

Flow-Tek®

A Subsidiary of BRAY INTERNATIONAL, Inc.

SERIES 19 **Segmented Ball Valves**

Size Range: 1" - 12"

Carbon Steel, Stainless Steel,
Optional Special Alloys

ASME Classes 150, 300 & 600





Flow-Tek Series 19 is a versatile Segmented Ball Valve designed for throttling or on-off applications in various industries including pulp & paper, chemical, power, oil & gas, and mining.

The valve features a characterized ball segment for high rangeability with splined stem connection for precise control, maintenance friendly segment-stem assembly, low friction shaft and thrust bearings for longer life, integral actuator mounting pads, and interchangeable seats.

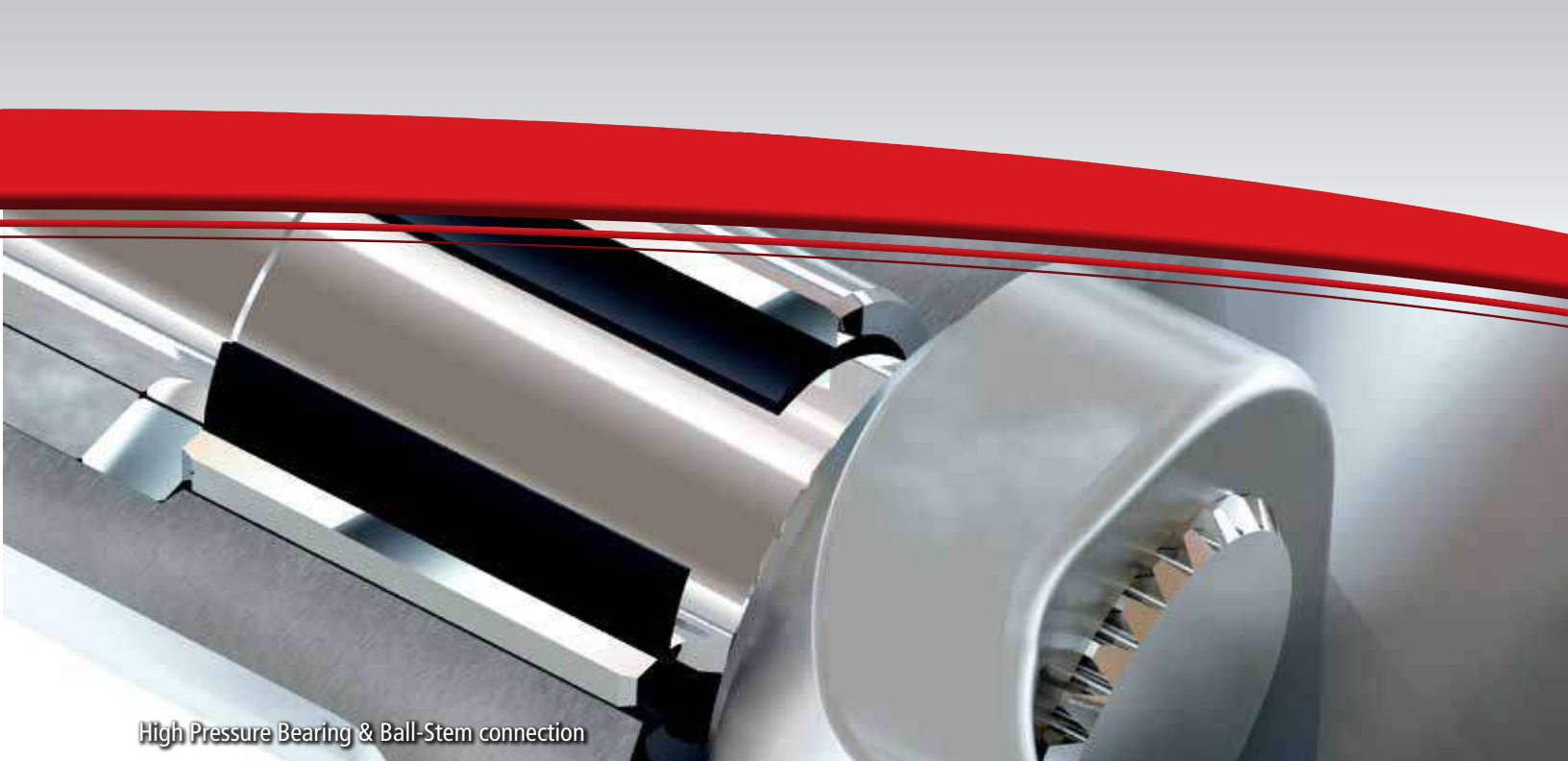
Valve Body

- One-piece body design which offers greater rigidity against fluctuating pipe loads.
- Eliminates the leak path associated with two piece body designs.
- Available in Flangeless and Flanged Ends.

Ball Segment

- Carefully designed with characterized V-port to offer rangeability in excess of 300:1, ideal for throttling applications in high consistency pulp services or slurry applications.
- Perfectly ground spherical surface with rounded edges ensure lower operating torques for metal seated valves.
- Hard coated spherical surface prevents galling.
