



Kodiak Series Trunnion Mounted Ball Valves



Canadian Owned, Canadian Operated, Proudly Canadian



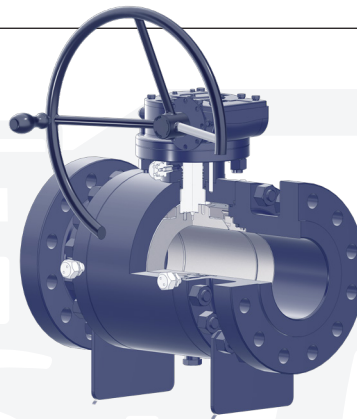
Butler Kodiak Series Trunnion Mounted Ball Valves

Butler delivers a comprehensive portfolio of trunnion mounted ball valves and highly engineered flow control components designed for the most demanding industrial environments. At the center of our offering is the Kodiak Series --a robust line of trunnion mounted ball valves built from forged materials and engineered for heavy duty, low maintenance performance. The Kodiak Series provides exceptional strength, reliability, and long term durability across a wide range of critical applications.

Our valves play a vital role in controlling and directing the flow of oil and gas as it moves from individual wellheads through flow lines, gathering systems, and transmission networks to refineries, petrochemical facilities, and industrial processing centers. Butler supports the full energy value chain with a broad range of solutions for natural gas, LNG, crude oil, and refined product transmission lines.

Features

- ✓ 3-piece forged
- ✓ API 6D designed and manufactured
- ✓ API 6D monogrammed
- ✓ API 6D 100% hydrostatic and pneumatic testing, including torque verification under full differential pressure
- ✓ API 607 fire-test certified
- ✓ API Spec Q1
- ✓ ASME B16.10 end-to-end dimensions
- ✓ ASME B16.34
- ✓ ASME B16.5 compliant flanges
- ✓ Anti-blowout stem design
- ✓ Antistatic device for grounding of the ball, stem and body
- ✓ Available with bi-directional or unidirectional sealing capability
- ✓ Built-in internal travel stops
- ✓ Complete material traceability
- ✓ Corrosion resistant low friction bearings
- ✓ CSA Z245.15-22 or -25
- ✓ Self-Relieving, DIB-1 or DIB-2 seat designs. Fully interchangeable seats: for converting SR to DIB-1 or DIB-2.
- ✓ Double isolation and bleed (DPE x DPE seats), supplied with threaded and plugged flanges for installation of a liquid relief kit (LRK) to manage cavity pressure
- ✓ Dual sealing (O-ring and 316 SPW gasket) arrangement at body and closure connection
- ✓ Inconel® seat springs



Size Range: 2"-24"

ASME Class 150-2500

Reduced & Full Port

RF, RTJ or Butt Weld Ends

- ✓ ISO 15848-1 fugitive emission certification
- ✓ ISO 9001:2015 Edition
- ✓ ISO 5211 mounting top work. Direct mount topworks pad for actuator or gear operator
- ✓ Lifting Lugs on 6" and larger.
- ✓ Locking device (lock not included)
- ✓ NACE MR0175 / ISO 15156
- ✓ Sealant injection fittings for emergency stem or seat sealing
- ✓ Seats & Stem equipped with injection fittings and integrated buried check valve
- ✓ SIL3-capable (Safety Integrity Level)
- ✓ Trunnion supported design reduces operating torque
- ✓ Internal Trunnion design on 6" & larger reduces potential leak paths
- ✓ Two sets of O-rings seals, plus fire safe stem packing seal prevents leakage
- ✓ Gear box seals are IP67 rated providing complete protection against dust ingress and resistance to water exposure. Gear box assembly is fully tested to ensure reliable, waterproof performance.

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Butler Kodiak Series Design Features



1 | Anti-Blowout Stem Design

Stem seal integrity is achieved by the use of three o-rings (or two o-rings and a graphite gasket). Upper o-ring (or graphite gasket) can be replaced with the valve in line and under pressure.

2 | Double Sealed Envelope Connections

Double o-rings or a combination of an o-ring and firesafe gasket on body/adaptor connections to ensure positive sealing. This makes the Kodiak suitable for above or below ground service.

3 & 4 | Sealant Injection System

The sealant injection ports located on the bonnet and adapter flanges are designed for two primary functions:

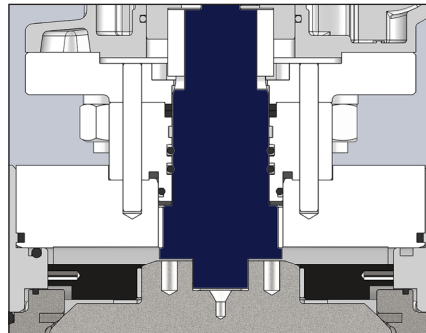
- **Emergency sealing** in the event of stem or seat leakage, including cases of seal damage.
- **Routine Seat lubrication** as part of standard maintenance activities.

When required, approved sealants can be injected through these fittings to temporarily restore sealing integrity. Each fitting incorporates an internal check valve to prevent backflow and provide additional system protection.

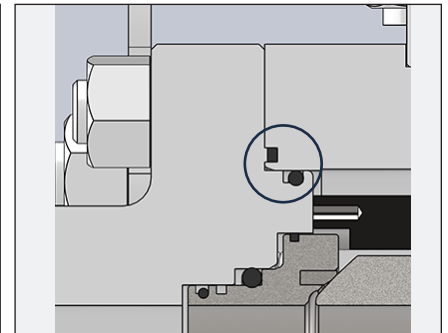
The client is responsible for implementing and maintaining an appropriate maintenance program to ensure continued system performance.

5 | Heavy Duty Bearing & Internal Trunnion Design

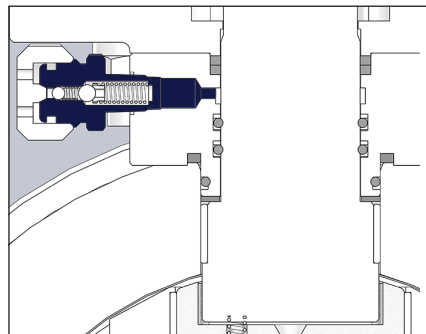
6" & larger, Class 150 to 2500. The trunnions are supported by heavy-duty Teflon-coated steel bearings. Thrust loads on the ball are carried by oversized trunnions housed within fully captured trunnion blocks, resulting in low operating torque and minimal seat wear. Because the trunnion block is positioned internally, the design significantly reduces potential leak paths, improving sealing integrity, and enhancing long-term valve reliability.



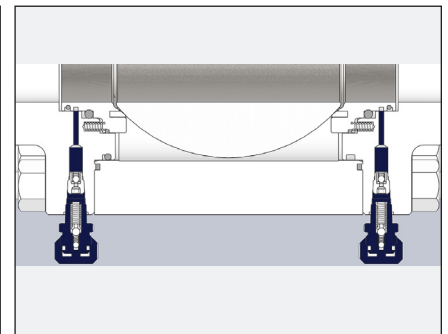
1



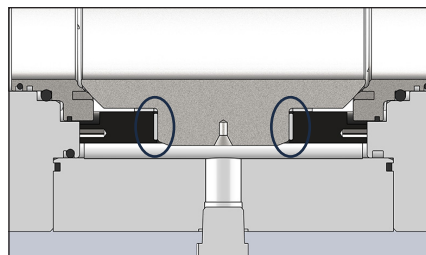
2



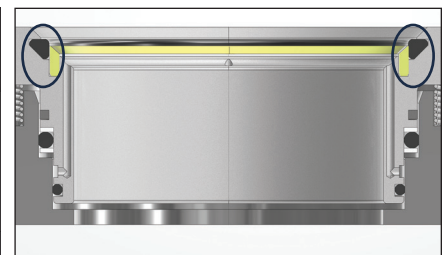
3



4



5



6

6 | DPE Seat Design

The DPE seat architecture incorporates a primary elastomeric sealing element that is mechanically captured and radially supported by a high performance polyamide structural insert. This configuration isolates the elastomer from direct erosive flow paths and minimizes degradation under abrasive or high velocity service conditions. The elastomeric seal maintains continuous, full circumference interface contact with the ball. Under elevated differential pressures, the material undergoes pressure energization, producing a robust and consistent seat to ball sealing interface that ensures reliable shutoff performance across the operating envelope. Available in ASME Class 150 to 900. ASME Class 1500 & 2500 will be available with primary plastic seat design.

