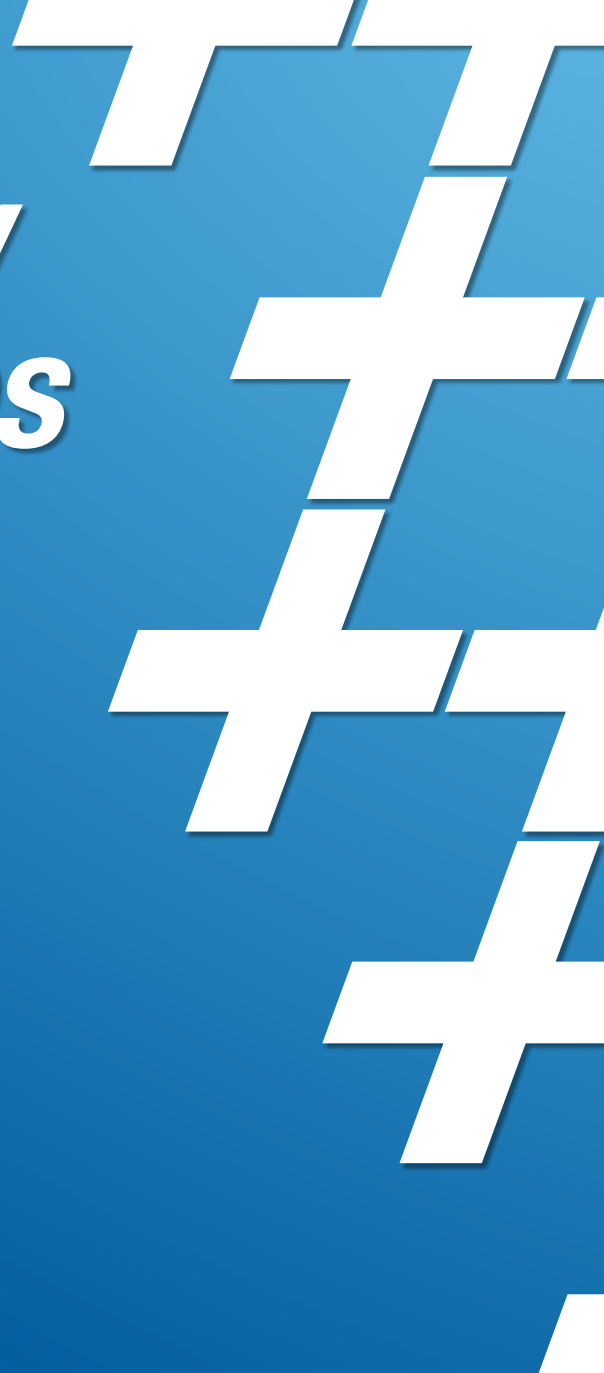




Butterfly Valves



FLOW+
Quality Valves at Low Cost

ABOUT US

The Flow+ product line is built around the goal of providing quality valves at competitive prices.

It's a goal that has met the needs of various oil and gas, mining, process, chemical and general industries, and the reason Flow+ remains a leader when it comes to your valve needs.

Our growing product line ranges from:

- 1, 2, and 3 piece ball valves, known as our B Series.
- Floating flanged ball valves offered in 150, 300 and 600 pressure classes, known as our Z Series.
- Trunnion ball valves, known as our T Series.
- A wide variety of butterfly valves, known as our BF Series.
- Strainers and check valves.
- Valve position monitors.

For more details, please visit www.flowplusvalves.com



Certified to NSF/ANSI 61

CRN



TABLE OF CONTENTS

BUTTERFLY VALVES

2" to 12" Butterfly Valve – BFW & BFL Series	3
14" to 24" Butterfly Valve – BFW & BFL Series	4
28" to 48" Butterfly Valve – BFD Series	5
Cv Value and Technical Information.....	6

ACTUATOR INFORMATION

SPNII Actuator Information.....	7
Actuation Selection Chart.....	7

ADDITIONAL INFORMATION

Flow+ Terms and Conditions.....	8
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PART NUMBERING SYSTEM