- The segment is carefully designed for optimum flow.
- The seat is supported during higher openings to prevent rocking motion and possible failure of the valve.





High Pressure Bearing & Ball-Stem connection

Ball – Stem Connection

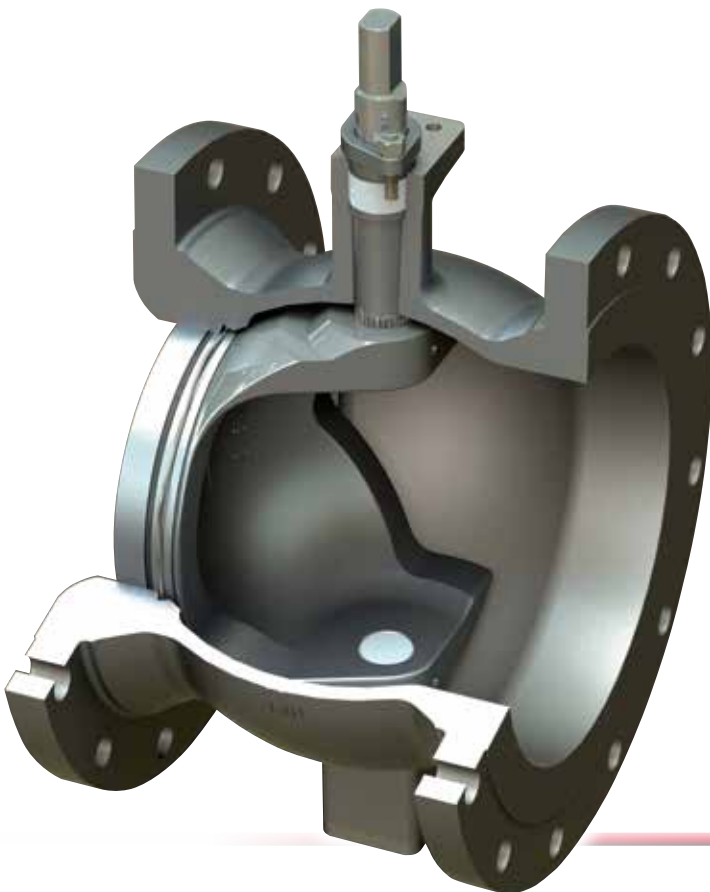
- Close-fit splined connection between stem and the segment offers extra strength with no lost motion or dead band.
- Perfectly oriented, specially designed shaft pin facilitates self-alignment of the ball segment while simplifying the assembly and disassembly during routine maintenance.

Seat

- Available with a metal seat and soft seat.
- Directs the flow away from the sealing area.
- Pressure energized seat design offers excellent sealing even at very low differential pressures.
- Self-aligning seat is independent of external pipe loads and offers excellent sealing even in adverse conditions.
- Standard metal seat has hard-faced seat surface with Stellite overlay on 316 SS base material.
- Standard soft seat design uses Tek-Fil® to maintain exceptional chemical and heat resistance.
- Flow-Teks' Tek-Fil® provides higher compressive strength, lower co-efficient of friction, superior abrasion and wear resistance, lower permeability, lower porosity, and reduced cold flow.