Butler Kodiak Series Technical Seating Features

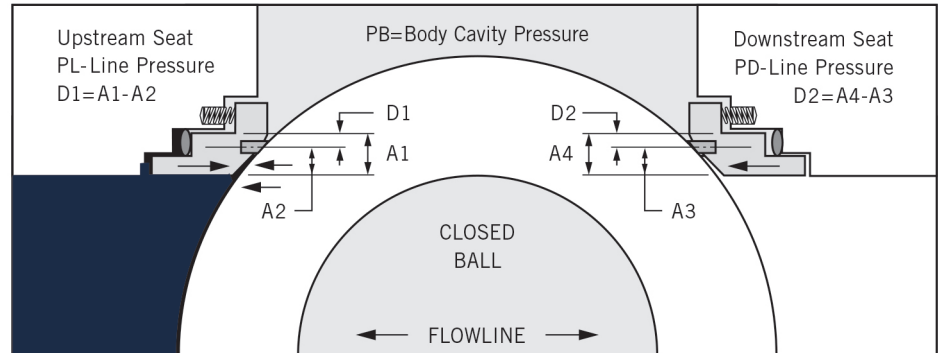
DOUBLE PISTON SEAT DESIGN

Upstream Seat

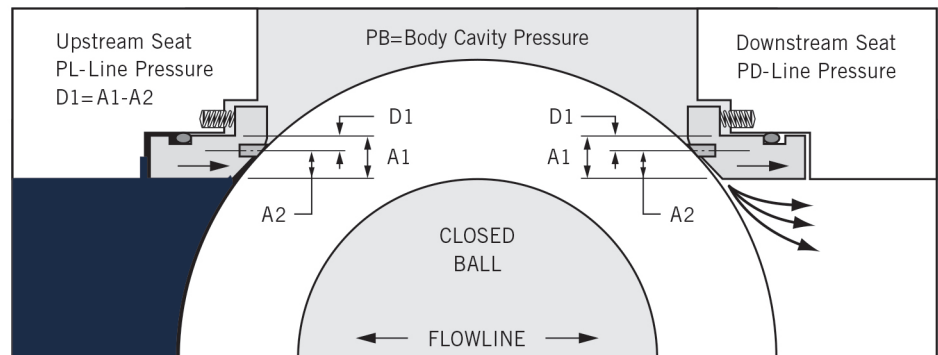
Line pressure acting on the seat area (A1) does not equalize against the line pressure acting on the seat area (A2). The difference in the area (D1) times the line pressure creates a "piston effect" force which pushes the seat against the ball surface resulting in a tight effective seal.

Downstream Seat

When the body cavity pressure is greater than the downstream pressure, the body cavity pressure acts on the seal area (A4). The net pressure difference, acting over area (D2), pushes the downstream seat tightly against the ball creating a positive seal.



Double Piston Seat Design



Self Relieving Seat Design

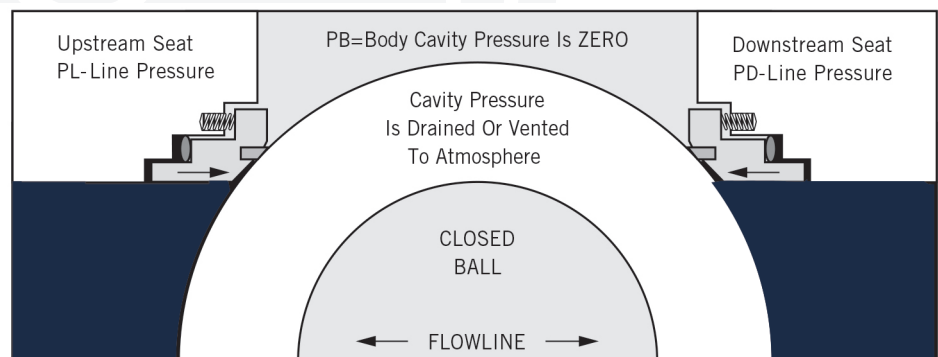
SELF RELIEVING SEAT DESIGN

Upstream Seat

The difference in the area (D1) times the line pressure creates a "piston effect" which forces the seat against the ball surface. Also the springs behind the seat adds the force to the seat which keeps the seat in contact with the ball surface by providing the tight seal.

Downstream Seat

When the body cavity pressure exceeds the spring pressure, automatic pressure relief will occur by relieving the body cavity pressure past the downstream seat. This eliminates the need for the body relief valve.



Double Block & Bleed Design

Double Block and Bleed

The double block and bleed condition is available in all seat design configurations. When the ball is in the closed position the body cavity pressure may be drained down to 'zero' by opening the bleed valve and draining the fluid by removing the drain plug. Each seat works independently assuring tight shut off seal against ball on the upstream and downstream side.

Butler Kodiak Series Part Number Codes



HOW TO ORDER - TRUNNION MOUNTED BALL VALVES

A	B	C	D	E	F	G	H	I	J	K
SIZE	PRESSURE	FACE	PORT	BODY	TRIM	SEALS	SEAT	PCS	TYPE	OPERATOR
2	1	R	F	L	E	H	T	3	TSR	L
2"	150	RF	Full	A350-LF2	3ML ENP	HNBR	TFM1600	3	Self Relieving	Lever

Sample

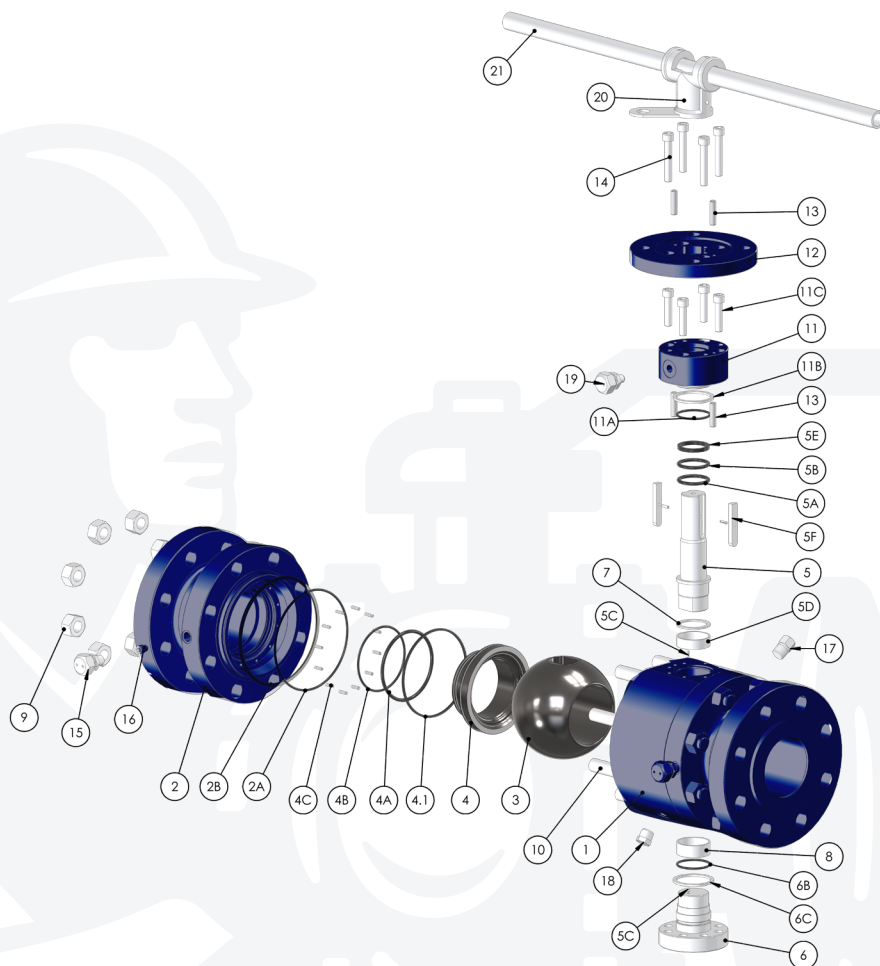
A - SIZE INCHES		B - CLASS PRESSURE		C - FACE		D - PORT		E - BODY		F - TRIM	
2	2	1	150	R	RF	R	REDUCED	S	A105N	E	3MIL ENP
3	3	3	300	T	RTJ	F	FULL	L	A350-LF2	S	316SS
4	4	6	600	B	BW			SS	A182-F316L	X	ALTERNATE
6	6	9	900	FF	FF						
8	8	15	1500	15	1500						
10	10	25	2500	25	2500						
12	12										
14	14										
16	16										
20	20										
24	24										

G - SEALS		H - SEATS		I - BODY DESIGN PCS		J - SEAT DESIGN TYPE		K - OPERATOR	
H	HNBR	R	RPTFE	3	3PC	TSR	SELF RELIEVING	L	LEVER
V	VITON	T	TFM1600			T1	DIB1	G	GEAR
A	AFLAS	D	DEVILON			T2	DIB2	B	BARE STEM
F	FFKM	P	PEEK					ACT	ACTUATED
X	ALTERNATE	M	METAL						
25	2500								

Consult Butler for sizes not shown.

We're constantly evolving our selection to better serve you.

