

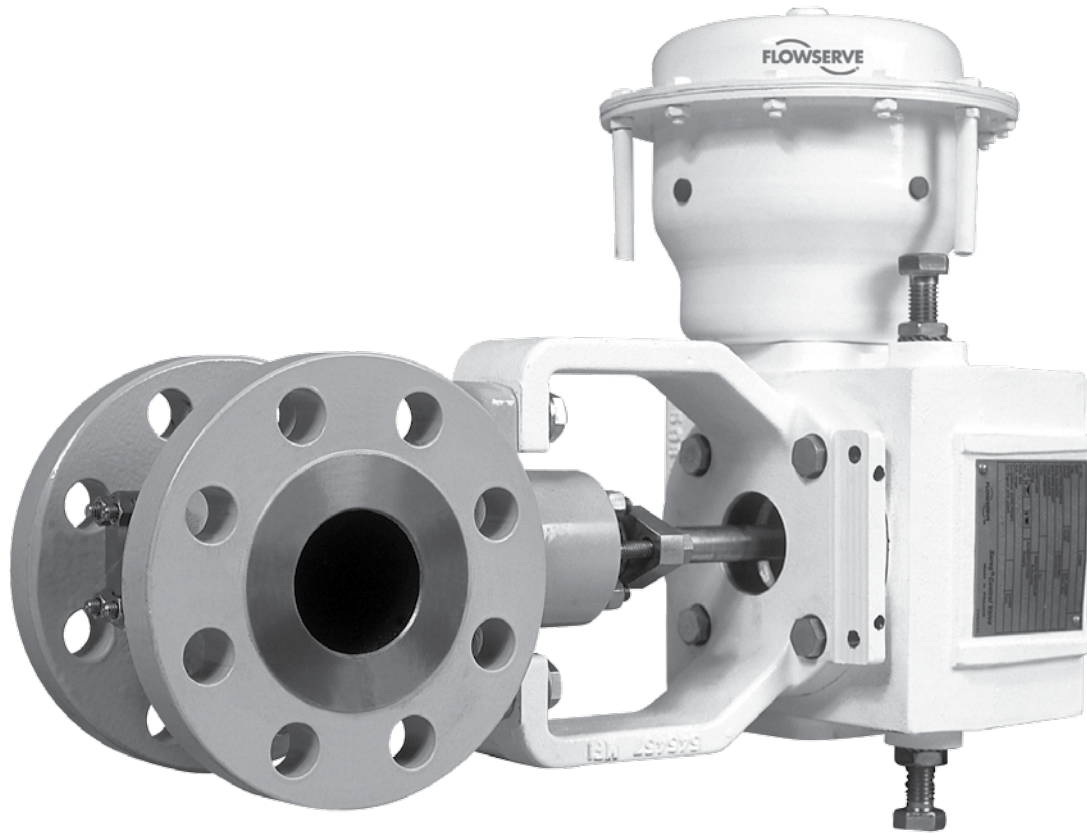


# TECHNICAL BULLETIN

## ***Valtek MaxFlo 3 Control Valves***

High Capacity Rotary Eccentric Plug Control Valve

FCD VLENTB0052-00 – 11/06



***Experience In Motion***

## MaxFlo 3 Control Valves

### Main Features

- Low breakout torque for smooth control and longer life
- Safest shaft blowout protection available – shaft will not fit through bonnet
- Tight bi-directional shutoff – Metal seats, Class IV; Soft seats, Class VI
- Higher flow rates; no crossover shaft to block flow path
- Sealed bearing design available
- O2 compatible design available

### End Connections / Face-to-face

- Integral flanges, ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2 (1"-12", DN 25-300, Class 150 and 300)
- Flangeless, ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2 (1"-8", DN 25-200 Class 150 and 300)
- Integral flanges, ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1 (Size 1"-12", DN 25-300, Class 150 and 300)
- Integral Flanges, DIN 3202 F1 (DN 25 to 300, PN 16 and PN 40)

### Exceptionally Fine Control

- 160:1 rangeability for MaxFlo 3, compared to 50:1 for globe valves and 20:1 for butterfly valves
- Low-friction bearings
- Low breakout torque
- Strong, backlash-free, polygon stem-plug connection

### Trim Options

Reduce trim by changing only the seat ring – plug stays the same

- 100%, 70%, 40% (1"-6", DN 25-150)
- 100%, 75%, (8"-12", DN 200-300)

### Designed to:

- ANSI B16.34
- ANSI B16.5
- NACE MR0175 / ISO 15156
- NACE MR0103
- PED compliant

### Packing Options

- PTFE V-ring
- Braided PTFE
- Graphite
- Fugitive emissions (SureGuard, SureGuard XT, SafeGuard)