Bearings

- Stem and end post bearings are low friction and maintenance free.
- Made of wear resistant PTFE compound supported by metal fabric or thick walled metal depending on the pressure drop.
- Additional thrust bearing on stem collar for high pressure applications eliminates unbalanced axial load for consistent high performance and precision control.



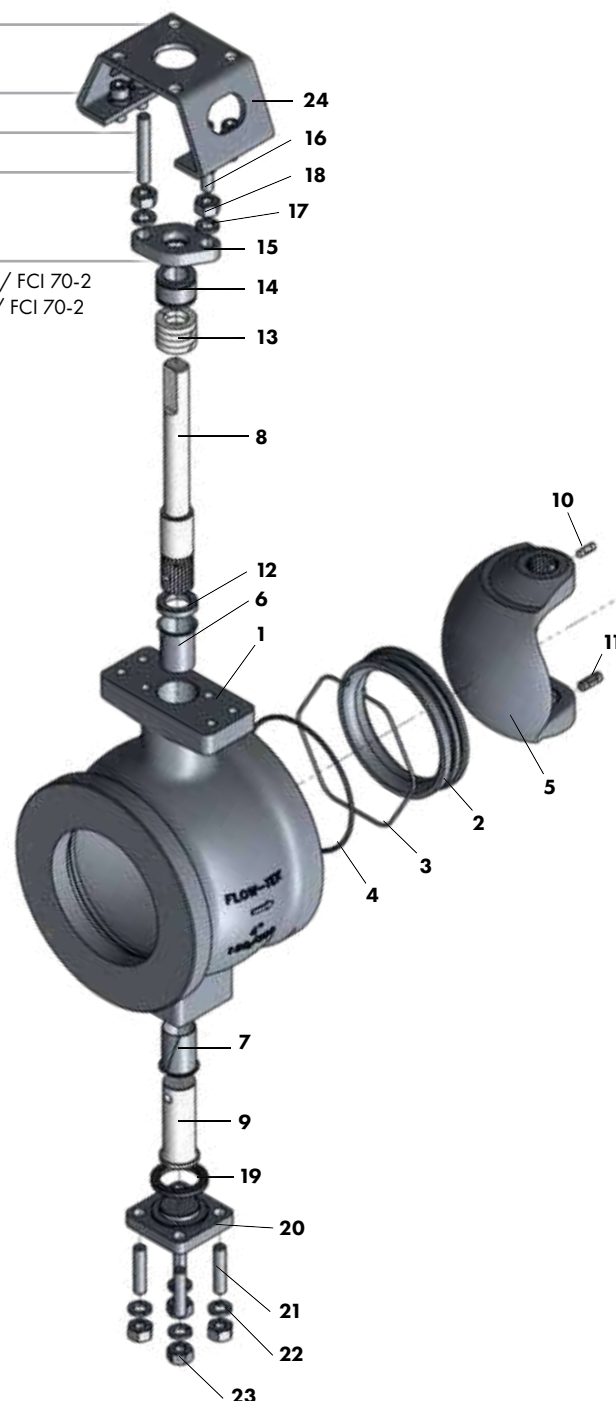
SPECIFICATIONS - CLASS 150/300

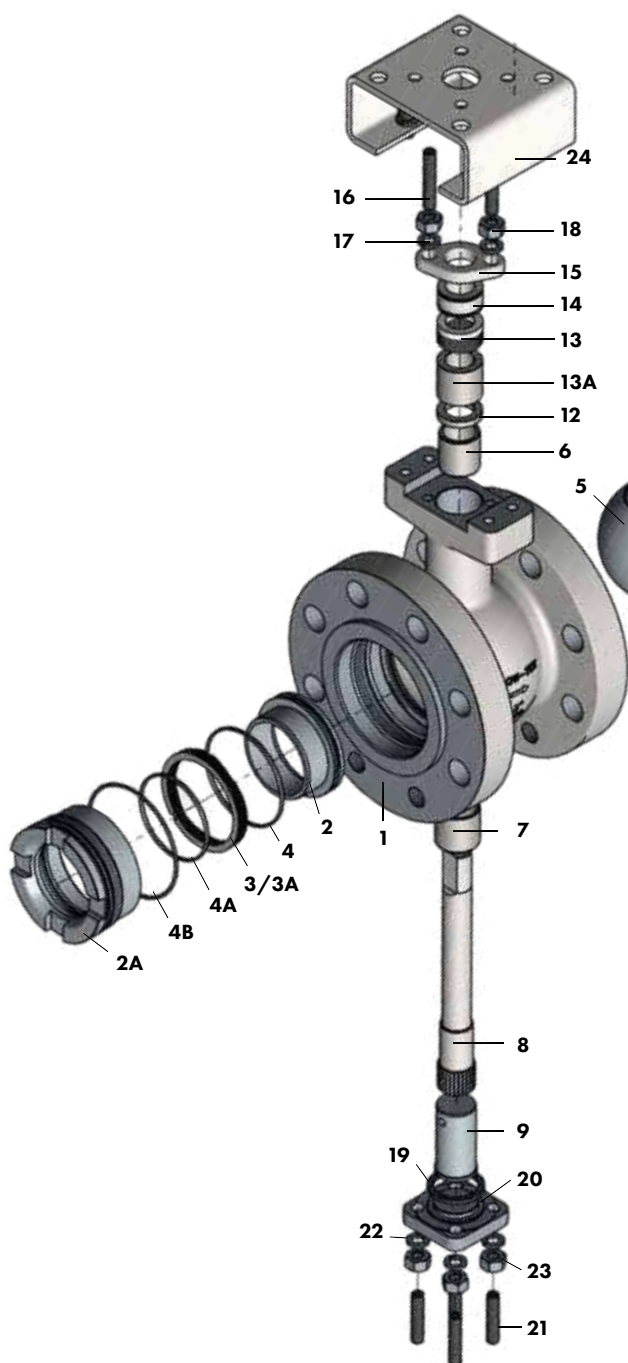
SIZES	1" up to 12" (DN 25 - DN 300)
CLASS RATING	Class 150/300
INHERENT FLOW CHARACTERISTIC	Equal Percentage
TEMPERATURE RANGE	-40°C to +260°C (-40°F to +500°F)
FLANGES	ASME B16.5
FACE TO FACE DIMENSIONS	Flangeless: Flow-Tek Internal Standard Flanged: ANSI/ISA 75.08.02 (ISA S75.04) / IEC 60534-3-2
SEAT TIGHTNESS	Metal Seat: Class IV per IEC 60534-4 / ANSI/ FCI 70-2 Soft Seat: Class VI per IEC 60534-4 / ANSI / FCI 70-2

MATERIALS

Item	Component	Carbon Steel	Stainless Steel
1	Body	ASTM A216 Gr WCB	ASTM A351 Gr CF8M