Butler Kodiak Series Component Parts 2", 3", 4" Class 150, 300, 600, 900, 1500 & 2500



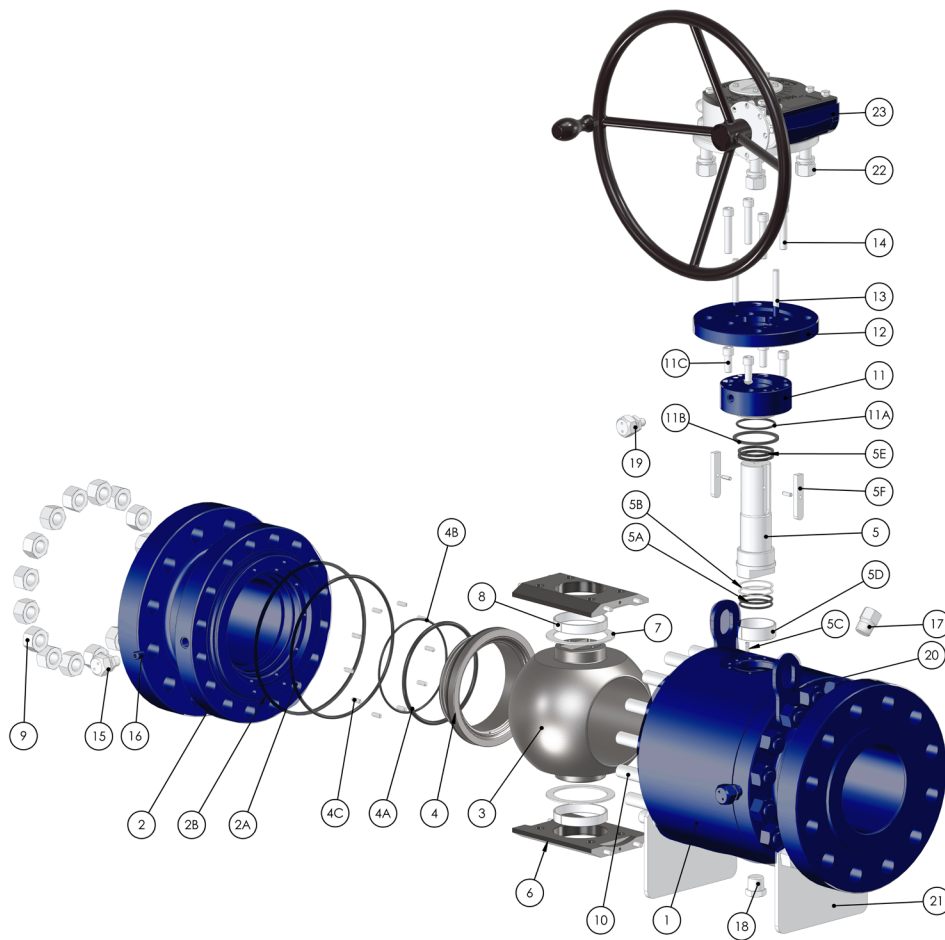
PARTS LIST: 2", 3" 4" CLASS 150, 300, 600, 900, 1500 & 2500

PART NO.	DESCRIPTION
1	Body
2	Adapter
2A	Body Seal
2B	Body Gasket
3	Ball
4-4.1	Seat Assembly + FS Seal
4A	Seat Primary Seal
4B	Seat Secondary Seal
4C	Seat Spring
5	Stem
5A	Stem Seal
5B	Stem Sub Seal
5C	Antistatic Spring/Ball

PART NO.	DESCRIPTION
5D	Stem Du Bearing
5E	Stem Fire Safe Seal
5F	Stem Keys
6	Trunnion
6A	Cap Screw, Trunnion
6B	Trunnion Seal
6C	Trunnion Gasket
7	Thrust Bearing
8	Trunnion Du Bearing
9	Body Nut
10	Body Stud
11	Bonnet
11A	Bonnet Primary Seal
11B	Bonnet Gasket

PART NO.	DESCRIPTION
11B	Bonnet Gasket
11C	Cap Screw, Bonnet
12	Mounting Cover
13	Alignment Pins
14	Cap Screw, Mounting Cover
15	Seat Injection Fitting
16	Ball Check
17	Plug/Pressure Relief Valve [DIB-1]
18	Drain Plug
19	Stem Injection Fitting
20	Lockable Handle Guide
21	Handle

Butler Kodiak Series Component Parts 6" & Larger Class 150,300,600,900,1500 & 2500



PARTS LIST: VALVE SIZE 6" & LARGER CLASS 150, 300, 600, 900, 1500 & 2500

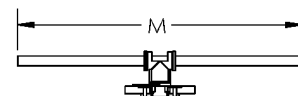
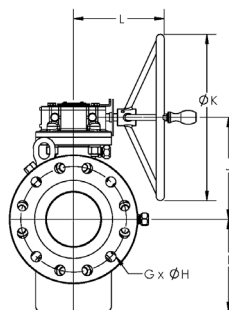
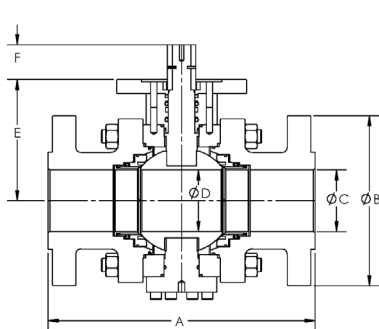
PART NO.	DESCRIPTION
1	Body
2	Adapter
2A	Body Seal
2B	Body Gasket
3	Ball
4	Seat Assembly
4A	Seat Primary Seal
4B	Seat Secondary Seal
4C	Seat Spring
5	Stem
5A	Stem Seals
5B	Stem Sub Seals
5C	Antistatic Spring

PART NO.	DESCRIPTION
5D	Stem Du Bearing
5R	Stem Fire Safe Seal
5F	Stem Keys
6	Trunnion Support Plate
7	Trunnion Thrust Bearing
8	Trunnion Du Bearing
9	Body Nut
10	Body Stud
11	Bonnet
11A	Bonnet Primary Seal
11B	Bonnet Gasket
11C	Cap Screw, Bonnet
12	Mounting Cover

PART NO.	DESCRIPTION
13	Alignment Pin
14	Cap Screw, Mounting Cover
15	Seat Injection Fitting
16	Ball Check
17	Plug/Pressure Relief Valve [DIB-1]
18	Drain Plug
19	Stem Injection Fitting
20	Lifting Lug
21	Support Leg
22	Stud & Bolt, Gear
23	Gearbox



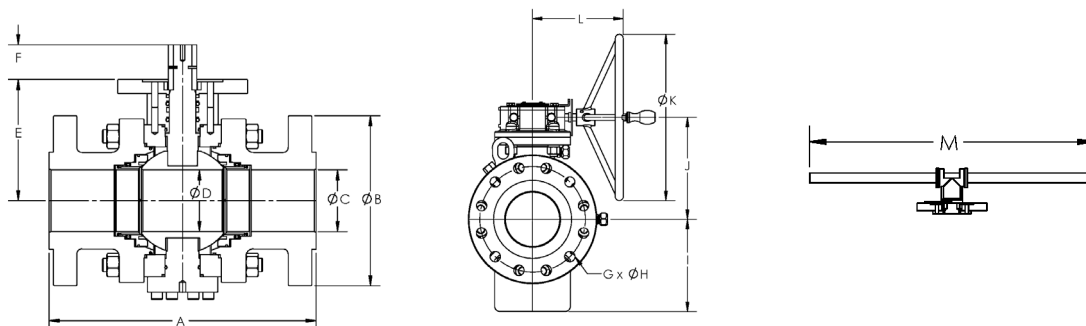
Butler Kodiak Series Dimensional Data Class 150 & 300