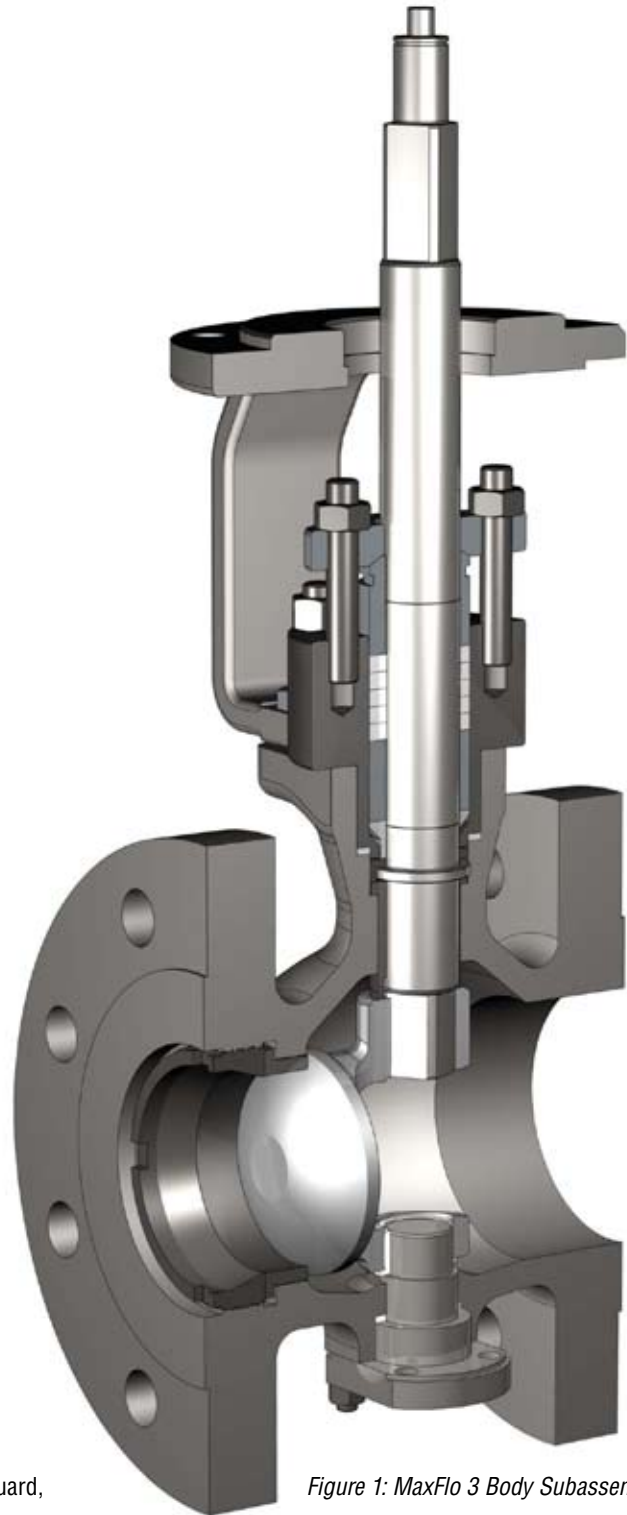


Figure 1: MaxFlo 3 Body Subassembly

## 2 Temperature Range

-148°F (-100°C) to 750°F (400°C)

## MaxFlo 3 Control Valves – Available Configurations

Figure 2: MaxFlo 3 with Flanged Body



Figure 3: MaxFlo 3 with Flangeless Body



Figure 4: MaxFlo 3 with Globe Face-to-face (ANSI/ISA 75.08.01 and DIN 3202 F1)



Figure 5: NR High Performance Rotary Diaphragm Actuator



Figure 6: VR High Performance Rotary Spring Cylinder Actuator



Figure 7: SuperNova Rotary Actuator

**Table 1: Specifications**

<b>Sizes</b>	1" through 12", DN 25 through 300
<b>Pressure Classes</b>	ANSI Class 150, ANSI Class 300, PN 16, PN 40
<b>End Connections</b>	Flanged (Sizes 1"-12", DN 25-300)
	Flangeless (Sizes 1"-8", DN 25-200)
<b>Face-to-face</b>	ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2
	DIN 3202 F1, EN 558-1/2 Series 1
	ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1
<b>Trim Area</b>	100%, 75%, 70% and 40% (dependant on body size and type)
	Other sizes available on request
<b>Packing Options</b>	PTFE V-ring, PTFE braided, graphite ribbon, graphite braided,
	SureGuard, SureGuard XT, SafeGuard, TA-Luft, other options on request
<b>Characteristics</b>	Linear, Equal Percent (by positioner cam)
<b>Operating Temperature</b>	-148 to 750°F (-100 to 400°C)
<b>Leakage Rates</b>	ANSI/FCI 70-2 Class IV, ANSI/FCI 70-2 Class VI with soft seat

**Table 2: Cv Flow Capacities (NR Diaphragm Actuators) Face-to-face per ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2, DIN 3202 F1, EN 558-1/2 Series 1**

Valve Size (in./mm)	Trim Size															
	100				100				75/70				40			
	Shaft Rotation															
	80				60				60				60			
	Shaft Direction															
	Up		Down		Up		Down		Up		Down		Up		Down	
Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	
1/25	20	12	17	10	17	9.6	14	8.1	12	6.7	9.9	5.6	7.8	4.7	7.8	4.7
1.5/40	48	41	45	38	33	33	33	31	23	23	26	26	16	16	17	15
2/50	76	67	77	69	62	55	55	56	38	34	41	41	22	19	25	25
3/80	208	208	235	235	169	169	163	191	110	132	144	144	66	75	82	82
4/100	294	294	394	394	239	239	241	320	174	174	211	211	104	119	110	134
6/150	711	711	930	930	577	577	554	755	448	448	388	529	256	256	221	302
8/200	1100	1100	1655	1655	893	894	1343	1344	670	670	1007	1008	Not Available			
10/250	1737	1738	2438	2439	1410	1412	1979	1981	1058	1059	1484	1486				
12/300	2492	2493	3504	3506	2022	2024	2844	2847	1517	1518	2133	2135				

For complete Cv curves, refer to the Sizing and Selection manual or the Performance! sizing software.

**Table 3: Cv Flow Capacities (90° rotation - VR Cylinder and SuperNova Actuators) Face-to-face per ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2, DIN 3202 F1, EN 558-1/2 Series 1**

Valve Size (in./mm)	Trim Size											
	100				75/70				40			
	Shaft Direction											
	Up		Down		Up		Down		Up		Down	
	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft
1/25	21	12	18	10	15	8	13	7	8.4	6	8.8	6
1.5/40	50	42	47	39	28	28	33	33	20	20	21	19
2/50	78	69	80	71	47	47	52	52	24	24	31	32
3/80	214	214	241	241	124	124	182	182	68	68	83	83
4/100	335	302	405	405	180	180	267	267	112	112	127	127
6/150	730	730	955	955	471	471	574	574	250	250	247	247
8/200	1130	1130	1700	1700	847	847	1275	1275	Not Available			
10/250	1785	1785	2505	2505	1339	1339	1879	1879				
12/300	2560	2560	3600	3600	1920	1920	2700	2700				

For complete Cv curves, refer to the Sizing and Selection manual or the Performance! sizing software.