2	Seat	316 SS with TEK-FIL Insert (Soft Seat) 316 SS with Stellite Hard Facing (Metal Seat)	
3	Seat Spring	Inconel X-750	
4	Seat O-Ring	Viton	
5	Segment	ASTM A351 Gr CF8M (Soft Seat) ASTM A351 Gr CF8M + Hard Chrome Plated (Metal Seat)	
6	Stem Bearing	316 SS Fabric + PTFE	
7	Post Bearing	316 SS Fabric + PTFE	
8	Stem	ASTM A564 Type 630 Cond H1150D (17-4PH)	
9	End Post	ASTM A564 Type 630 Cond H1150D (17-4PH)	
10	Stem Pin	Stainless Steel	
11	End Post Pin	Stainless Steel	
12	Thrust Washer	Nitronic 60	
13	Packing	PTFE Rings + 1 Carbon Fiber Ring	
14	Gland Ring	316 SS	
15	Gland Retainer	316 SS	
16	Packing Stud	ASTM A193 Gr B7	ASTM A193 Gr B8
17	Packing Washer	Steel	Stainless Steel
18	Packing Nut	ASTM A194 Gr 2H	ASTM A194 Gr 8
19	Gasket	Graphite / PTFE	
20	Post Cover	Carbon Steel	Stainless Steel
21	Post Cover Stud	ASTM A193 Gr B7	ASTM A193 Gr B8
22	Post Cover Washer	Steel	Stainless Steel
23	Post Cover Nut	ASTM A194 Gr 2H	ASTM A194 Gr 8
24	Mounting Bracket	Carbon Steel	Stainless Steel