1	1 = Size 02 = 2" 25 = 2-1/2" 03 = 3" up to	6	6 = Shaft 1 = 416SS / 431SS/304SS 4 = 316SS 5 = 17-4SS
2	2 = Style A = Wafer (ANSI 125/150) B = Wafer (ANSI 125/150) (DIN PN10/PN16) C = Lug (ANSI 125/150) D = Double Flanged	7	7 = Bushing 0 = Bronze 3 = PTFE
3	3 = Body 1 = Cast Iron 2 = Ductile Iron	8	8 = Seat/Liner 1 = Buna-N 4 = EPDM / NSF61 5 = EPDM 6 = Viton 8 = Hypalon 9 = PTFE Line EPDM (125 PSI Rated Only)
4	4 = Pressure 0 = 232 PSI (2" - 12") 1 = Class 150 lb 2 = 285 PSI (2" - 12") 4 = 250 PSI (14" and up) 8 = 125 PSI (2" and up)	9	5 = Actuator 3 = Lockable Handle (2" - 12") 5 = Gear Operator 6 = Double Acting Actuator 7 = Fail Close Actuator 8 = Fail Open Actuator 9 = Electric Actuator C = Buried Gear / 2" Nut U = Chain Wheel X = None
5	5 = Disc 2 = Nickel Plated Ductile Iron 3 = Aluminium Bronze 4 = 316SS 5 = Alloy 20 6 = Monel 7 = Hastelloy C 8 = Nylon Coated Ductile 9 = PTFE Coated 316SS	10	10 = Special Features 0 = Custom Product

2-12" Butterfly Valve

Maximum Working Pressure 285 PSI

	Materials	ASTM
Body	Ductile Iron	A395
	Cast Iron*	A126-B
	Carbon Steel*	A216
	Stainless Steel*	A351-CF8M
Disc	Ductile Iron - Nickel Plated	A395-ENP
	316 Stainless Steel	A351-CF8M
	Aluminum Bronze*	A339-80-45-10
	Alloy 20*	A351-CN-7M
	Monel*	A494-M35
	Hastelloy C-276*	A494-CW-6M
	Shaft	316 Stainless Steel
Shaft	416 Stainless Steel	A582
	17-4 Stainless Steel	A564
Bushing	Bronze*	B62
	PTFE	N/A
Temperature (both in °F and °C)		
Seat/Liner	Buna-N	0 – 180°F « (-18) – 80°C
	Viton	0 – 400°F « (-18) – 204°C
	PTFE Lined EPDM <small>(125 PSI Rated Only)</small>	0 – 250°F « (-18) – 204°C
	EPDM	(-30) – 275°F « (-35) – 135°C
	Hypalon*	(-20) – 200°F « (-30) – 90°C

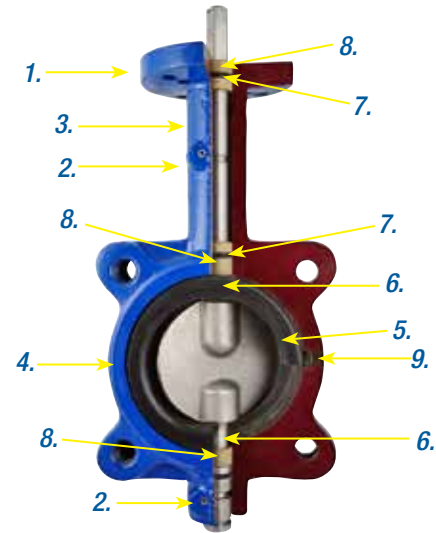
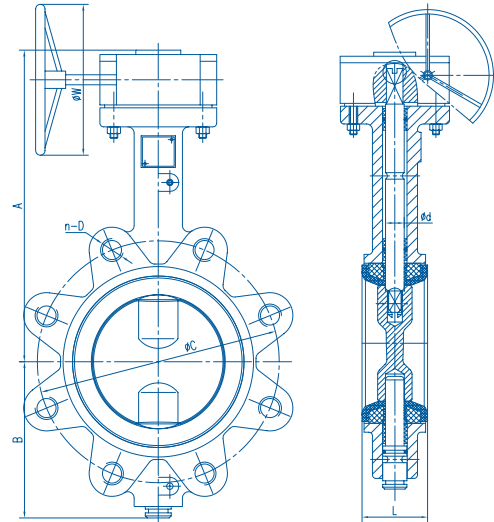
*Optional equipment.

