

Resilient Seated Butterfly – Submittal/Technical Data

Application

Bray's NY, AB and SS series resilient seated butterfly valves set the design standard for quality, reliability and long life in a wide variety of HVAC applications. Specifically designed for automated applications on chilled water, hot water and condenser water, all NY, AB and SS series automated butterfly valves are 100% factory tested for bubble tight shut off and low seating/unseating torque.



Technical Specifications		
Service	Hot Water, Chilled Water, Condenser Water up to 50% Glycol	
Size Range	2" through 30" (DN 50 to 750)	
Body Style	Lug, 2-Way and 3-Way, for ANSI 125 and ANSI 150 flanges	
Flow Characteristics	Modified Equal Percentage – See Page RB-3 in the sales brochure	
Flow Coefficients	See Page RB-9 in the sales brochure	
Fluid Temperature Limits	-20 to 250°F (-28 to 121°C)	
Leakage	Bubble tight at rated maximum differential pressure	
Maximum Fluid Velocity	30 ft/second (9 m/second)	
Body Cold Working Pressure Ratings	250 PSI (17.2 Bar)	
Close-Off - Pressure Ratings	2 in. to 12 in. Valve Part Numbers Ending in "0"	175 psi
	14 in. to 30 in. Valve Part Numbers Ending in "0"	150 psi
	2 in. to 20 in. Valve Part Numbers Ending in "1"	50 psi
	24 in. to 30 in. Valve Part Numbers Ending in "1"	75 psi
	See pages RB-18 to RB-26 in the sales brochure for specific models	
Materials Materials (other materials available upon request)	Body	Cast Iron
	Disc	NY Series - Ductile Iron, Nylon 11 coated
		AB Series - Aluminum Bronze
		SS Series - 316 Stainless Steel
	Seat	EPDM (Ethylene Propylene Diene Monomer) - Peroxide Cured
Stem	416 Stainless Steel	
Tee	Ductile Iron (3-way valves only)	
Approvals & Certifications	CE/PED Certification, NSF/ANSI 61-2008 Certification (Potable Water) SIL Certification, ABS Certification, Bureau Veritas Certification, DNV	

Disclaimer - The performance specifications are nominal and conform to acceptable industry standards.
For application at conditions beyond these specifications, consult the local Bray office.
Bray, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

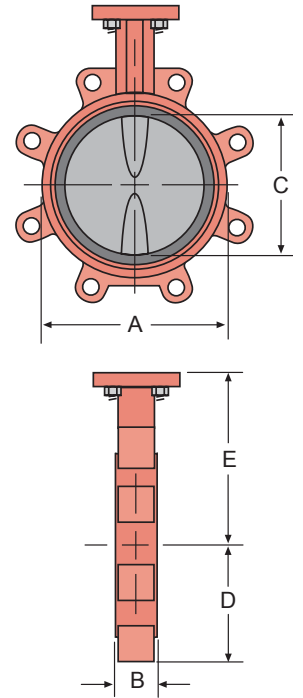
BFV - Dimensions, 2-Way - Commercial Electric Actuators

Dimensions - (Valve Body)

2-Way BFV Dimensions, 2" - 20" - Series 31 Butterfly Valves														
Valve Model	Size		Cv		A	B	C	D	E	Lug Bolting		Data Threads	Weight ¹	
	in.	mm	90°	60°						BC	Holes		lbs.	kg.
-- L2-020	2	50	144	61	3.69	1.62	2.00	2.30	5.50	4.75	4	5/8-11	7.0	3.12
-- L2-025	2-1/2	65	282	107	4.19	1.75	2.50	2.57	6.00	5.50	4	5/8-11	8.0	3.63
-- L2-030	3	80	461	154	4.88	1.75	3.00	2.81	6.25	6.00	4	5/8-11	9.0	4.08
-- L2-040	4	100	841	274	6.06	2.00	4.00	4.09	7.00	7.50	8	5/8-11	15.0	6.80
-- L2-050	5	125	1376	428	7.06	2.12	5.00	4.61	7.50	8.50	8	3/4-10	20.0	9.07
-- L2-060	6	150	1850	567	8.12	2.12	5.75	5.06	8.00	9.50	8	3/4-10	23.0	10.43

N=Normally Open / C=Normally Closed
 NY=Nylon Coated Disc / AB=Aluminum Bronze Disc/ SS=Stainless Steel Disc