Note: Other materials are available on request for various applications. Please consult factory for details.





SPECIFICATIONS - CLASS 600

SIZES	1" up to 12" (DN 25 - DN 300)
CLASS RATING	Class 600
INHERENT FLOW CHARACTERISTIC	Equal Percentage
TEMPERATURE RANGE	-40°C to +260°C (-40°F to +500°F)
FLANGES	ASME B16.5
FACE TO FACE DIMENSIONS	Flangeless: ANSI/ISA 75.08.02 Flanged: ANSI/ISA 75.08.02
SEAT TIGHTNESS	Metal Seat: Class IV per IEC 60534-4 / ANSI / FCI 70-2 Soft Seat: Class VI per IEC 60534-4 / ANSI / FCI 70-2

MATERIALS

Item	Component	Carbon Steel	Stainless Steel
1	Body	ASTM A216 Gr WCB	ASTM A351 Gr CF8M
2	Seat	316 SS with TEK-FIL Insert (Soft Seat) 316 SS with Stellite Hard Facing (Metal Seat)	
2A	Seat Retainer	Stainless Steel	
3	Seat Spring	17-7 PH	
3A	Seat Shim	17-7 PH	
4	Seat O-Ring	Viton	
4A	O-Ring (Seat-Retainer)	Viton	
4B	O-Ring (Body-Retainer)	Viton	
5	Segment	ASTM A351 Gr CF8M (Soft Seat) ASTM A351 Gr CF8M + Hard Coated (Metal Seat)	
6	Stem Bearing	Metal+RPTFE / Metal	
7	Post Bearing	Metal+RPTFE / Metal	
8	Stem	ASTM A564 Type 630 Cond H1150D (17-4PH)	
9	End Post	ASTM A564 Type 630 Cond H1150D (17-4PH)	
10	Stem Pin	Stainless Steel	
11	End Post Pin	Stainless Steel	
12	Thrust Washer	Nitronic 60	
13	Packing	PTFE Rings + 1 Carbon Fiber Ring	
13A	Packing Spacer	316 SS	
14	Gland Ring	316 SS	
15	Gland Retainer	316 SS	
16	Packing Stud	ASTM A193 Gr B7	ASTM A193 Gr B8
17	Packing Washer	Steel	Stainless Steel
18	Packing Nut	ASTM A194 Gr 2H	ASTM A194 Gr 8
19	Gasket	Graphite / PTFE	
20	Post Cover	Carbon Steel	Stainless Steel
21	Post Cover Stud	ASTM A193 Gr B7	ASTM A193 Gr B8
22	Post Cover Washer	Steel	Stainless Steel
23	Post Cover Nut	ASTM A194 Gr 2H	ASTM A194 Gr 8
24	Mounting Bracket	Carbon Steel	Stainless Steel

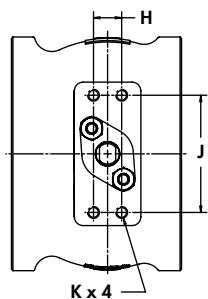
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DIMENSIONS - Class 150/300