Size	A	B	C	D	n-d	E	L	W
2"	194	89	120.5	19	4-5/8-11UNC-2B	85.2	46.1	261.5
2.5"	206	98	139.5	19	4-5/8-11UNC-2B	98.6	49.1	261.5
3"	213	104	152.5	19	4-5/8-11UNC-2B	107.8	48.4	261.5
4"	232	123	190.5	19	8-5/8-11UNC-2B	72.9	55.3	261.5
5"	244	136	216	22	8-3/4-10UNC-2B	82.7	58.8	364
6"	257	147	241.5	22	8-3/4-10UNC-2B	92.4	59.1	364
8" Lever	246	184	298.5	22	8-3/4-10UNC-2B	114.2	64.1	364
8" Gear	332	184	298.5	22	8-3/4-10UNC-2B	114.2	64.1	300
10"	364	212	362	25	12-7/8-9UNC-2B	93.7	71.8	300
12"	414	255	432	25	12-7/8-9UNC-2B	111.8	81	300

*Units of measurement in millimeters. For DIN dimensional data, please contact a Flow+ supplier.

ADDITIONAL INFORMATION

- Available in wafer or lug body
- Consult supplier for vacuum service
- Standard dead-end service for lug style with downstream flange removed
- Compatible with ASME 125/150 flanges
- Applicable standards: API609, MSS-SP67, tested per API598, CRN, Certified NSF/ANSI 61
- Seats are field replaceable
- All valve bodies are epoxy coated
- Locking lever handle with 10 position notch plate on sizes 2" to 8" – gear operator available on request



FEATURES

1. ISO5211 mounting flange allows for easy actuation
2. 17-4PH SS blow-out proof shafts
3. A395 ductile iron body
4. Bubble tight and bi-directional up to 285 PSI
5. Cartridge seat with phenolic backing seat provides dimensionally stable seating surface, minimal seat wear and extends seat life
6. Two molded in primary shaft seals on upper and lower seal bore I.D.
7. Three additional shaft seals
8. Two upper and one lower F4 bushing to provide additional support
9. Set screws to maintain seat alignment on dead-end service

14-24" Butterfly Valve

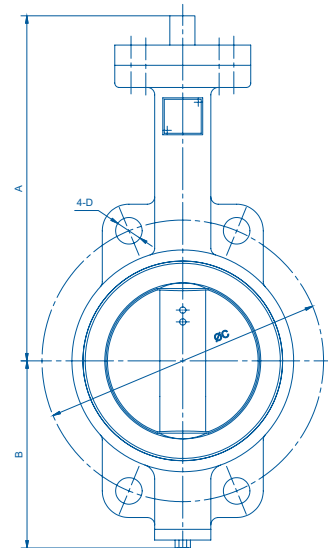
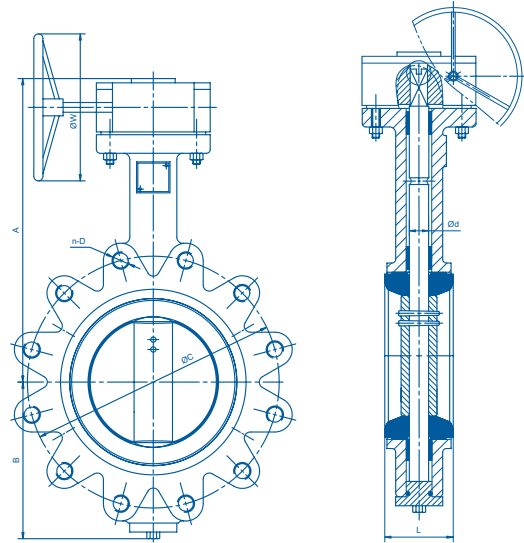
Maximum Working Pressure 250 PSI