**Table 4: Standard Trim Cv Flow Capacities (NR Diaphragm Actuator)**  
 Face-to-face per ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1

Valve Size (in./mm)	Trim Size															
	100				100				75/70				40			
	Shaft Rotation															
	80				60				60				60			
	Shaft Direction															
Up		Down		Up		Down		Up		Down		Up		Down		
Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	
1/25	20	12	17	10	17	9.6	14	8.1	12	6.7	9.9	5.6	7.8	4.7	7.8	4.7
1.5/40	48	41	45	38	33	33	33	31	23	23	26	26	16	16	17	15
2/50	76	67	77	69	62	55	55	56	38	34	41	41	22	19	25	25
3/80	208	208	235	235	169	169	163	191	110	132	144	144	66	75	82	82
4/100	294	294	394	394	239	239	241	320	174	174	211	211	104	119	110	134
6-8/150-200	711	711	930	930	577	577	554	755	448	448	388	529	256	256	221	302
10/200	1100	1100	1655	1655	893	894	1343	1344	670	670	1007	1008	Not Available			
12/250	1737	1738	2438	2439	1410	1412	1979	1981	1058	1059	1484	1486				

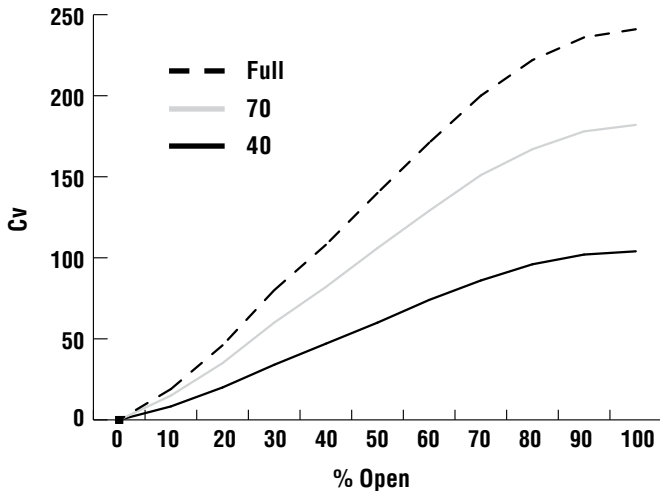
For complete Cv curves, refer to the Sizing and Selection manual or the Performance! sizing software.

**Table 5: Cv Flow Capacities (90° rotation - VR Cylinder and SuperNova Actuators)**  
 Face-to-face per ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1

Valve Size (in./mm)	Trim Size												
	100				75/70				40				
	Shaft Direction												
	Up		Down		Up		Down		Up		Down		
Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft
1/25	21	12	18	10	15	8	13	7	8.4	6	8.8	6	6
1.5/40	50	42	47	39	28	28	33	33	20	20	21	19	19
2/50	78	69	80	71	47	47	52	52	24	24	31	32	32
3/80	214	214	241	241	124	124	182	182	68	68	83	83	83
4/100	335	302	405	405	180	180	267	267	112	112	127	127	127
6-8/150-200	730	730	955	955	471	471	574	574	250	250	247	247	247
10/250	1130	1130	1700	1700	847	847	1275	1275	Not Available				
12/300	1785	1785	2505	2505	1339	1339	1879	1879					

For complete Cv curves, refer to the Sizing and Selection manual or the Performance! sizing software.