CLASS 150 - DIMENSIONS																													
Valve Size		A = RF		A = RTJ		B		ØC		ØD		E		F		GxØH		I		J		ØK		L		M		Approx. WT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2	50	7.00	178	7.50	191	6.00	152	1.93	49	1.93	49	5.20	132	1.18	30	4 x 3/4	4 x 19.1	3.46	88	7.40	188	-	-	-	-	14.06	357	62	28
3 x 2	80 x 50	8.00	203	8.50	216	7.50	191	2.93	74	1.93	49	5.20	132	1.18	30	4 x 3/4	4 x 19.1	3.46	88	7.40	188	-	-	-	-	14.06	357	73	33
3	80	8.00	203	8.50	216	7.50	190	2.93	74	2.91	74	6.02	153	1.38	35	4 x 3/4	4 x 19.1	4.27	109	8.58	218	-	-	-	-	19.96	507	88	40
4 x 3	100 x 80	9.00	229	9.50	241	9.00	229	3.94	100	2.91	74	6.02	153	1.38	35	8 x 3/4	8 x 19.1	4.27	109	0	-	-	-	-	-	19.96	507	146	66
4	100	9.00	229	9.50	241	9.00	229	3.94	100	3.94	100	6.97	177	1.97	50	8 x 3/4	8 x 19.1	5.49	140	10.08	256	-	-	-	-	23.90	607	148	67
6 x 4	150 x 100	15.50	394	16.00	406	11.00	279	5.91	150	3.94	100	6.97	177	1.97	50	8 x 7/8	8 x 22.2	5.49	140	10.08	256	-	-	-	-	23.90	607	254	115
6	150	15.50	394	16.00	406	11.00	279	5.91	150	5.91	150	8.37	213	2.17	55	8 x 7/8	8 x 22.2	9.65	245	9.98	254	12.60	320	7.60	193	-	-	353	160
8 x 6	200 x 150	18.00	457	18.50	470	13.50	343	7.91	201	5.91	150	8.37	213	2.17	55	8 x 7/8	8 x 22.2	9.65	245	9.98	254	12.60	320	7.60	193	-	-	430	195
8	200	18.00	457	18.50	470	13.50	343	7.91	201	7.91	201	10.18	259	2.56	65	8 x 7/8	8 x 22.2	11.22	285	12.30	313	14.17	360	9.88	251	-	-	593	269
10 x 8	250 x 200	21.00	533	21.50	546	16.00	406	9.92	252	7.91	201	10.18	259	2.56	65	12 x 1	12 x 25.4	11.22	285	12.30	313	14.17	360	9.88	251	-	-	642	291
10	250	21.00	533	21.50	546	16.00	406	9.92	252	9.92	252	11.65	296	2.95	75	12 x 1	12 x 25.4	13.39	340	14.02	356	19.69	500	10.98	279	-	-	908	412
12 x 10	300 x 250	24.00	610	24.50	622	19.00	483	11.93	303	9.92	252	11.65	296	2.95	75	12 x 1	12 x 25.4	13.39	340	14.02	356	19.69	500	10.98	279	-	-	944	248
12	300	24.00	610	24.50	622	19.00	483	11.93	303	11.93	303	13.13	334	2.95	75	12 x 1	12 x 25.4	15.16	385	15.49	394	19.69	500	12.17	309	-	-	1314	596
14 x 10	350 x 250	27.00	686	27.50	699	21.00	533	13.15	334	9.92	252	11.65	296	2.95	75	12 x 1-1/8	12 x 28.6	13.39	340	15.49	394	19.69	500	10.98	279	-	-	1067	484
14	350	27.00	686	27.50	699	21.00	533	13.15	334	13.15	334	14.39	366	3.43	87	12 x 1-1/8	12 x 28.6	15.14	385	16.75	426	23.62	600	12.17	309	-	-	1808	820
16 x 12	400 x 300	30.00	762	30.50	775	23.50	597	15.16	385	11.93	303	13.13	334	2.95	75	16 x 1-1/8	16 x 28.6	15.16	385	16.75	426	23.62	600	12.17	309	-	-	1625	737
16	400	30.00	762	30.50	775	23.50	597	15.16	385	15.16	385	15.83	402	3.43	87	16 x 1-1/8	16 x 28.6	16.57	421	20.67	525	19.69	500	13.86	352	-	-	2381	1080
18 x 14	450 x 350	34.00	864	34.50	876	25.00	635	17.16	436	13.15	334	14.39	366	3.43	87	16 x 1-1/4	16 x 31.8	15.14	385	20.67	525	19.69	500	12.17	309	-	-	2183	990
18	450	34.00	864	34.50	876	25.00	635	17.16	436	17.16	436	17.44	443	3.43	87	16 x 1-1/4	16 x 31.8	17.42	443	22.60	574	23.62	600	15.20	386	-	-	3131	1420
20 x 16	500 x 400	36.00	914	36.50	927	27.50	699	19.17	487	15.16	385	15.83	402	3.43	87	20 x 1-1/4	16 x 31.8	16.57	421	22.60	574	23.62	600	13.86	352	-	-	2426	1100
20	500	36.00	914	36.50	927	27.50	699	19.17	487	19.17	487	18.92	481	3.43	87	20 x 1-1/4	16 x 31.8	19.61	498	25.10	638	23.62	600	16.77	426	-	-	4343	1970
24 x 20	600 x 500	42.00	1067	42.50	1080	32.00	813	23.19	589	19.17	487	18.92	481	3.43	87	20 x 1-3/8	20 x 35	19.61	498	25.10	638	23.62	600	16.77	426	-	-	4344	1970
24	600	42.00	1067	42.50	1080	32.00	813	23.19	589	23.19	589	22.66	576	4.25	108	20 x 1-3/8	20 x 35	23.27	591	25.69	653	23.62	600	19.37	492	-	-	6742	3050

CLASS 300 - DIMENSIONS																													
Valve Size		A = RF		A = RTJ		B		Øc		ØD		E		F		GxØH		I	J		ØK		L	M	Approx. WT				
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG		
2	50	8.50	216	9.13	232	6.50	165	1.93	49	1.93	49	5.20	132	1.18	30	8 x 3/4	8 x 19.1	3.46	88	7.40	188	-	-	-	-	14.06	357	75	34
3 x 2	80 x 50	11.13	283	11.75	298	8.25	210	2.93	74	1.93	49	5.20	132	1.18	30	8 x 7/8	8 x 22.2	3.46	88	7.40	188	-	-	-	-	14.06	357	82	37
3	80	11.13	283	11.75	298	8.25	210	2.91	74	2.91	74	6.00	153	1.38	35	8 x 7/8	8 x 22.2	4.27	109	8.58	218	-	-	-	-	19.96	507	123	56
4 x 3	100 x 80	12.00	305	12.63	321	10.00	254	3.94	100	2.91	74	6.00	153	1.38	35	8 x 7/8	8 x 22.2	4.27	109	8.58	218	-	-	-	-	19.96	507	146	66
4	100	12.00	305	12.63	321	10.00	254	3.94	100	3.94	100	6.97	177	1.97	50	8 x 7/8	8 x 22.2	5.49	140	10.08	256	-	-	-	-	23.90	607	187	85
6 x 4	150 x 100	15.88	403	16.50	419	12.50	318	5.91	150	3.94	100	6.97	177	1.97	50	12 x 7/8	12 x 22.2	5.49	140	10.08	256	-	-	-	-	23.90	607	243	110
6	150	15.88	403	16.50	419	12.50	318	5.91	150	5.91	150	8.37	213	2.17	55	12 x 7/8	12 x 22.2	9.65	245	10.26	261	14.17	360	9.88	251	-	-	386	175
8 x 6	200 x 150	19.75	502	20.38	518	15.00	381	7.91	201	5.91	150	8.37	213	2.17	55	12 x 1	12 x 25.4	9.65	245	10.26	261	14.17	360	9.88	251	-	-	448	203
8	200	19.75	502	20.38	518	15.00	381	7.91	201	7.91	201	10.26	261	2.56	65	12 x 1	12 x 25.4	11.22	285	12.38	315	18.11	460	9.88	251	-	-	699	317
10 x 8	250 x 200	22.38	568	23.00	584	17.50	444	9.92	252	7.91	201	10.26	261	2.56	65	16 x 1-1/8	16 x 28.6	11.22	285	12.38	315	18.11	460	9.88	251	-	-	774	351
10	250	22.38	568	23.00	584	17.50	444	9.92	252	9.92	252	11.65	296	2.95	75	16 x 1-1/8	16 x 28.6	13.39	340	14.02	356	19.69	500	12.17	309	-	-	1008	457
12 x 10	300 x 250	25.50	648	26.13	664	20.50	521	11.93	303	9.92	252	11.65	296	2.95	75	16 x 1-1/4	16 x 31.8	13.39	340	14.02	356	19.69	500	12.17	309	-	-	1127	511
12	300	25.50	648	26.13	664	20.50	521	11.93	303	11.93	303	13.68	348	3.15	80	16 x 1-1/4	16 x 31.8	15.35	390	18.52	471	19.69	500	14.33	364	-	-	1523	691
14 x 10	350 x 250	30.00	762	30.63	778	23.00	584	13.15	334	9.92	252	11.65	296	2.95	75	20 x 1-1/4	20 x 31.8	13.39	340	14.02	356	19.69	500	12.17	309	-	-	1235	560
14	350	30.00	762	30.63	778	23.00	584	13.15	334	13.15	334	14.57	370	3.43	87	20 x 1-1/4	20 x 31.8	15.14	385	19.41	493	19.69	500	13.86	352	-	-	2161	980
16 x 12	400 x 300	33.00	838	33.63	854	25.50	648	15.16	385	11.93	303	13.68	348	3.15	80	20 x 1-3/8	20 x 35	15.35	390	18.52	471	19.69	500	14.33	364	-	-	1641	744
16	400	33.00	838	33.63	854	25.50	648	15.16	385	15.16	385	16.34	415	3.43	87	20 x 1-3/8	20 x 35	16.93	430	22.52	572	23.62	500	16.77	426	-	-	2734	1240
18 x 14	450 x 350	36.00	914	36.63	930	28.00	711	17.16	436	13.15	334	14.57	370	3.43	87	24 x 1-3/8	24 x 35	15.14	385	19.41	493	23.62	500	13.86	352	-	-	2536	1150
18	450	36.00	914	36.63	930	28.00	711	17.16	436	17.16	436	17.67	457	4.25	108	24 x 1-3/8	24 x 35	18.50	470	25.02	636	23.62	500	17.24	438	-	-	3825	1735
20 x 16	500 x 400	39.00	991	39.75	1010	30.50	775	19.17	487	15.16	385	16.34	415	3.43	87	24 x 1-3/8	24 x 35	16.93	430	22.52	572	23.62	500	16.77	426	-	-	3667	1663
20	500	39.00	991	39.75	1010	30.50	775	19.17	487	19.17	487	19.69	500	4.25	108	24 x 1-3/8	24 x 35	20.67	525	22.72	577	23.62	600	19.37	492	-	-	5203	2360
24 x 20	600 x 500	45.00	1143	45.88	1165	36.00	914	23.19	589	19.17	487	19.69	500	4.25	108	24 x 1-5/8	24 x 41.3	20.67	525	22.72	577	23.62	600	19.37	492	-	-	5868	2661
24	600	45.00	1143	45.88	1165	36.00	914	23.19	589	23.19	589	22.85	581	4.25	108	24 x 1-5/8	24 x 41.3	22.91	582	25.89	658	23.62	600	19.84	504	-	-	8157	3705