	Materials	ASTM
Body	Ductile Iron	A395
	Cast Iron	A126-B
	Carbon Steel*	A216
	Stainless Steel*	A351-CF8M
Disc	316 Stainless Steel	A351-CF8M
	Aluminum Bronze*	A339-80-45-10
	Alloy 20*	A351-CN-7M
	Monel*	A494-M35
	Hastelloy C-276*	A494-CW-6M
Shaft	316 Stainless Steel	A182-F316
	416 Stainless Steel	A564
Bushing	Bronze*	B62
	PTFE	N/A
Temperature (both in °F and °C)		
Seat/Liner	Buna-N	0 – 180°F « (-18) – 80°C
	Viton	0 – 400°F « (-18) – 204°C
	PTFE Lined EPDM <small>(125 PSI Rated Only)</small>	0 – 250°F « (-18) – 204°C
	EPDM	(-30) – 275°F « (-35) – 135°C
	Hypalon*	(-20) – 200°F « (-30) – 90°C

*Optional equipment.

Size	A	B	C	n-d	L	W
14"	445	267	476	12-1-8UN-2B	79.5	300
16"	505	322	539.5	16-1-1/8-8UN2B	90	300
18"	527	339	578	16-1-1/8-8UN2B	109	300
20"	600	371	635	20-1-1/8-8UN-2B	135	300
24"	682	461	749.5	20-1-1/4-8UN-2B	156	300

*Units of measurement in millimeters. For DIN dimensional data, please contact a Flow+ supplier.



FEATURES

- Available in wafer or lug body
- Bubble tight and bi-directional to 250 PSI
- Consult supplier for vacuum service
- Standard dead-end service for lug style with downstream flange removed
- Compatible with ASME 125/150 flanges
- Applicable standards; API 609, MSS-SP67, tested per API-598, CRN
- Phenolic backed seat provides a dimensionally stable seat sealing surface, minimal seat wear and extends seat life
- Blow-out proof design
- All valve bodies are epoxy coated
- ISO 5211 mounting flange allowing easy actuation.
- Gear operator with hand-wheel on sizes 14" - 24"
- Actuation available to suit any requirement

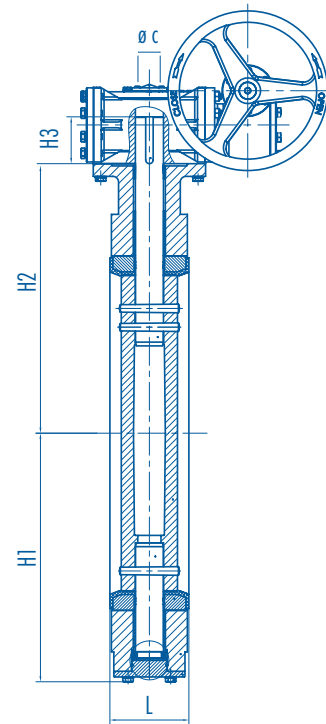
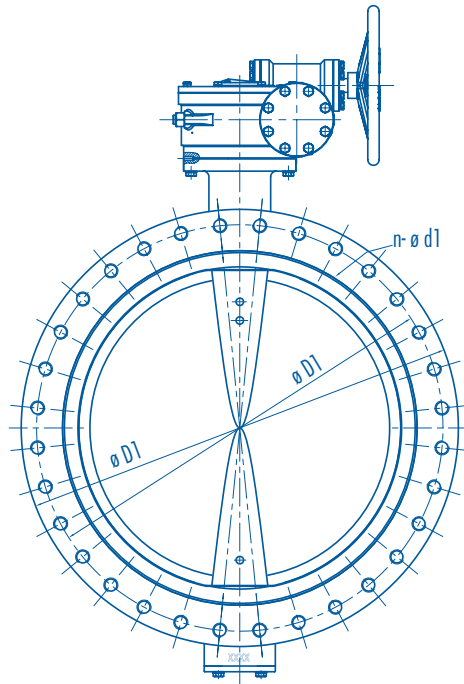
28-48" Butterfly Valve

ANSI Class 150lb Flanged End

Parts	Materials	ASTM
Body	Cast Iron	A126 Class B
O-Ring	EPDM/BUNA	
Bushing	PTFE	
Pin	Stainless Steel	AISI 316
Shaft	Stainless Steel	AISI 316
Disc	Stainless Steel	AISI 316
Seat	EPDM/BUNA	