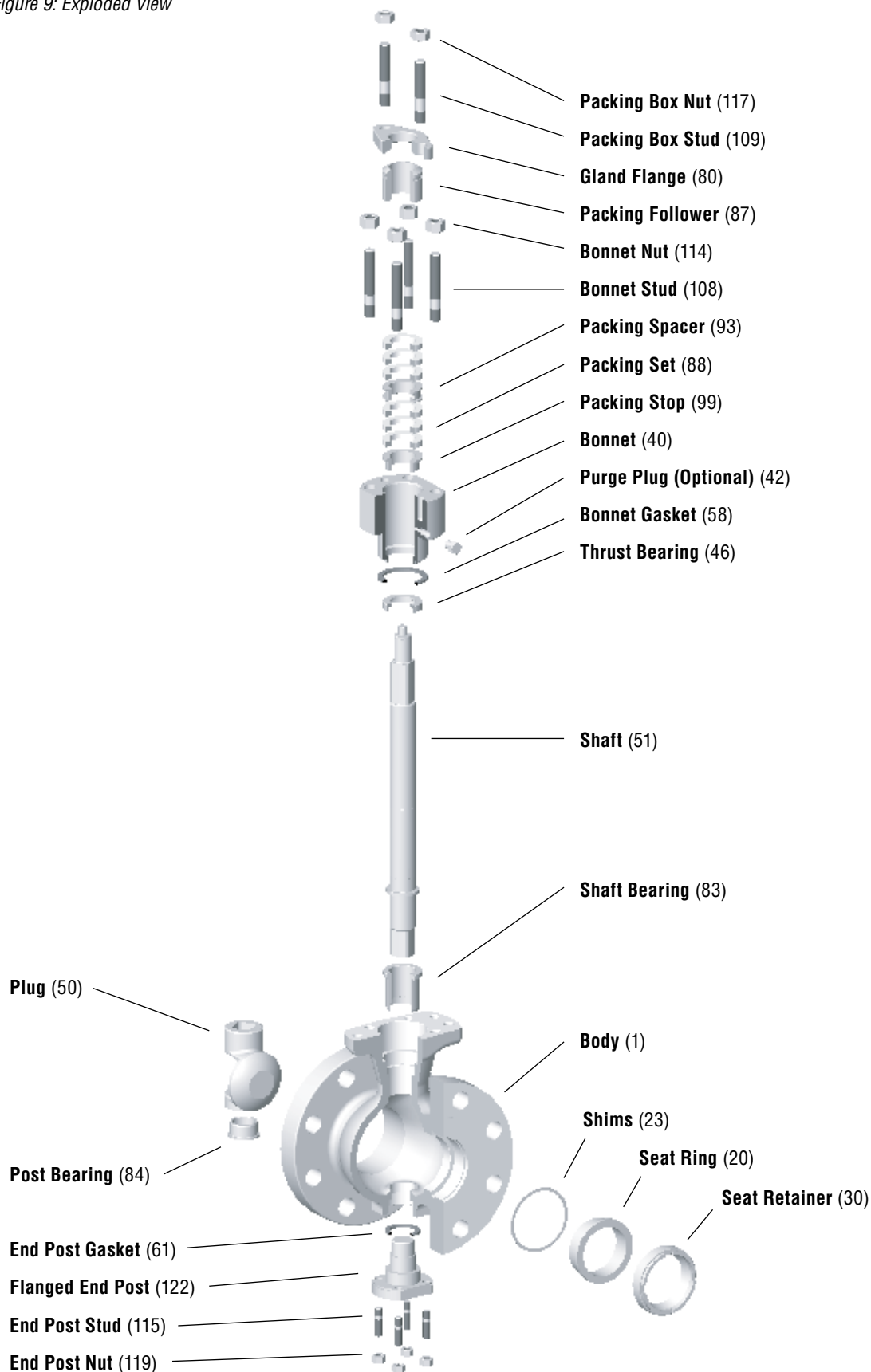
Figure 8: Sample Cv Curve



**Table 6: Standard Materials of Construction**

Part	Item	Available Materials
Body	1	Carbon Steel (A216 WCC, EN 1.0619)
		Stainless Steel (A351 CF8M, EN 1.4581)
Seat Ring	20	316L Stainless Steel
		316L Stainless Steel with PTFE
		316L Stainless Steel with Alloy 6 overlay
Shim	23	304 Stainless Steel
Seat Retainer	30	316 Stainless
Bonnet	40	Carbon Steel (A-105)
		Stainless Steel (A-479-316)
Thrust Bearing	46	440C
		UNS S31803 (Duplex 2205) - Coated
Plug	50	1.4418 or 1.4405 (X4CrNiMo16-5-1)
		316L Stainless Steel with Alloy 6 overlay
Shaft	51	1.4418 (X4CrNiMo16-5-1)
		A638 Grade 660
Gaskets	58, 61	PTFE
		Die Formed Graphite
Gland Flange	80	316 Stainless Steel
Bearings	83, 84	440C
		UNS S31803 (Duplex 2205)
		Metal-backed 10% Carbon Filled PTFE Lined
Packing Follower	87	316 Stainless Steel
Packing	88	PTFE V-ring
		Braided PTFE
		Graphite Rib/Braided
		SureGuard
		SureGuard XT
		SafeGuard
		TA-Luft
Packing Stop	99	316 Stainless Steel
Bonnet Bolting	108,114	A193-B7/A194-2H
		A193 B8 Cl 1/A194 Gr 8
		A193 B8 Cl 2/A194 Gr 8
		A193-B7M/A194-2HM
		A453 Gr 660/A2-70
Packing Box Bolting	109, 117	Stainless Steel
End Post Bolting	115, 119	A193-B7/A194-2H
		A193 B8 Cl 1/A194 Gr 8
End Post	122	1.4418 (X4CrNiMo16-5-1)
		A638 Grade 660
End Post Flange (Sizes 1" to 2")	122	A216 WCC, EN 1.0619
		A351 CF8M, EN 1.4581)

Figure 9: Exploded View



**Table 7: MaxFlo 3 Maximum Allowable Shutoff Pressure Drops (psi/bar)<sup>1</sup>**

Valve Size (in./mm)	Component	Material <sup>2</sup>	Flow Direction <sup>3</sup>	Temperature Range (°F/°C)							
				-100/-73 to 100/38	200/93	300/149	400/204	500/260	600/316	700/371	750/400
1/25	Shaft and Post	1.4418 or A-638 Gr. 660	SU or SD	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Plug	1.4418		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-182 316L / Alloy 6		710/49	670/46	630/43	580/40	530/37	480/33	420/29	
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10				
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-276-S31803 (Coated)			750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	
A-182 316 / PTFE			750/52	750/52	650/45	470/32					
1.5/40	Shaft and Post	1.4418 or A-638 Gr. 660	SU or SD	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Plug	1.4418		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-182 316L / Alloy 6		710/49	670/46	630/43	580/40	530/37	480/33	420/29	
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10				
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-276-S31803 (Coated)			750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	
A-182 316 / PTFE			750/52	660/46	450/31	300/21					
2/50	Shaft and Post	1.4418 or A-638 Gr. 660	SU or SD	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Plug	1.4418		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-182 316L / Alloy 6		750/52	720/50	680/47	630/43	560/39	510/35	450/31	
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10				
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-276-S31803 (Coated)			750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	
A-182 316 / PTFE			750/52	750/52	540/37	360/25					
3/80	Shaft and Post	1.4418 or A-638 Gr. 660	SU or SD	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Plug	1.4418		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-182 316L / Alloy 6		660/46	620/43	590/41	550/38	500/34	450/31	400/28	
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10				
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-276-S31803 (Coated)			750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	
A-182 316 / PTFE			720/50	430/30	290/20	200/14					
4/100	Shaft and Post	1.4418 or A-638 Gr. 660	SU or SD	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Plug	1.4418		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-182 316L / Alloy 6		710/49	670/46	630/43	580/40	530/37	480/33	420/29	
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10				
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-276-S31803 (Coated)			750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	
A-182 316 / PTFE			720/50	430/30	290/20	200/14					



