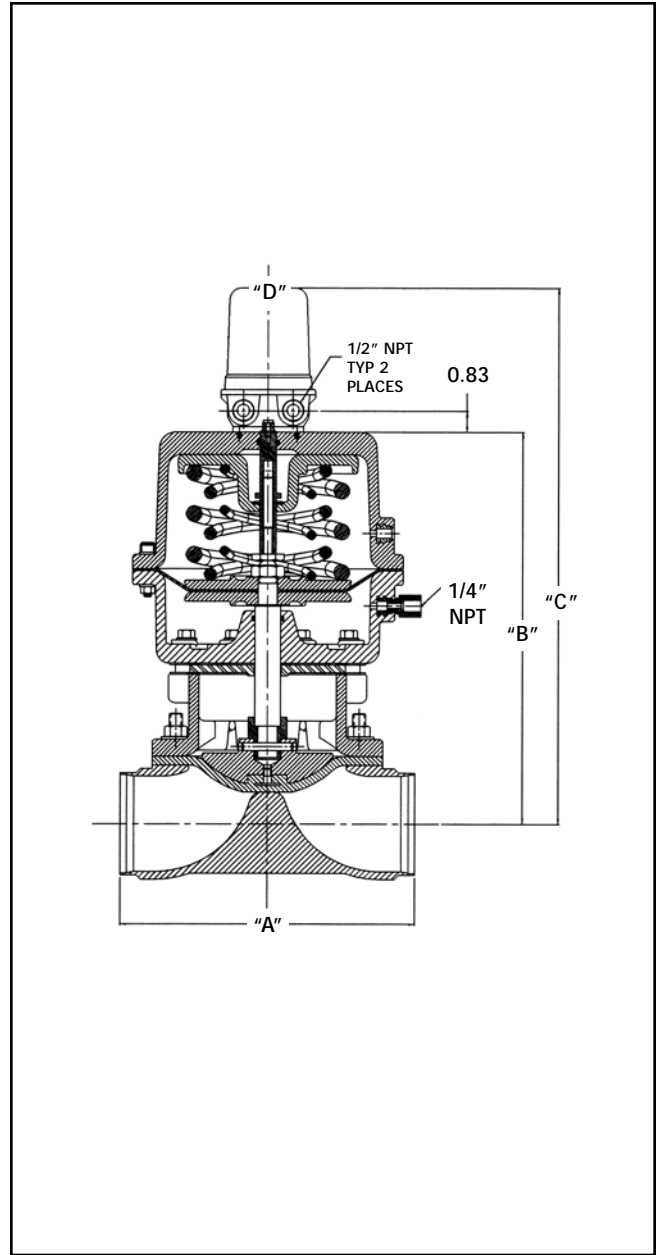
Dimensional Charts

Advantage Actuators 3" & 4"

Series 47



Series 33



Series 47 Dimensional Data

Valve Size		A		B With Limit Switch, SP 2		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

Series 33 Dimensional Data

Valve Size		A		B		C*		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

* With Limit Switch SP2

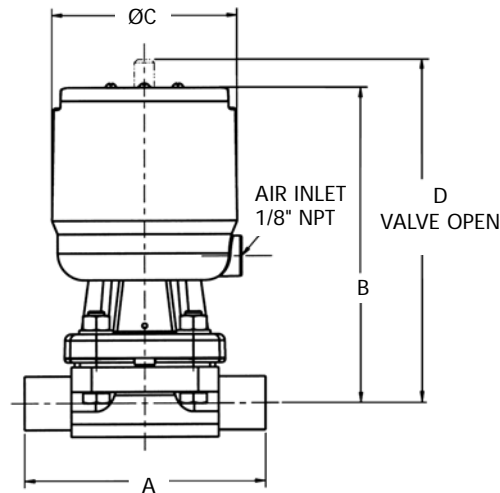
Advantage Actuator Weights 33 & 47 Series

Advantage Actuator Weights (including Actuator and Forged Body*)							
Valve Size		Double Acting		Spring-to-Open		Spring-to-Close	
Inch	DN	Lbs.	Kg	Lbs.	Kg	Lbs.	Kg
3.00 (47)	80	72.09	32.70	75.39	34.20	107.49	48.76
4.00 (47)	100	82.50	37.42	85.80	38.92	117.50	53.30

*3" & 4" (DN 80-100) include cast body weight

Advantage Actuator Weights (less Body and Diaphragm)									
Size		Double Act		Direct		Reverse			
						60		90	
	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