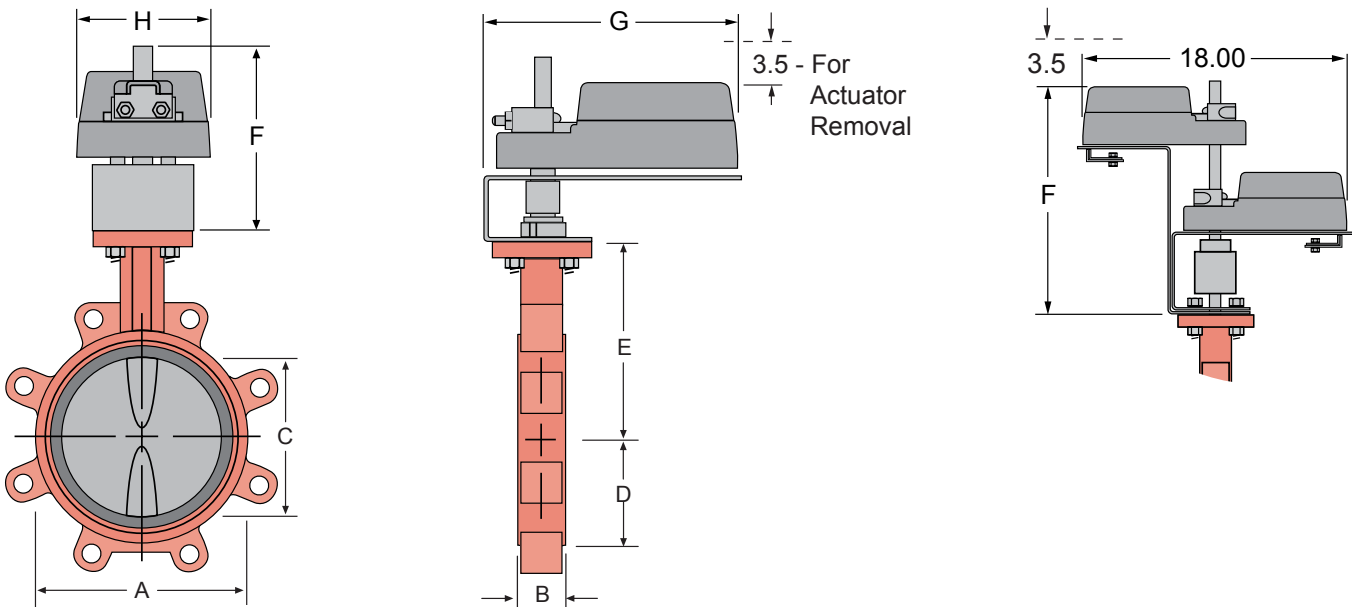
¹ - Weights are for valve bodies only.



Dimensions - (Commercial Actuators)

Commercial Actuator - Dimensions				
Model Number	F	G	H	Weight lbs
D-140	6.68	7.50	4.00	2.9
D-210	6.68	7.50	4.00	2.9
DS-180	7.43	10.96	4.00	6.4
DC-310	7.43	10.96	3.95	4.4
DCS-140	7.43	10.96	3.95	4.9
RA Series	5.31	8.58	3.82	3.8
Dual Act.	11.75	18.00	4.00	12.8

Largest Actuator Dimension Shown

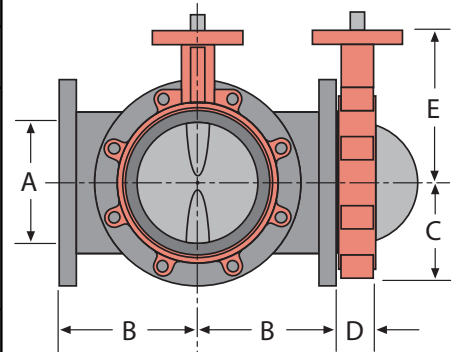


BFV - Dimensions, 3-Way - Commercial Electric Actuators

Dimensions - (Valve Body)

3-Way BFV Dimensions, 2" - 20" - Series 31 Butterfly Valves

Valve Model	Size		Cv		A	B	C	D	E	Lug Bolting Data		
	in.	mm	90°	60°						BC	Holes	Threads
__L3-X020	2	50	144	61	2.00	4.50	2.30	1.62	5.50	4.75	4	5/8-11
__L3-X025	2-1/2	65	282	107	2.50	5.00	2.57	1.80	6.00	5.50	4	5/8-11
__L3-X030	3	80	461	154	3.00	5.50	2.81	1.80	6.25	6.00	4	5/8-11
__L3-X040	4	100	841	274	4.00	6.50	4.09	2.00	7.00	7.50	8	5/8-11
__L3-X050	5	125	1376	428	5.00	7.50	4.61	2.12	7.50	8.50	8	3/4-10
__L3-X060	6	150	1850	567	6.00	8.00	5.06	2.12	8.00	9.50	8	3/4-10



X=Configuration Number for 3-Way
 NY=Nylon Coated Disc / AB=Aluminum Bronze Disc/ SS=Stainless Steel Disc

3-Way Tee Weights

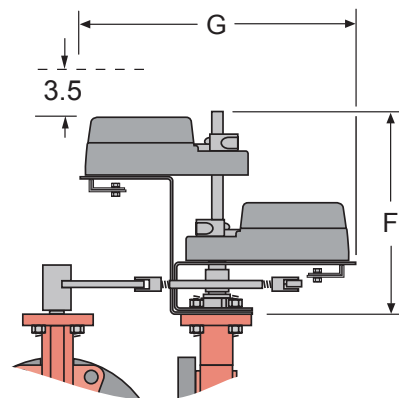
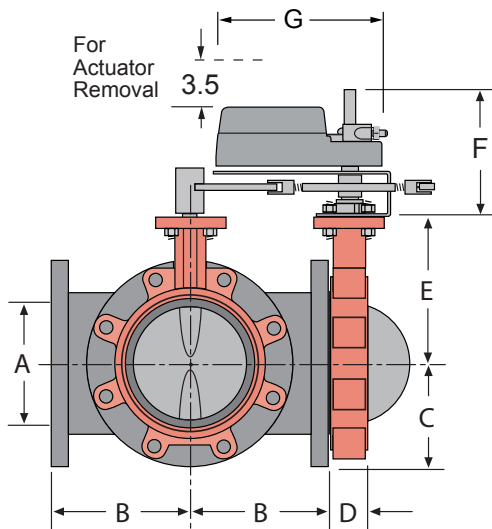
Size	Weight	
	in.	mm
2	50	19
2-1/2	65	27
3	80	39
4	100	62
5	125	79
6	150	96
8	200	155
10	250	270
12	300	380
14	350	435
16	400	550
18	450	665
20	500	855