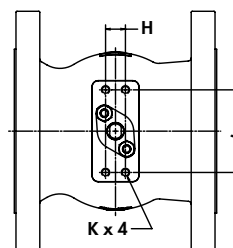
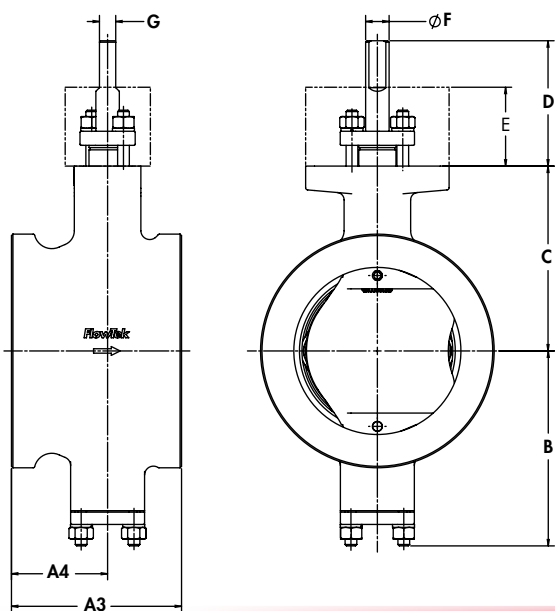
Size In mm	Flanged		Flangeless		B	C	D	E	F	G	H	J	K	Bore/Port	
	A1	A2	A3	A4										Soft Seat	Metal Seat
1 25	4 102	2 51	2 50	1 25	3 77	2.8 71.5	3.1 78.5	2.1 53.1	0.4 10	0.3 8	0.8 19.1	3.1 79.3	5/16"-18 UNC	0.6 16.5	0.9 24.0
1.5 40	4.5 114	2.2 57	2.4 60	1.4 35	3.3 84	3.1 79	3.1 78.5	2.1 53.1	0.4 10	0.3 8	0.8 19.1	3.1 79.3	5/16"-18 UNC	1.0 26.0	1.3 34.0
2 50	4.9 124	2.4 62	3 75	1.7 43	3.9 99	3.8 97	3.3 85	2.1 53.1	0.6 14	0.4 10	0.8 19.1	3.1 79.3	5/16"-18 UNC	1.4 35.0	1.7 43.0
3 80	6.5 165	3.2 82.5	3.9 100	2.2 55	4.8 121	4.6 118	3.3 85	2.1 53.1	0.6 16	0.4 11	0.8 19.1	3.1 79.3	5/16"-18 UNC	2.5 63.0	2.8 70.6
4 100	7.6 194	3.8 97	4.5 115	2.6 65	5.2 133	4.9 125	3.3 85	2.1 53.1	0.6 16	0.4 11	0.8 19.1	3.1 79.3	5/16"-18 UNC	3.1 77.5	3.3 85.0
6 150	9 229	4.5 114.5	6.3 160	3.7 95	7.6 193	7.3 185	3.6 92	2.4 60.5	0.9 22	0.6 16	1 25.4	3.5 89	3/6"-16 UNC	4.3 109.0	4.8 122.0
8 200	9.6 243	4.8 121.5	7.9 200	4.8 121.5	8.4 213	8.1 206	4.3 109	2.3 58	1.1 28.6	0.9 22	1.1 28.5	4.4 111.3	1/2"-13 UNC	5.7 144.0	6.1 156.0
10 250	11.7 297	5.8 148.5	9.4 240	5.8 148	10.1 256	9.7 247	4.3 109	2.3 58	1.2 30	0.9 22	1.1 28.5	4.4 111.3	1/2"-13 UNC	7.2 183.0	7.7 196.0
12 300	13.3 338	7.2 183	- -	- -	11.5 292	11.1 281	4.3 109	2.3 58	1.2 30	0.9 22	1.1 28.5	4.4 111.3	1/2"-13 UNC	8.7 222.0	9.2 233.0