FEATURES

- The U type flange body style fits between a FF or a RF flange PTFE bushing to ensure the maximum shaft support and centralized alignment
- 360° polished disc assures positive shut-off hard back cartridge seat one piece shaft, pinned and splined disc
- Universal ISO5211 mounting pad



Size		L		Ø D		Ø D1		n- Ø d1		H1		H2		H3		Ø c	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
28"	700	6.50	165	35.24	895	33.07	840	24-1.18	24-30	19.88	505	24.57	624	2.60	66	2.48	63
30"	900	7.48	190	44.50	1130	40.25	1022	28-1.38	28-35	22.24	565	26.46	672	2.60	66	2.48	63
36"	900	7.99	203	46	1168	42.75	1086	32-1.62	32-41	25.08	637	28.35	720	4.65	118	2.95	75
42"	1000	8.50	216	53	1346	49.5	1257	36-1.62	32-41	27.56	700	31.50	800	5.59	142	3.35	85
48"	1200	10	254	59.90	1511	56	1422	44-1.62	44-41	33.23	844	37.01	940	6.30	160	4.13	105

*Please contact a Flow+ supplier for information on sizes over 48".

Cv Value†

Valve Sizing Coefficients

Disc Angle Open	Valve Size												
	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	20"	24"
10°	0.1	0.2	0.3	0.5	0.8	2	3	4	5	6	8	14	22
20°	5	8	12	17	29	45	89	151	234	338	464	791	1222
30°	12	20	23	36	61	95	188	320	495	715	983	1647	2587
40°	15	25	39	78	133	205	408	694	1072	1549	2130	3628	5605
50°	27	45	70	139	237	366	727	1237	1911	2761	3797	6465	9989
60°	44	75	116	230	392	605	1202	2049	3162	4568	6282	10698	16528
70°	70	119	183	364	620	958	1903	3240	5005	7230	9942	16931	26157
80°	105	178	275	546	930	1437	2854	4859	7507	10844	14913	25396	39236
90°	115	196	302	600	1022	1579	3136	5430	8250	11917	16388	27908	43116

†Cv Value - USGPM water @ 70F passed through the valve with 1 PSI pressure drop. For sizes 28" and up, please contact a Flow+ supplier.