Valve Size (in./mm)	Component	Material <sup>2</sup>	Flow Direction <sup>3</sup>	Temperature Range (°F/°C)								
				-100/-73 to 100/38	200/93	300/149	400/204	500/260	600/316	700/371	750/400	
6/150	Shaft and Post	1.4418	SU	750/52	750/52	750/52	750/52	750/52	750/52	720/50	700/48	
			SD	750/52	730/50	710/49	690/48	660/46	640/44	600/41	580/40	
		A-638 Gr. 660	SU	750/52	740/51	730/50	720/50	700/48	690/48	680/47		
			SD	640/44	630/43	620/43	600/41	590/41	580/40	560/39		
	Plug	1.4418		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-182 316L / Alloy 6		290/20	270/19	250/17	230/16	210/14	190/13	170/12		
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10					
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-276-S31803 (Coated)		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-182 316 / PTFE		440/30	260/18	180/12	120/8							
8/200	Shaft and Post	1.4418	SU	550/38	530/37	510/35	500/34	480/33	450/31	430/30	410/28	
			SD	450/31	440/30	420/29	410/28	390/27	370/26	350/24	330/23	
		A-638 Gr. 660	SU	450/31	440/30	430/30	430/30	420/29	410/28	400/28		
			SD	370/26	360/25	360/25	350/24	340/23	330/23	320/22		
	Plug	1.4418		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	620/43
		A-182 316L / Alloy 6		210/14	200/14	200/14	170/12	160/11	140/10	120/8		
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10					
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-276-S31803 (Coated)		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-182 316 / PTFE		440/30	260/18	180/12	120/8							
10/250	Shaft and Post	1.4418	SU	230/16	220/15	220/15	210/14	210/14	200/14	200/14	190/13	
			SD	180/12	170/12	170/12	160/11	150/10	140/10	140/10	130/9	
		A-638 Gr. 660	SU	190/12	180/12	180/12	180/12	170/12	170/12	170/12	170/12	
			SD	140/10	140/10	140/10	140/10	130/9	130/9	130/9		
	Plug	1.4418		750/52	750/52	750/52	730/50	710/49	680/47	650/45	620/43	
		A-182 316L / Alloy 6		210/14	200/14	190/13	170/12	160/11	140/10	120/8		
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10					
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-276-S31803 (Coated)		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-182 316 / PTFE		460/32	270/19	190/13	120/8							
12/300	Shaft and Post	1.4418	SU	210/14	200/14	200/14	190/11	180/10	170/10	160/10	160/10	
			SD	130/9	120/8	120/8	110/8	110/8	100/7	100/7	90/6	
		A-638 Gr. 660	SU	170/12	170/12	170/12	160/11	160/11	160/11	150/10		
			SD	100/7	100/7	100/7	90/6	90/6	90/6	90/6		
	Plug	1.4418		600/41	580/40	560/39	540/37	520/36	500/34	470/32	450/31	
		A-182 316L / Alloy 6		149/10	142/10	133/9	123/8	112/8	101/7	90/6		
	Seat	A-182 316L / PTFE		750/52	450/31	250/17	150/10					
		A-182 316L		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
	Bearings	A-276-440C		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
		A-276-S31803 (Coated)		750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52	750/52
A-182 316 / PTFE		460/32	270/19	190/13	120/8							

1. If higher pressure drops are required, contact your Flowserve sales office.

2. Additional seat and bearing materials are available. Contact your Flowserve sales office for pressure drops.

3. SU = Shaft Upstream; SD = Shaft Downstream

Note: Values are for components shown only. Pressures/temperatures may exceed limits per ANSI B16.34 for body materials.

**Table 8: Diaphragm Actuator Specifications**

<b>Type</b>	Single-acting, high-performance
<b>Sizes</b>	NR1, NR2, NR3
<b>Action</b>	Air-to-open, Air-to-close, Fail-in-place
<b>Supply Pressure</b>	60 psig/4 barg* (maximum)
<b>Auxiliary</b>	Push-type handwheel
<b>Stroke</b>	60° and 80°
<b>Spring Ranges</b>	0.2 to 1, 0.7 to 1.9, and 1.4 to 2.8 bar

\* Some restrictions may apply to certain applications



Figure 10: NR High Performance Rotary Diaphragm Actuator

**Table 9: Valve Size / NR Diaphragm Actuator Compatibility**

Actuator Size	Valve Size (in./mm)								
	1/25	1.5/40	2/50	3/80	4/100	6/150	8/200	10/250	12/300
NR 1	X	X	X						
NR 2				X	X				
NR 3						X	X	X	X

**Table 10: Cylinder Actuator Specifications**

<b>Type</b>	Double-acting, cylinder with fail-safe spring action
<b>Sizes</b>	25, 50, 100, 200
<b>Action</b>	Air-to-open, Air-to-close, Fail-in-place
<b>Supply Pressure</b>	150 psig/10.3 barg* (maximum)
<b>Auxiliary</b>	Declutchable side-mounted; manual gear operated; handlever
<b>Stroke</b>	90°
<b>Springs</b>	Standard, extended (sizes 25 & 50), dual sizes (100 & 200)

\* Some restrictions may apply to certain applications



Figure 11: VR High Performance Rotary Spring Cylinder Actuator

**Table 11: Valve Size / VR Cylinder Actuator Compatibility**

Actuator Size (in <sup>2</sup> )	Spring Type	Valve Size (in./mm)								
		1/25	1.5/40	2/50	3/80	4/100	6/150	8/200	10/250	12/300
25	STD	X	X	X	X	X				
25	EXTD	X	X	X	X	X				
50	STD				X	X	X	X	X	
50	EXTD				X	X	X	X	X	
100	STD						X	X	X	
100	DUAL						X	X	X	X
200	STD						X	X	X	X
200	DUAL						X	X	X	X

**Table 12: SuperNova Actuator Specifications**

<b>Type</b>	Single-acting spring-return, double-acting
<b>Sizes</b>	B063, B085, B100, B115, B125, B150, B175, B200, SNA 250, SNA 300
<b>Action</b>	Air-to-open, air-to-close, fail-in-place
<b>Supply Pressure</b>	100 psig/6.9 barg* (maximum) single-acting
	150 psig/10.34 barg (maximum) double-acting
<b>Auxiliary</b>	Declutchable handwheel
<b>Stroke</b>	90°
<b>Springs</b>	5 to 12 springs available