Dimensions - (Commercial Actuators)

Commercial Actuator - Dimensions

Model Number	F	G	Weight lbs
D-140	6.68	7.50	2.9
D-210	6.68	7.50	2.9
DS-180	7.43	10.96	6.4
DC-310	7.43	10.96	4.4
DCS-140	7.43	10.96	4.9
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Dual Act.	11.75	18.00	12.8

Largest Actuator Dimension Shown

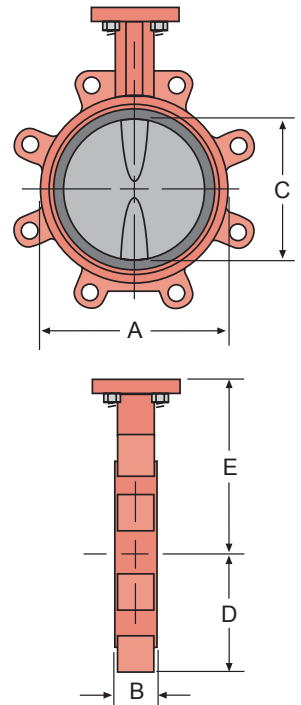


BFV - Dimensions, 2-Way - Industrial Actuators

Dimensions - (Valve Body)

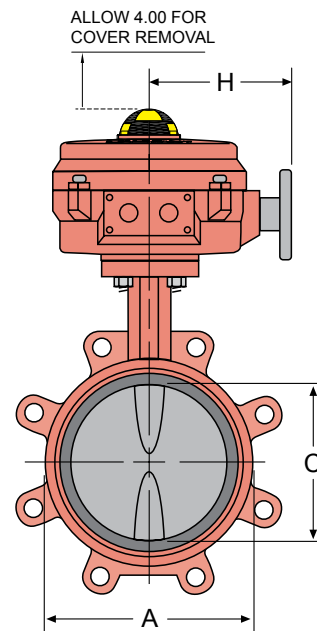
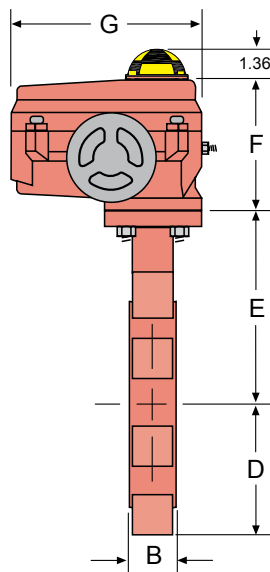
2-Way BFV Dimensions, 2" - 20" - Series 31 Butterfly Valves														
Valve Model	Size		Cv		A	B	C	D	E	Lug Bolting Data			Weight ¹	
	in.	mm	90°	60°						BC	Holes	Threads	lbs.	kg.
__L2_020	2	50	144	61	3.69	1.62	2.00	2.30	5.50	4.75	4	5/8-11	7.0	3.12
__L2_025	2-1/2	65	282	107	4.19	1.75	2.50	2.57	6.00	5.50	4	5/8-11	8.0	3.63
__L2_030	3	80	461	154	4.88	1.75	3.00	2.81	6.25	6.00	4	5/8-11	9.0	4.08
__L2_040	4	100	841	274	6.06	2.00	4.00	4.09	7.00	7.50	8	5/8-11	15.0	6.80
__L2_050	5	125	1376	428	7.06	2.12	5.00	4.61	7.50	8.50	8	3/4-10	20.0	9.07
__L2_060	6	150	1850	567	8.12	2.12	5.75	5.06	8.00	9.50	8	3/4-10	23.0	10.43
__L2_080	8	200	3316	1081	10.50	2.50	7.75	6.05	9.50	11.75	8	3/4-10	42.0	19.05
__L2_100	10	250	5430	1710	12.75	2.50	9.75	7.69	10.75	14.25	12	7/8-9	66.0	29.94
__L2_120	12	300	8077	2563	14.88	3.00	11.75	9.02	12.25	17.00	12	7/8-9	88.0	39.92
__L2_140	14	350	10538	3384	17.05	3.00	13.25	9.93	13.62	18.75	12	1-8	114.0	51.71
__L2_160	16	400	13966	4483	19.21	4.00	15.25	11.30	14.75	21.25	16	1-8	166.0	75.30
__L2_180	18	450	17214	5736	21.12	4.25	17.25	12.16	16.00	22.75	16	1 1/8-7	226.0	102.51
__L2_200	20	500	22339	7144	23.25	5.00	19.25	14.00	17.25	25.00	20	1 1/8-7	305.0	138.35
__F2-C240(1)	24	600	33154	11040	33.00	5.94	23.28	17.56	19.50	29.50	4	1 1/4-7	500.0	226.80
__F2-C300(1)	30	750	52443	18090	38.75	6.56	29.29	20.81	23.00	36.00	4	1 1/4-7	855.0	387.82

L=N=Normally Open / C=Normally Closed
 NY=Nylon Coated Disc / AB=Aluminum Bronze Disc / SS=Stainless Steel Disc
¹ - Weights are for valve bodies only.