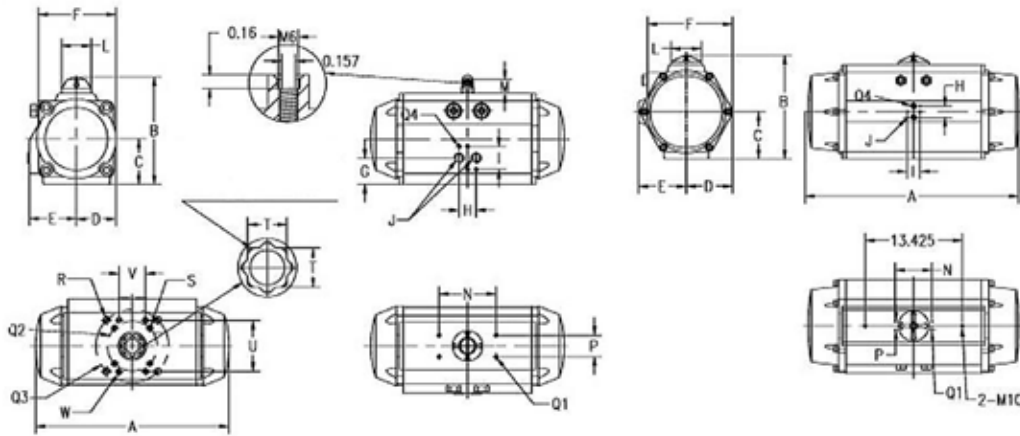
Technical Information

Weights and Valve Sizes

Weights		Valve Size													
Bare Stem		2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Wafer	lb	6	7	10	13	18	20	32	42	70	95	117	165	275	440
	kg	2.72	3.18	4.54	5.90	8.16	9.07	14.51	19.05	31.75	43.09	53.07	74.84	124.74	199.58
Lug	lb	7	8	14	26	28	31	49	72	105	155	195	230	396	610
	kg	3.18	3.63	6.35	11.79	12.70	14.06	22.23	32.66	47.63	703.1	88.45	104.33	179.62	276.70
Lever Operated		2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	20"
Wafer	lb	7.8	8.8	11.8	14.8	19.8	21.8	36	46	74	-	-	-	-	-
	kg	3.52	3.98	5.34	6.70	8.96	9.87	16.31	20.85	33.55	-	-	-	-	-
Lug	lb	8.8	9.8	15.8	27.8	29.8	32.8	53	76	109	-	-	-	-	-
	kg	3.98	4.43	7.15	12.59	13.5	14.86	24.03	34.46	49.43	-	-	-	-	-
Gear Operated		2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	20"
Wafer	lb	33.1	34.1	37.1	40.1	45.1	47.1	63.7	73.7	73.7	126.7	194.4	242.4	352.4	517.4
	kg	15.02	15.48	16.84	18.2	20.46	21.37	28.91	33.45	33.45	57.49	88.27	110.04	159.94	234.78
Lug	lb	34.1	35.1	41.1	53.1	55.1	58.1	80.7	103.7	103.7	186.7	272.4	307.4	473.4	387.4
	kg	15.48	15.93	18.65	24.09	25	26.35	36.63	47.06	62.03	84.71	123.65	139.53	214.82	311.90

For sizes 28" and up, please contact a Flow+ supplier.

SPNII Actuator Information



Model	Unit	A	B	C	D	E	F	G	H	H1	H2	I	J	L
032	in	4.61	1.77	0.88	0.88	0.88	1.77	.88	0.94	0.39	-	1.25	1/8"	1.4
	mm	117	45	22	22	22	45	22	24	10		32	32	36
050	in	5.8	3.62	1.35	1.12	1.61	2.28	1.02	0.94	0.47	1.26	1.26	1/4"	1.65
	mm	147	92	34	28	41	58	26	24	12	32	32	32	42
063	in	6.26	4.25	1.67	1.42	1.14	2.83	1.18	0.94	0.63	1.34	1.26	1/4"	1.65
	mm	159	108	42	36	29	72	30	24	16	34	32	32	42
075	in	8.39	4.92	2.01	1.71	2.07	3.39	1.03	0.94	0.75	1.34	1.26	1/4"	1.65
	mm	213	125	51	43	53	86	26	24	19	34	32	32	42
085	in	9.8	5.43	2.27	1.91	2.22	3.8	1.26	0.94	0.75	1.34	1.26	1/4"	1.65
	mm	249	138	58	49	56	97	32	24	19	34	32	32	42
100	in	10.67	5.94	2.5	2.2	2.6	4.17	1.46	0.94	0.91	1.89	1.26	1/4"	1.65
	mm	271	151	64	56	66	106	37	24	23	48	32	32	42
115	in	12.40	6.89	2.85	2.52	3.03	5.00	1.67	0.94	0.91	1.89	1.26	1/4"	2.6
	mm	315	175	72	64	77	127	42	24	23	48	32	32	66
125	in	13.62	7.48	3.09	2.72	3.23	5.12	1.8	0.94	1.14	2.56	1.26	1/4"	2.6
	mm	346	190	78	69	82	130	46	24	29	65	32	32	66
145	in	16.22	8.25	3.46	3.15	3.54	5.85	2.17	0.94	1.14	2.56	1.26	1/4"	2.6
	mm	412	210	88	80	90	149	55	24	29	65	32	32	66
160	in	17.44	9.06	3.88	3.46	3.87	6.28	2.04	0.94	1.14	2.56	1.26	1/4"	2.6
	mm	443	230	99	88	98	160	52	24	29	65	32	32	66
180	in	19.37	9.96	4.29	3.88	4.15	7.07	2.37	0.94	1.65	3.62	1.26	1/4"	3.15
	mm	492	253	109	99	105	180	60	24	42	92	32	32	80
200	in	21.54	10.91	4.8	4.29	4.41	7.64	2.6	0.94	1.65	3.62	1.26	1/4"	3.15
	mm	547	277	122	109	112	194	66	24	42	92	32	32	80
240	in	24.17	13.7	5.75	5.14	5.16	9.09	2.76	1.57	1.97	3.27	1.77	3/8"	3.15
	mm	614	348	146	131	131	231	70	40	50	92	45	45	80
265	in	28.7	15.31	6.57	5.79	5.78	9.99	3.54	1.57	1.97	3.27	1.77	3/8"	3.15
	mm	729	389	167	147	147	254	90	40	50	92	45	45	80
300	in	33.03	16.14	6.99	6.38	6.81	11.42	3.35	1.57	1.97	3.27	1.77	1/2"	3.15
	mm	839	410	178	162	173	290	85	40	50	92	45	45	80