\* Some restrictions may apply to certain applications

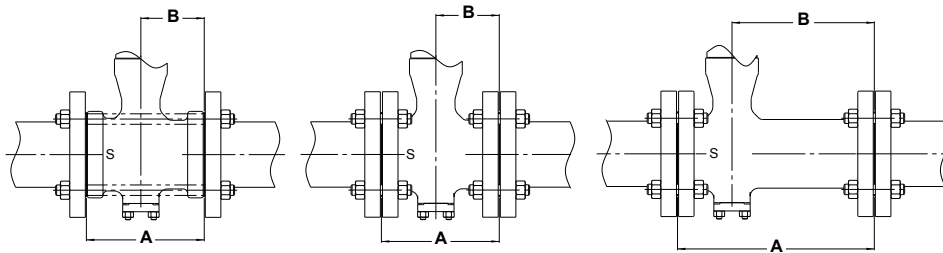


Figure 12:  
SuperNova  
Rotary Actuator

**Table 13: Valve Size / SuperNova Actuator Compatibility**

Actuator Size	Valve Size (in./mm)								
	1/25	1.5/40	2/50	3/80	4/100	6/150	8/200	10/250	12/300
B063	X	X	X	X					
B085	X	X	X	X					
B100	X	X	X	X	X	X			
B115	X	X	X	X	X	X			
B125	X	X	X	X	X	X	X	X	X
B150	X	X	X	X	X	X	X	X	X
B175				X	X	X	X	X	X
B200					X	X	X	X	X
SNA 250					X	X	X	X	X
SNA 300							X	X	X

Figure 13: MaxFlo 3 Face-to-face Options


**Table 14: MaxFlo 3 Face-to-face Dimensions**

Valve Size (in./mm)	(ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2)				(ANSI/ISA-75.08.01, Class 150, EN 558-1/2 Series 37-38, IEC 60534-3-1)				(ANSI/ISA-75.08.01 Class 300, EN 558-1/2 Series 37-38, IEC 60534-3-1)				(DIN 3202 F1, EN 558-1/2 Series 1)			
	A		B		A		B		A		B		A		B	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/25	4.02	102	2.01	51	7.25	184	4.76	121	7.75	197	5.16	131	6.30	160	3.74	95
1.5/40	4.49	114	2.24	57	8.75	222	5.83	148	9.25	235	6.22	158	7.87	200	4.96	126
2/50	4.88	124	2.44	62	10.00	254	6.89	175	10.50	267	7.28	185	9.06	230	5.98	152
3/80	6.50	165	3.25	83	11.75	298	7.48	190	12.50	318	8.11	206	12.21	310	8.03	204
4/100	7.64	194	3.82	97	13.88	353	9.17	233	14.50	368	9.49	241	13.78	350	9.17	233
6/150	9.02	229	4.65	118	17.75	451	11.57	294	18.62	473	12.01	305	18.90	480	12.64	321
8/200	9.57	243	5.35	136	21.38	543	15.28	388	22.38	568	15.75	400	23.62	600	16.61	422
10/250	11.69	297	6.22	158	26.50	673	19.88	505	27.88	708	20.55	522	28.74	730	20.98	533
12/300	13.31	338	6.77	172	29.00	737	21.57	548	30.50	775	22.32	567	33.47	850	25.12	638

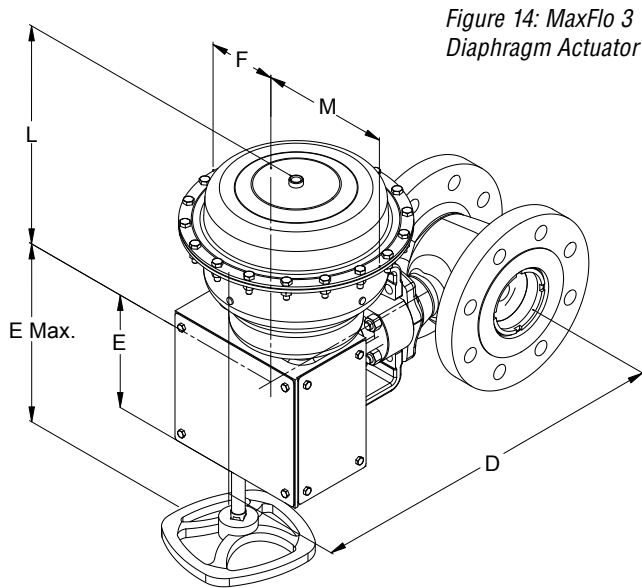


Figure 14: MaxFlo 3 Diaphragm Actuator

Table 15: MaxFlo 3 Dimensions (Diaphragm Actuator)

Valve Size (in./mm)	D		E		E(Max)		F		L		M	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/25	12.80	325	3.46	88	8.66	220	2.13	54	9.72	247	5.43	138
1.5/40	13.78	350	3.46	88	8.66	220	2.13	54	9.80	249	5.43	138
2/50	13.86	352	3.46	88	8.66	220	2.13	54	9.80	249	5.43	138
3/80	20.31	516	4.92	125	12.20	310	3.54	90	14.09	358	8.58	218
4/100	20.51	521	4.92	125	12.20	310	3.54	90	14.09	358	8.58	218
6/150	25.71	653	6.42	163	17.72	450	4.25	108	19.53	496	12.28	312
8/200	26.14	664	6.42	163	17.72	450	4.25	108	19.53	496	12.28	312
10/250	28.86	733	6.42	163	17.72	450	4.25	108	19.72	501	12.28	312
12/300	29.84	758	6.42	163	17.72	450	4.25	108	19.72	501	12.28	312

For face-to-face dimensions, see Table 14.

All dimensions are to be used for estimation only. Certified drawings will be supplied upon request.

Table 16: Estimated Shipping Weight with Diaphragm Actuator (with Standard Actuator and Positioner)

Valve Size (in./mm)	Flangeless (ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2)		Flanged Body Class 150 (ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2)		Flanged Body Class 300 (ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2)		Flanged Body Class 150 (ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1)		Flanged Body Class 300 (ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1)		Flanged Body PN 16 (DIN 3202 F1, EN 558-1/2 Series 1)		Flanged Body PN 40 (DIN 3202 F1, EN 558-1/2 Series 1)	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
1/25	33	15	38	17	38	17	42	19	72	19	42	19	42	19
1.5/40	35	16	44	20	44	20	51	23	51	23	51	23	51	23
2/50	40	18	49	22	49	22	55	25	55	25	55	25	55	25
3/80	99	45	117	53	127	58	131	59	141	64	121	55	124	56
4/100	110	50	141	64	151	69	154	70	165	75	154	70	159	72
6/150	287	130	331	150	361	164	368	167	399	181	364	165	379	172
8/200	324	147	403	183	443	201	447	203	487	221	452	205	496	225
10/250	386	175	512	232	562	255	595	270	645	293	600	272	672	305
12/300	463	210	633	287	695	315	754	342	816	370	742	337	851	386

All weights are to be used for estimation only. Certified drawings will be supplied upon request.