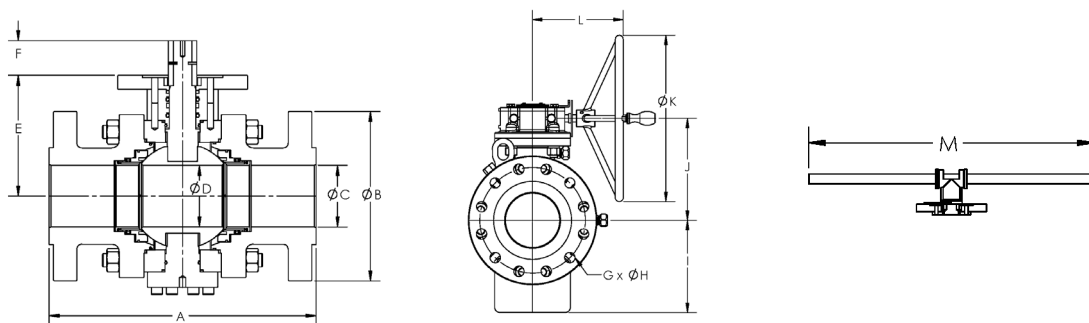
Butler Kodiak Series Dimensional Data Class 600



CLASS 600 - DIMENSIONS																													
Valve Size		A = RF		A = RTJ		B		Øc		ØD		E		F		GxØH		I		J		ØK		L		M		Approx. WT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2	50	11.50	292	11.63	295	6.50	165	1.93	49	1.93	49	5.73	146	1.59	41	8 x 3/4	8 x 19.1	3.64	93	7.89	201	-	-	-	-	23.50	597	104	47
3 x 2	80 x 50	14.00	356	14.13	359	8.25	210	2.93	74	1.93	49	5.73	146	1.59	41	8 x 7/8	8 x 22.2	3.64	93	7.89	201	-	-	-	-	23.50	597	126	57
3	80	14.00	356	14.13	359	8.25	210	2.91	74	2.91	74	6.81	173	2.15	55	8 x 7/8	8 x 22.2	4.72	120	9.76	248	-	-	-	-	27.83	707	201	91
4 x 3	100 x 80	17.00	432	17.13	435	10.75	273	3.94	100	2.91	74	6.81	173	2.15	55	8 x 1	8 x 25.4	4.72	120	9.76	248	-	-	-	-	27.83	707	223	101
4	100	17.00	432	17.13	435	10.75	273	3.94	100	3.94	100	7.72	196	2.20	56	8 x 1	8 x 25.4	5.83	148	9.61	244	14.17	360	9.88	251	-	-	333	151
6 x 4	150 x 100	22.00	559	22.13	562	14.00	356	5.91	150	3.94	100	7.72	196	2.20	56	12 x 1-1/8	12 x 28.6	5.83	148	9.61	244	14.17	360	9.88	251	-	-	355	161
6	150	22.00	559	22.13	562	14.00	356	5.91	150	5.91	150	8.98	228	2.56	65	12 x 1-1/8	12 x 28.6	10.04	255	11.10	282	18.11	460	9.88	251	-	-	606	275
8 x 6	200 x 150	26.00	660	26.13	664	16.50	419	7.91	201	5.91	150	8.98	228	2.56	65	12 x 1-1/4	12 x 31.8	10.04	255	11.10	282	18.11	460	9.88	251	-	-	677	307
8	200	26.00	660	26.13	664	16.50	419	7.91	201	7.91	201	10.79	274	2.56	65	12 x 1-1/4	12 x 31.8	12.01	305	13.15	334	23.62	600	12.17	309	-	-	1041	472
10 x 8	250 x 200	31.00	787	31.13	791	20.00	508	9.92	252	7.91	201	10.79	274	2.56	65	16 x 1-3/8	16 x 35	12.01	305	13.15	334	23.62	600	12.17	309	-	-	1376	624
10	250	31.00	787	31.13	791	20.00	508	9.92	252	9.92	252	13.01	331	3.15	80	16 x 1-3/8	16 x 35	14.37	365	17.85	454	19.69	500	13.86	352	-	-	1720	780
12 x 10	300 x 250	33.00	838	33.13	841	22.00	559	11.93	303	9.92	252	13.01	331	3.15	80	20 x 1-3/8	20 x 35	14.37	365	17.85	454	19.69	500	13.86	352	-	-	2009	911
12	300	33.00	838	33.13	841	22.00	559	11.93	303	11.93	303	14.67	373	3.43	87	20 x 1-3/8	20 x 35	16.14	410	19.82	504	23.62	600	15.20	386	-	-	2368	1074
14 x 10	350 x 250	35.00	889	35.13	892	23.75	603	13.15	334	9.92	252	13.01	331	3.15	80	20 x 1-1/2	20 x 38.1	14.37	365	17.85	454	19.69	500	13.86	352	-	-	2231	1012
14	350	35.00	889	35.13	892	23.75	603	13.15	334	13.15	334	15.43	392	3.43	87	20 x 1-1/2	20 x 38.1	16.18	411	21.89	556	23.62	600	17.17	436	-	-	2987	1355
16 x 12	400 x 300	39.00	991	39.13	994	27.00	686	15.16	385	11.93	303	14.67	373	3.43	87	20 x 1-5/8	20 x 41.3	16.14	410	19.82	504	23.62	600	15.20	386	-	-	3180	1442
16	400	39.00	991	39.13	994	27.00	686	15.16	385	15.16	385	17.11	435	3.43	87	20 x 1-5/8	20 x 41.3	17.81	453	24.15	614	23.62	600	17.24	438	-	-	4114	1866
18 x 14	450 x 350	43.00	1092	43.13	1095	29.25	743	17.16	436	13.15	334	15.43	392	3.43	87	20 x 1-3/4	20 x 44.5	16.18	411	21.89	556	23.62	600	17.17	436	-	-	3704	1680
18	450	43.00	1092	43.13	1095	29.25	743	17.16	436	17.16	436	19.04	484	4.25	108	20 x 1-3/4	20 x 44.5	20.08	510	22.07	561	23.62	600	19.84	504	-	-	5655	2565
20 x 16	500 x 400	47.00	1194	47.25	1200	32.00	813	19.17	487	15.16	385	17.11	435	3.43	87	24 x 1-3/4	24 x 44.5	17.81	453	24.15	614	23.62	600	17.24	438	-	-	4597	2085
20	500	47.00	1194	47.25	1200	32.00	813	19.17	487	19.17	487	20.81	529	4.25	108	24 x 1-3/4	24 x 44.5	21.79	554	25.61	651	23.62	600	21.30	541	-	-	7628	3460
24 x 20	600 x 500	55.00	1397	55.38	1407	37.00	940	23.19	589	19.17	487	20.81	529	4.25	108	24 x 2	24 x 50.8	21.79	554	25.61	651	23.62	600	21.30	541	-	-	7162	3248
24	600	55.00	1397	55.38	1407	37.00	940	23.19	589	23.19	589	25.45	647	5.24	133	24 x 2	24 x 50.8	25.59	650	30.33	771	27.56	700	21.89	556	-	-	12555	5695



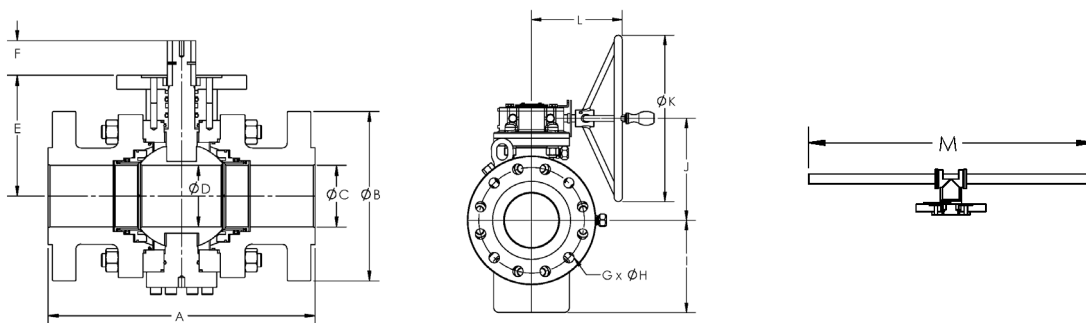
Butler Kodiak Series Dimensional Data Class 900