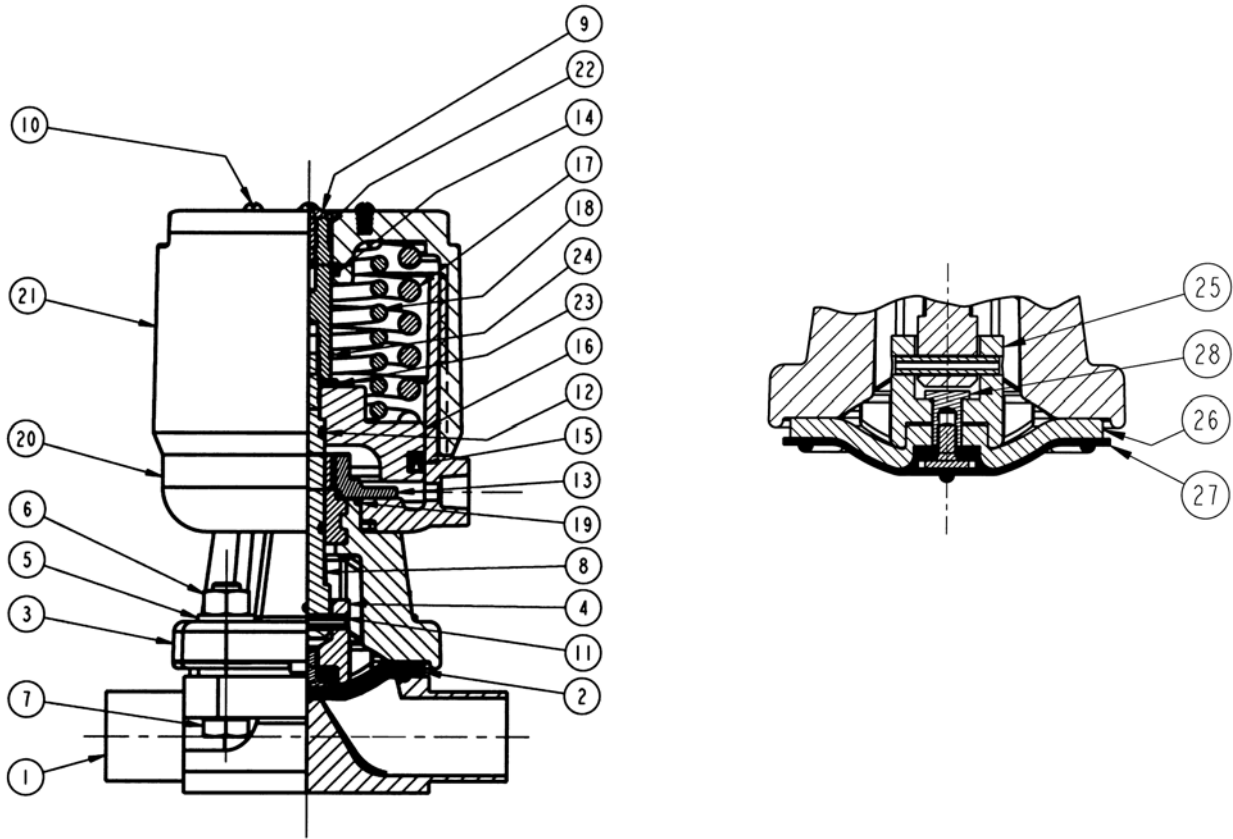
Dimensional Charts Advantage Piston Actuators



Valve Size		A		B		C		D		Actuator Weight*	
Inch	DN	Inch	mm	Inch	mm	Inch	mm	Inch	mm	lb	kg
0.50	15	3.50	89.8	4.53	115.0	2.75	69.9	4.90	124.4	1.80	0.81
0.75	20	4.00	101.6	5.34	135.6	3.38	85.9	5.80	147.3	3.23	1.46
1.00	25	4.50	114.3	5.90	149.8	3.38	85.9	6.42	163.0	3.62	1.64
1.50	40	5.50	139.7	9.53	242.0	5.00	127.0	10.34	262.7	11.75	5.32
2.00	50	6.25	158.7	10.07	255.8	5.00	127.0	11.18	284.1	13.3	6.03

* Less body

Bill of Materials Advantage Piston Actuator (APA)