Dimensions - (Series 70/AU Actuators)

Series 70/AU - Dimensions				
Model Number	F	G	H	Weight lbs
70-0061	5.6	7.5	5.8	13
70-0121/0201	6.6	10.1	7.8	28
70-0301/0501/0651	7.2	12.1	8.3	48
70-1300/1800	12.1	18.8	9.5	118
AU-4068	12.3	32.1	28.9	195
AU-7080	12.3	32.0	31.9	285



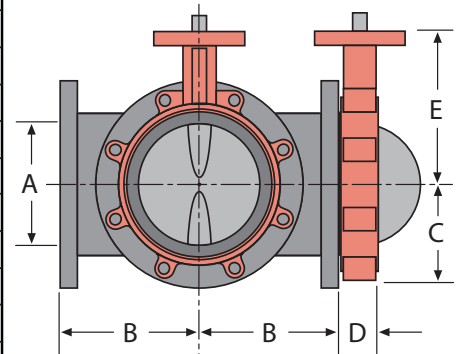
BFV - Dimensions, 3-Way - Industrial Actuators

Dimensions - (Valve Body)

3-Way BFV Dimensions, 2" - 20" - Series 31 Butterfly Valves

Valve Model	Size		Cv		A	B	C	D	E	Lug Bolting Data		
	in.	mm	90°	60°						BC	Holes	Threads
__ L3-X020	2	50	144	61	2.00	4.50	2.30	1.62	5.50	4.75	4	5/8-11
__ L3-X025	2-1/2	65	282	107	2.50	5.00	2.57	1.80	6.00	5.50	4	5/8-11
__ L3-X030	3	80	461	154	3.00	5.50	2.81	1.80	6.25	6.00	4	5/8-11
__ L3-X040	4	100	841	274	4.00	6.50	4.09	2.00	7.00	7.50	8	5/8-11
__ L3-X050	5	125	1376	428	5.00	7.50	4.61	2.12	7.50	8.50	8	3/4-10
__ L3-X060	6	150	1850	567	6.00	8.00	5.06	2.12	8.00	9.50	8	3/4-10
__ L3-X080	8	200	3316	1081	8.00	9.00	6.05	2.50	9.50	11.75	8	3/4-10
__ L3-X100	10	250	5430	1710	10.00	11.00	7.69	2.50	10.75	14.25	12	7/8-9
__ L3-X120	12	300	8077	2563	12.00	12.00	9.02	3.00	12.25	17.00	12	7/8-9
__ L3-X140	14	350	10538	3384	14.00	14.00	9.93	3.00	13.62	18.75	12	1-8
__ L3-X160	16	400	13966	4483	16.00	15.00	11.30	4.00	14.75	21.25	16	1-8
__ L3-X180	18	450	17214	5736	18.00	16.50	12.16	4.20	16.00	22.75	16	1-1/8-7
__ L3-X200	20	500	22339	7144	20.00	18.00	14.00	5.00	17.25	25.00	20	1-1/8-7

X=Configuration Number for 3-Way
 NY=Nylon Coated Disc / AB=Aluminum Bronze Disc/ SS=Stainless Steel Disc



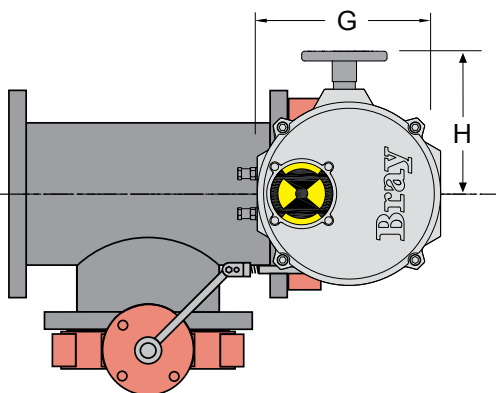
3-Way Tee Weights

Size	Weight	
in.	mm	lbs.
2	50	19
2-1/2	65	27
3	80	39
4	100	62
5	125	79
6	150	96
8	200	155
10	250	270
12	300	380
14	350	435
16	400	550
18	450	665
20	500	855

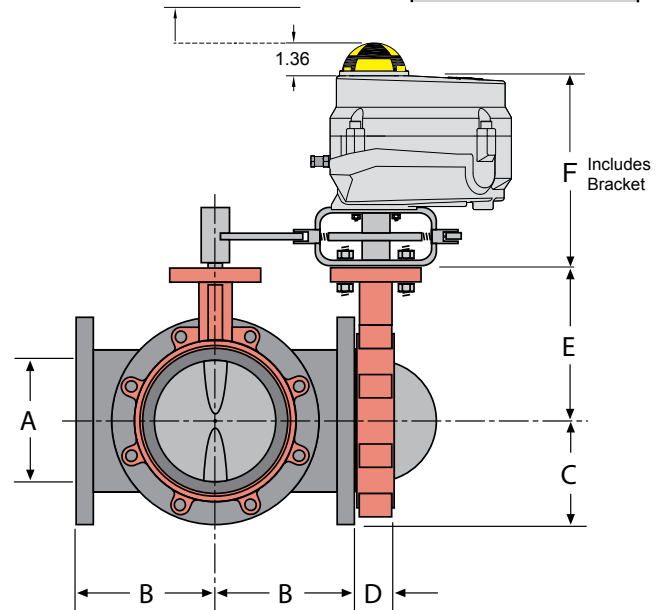
Dimensions - (Series 70 & AU Actuators)

Series 70 - Dimensions

Model Number	F	G	H	Weight lbs
70-0061	8.60	7.50	5.80	12
70-0121	10.73	10.10	7.80	28
70-0201	10.73	10.10	7.80	28
70-0301	11.33	12.10	8.30	48
70-0501	13.20	12.10	8.30	48
70-0651	13.20	12.10	8.30	48
70-1300	20.50	12.10	9.50	118
70-1800	20.50	12.10	9.50	118
AU-4068	22.30	32.10	28.90	195