Model	Unit	M	N	P	Q1	Q2	Q3	Q4	R	S	T	U	V	W
032	in	0.79	1.97	1.18	M5	F03	-	M5	-	-	0.35	-	-	-
	mm	20	50	30							9			
050	in	0.79	3.15	1.18	M5	F04	-	M5	-	M5	0.67	-	-	-
	mm	20	80	30							17			
063	in	0.79	3.15	1.18	M5	F05	-	M5	-	M6	0.67	-	-	-
	mm	20	80	30							17			
075	in	0.79	3.15	1.18	M5	F05	F07	M5	M8	M6	0.87	-	-	-
	mm	20	80	30							22			
085	in	0.79	3.15	1.18	M5	F05	F07	M5	M8	M6	0.87	-	-	-
	mm	20	80	30							22			
100	in	0.79	3.15	1.18	M5	F07	F10	M5	M10	M8	0.87	2.83	1.46	M8
	mm	20	80	30							22	72	37	
115	in	1.18	3.15	1.18	M5	F07	F10	M5	-	M10	0.87	-	-	M8
	mm	30	80	30							22			
125	in	1.18	3.15	1.18	M5	F10	-	M5	-	M10	1.42	2.83	1.46	M8
	mm	30	80	30							36	72	37	
145	in	1.18	3.15	1.18	M5	F10	F12	M5	M12	M10	1.42	2.83	1.46	M8
	mm	30	80	30							36	72	37	
160	in	1.18	3.15	1.18	M5	F10	F12	M5	M12	M10	1.42	2.83	1.46	M8
	mm	30	80	30							36	72	37	
180	in	1.18	5.12	1.18	M5	F10	F14	M5	M16	M10	1.42	3.9	2.09	M10
	mm	30	130	30							36	99	53	
200	in	1.18	5.12	1.18	M5	F10	F14	M5	M16	M10	1.42	3.9	2.09	M10
	mm	30	130	30							36	99	53	
240	in	1.97	5.12	1.18	M5	F12	F16	M6	M20	M12	1.81	-	-	-
	mm	50	130	30							46			
265	in	1.97	5.12	1.18	M5	-	F16	M6	M20	-	1.81	-	-	-
	mm	50	130	30							46			
300	in	1.97	5.12	1.18	M5	-	F16	M6	M20	-	1.81	-	-	-
	mm	50	130	30							46			

Actuation Selection Chart

Actuator Sizing Info**	Seating Torque**	Double Acting*	Spring Return*
2"	133	63DA	75SR
2.5"	211	63DA	75SR
3"	278	75DA	75SR
4"	419	75DA	85SR
5"	648	85DA	115SR
6"	940	100DA	125SR
8"	1510	125DA	145SR
10"	2489	145DA	160SR
12"	3628	145DA	160SR
14"	4200	160DA	200SR
16"	6600	200DA	240SR
18"	9840	240DA	265SR
20"	12000	240DA	265SR
24"	21840	265DA	***

*Recommended SPN II piston pneumatic actuators have been sized based on 80 PSI air supply and have been tested utilizing 150 PSI line pressure (water). Rubber seated valves only, contact Flow+ supplier for more information.

**All torque values on chart are in/lbs based on 150 PSI differential pressure and are for "wet" (water and other lubricating media) on-off service. For "dry" service (non-lubricating, dry gas media), multiply values by 1.5.

*** Consult Flow+ supplier.

****For high or low temperature applications, consult Flow+ supplier for special seal kits.

For sizes 28" and up, please contact a Flow+ supplier.