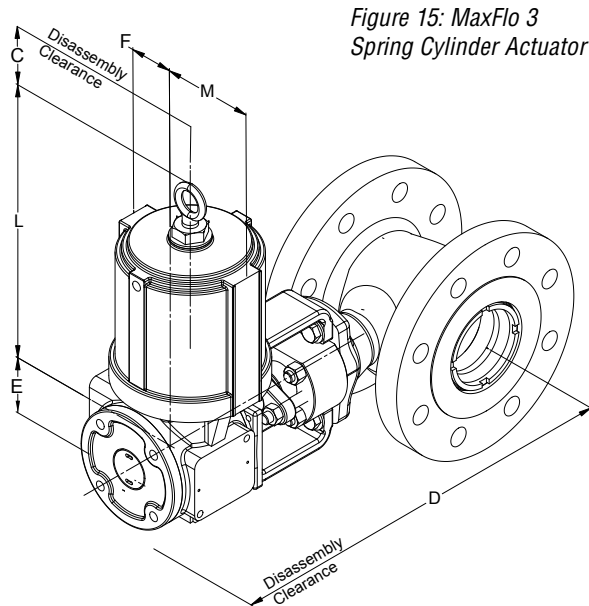


Figure 15: MaxFlo 3 Spring Cylinder Actuator

Table 17: MaxFlo 3 Dimensions (Spring Cylinder Actuator)

Valve Size (in./mm)	Actuator Size	Shaft Size		C		D		E		F		L		M	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/25	25	0.4	11	6.0	152	20.0	510	5.6	142	2.2	56	13.1	332	4.3	109
1.5/40	25	0.6	16	6.0	152	21.0	535	5.6	142	2.2	56	13.1	332	4.3	109
2/50	25	0.6	16	6.0	152	21.0	535	5.6	142	2.2	56	13.1	332	4.3	109
2/50	50	0.6	16	8.0	203	21.0	535	6.7	170	2.5	64	18.0	457	6.6	168
3/80	25	0.9	23	6.0	152	25.0	635	5.6	142	2.2	56	13.1	332	4.3	109
3/80	50	0.9	23	8.0	203	25.0	635	6.7	170	2.5	64	18.0	457	6.6	168
4/100	25	0.9	23	6.0	152	26.0	661	5.6	142	3.9	99	13.1	332	8.7	221
4/100	50	0.9	23	8.0	203	26.0	661	6.7	170	2.5	64	18.0	457	6.6	168
6/150	50	1.0	26	8.0	203	27.0	680	6.7	170	2.5	64	18.0	457	6.6	168
6/150	100	1.5	38	11.0	279	29.0	722	9.1	231	3.9	99	22.6	574	8.7	221
8/200	50	1.0	26	8.0	203	27.0	685	6.7	170	2.5	64	18.0	457	6.6	168
8/200	100	1.5	38	11.0	279	29.0	733	9.1	231	3.9	99	22.6	574	8.7	221
10/250	50	1.0	26	8.0	203	30.0	751	6.7	170	2.5	64	18.0	457	6.6	168
10/250	100	1.5	38	11.0	279	32.0	802	9.1	231	3.9	99	22.6	576	8.7	221
12/300	100	1.5	38	11.0	279	33.0	827	9.1	231	3.9	99	22.6	576	8.7	221

For face-to-face dimensions, see Table 14.

All dimensions are to be used for estimation only. Certified drawings will be supplied up request.

Figure 16: Handwheel and Extended, Heavy-duty Spring

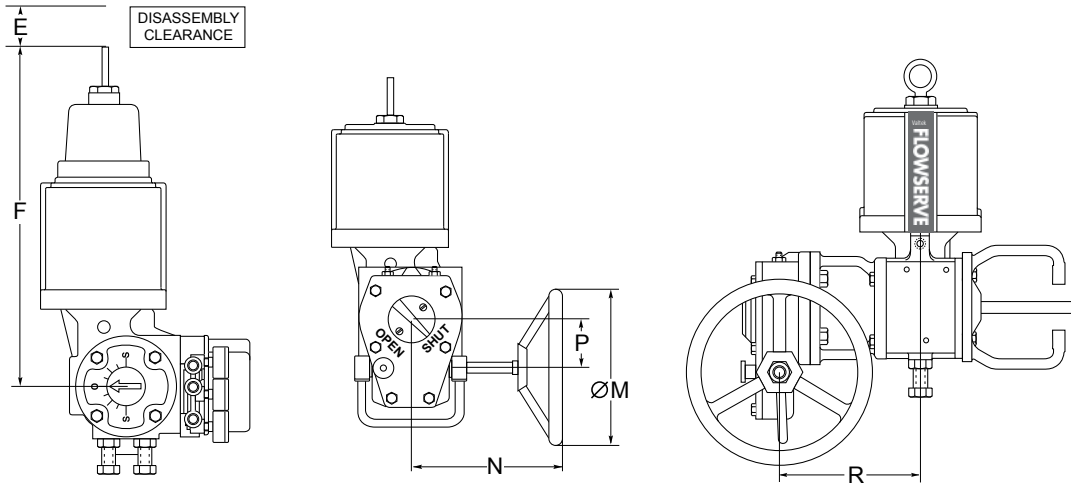


Table 18: Handwheel and Extended, Heavy-duty Spring Dimensions

Actuator Size (in <sup>2</sup> )	E		F		M		N		P		R	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
25	9.3	236	17.3	439	10.0	254	9.8	249	2.6	66	7.4	188
50	9.8	249	23.8	605	12.0	305	10.3	262	3.4	86	10.1	257
100	8.5	216	23.0	584	18.0	457	13.3	338	5.4	137	9.7	246
200	9.0	229	24.3	617	18.0	457	13.3	338	5.4	137	9.7	246