ALLOW 4.00 FOR COVER REMOVAL

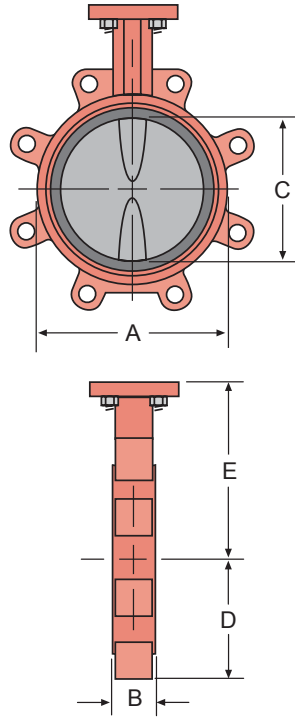


BFV - Dimensions, 2-Way - Pneumatic Actuators

Dimensions - (Valve Body)

2-Way BFV Dimensions, 2" - 20" - Series 31 Butterfly Valves														
Valve Model	Size		Cv		A	B	C	D	E	Lug Bolting Data			Weight ¹	
	in.	mm	90°	60°						BC	Holes	Threads	lbs.	kg.
__L2-_020	2	50	144	61	3.69	1.62	2.00	2.30	5.50	4.75	4	5/8-11	7.0	3.12
__L2-_025	2-1/2	65	282	107	4.19	1.75	2.50	2.57	6.00	5.50	4	5/8-11	8.0	3.63
__L2-_030	3	80	461	154	4.88	1.75	3.00	2.81	6.25	6.00	4	5/8-11	9.0	4.08
__L2-_040	4	100	841	274	6.06	2.00	4.00	4.09	7.00	7.50	8	5/8-11	15.0	6.80
__L2-_050	5	125	1376	428	7.06	2.12	5.00	4.61	7.50	8.50	8	3/4-10	20.0	9.07
__L2-_060	6	150	1850	567	8.12	2.12	5.75	5.06	8.00	9.50	8	3/4-10	23.0	10.43
__L2-_080	8	200	3316	1081	10.50	2.50	7.75	6.05	9.50	11.75	8	3/4-10	42.0	19.05
__L2-_100	10	250	5430	1710	12.75	2.50	9.75	7.69	10.75	14.25	12	7/8-9	66.0	29.94
__L2-_120	12	300	8077	2563	14.88	3.00	11.75	9.02	12.25	17.00	12	7/8-9	88.0	39.92
__L2-_140	14	350	10538	3384	17.05	3.00	13.25	9.93	13.62	18.75	12	1-8	114.0	51.71
__L2-_160	16	400	13966	4483	19.21	4.00	15.25	11.30	14.75	21.25	16	1-8	166.0	75.30
__L2-_180	18	450	17214	5736	21.12	4.25	17.25	12.16	16.00	22.75	16	1 1/8-7	226.0	102.51
__L2-_200	20	500	22339	7144	23.25	5.00	19.25	14.00	17.25	25.00	20	1 1/8-7	305.0	138.35
__F2-C240(1)	24	600	33154	11040	33.00	5.94	23.28	17.56	19.50	29.50	4	1 1/4-7	500.0	226.80
__F2-C300(1)	30	750	52443	18090	38.75	6.56	29.29	20.81	23.00	36.00	4	1 1/4-7	855.0	387.82

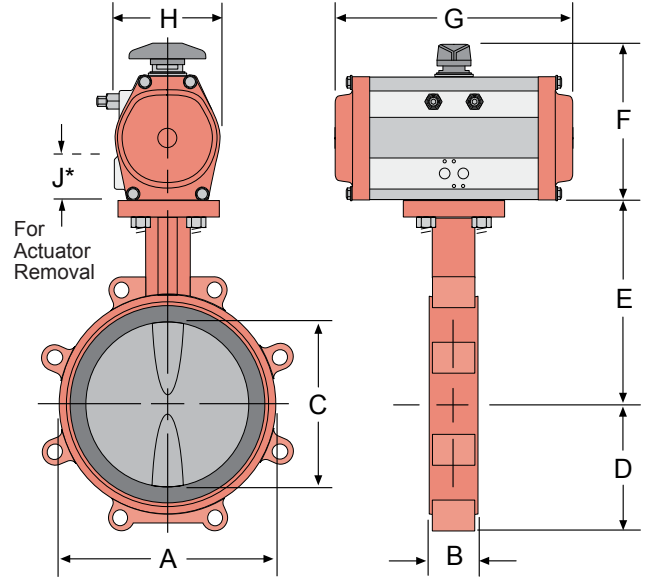
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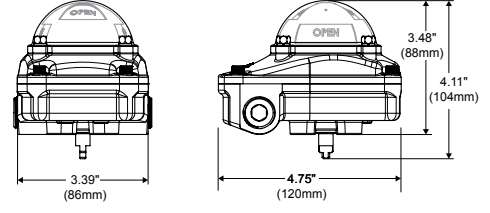
Dimensions - (Series 92/93 Pneumatic Actuator)