CLASS 900 - DIMENSIONS

Valve Size		A = RF		A = RTJ		B		Øc		ØD		E		F		GxØH		I		J		ØK		L		M		Approx. WT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2	50	14.50	368	14.63	371	8.50	216	1.93	49	1.93	49	6.02	153	1.59	41	8 x 1	8 x 25.4	4.13	105	8.58	218	-	-	-	-	25.59	650	157	71
3 x 2	80 x 50	15.00	381	15.13	384	9.50	241	2.91	74	1.93	49	6.02	153	1.59	41	8 x 1	8 x 25.4	4.13	105	-	-	-	-	-	-	25.59	650	179	81
3	80	15.00	381	15.13	384	9.50	241	2.91	74	2.91	74	7.17	182	2.19	56	8 x 1	8 x 25.4	5.08	129	10.12	257	-	-	-	-	29.53	750	251	114
4 x 3	100 x 80	18.00	457	18.13	460	11.50	292	3.94	100	2.91	74	7.17	182	2.19	56	8 x 1-1/4	8 x 31.8	5.08	129	-	-	-	-	-	-	29.53	750	273	124
4	100	18.00	457	18.13	460	11.50	292	3.94	100	3.94	100	8.07	205	2.20	56	8 x 1-1/4	8 x 31.8	6.18	157	9.96	253	14.17	360.00	9.88	251	-	-	392	178
6 x 4	150 x 100	24.00	610	24.13	613	15.00	381	5.91	150	3.94	100	8.07	205	2.20	56	12 x 1-1/4	12-31.8	6.18	157	9.96	253	14.17	360	9.88	251	-	-	492	223
6	150	24.00	610	24.13	613	15.00	381	5.91	150	5.91	150	9.43	240	2.95	75	12 x 1-1/4	12-31.8	10.43	265	11.79	300	19.69	500	10.98	279	-	-	789	358
8 x 6	200 x 150	29.00	737	29.13	740	18.50	470	7.91	201	5.91	150	9.43	240	2.95	75	12 x 1-1/2	12-38.1	10.43	265	11.79	300	19.69	500	10.98	279	-	-	970	440
8	200	29.00	737	29.13	740	18.50	470	7.91	201	7.91	201	11.73	298	3.54	90	12 x 1-1/2	12-38.1	12.40	315	16.57	421	19.69	500	13.86	352	-	-	1400	635
10 x 8	250 x 200	33.00	838	33.13	841	21.50	546	9.92	252	7.91	201	11.73	298	3.54	90	16 x 1-1/2	16 x 38.1	12.40	315	16.57	421	19.69	500	13.86	352	-	-	1521	690
10	250	33.00	838	33.13	841	21.50	546	9.92	252	9.92	252	13.44	342	4.33	110	16 x 1-1/2	16 x 38.1	14.17	360	19.63	499	23.62	600	16.77	426	-	-	2209	1002
12 x 10	300 x 250	38.00	965	38.13	968	24.00	610	11.93	303	9.92	252	13.44	342	4.33	110	20 x 1-1/2	20 x 38.1	14.17	360	19.63	499	23.62	600	16.77	426	-	-	2547	1155
12	300	38.00	965	38.13	968	24.00	610	11.93	303	11.93	303	15.55	395	4.72	120	20 x 1-1/2	20 x 38.1	16.14	410	18.58	472	23.62	600	19.37	492	-	-	3278	1487
14 x 10	350 x 250	40.50	1092	40.88	1038	25.25	641	12.67	322	9.92	252	13.44	342	4.33	110	20 x 1-5/8	20 x 41.3	14.17	360	19.63	499	23.62	600	16.77	426	-	-	2734	1240
14	350	40.50	1092	40.88	1038	25.25	641	12.67	322	12.67	322	16.73	425	5.51	140	20 x 1-5/8	20 x 41.3	18.43	468	19.76	502	23.62	600	19.84	504	-	-	4217	1913
16 x 12	400 x 300	44.50	1130	44.88	1140	27.25	692	14.69	373	11.93	303	15.55	395	4.72	120	20 x 1-3/4	20 x 44.5	16.14	410	18.58	472	23.62	600	19.37	492	-	-	3815	1730
16	400	44.50	1130	44.88	1140	27.25	705	14.69	373	14.69	373	19.02	483	5.51	140	20 x 1-3/4	20 x 44.5	21.26	540	23.82	605	23.62	600	21.30	541	-	-	6030	2735
18 x 14	450 x 350	48.00	1219	48.50	1232	31.00	787	16.65	423	12.67	322	16.73	425	5.51	140	20 x 2	20 x 50.8	18.43	468	19.76	502	23.62	600	19.84	504	-	-	4190	1900
18	450	48.00	1219	48.50	1232	31.00	787	16.65	423	16.65	423	21.65	550	7.09	180	20 x 2	20 x 50.8	22.44	570	26.46	672	23.62	600	21.30	541	-	-	7460	3384
20 x 16	500 x 400	52.00	1321	52.50	1334	33.75	857	18.54	471	14.69	373	19.02	483	5.51	140	20 x 2-1/8	20 x 54	21.26	540	23.82	605	23.62	600	21.30	541	-	-	6339	2875
20	500	52.00	1321	52.50	1334	33.75	857	18.54	471	18.54	471	22.99	584	7.09	180	20 x 2-1/8	20 x 54	24.41	620	27.87	708	27.56	700	21.89	556	-	-	10263	4655
24 x 20	600 x 500	61.00	1549	61.75	1568	41.00	1041	22.44	570	18.54	471	22.99	584	7.09	180	20 x 2-5/8	20 x 66.7	24.41	620	27.87	708	27.56	700	21.89	556	-	-	11907	5400
24	600	61.00	1549	61.75	1568	41.00	1041	22.44	570	22.44	570	28.23	717	7.87	200	20 x 2-5/8	20 x 66.7	28.35	720	33.86	860	31.50	800	27.05	687	-	-	17284	7840

Butler Kodiak Series Dimensional Data Class 1500 & 2500



CLASS 1500 - DIMENSIONS

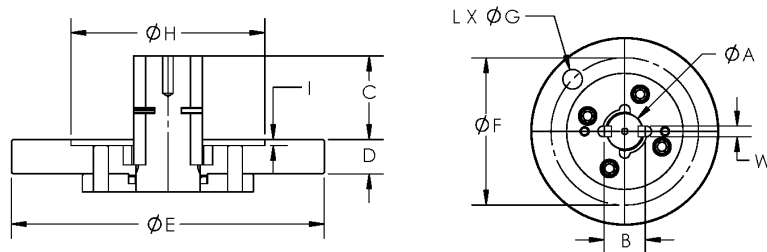
Valve Size		A = RF		A = RTJ		B		Øc		ØD		E		F		GxØH		I		J		ØK		L		M		Approx. WT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2	50	14.50	368	14.63	371	8.50	216	1.93	49	1.93	49	6.02	153	1.59	41	8 x 1	8 x 25.4	4.13	105	8.19	208	-	-	-	-	25.59	650	157	71
3 x 2	80 x 50	18.50	470	18.63	473	10.50	267	2.91	74	2.91	74	6.02	153	1.59	41	8 x 1-1/4	8 x 31.8	4.13	105	8.19	208	-	-	-	-	25.59	650	179	81
3	80	18.50	470	18.63	473	10.50	267	2.91	74	2.91	74	7.40	188	2.15	55	8 x 1-1/4	8 x 31.8	5.31	135	10.35	263	-	-	-	-	35.43	900	331	150
4 x 3	100 x 80	21.50	546	21.63	549	12.25	311	3.94	100	3.94	100	7.40	188	2.15	55	8 x 1-3/8	8 x 35	5.31	135	10.35	263	-	-	-	-	35.43	900	353	160
4	100	21.50	546	21.63	549	12.25	311	3.94	100	3.94	100	8.50	216	2.20	56	8 x 1-3/8	8 x 35	6.81	173	10.63	270	18.11	460	9.88	251	-	-	511	232
6 x 4	150 x 100	27.75	705	28.00	711	15.50	394	5.67	144	5.67	144	8.50	216	2.20	56	12 x 1-1/2	12 x 31.8	6.81	173	10.63	270	18.11	460	9.88	251	-	-	712	323
6	150	27.75	705	28.00	711	15.50	394	5.67	144	5.67	144	12.07	307	3.54	90	12 x 1-1/2	12 x 31.8	12.40	315	16.91	430	19.69	500	13.86	352	-	-	1334	605
8 x 6	200 x 150	32.75	832	33.13	841	19.00	483	7.55	192	7.55	192	12.07	307	3.54	90	12 x 1-3/4	12 x 44.5	12.40	315	16.91	430	19.69	500	13.86	352	-	-	1248	566
8	200	32.75	832	33.13	841	19.00	483	7.55	192	7.55	192	14.00	356	4.33	110	12 x 1-3/4	12 x 44.5	14.57	370	20.18	513	23.62	600	16.77	426	-	-	2330	1057

RTJ available upon request.