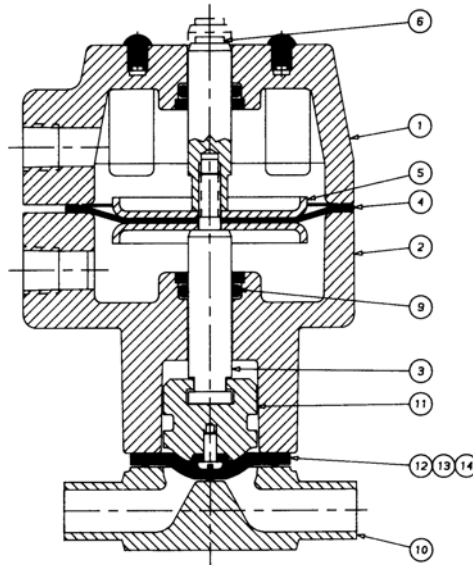


Materials of Construction			
Item	Description	Material	Quantity
1	Standard ITT Body	STN. STL. 316L	1
2	Standard ITT Elastomer Diaphragms	EPDM, BUNA-N	1
3	Bonnet	STN. STL.	1
4	Compressor	Zinc	1
5	Washer, Plain	STN. STL. 18-8	4
6	Nut, Hex	STN. STL. 18-8	4
7	Screw, Hex HD, Cap	STN. STL. 18-8	4
8	Spindle, Valve	STN. STL.	1
9	Plug	Plastic	1
10	Screw, Machine RD Head	STN. STL.	4
11	Pin, Compressor	STN. STL.	1
*12	"O" Ring	BUNA-N	2
13	Bushing	Brass	1
*14	"O" Ring	BUNA-N	1

Materials of Construction			
Item	Description	Material	Quantity
*15	Seal, Piston	BUNA-N	1
16	Piston	Zinc	1
17	Spring, Outer	Steel	1
18	Spring, Inner	Steel	1
19	"O" Ring	BUNA-N	2
20	Cylinder	Glass Reinforced PBT	1
21	Cover, Cylinder	Glass Reinforced PBT	1
22	Spindle, Indicating	STN. STL.	1
23	Washer	STN. STL.	1
24	Ring, Retaining	STN. STL.	1
25	Compressor	Zinc	1
26	Backing Cushion	EPDM	1
27	Standard ITT Plastic Diaphragms	PTFE, Grade TM	1
28	Tube Nut	Brass	1

* Recommended service parts

Bill of Materials Advantage Actuator



Air to Open—Air to Close Shown

Materials of Construction 1/4"—2", DN 6—50

Item	Description	Material	Quantity
1	Cover, Upper Actuator	PAS, Cmpl with FDA Cfr #21	1
2	Cover, Lower Actuator	PAS, Cmpl with FDA Cfr #21	1
3	Spindle	Stn. Stl.	1
4	Diaphragm, Actuator	Buna N	1
5	Plate, Actuator	Stn.Stl. or Car Stl Nickel Pl.	2
6	Spindle, Indicating	Stn. Stl.	1
7	Spring	Steel Nickel Pl.	1
8	Spring	Steel Nickel Pl.	1
*9	"O" Ring	Viton, Cmpl with FDA Cfr #21	2
10	Body, Weir 1/4"-2"	Stn. Stl., Forge, or Inv. Cast	1
11	Compressor	Stn. Stl., C.I., Zinc or Bronze	1
*12	Diaphragm, Elastomer	EPDM	1
*13	Diaphragm, Plastic	PTFE Grade TM	1
*14	Cushion, Backing	EPDM	1
15	Washer, Plain	Stn. Stl., 18-8	4
16	Nut, Hex	Stn. Stl., 18-8	4
17	Screw, Hex HD, Cap	Stn. Stl., 18-8	4

**Recommended spare parts*

For more information, please contact:

Pure-Flo Headquarters

33 Centerville Road
Lancaster, PA 17603-2064 USA
Phone +1 (800) 787-3561
Phone +1 (717) 509-2200
Fax +1 (800) 239-9402

Website: www.ittpureflo.com

E-mail: pureflo.custserv@itt.com

Valve Office Locations:

Pure-Flo
110-B West Cochran
Simi Valley, CA 93065 USA
Phone +1 (800) 926-8884
Phone +1 (805) 520-7200
Fax +1 (805) 520-7205

Pure-Flo
Richards Street
Kirkham, Lancashire
PR4 2HU, England
Phone +44-1772-682696
Fax +44-1772-686006