Series 92/93 - Dimensions						
Model Number	F	G	H	J	Weight lbs	
					Double Acting	Spring Return
92/93-063	4.29	6.00	2.76	1.50	3.3	3.9
92/93-083	5.20	7.89	3.58	1.50	6.3	8.1
92/93-093	5.54	8.91	3.94	1.50	8.5	10.9
92/93-119	6.93	12.10	4.72	1.50	18.0	23.4
92/93-128	7.73	12.34	5.39	1.50	21.5	28.1
92/93-160	9.37	15.45	6.77	3.00	39.0	53.4
92/93-210	11.61	18.92	8.83	3.00	78.0	111.0
92/93-255	13.46	26.70	10.75	3.00	143.5	214.9
45E2-12-DA	9.70	52.80	14.80	8.00	210.0	-
14E3-12-DA-C	12.10	72.06	21.30	12.00	386.0	-
45E2-12-SR3	9.70	52.80	14.80	8.00	-	362.0
73E2-14-SR4-C	11.80	60.10	16.80	10.00	-	624.0
73E2-14-SR3-C	11.80	60.10	16.80	10.00	-	569.0
14E3-18-SR5-C	12.10	72.06	21.30	12.00	-	1043.0

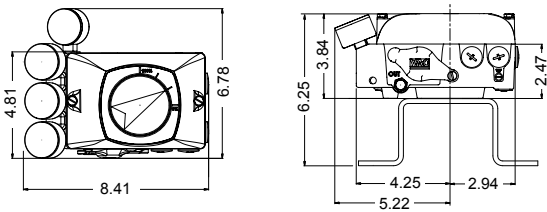
Dimensions are in Inches
 J* = Height required for Actuator removal



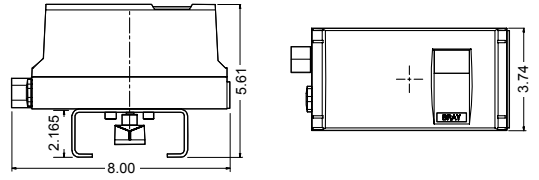
Series 5A Switch Box



VP200 Pneumatic Positioner



Series 6A Electro Pneumatic Positioner



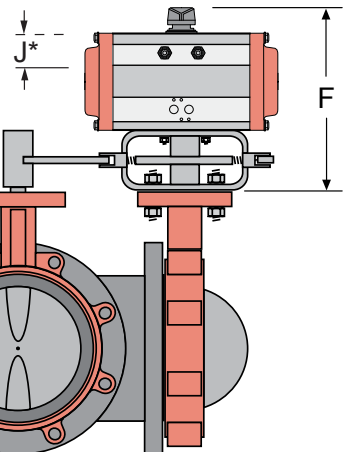
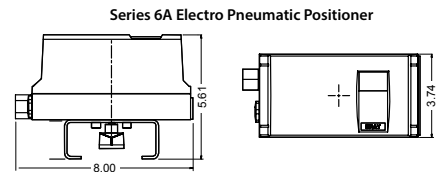
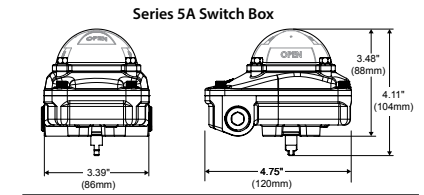
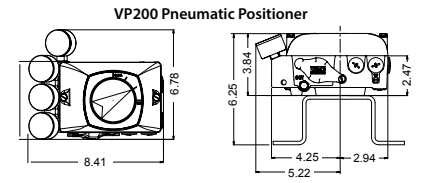
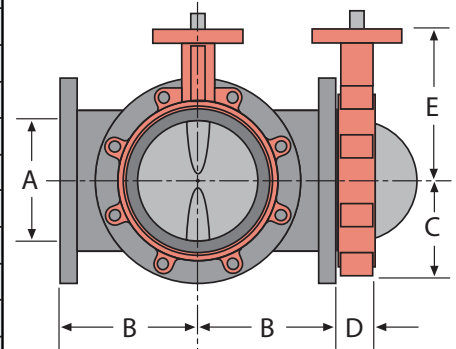
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Dimensions - (Valve Body)

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--L3-X050	5	125	1376	428	5.00	7.50	4.61	2.12	7.50	8.50	8	3/4-10
--L3-X060	6	150	1850	567	6.00	8.00	5.06	2.12	8.00	9.50	8	3/4-10
--L3-X080	8	200	3316	1081	8.00	9.00	6.05	2.50	9.50	11.75	8	3/4-10
--L3-X100	10	250	5430	1710	10.00	11.00	7.69	2.50	10.75	14.25	12	7/8-9
--L3-X120	12	300	8077	2563	12.00	12.00	9.02	3.00	12.25	17.00	12	7/8-9
--L3-X140	14	350	10538	3384	14.00	14.00	9.93	3.00	13.62	18.75	12	1-8
--L3-X160	16	400	13966	4483	16.00	15.00	11.30	4.00	14.75	21.25	16	1-8
--L3-X180	18	450	17214	5736	18.00	16.50	12.16	4.20	16.00	22.75	16	1-1/8-7
--L3-X200	20	500	22339	7144	20.00	18.00	14.00	5.00	17.25	25.00	20	1-1/8-7

X=Configuration Number for 3-Way
 NY=Nylon Coated Disc / AB=Aluminum Bronze Disc/ SS=Stainless Steel Disc



Dimensions - (Series 92/93 Pneumatic Actuator)