DIMENSIONS - Class 600

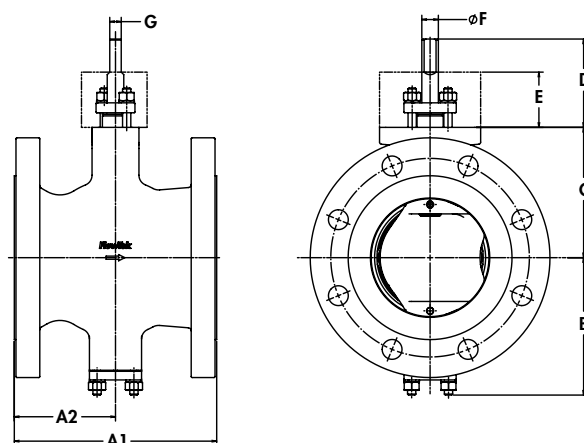
Size In mm	Flanged		Flangeless		B	C	D	E	F	G	H	J	K
	A1	A2	A3	A4									
1 25	4 102	2 51	4 102	2 51	3.4 86	4.1 105	3.3 85	2.1 53	.6 16	.4 11	.8 19.1	3.1 79.3	5/16"-18 UNC
1.5 40	4.5 114	2.2 57	4.5 114	2.2 57	3.9 100	4.7 120	3.3 85	2.1 53	.6 16	.4 11	.8 19.1	3.1 79.3	5/16"-18 UNC
2 50	4.9 124	2.4 62	4.9 124	2.4 62	4.3 110	4.9 125	3.6 92	2.4 60	.8 19	.5 13	1 25.4	3.5 89	3/8"-16 UNC
3 80	6.5 165	3.2 82.5	6.5 165	3.2 82.5	4.9 125	6 153	3.6 92	2.4 60	.9 22	.6 16	1 25.4	3.5 89	3/8"-16 UNC
4 100	7.6 194	3.8 97	7.6 194	3.8 97	5.5 140	7.3 185	4.3 109	2.3 58	1.2 30	.9 22	1.12 28.5	4.37 111	1/2"-13 UNC
6 150	9 229	4.5 114.5	9 229	4.5 114.5	7.9 200	9.4 240	4.3 109	2.3 58	1.4 35	.4 in key 10 mm key	1.12 28.5	4.37 111	1/2"-13 UNC
8	Contact Factory												
10													
12													