CLASS 2500 - DIMENSIONS

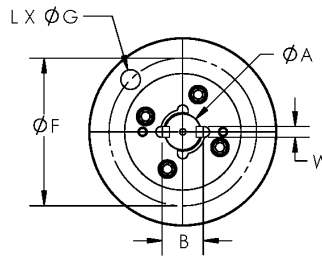
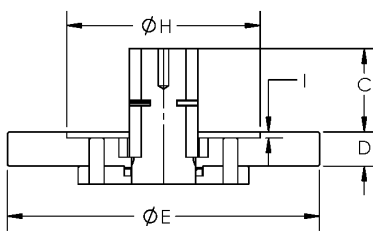
Valve Size		A = RF		A = RTJ		B		Øc		ØD		E		F		GxØH		I		J		ØK		L		M		Approx. WT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2	50	17.75	451	17.88	454	9.25	235	1.65	42	1.65	42	6.99	177.5	2.17	55.0	8 x 1-1/8	8 x 28.6	5.75	146	8.88	225.5	14.17	360	9.88	251	-	-	196	89
3	80	22.75	578	23.00	584	12.00	305	2.44	62	2.44	62	8.48	215.5	2.17	55.0	8 x 1-3/8	8 x 35	7.28	185	10.61	270	18.11	460	9.88	251	-	-	415	188
4	100	26.50	673	26.88	683	14.00	356	3.42	87	3.42	87	10.59	269.0	2.95	75.0	8 x 1-5/8	8 x 41.3	8.84	225	12.95	329	23.62	600	12.17	309	-	-	841	381
6	150	36.00	914	36.50	927	19.00	483	5.16	131	5.16	131	13.70	348.0	4.33	110.0	8 x 2-1/8	8 x 54	12.05	306	19.88	505	23.62	600	16.77	426	-	-	1671	758

Topworks & Stem Data



Bore Sz. (in)	ASME Class	Size Dimension (in.)											
		ISO 5211	A	B	C	D	E	F	G	H	I	L	W
2	150	F10	0.79	0.98	1.18	0.47	4.92	4.02	0.47	2.76	0.16	4	0.24
	300	F10	0.79	0.98	1.18	0.47	4.92	4.02	0.47	2.76	0.16	4	0.24
	600	F12	1.06	1.30	1.59	0.71	5.91	4.92	0.55	-	-	4	0.31
	900	F12	1.06	1.30	1.59	0.71	5.91	4.92	0.55	-	-	4	0.31
	1500	F12	1.06	1.30	1.59	0.71	5.91	4.92	0.55	-	-	4	0.31
3	2500	F14	1.42	1.65	2.17	0.79	6.89	5.51	0.71	3.94	0.18	4	0.39
	150	F10	0.94	1.18	1.38	0.47	4.92	4.02	0.47	2.76	0.16	4	0.31
	300	F10	0.94	1.18	1.38	0.47	4.92	4.02	0.47	2.76	0.16	4	0.31
	600	F14	1.38	1.61	2.15	0.91	6.89	5.51	0.71	-	-	4	0.39
	900	F14	1.38	1.61	2.15	0.91	6.89	5.51	0.71	-	-	4	0.39
4	1500	F14	1.38	1.61	2.15	0.91	6.89	5.51	0.71	-	-	4	0.39
	2500	F16	1.69	1.93	2.17	0.91	8.27	6.50	0.87	5.12	0.22	4	0.47
	150	F12	1.18	1.42	1.97	0.59	5.91	4.92	0.55	3.35	0.16	4	0.31
	300	F12	1.18	1.42	1.97	0.59	5.91	4.92	0.55	3.35	0.16	4	0.31
	600	F16	1.57	1.81	2.20	0.91	8.27	6.50	0.87	5.12	0.16	4	0.47
6	900	F16	1.57	1.81	2.20	0.91	8.27	6.50	0.87	5.12	0.16	4	0.47
	1500	F16	1.57	1.81	2.20	0.91	8.27	6.50	0.87	5.12	0.16	4	0.47
	2500	F25	2.09	2.40	2.95	0.98	11.81	10.00	0.71	7.87	0.24	8	0.63
	150	F12	1.42	1.65	2.17	0.59	5.91	4.92	0.55	3.35	0.16	4	0.39
	300	F12	1.42	1.65	2.17	0.59	5.91	4.92	0.55	3.35	0.16	4	0.39
8	600	F16	1.97	2.24	2.56	0.91	8.27	6.50	0.87	5.12	0.24	4	0.55
	900	F16	1.97	2.24	2.56	0.91	8.27	6.50	0.87	5.12	0.24	4	0.55
	1500	F16	1.97	2.24	2.56	0.91	8.27	6.50	0.87	5.12	0.24	4	0.55
	2500	F25	2.36	2.68	3.54	0.98	11.81	10.00	0.71	7.87	0.24	8	0.71
	1500	F16	2.95	3.31	4.33	0.98	11.81	10.00	0.71	7.87	0.24	8	0.79
10	150	F16	2.09	2.40	2.95	0.79	8.27	6.50	0.87	5.12	0.24	4	0.63
	300	F16	2.09	2.40	2.95	0.79	8.27	6.50	0.87	5.12	0.24	4	0.63
	600	F25	2.36	2.68	3.15	0.98	11.81	10.00	0.71	7.87	0.24	8	0.71
	900	F25	2.36	2.68	3.15	0.98	11.81	10.00	0.71	7.87	0.24	8	0.71
	1500	F25	2.95	3.31	4.33	0.98	11.81	10.00	0.71	7.87	0.24	8	0.79
12	150	F16	2.09	2.40	2.95	0.79	8.27	6.50	0.87	5.12	0.24	4	0.63
	300	F25	2.44	2.76	3.15	0.98	11.81	10.00	0.71	7.87	0.24	8	0.71
	600	F25	3.15	3.54	3.43	0.98	11.81	10.00	0.71	7.87	0.24	8	0.87
	900	F25	3.35	3.74	4.72	0.98	11.81	10.00	0.71	7.87	0.24	8	0.87
	1500	F25	2.44	2.76	3.43	0.98	11.81	10.00	0.71	7.87	0.24	8	0.71
14	300	F25	2.44	2.76	3.43	0.98	11.81	10.00	0.71	7.87	0.24	8	0.71
	600	F25	3.15	3.54	3.43	1.18	11.81	10.00	0.71	7.87	0.24	8	0.87
	900	F30	3.54	3.94	5.51	1.18	13.78	11.73	0.87	9.06	0.24	8	0.98
	1500	F16	2.44	2.76	3.43	0.98	11.81	10.00	0.71	7.87	0.24	8	0.71
	300	F25	2.83	3.19	3.43	0.98	11.81	10.00	0.71	7.87	0.24	8	0.79
16	600	F25	3.15	3.54	3.43	1.18	11.81	10.00	0.71	7.87	0.24	8	0.87
	900	F30	3.94	4.41	5.51	1.18	13.78	11.73	0.87	9.06	0.24	8	1.10
	1500	F25	2.83	3.19	3.43	1.18	11.81	10.00	0.71	7.87	0.24	8	0.79
	300	F25	3.35	3.74	4.25	1.18	11.81	10.00	0.71	7.87	0.24	8	0.87
	600	F30	3.94	4.41	4.25	1.38	13.78	11.73	0.87	9.06	0.24	8	1.10
18	900	F35	4.72	5.28	7.09	1.50	16.34	14.02	1.30	10.24	0.24	8	1.26
	1500	F25	2.83	3.19	3.43	1.18	11.81	10.00	0.71	7.87	0.24	8	0.79
	300	F25	3.35	3.74	4.25	1.18	11.81	10.00	0.71	7.87	0.24	8	0.87
	600	F30	3.94	4.41	4.25	1.38	13.78	11.73	0.87	9.06	0.24	8	1.10
	900	F35	4.53	5.08	7.09	1.50	16.34	14.02	1.30	10.24	0.24	8	1.26
20	1500	F30	3.35	3.74	4.25	1.18	11.81	10.00	0.71	7.87	0.24	8	0.87
	300	F30	3.94	4.41	4.25	1.38	13.78	11.73	0.87	9.06	0.24	8	1.10
	600	F35	4.53	5.08	7.09	1.50	16.34	14.02	1.30	10.24	0.24	8	1.26
	900	F35	4.72	5.28	7.09	1.50	16.34	14.02	1.30	10.24	0.24	8	1.26
	1500	F40	5.51	6.14	7.87	1.77	18.70	15.98	1.54	11.81	0.35	8	1.42