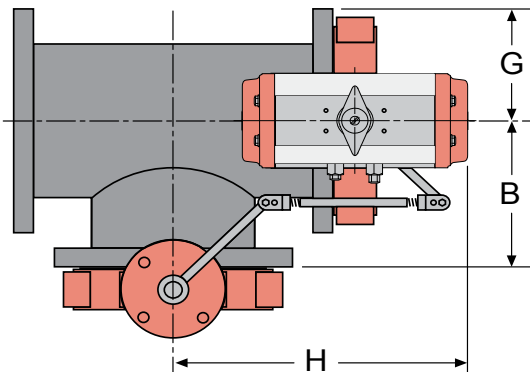
Series 92/93 - Dimensions

Model Number	F	G	H	J	Weight lbs	
					Double Acting	Spring Return
92/93-063	7.53	3.00	9.06	1.50	3.3	3.9
92/93-083	8.43	4.50	13.33	1.50	6.3	8.1
92/93-093	8.78	5.50	14.89	1.50	8.5	10.9
92/93-119	11.41	8.00	19.89	1.50	18.0	23.4
92/93-128	12.22	8.00	19.89	1.50	21.5	28.1
92/93-160	13.49	10.50	26.64	3.00	39.0	53.4
92/93-210	17.62	13.75	33.14	3.00	78.0	111.0
92/93-255	19.49	13.75	33.14	3.00	143.5	214.9

Dimensions are in Inches Largest Actuator Dimension Shown
 J* = Height required for Actuator removal

3-Way Tee Weights

Size	Weight	
	in.	mm
2	50	19
2-1/2	65	27
3	80	39
4	100	62
5	125	79
6	150	96
8	200	155
10	250	270
12	300	380
14	350	435
16	400	550
18	450	665
20	500	855

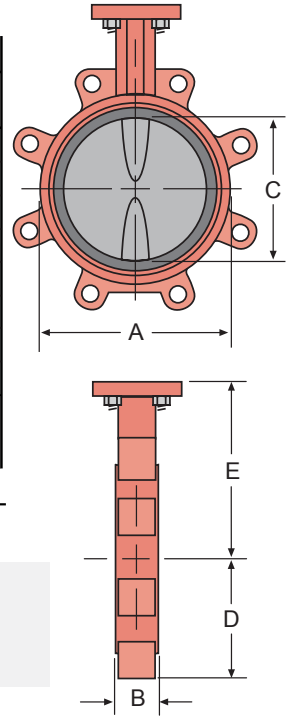


BFV - Dimensions, 2-Way-Low Pressure Pneumatic Actuators

Dimensions - (Valve Body)

2-Way BFV Dimensions, 2" - 10" - Series 31 Butterfly Valves															
Valve Model	Size		Cv		A	B	C	D	E	J	Lug Bolting Data			Weight	
	in.	mm	90°	60°							BC	Holes	Threads	lbs.	kg.
__L2-_020	2	50	144	61	3.69	1.62	2.00	2.30	5.50	8.62	4.75	4	5/8-11	7.0	3.12
__L2-_025	2-1/2	65	282	107	4.19	1.75	2.50	2.57	6.00	9.12	5.50	4	5/8-11	8.0	3.63
__L2-_030	3	80	461	154	4.88	1.75	3.00	2.81	6.25	9.38	6.00	4	5/8-11	9.0	4.08
__L2-_040	4	100	841	274	6.06	2.00	4.00	4.09	7.00	13.75	7.50	8	5/8-11	15.0	6.80
__L2-_050	5	125	1376	428	7.06	2.12	5.00	4.61	7.50	14.38	8.50	8	3/4-10	20.0	9.07
__L2-_060	6	150	1850	567	8.12	2.12	5.75	5.06	8.00	14.88	9.50	8	3/4-10	23.0	10.43
__L2-_080	8	200	3316	1081	10.50	2.50	7.75	6.05	9.50	16.38	11.75	8	3/4-10	42.0	19.05
__L2-_100	10	250	5430	1710	12.75	2.50	9.75	7.69	10.75	17.62	14.25	12	7/8-9	66.0	29.94

N=Normally Open / C=Normally Closed
 NY=Nylon Coated Disc / AB=Aluminum Bronze Disc / SS=Stainless Steel Disc