FLANGELESS



FLANGED



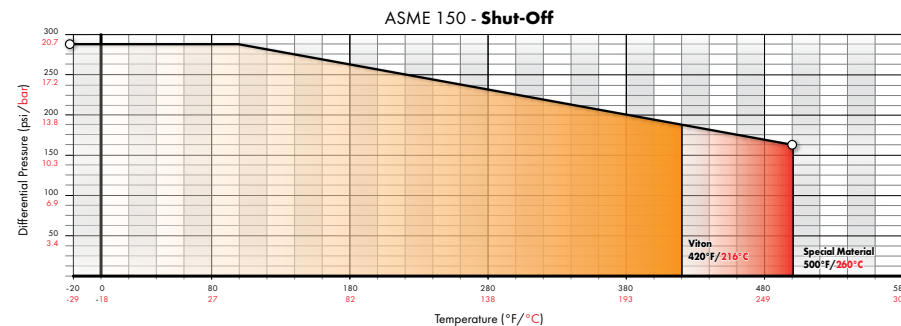
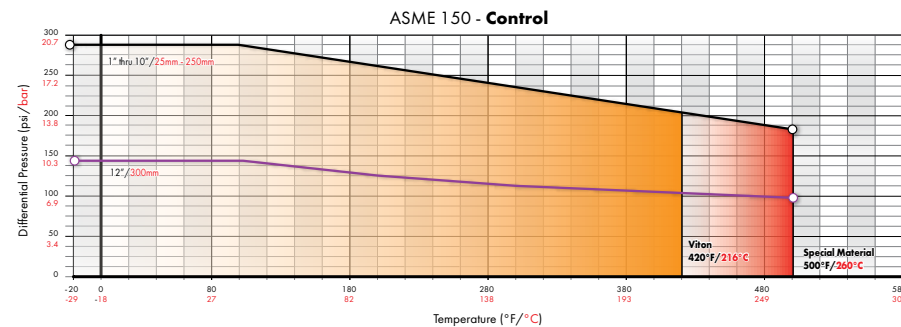
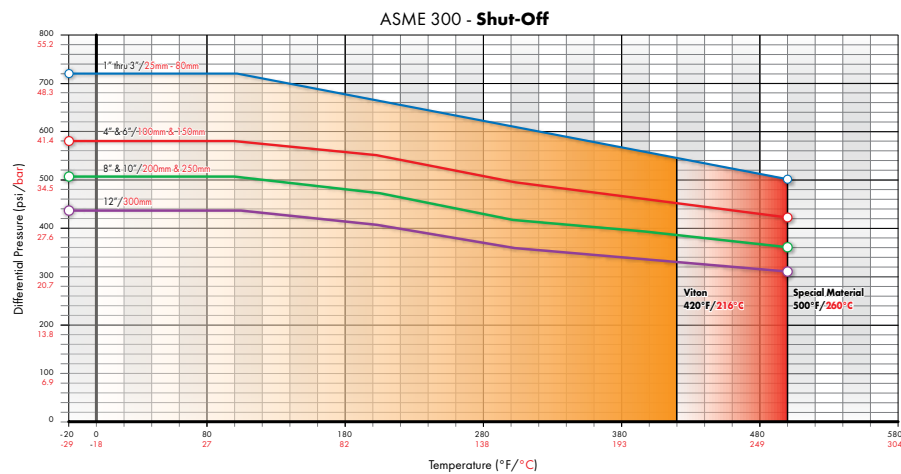
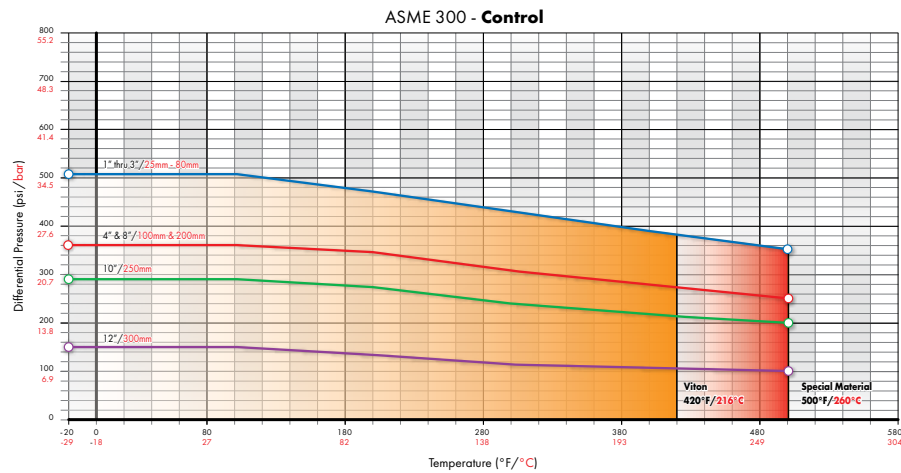
Approximate Weight (lbs - kg)

Size In mm	Flangeless		Flanged		
	CL 150/300	CL 600	CL 150	CL 300	CL 600
1	6	9	9	12	15
25	2.5	4	4.3	5.4	7
1.5	7	11	13	17	22
40	3.1	5	5.8	7.7	10
2	10	15	17.9	21	29
50	4.7	7	8.1	9.6	13
3	16	24	32	41	55
80	7.3	11	14.4	18.7	25
4	23	35	45.2	64	86
100	10.4	16	20.5	29	39
6	57	86	86	126	176
150	26	39	39	57.3	80
8	101	Contact Factory	131	191	Contact Factory
200	45.7		59.4	86.6	
10	176		191	284	
250	80		86.7	129	
12	-	-	302	434	Contact Factory
300	-	-	137	197	

Flow Coefficient 90° (Cv - Kv)

Size In mm	CL 150/300		CL 600
	Metal Seat	Soft Seat	Metal/Soft
1	33	20	23
25	28	17	20
1.5	78	52	48
40	67	45	41
2	133	95	100
50	114	82	86
3	302	287	275
80	260	247	237
4	460	436	422
100	396	375	363
6	905	760	801
150	778	654	689
8	1480	1350	Contact Factory
200	1273	1161	
10	2430	2380	
250	2090	2047	
12	3425	3410	
300	2946	2933	

PRESSURE & TEMPERATURE



Flow-Tek®

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