Table 19: Estimated Shipping Weight – Spring Cylinder Actuator (with Standard Actuator and Positioner)

Valve Size (in./mm)	Flangeless (ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2)		Flanged Body Class 150 (ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2)		Flanged Body Class 300 (ANSI/ISA-75.08.02, EN 558-1/2 Series 36, IEC 60534-3-2)		Flanged Body Class 150 (ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1)		Flanged Body Class 300 (ANSI/ISA-75.08.01, EN 558-1/2 Series 37-38, IEC 60534-3-1)	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
1/25	53	24	56	25	56	25	60	27	60	27
1.5/40	57	26	64	29	64	29	71	32	71	32
2/50	68	31	75	34	75	34	82	37	82	37
3/80	82	37	99	45	119	54	112	51	132	60
4/100	92	42	126	57	136	62	139	63	150	68
6/150	183	83	236	107	266	121	265	120	304	138
8/200	218	99	294	133	334	152	337	153	379	172
10/250	283	128	398	181	448	203	483	219	531	241
12/300	395	179	595	270	660	299	717	325	780	354

All weights are to be used for estimation only. Certified drawings will be supplied upon request.

Table 20: Oversized Actuator Weights

Original Size (in <sup>2</sup> )	Oversize (in <sup>2</sup> )	Add
25	50	30 lb./14 kg
50	100	90 lb./41 kg
100	200	125 lb./57 kg

**Table 21: MaxFlo 3 Mounting Orientations – Diaphragm Actuator**

AIR-TO-CLOSE, FAIL OPEN CONFIGURATION			
	SHAFT DOWNSTREAM	SHAFT UPSTREAM	
HORIZONTAL FLOW			LEFT HAND PIPE MOUNTING
			RIGHT HAND PIPE MOUNTING
VERTICAL FLOW			FLOW DOWN
			FLOW UP

**Table 22: MaxFlo 3 Mounting Orientations - Diaphragm Actuator**

AIR-TO-OPEN, FAIL CLOSE CONFIGURATION			
	SHAFT DOWNSTREAM	SHAFT UPSTREAM	
HORIZONTAL FLOW			LEFT HAND PIPE MOUNTING
			RIGHT HAND PIPE MOUNTING
VERTICAL FLOW			FLOW DOWN
			FLOW UP



**Table 23: MaxFlo 3 Mounting Orientations - Cylinder Actuator**

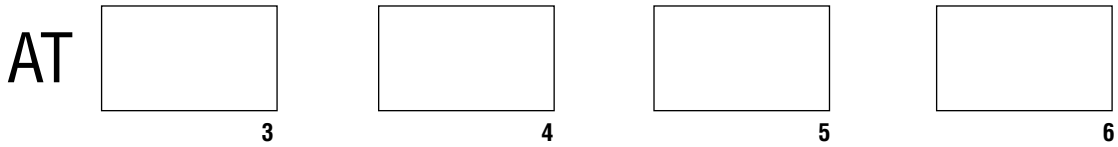
AIR-TO-CLOSE, FAIL OPEN CONFIGURATION			
SHAFT DOWNSTREAM		SHAFT UPSTREAM	
<b>HORIZONTAL FLOW</b>			<b>LEFT HAND PIPE MOUNTING</b>
<b>VERTICAL FLOW</b>			<b>FLOW DOWN</b>

**Table 24: MaxFlo 3 Mounting Orientations - Cylinder Actuator**

AIR-TO-OPEN, FAIL CLOSE CONFIGURATION			
	SHAFT DOWNSTREAM	SHAFT UPSTREAM	
HORIZONTAL FLOW			LEFT HAND PIPE MOUNTING
			RIGHT HAND PIPE MOUNTING
VERTICAL FLOW			FLOW DOWN
			FLOW UP

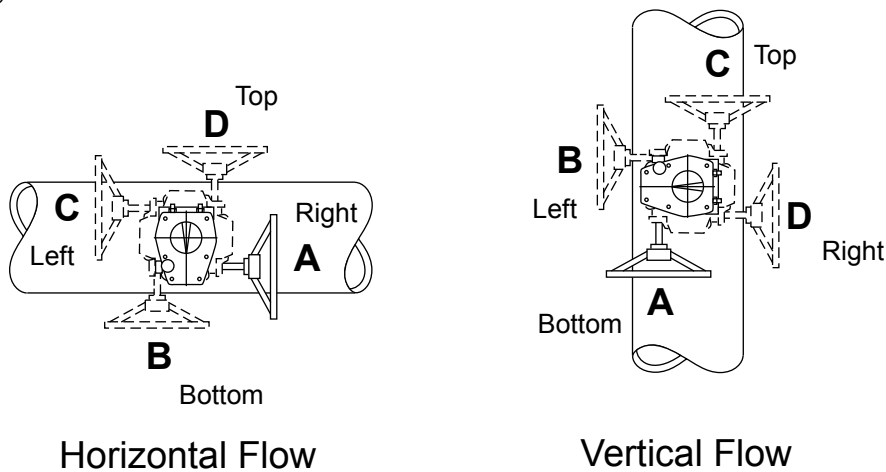
**Table 25: MaxFlo 3 Pipe Mounting Orientation Codes**

3 - Air Action		4 - Pipe Configuration		5 - Actuator Orientation		6 - Shaft Direction	
<b>O</b>	Air-to-open - ATO	<b>L</b>	Left Hand Mounting	<b>L</b>	Left	<b>U</b>	Shaft Upstream
<b>C</b>	Air-to-close - ATC	<b>R</b>	Right Hand Mounting	<b>R</b>	Right	<b>D</b>	Shaft Downstream
		<b>D</b>	Flow Down	<b>T</b>	Top (Default)		
		<b>U</b>	Flow Up	<b>B</b>	Bottom*		



\* Not available on diaphragm actuators

Figure 17: Horizontal and Vertical Flow





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