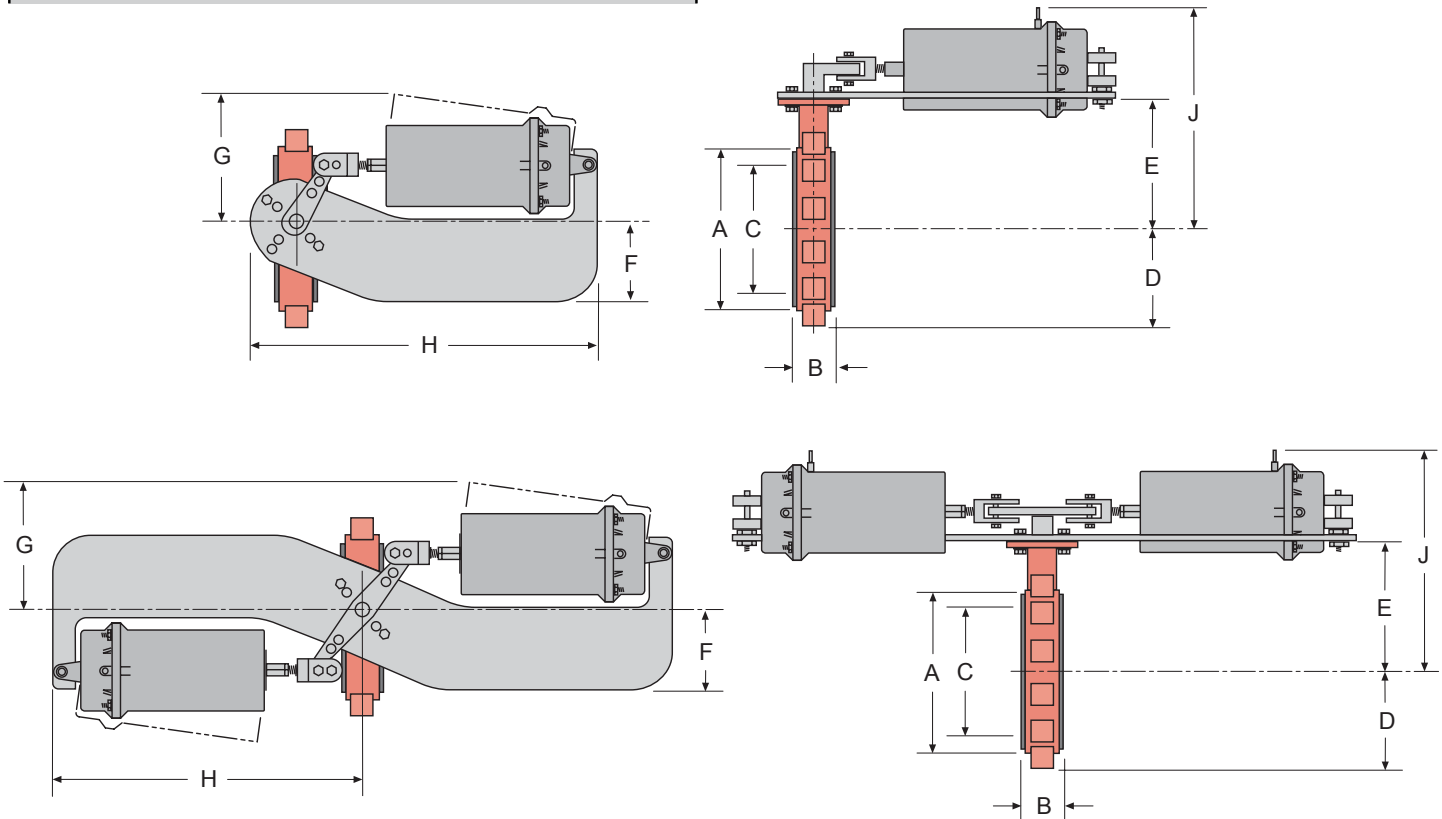


Dimensions - (Low Pressure Pneumatic Actuators)

LP Series D-3153, D-3244, D-3246 - Dimensions				
Model Number	F	G*	H	Weight lbs
D-3153	3.38	5.66	15.97	8.00
D-3244	4.88	7.31	19.94	13.55
D-3246	5.54	8.94	25.81	17.55
D-3246-D	6.00	8.94	22.75	35.10

Dimensions are in Inches
 G* = Maximum swing of Actuator
 -D = Tandem Actuators

Linkage arms are fixed to open the valve to 70 degrees and are non-adjustable



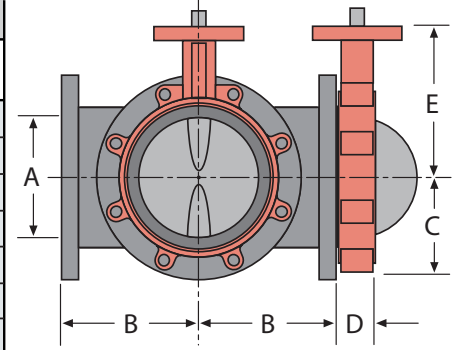
BFV - Dimensions, 3-Way-Low Pressure Pneumatic Actuators

Dimensions - (Valve Body)

3-Way BFV Dimensions, 2" - 8" - Series 31 Butterfly Valves

Valve Model	Size		Cv		A	B	C	D	E	Lug Bolting Data		
	in.	mm	90°	60°						BC	Holes	Threads
__ L3-X020	2	50	144	61	2.00	4.50	2.30	1.62	5.50	4.75	4	5/8-11
__ L3-X025	2-1/2	65	282	107	2.50	5.00	2.57	1.80	6.00	5.50	4	5/8-11
__ L3-X030	3	80	461	154	3.00	5.50	2.81	1.80	6.25	6.00	4	5/8-11
__ L3-X040	4	100	841	274	4.00	6.50	4.09	2.00	7.00	7.50	8	5/8-11
__ L3-X050	5	125	1376	428	5.00	7.50	4.61	2.12	7.50	8.50	8	3/4-10
__ L3-X060	6	150	1850	567	6.00	8.00	5.06	2.12	8.00	9.50	8	3/4-10
__ L3-X080	8	200	3316	1081	8.00	9.00	7.69	2.50	9.50	11.75	8	3/4-10

X=Configuration Number for 3-Way
 NY=Nylon Coated Disc / AB=Aluminum Bronze Disc/ SS=Stainless Steel Disc



3-Way Tee Weights

Size in.	mm	Weight lbs.
2	50	19
2-1/2	65	27
3	80	39
4	100	62
5	125	79
6	150	96
8	200	155

Dimensions - (Low Pressure Pneumatic Actuators)

LP Series D-3153, D-3244, D-3246 - Dimensions

Model Number	F	G*	H**	Weight lbs
D-3153	9.38	5.66	10.90	8.00
D-3244	13.75	7.31	12.02	13.55
D-3246	14.38	8.94	13.76	17.55
D-3246-D	16.38	8.94	24.00	35.10

Dimensions are in Inches
 G* = Maximum swing of Actuator
 H** = Maximum swing of Arm
 -D = Tandem Actuators
 Largest Actuator Dimension Shown

Linkage arms are fixed to open the valve to 70 degrees and are non-adjustable