Topworks & Stem Data



Bore Sz. (in)	ASME Class	Size Dimension (mm)											
		ISO 5211	A	B	C	D	E	F	G	H	I	L	W
2	150	F10	20.0	25.0	30.0	12.0	125.0	102.0	12.0	70.0	4.0	101.6	6.0
	300	F10	20.0	25.0	30.0	12.0	125.0	102.0	12.0	70.0	4.0	101.6	6.0
	600	F12	27.0	33.0	40.5	18.0	150.0	125.0	14.0	-	-	101.6	8.0
	900	F12	27.0	33.0	40.5	18.0	150.0	125.0	14.0	-	-	101.6	8.0
	1500	F12	27.0	33.0	40.5	18.0	150.0	125.0	14.0	-	-	101.6	8.0
3	2500	F14	36.0	42.0	55.0	20.0	175.0	140.0	18.0	100.0	4.5	101.6	10.0
	150	F10	24.0	30.0	35.0	12.0	125.0	102.0	12.0	70.0	4.0	101.6	8.0
	300	F10	24.0	30.0	35.0	12.0	125.0	102.0	12.0	70.0	4.0	101.6	8.0
	600	F14	35.0	41.0	54.5	23.0	175.0	140.0	18.0	-	-	101.6	10.0
	900	F14	35.0	41.0	55.5	23.0	175.0	140.0	18.0	-	-	101.6	10.0
4	1500	F14	35.0	41.0	54.5	23.0	175.0	140.0	18.0	-	-	101.6	10.0
	2500	F16	43.0	49.0	55.0	23.0	210.0	165.0	22.0	130.0	5.5	101.6	12.0
	150	F12	30.0	36.0	50.0	15.0	150.0	125.0	14.0	85.0	4.0	101.6	8.0
	300	F12	30.0	36.0	50.0	15.0	150.0	125.0	14.0	85.0	4.0	101.6	8.0
	600	F16	40.0	46.0	56.0	23.0	210.0	165.0	22.0	130.0	4.0	101.6	12.0
6	900	F16	40.0	46.0	56.0	23.0	210.0	165.0	22.0	130.0	4.0	101.6	12.0
	1500	F16	40.0	46.0	56.0	23.0	210.0	165.0	22.0	130.0	4.0	101.6	12.0
	2500	F25	53.0	61.0	75.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	16.0
	150	F12	36.0	42.0	55.0	15.0	150.0	125.0	14.0	85.0	4.0	101.6	10.0
	300	F12	36.0	42.0	55.0	15.0	150.0	125.0	14.0	85.0	4.0	101.6	10.0
8	600	F16	50.0	57.0	65.0	23.0	210.0	165.0	22.0	130.0	6.0	101.6	14.0
	900	F16	50.0	57.0	75.0	23.0	210.0	165.0	22.0	130.0	6.0	101.6	14.0
	1500	F25	63.0	71.0	90.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	18.0
	2500	F25	72.0	81.0	110.0	30.0	300.0	254.0	18.0	200.0	6.0	203.2	20.0
	150	F16	46.0	53.0	65.0	23.0	210.0	165.0	22.0	130.0	6.0	101.6	14.0
10	300	F16	46.0	53.0	65.0	23.0	210.0	165.0	22.0	130.0	6.0	101.6	14.0
	600	F16	50.0	57.0	65.0	23.0	210.0	165.0	22.0	130.0	6.0	101.6	14.0
	900	F25	60.0	68.0	90.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	18.0
	1500	F16	75.0	84.0	110.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	20.0
	150	F16	53.0	61.0	75.0	20.0	210.0	165.0	22.0	130.0	6.0	101.6	16.0
12	300	F16	53.0	61.0	75.0	20.0	210.0	165.0	22.0	130.0	6.0	101.6	16.0
	600	F25	60.0	68.0	80.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	18.0
	900	F25	75.0	84.0	110.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	20.0
	150	F16	53.0	61.0	75.0	20.0	210.0	165.0	22.0	130.0	6.0	101.6	16.0
	300	F25	62.0	70.0	80.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	18.0
14	600	F25	80.0	90.0	87.0	30.0	300.0	254.0	18.0	200.0	6.0	203.2	22.0
	900	F30	90.0	100.0	140.0	30.0	350.0	298.0	22.0	230.0	6.0	203.2	25.0
	150	F16	62.0	70.0	87.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	18.0
	300	F25	72.0	81.0	87.0	25.0	300.0	254.0	18.0	200.0	6.0	203.2	20.0
	600	F25	80.0	90.0	87.0	30.0	300.0	254.0	18.0	200.0	6.0	203.2	22.0
16	900	F30	100.0	112.0	140.0	30.0	350.0	298.0	22.0	230.0	6.0	203.2	28.0
	150	F25	72.0	81.0	87.0	30.0	300.0	254.0	18.0	200.0	6.0	203.2	20.0
	300	F25	85.0	95.0	108.0	30.0	300.0	254.0	18.0	200.0	6.0	203.2	22.0
	600	F30	100.0	112.0	108.0	35.0	350.0	298.0	22.0	230.1	6.0	203.2	28.0
	900	F35	120.0	134.0	180.0	38.0	415.0	356.0	33.0	260.0	6.0	203.2	32.0
20	150	F25	72.0	81.0	87.0	30.0	300.0	254.0	18.0	200.0	6.0	203.2	20.0
	300	F25	85.0	95.0	108.0	30.0	300.0	254.0	18.0	200.0	6.0	203.2	22.0
	600	F30	100.0	112.0	108.0	35.0	350.0	298.0	22.0	230.1	6.0	203.2	28.0
	900	F35	115.0	129.0	180.0	38.0	415.0	356.0	33.0	260.0	6.0	203.2	32.0
	150	F30	85.0	95.0	108.0	30.0	350.0	298.0	22.0	230.1	6.0	203.2	22.0
24	300	F30	100.0	112.0	108.0	35.0	350.0	298.0	22.0	230.1	6.0	203.2	28.0
	600	F35	120.0	134.0	133.0	40.0	415.0	356.0	33.0	260.0	6.0	203.2	32.0
	900	F40	140.0	156.0	200.0	45.0	475.0	406.0	39.0	300.0	9.0	203.2	36.0



Butler Kodiak Series Stem Torque Data

Base Sz. (in)	ASME Class	STEM TORQUE DATA			
		Break Torque (in.lbs)	MAST (in.lbs.)	Break Torque (Nm)	MAST (Nm)
2	150	399.00	1906.00	45.08	215.35
	300	531.00	1906.00	60.00	215.35
	600	162.00	5204.00	18.30	587.97
	900	1770.00	5204.00	199.98	587.97
	1500	2213.00	5204.00	250.04	587.97
	2500	*	*	*	*
3	150	708.00	3398.00	79.99	383.92
	300	930.00	3398.00	105.08	383.92
	600	2124.00	11551.00	239.98	1305.09
	900	3779.00	11551.00	426.97	1305.09
	1500	4425.00	10433.00	499.96	1178.77
	2500	*	*	*	*
4	150	1328.00	7510.00	150.04	848.52
	300	1947.00	7510.00	219.98	848.52
	600	4071.00	18400.00	459.96	2078.92
	900	6638.00	18400.00	749.99	2078.92
	1500	8850.00	18400.00	999.92	2078.92
	2500	*	*	*	*
6	150	3540.00	12743.00	399.97	1439.77
	300	5133.00	12743.00	579.95	1439.77
	600	7965.00	37809.00	899.93	4271.85
	900	14160.00	37809.00	1599.87	4271.85
	1500	*	*	*	*
	2500	*	*	*	*
8	150	7080.00	28511.00	799.93	3221.32
	300	9735.00	28511.00	1099.91	3221.32
	600	14868.00	37809.00	1679.86	4271.85
	900	24780.00	63897.00	2799.77	7219.40
	1500	*	*	*	*
	2500	*	*	*	*
10	150	9735.00	44552.00	1099.91	5033.71
	300	15930.00	44552.00	1799.85	5033.71
	600	28054.00	60362.00	3169.68	6820.00
	900	*	*	*	*
12	150	15045.00	44603.00	1699.86	5039.47
	300	23010.00	70407.00	2599.78	7954.93
	600	35400.00	153464.00	3999.67	17339.13
	900	*	*	*	*
14	150	*	*	*	*
	300	*	*	*	*
	600	*	*	*	*
	900	*	*	*	*
16	150	24338.00	70407.00	2749.83	7954.93
	300	34073.00	115194.00	3849.74	13015.19
	600	55755.00	153464.00	6299.48	17339.13
	900	*	*	*	*

Notes:

[1] Torques at maximum differential pressure are tabulated.

[2] Torques expressions are suggested for other differential pressure.

[3] Differential pressure "P" in torque expressions is in PSI (MPa).

Consult Butler for sizes larger than 16"

Pressure ratings are according to API 6D / ASME 16.34: Cl. 150 P = 285 (1.96)

Cl. 300 P = 740 (5.11) Cl. 600 P = 1480 (10.21)

Cl. 900 P = 2220 (15.32) Cl. 1500 P = 3705 (25.53)

Butler Kodiak Series Engineering Data



Cv VALUE OF FULL PORT BALL VALVE							
Size		CL 150	CL 300	CL 600	CL 900	CL 1500	CL 2500
IN	DN						
2"	50	420	420	370	450	450	250
3 x 2	80 x 50	200	200	200	190	180	-
3"	80	1200	1050	1020	1100	500	500
4 x 3	100 x 80	600	600	600	590	550	-
4"	100	2200	2100	1850	2200	2200	1100
6 x 4	150 x 100	800	800	790	790	780	-
6"	150	5150	5100	4400	4380	3800	2500
8 x 6	200 x 150	2150	2150	2150	2150	2150	-
8"	200	9500	9400	8450	8500	7400	-
10 x 8	250 x 200	4300	4300	4300	4450	4450	-
10"	250	15000	15000	14250	14500	11500	-
12 x 10	300 x 250	7550	7550	7550	8000	9000	-
12"	300	23000	23000	22500	21100	18000	-
14 x 10	350 x 250	6000	6000	6000	6100	6100	-
14"	350	28000	28000	28000	25000	21000	-
16 x 12	400 x 300	9100	9100	9100	8900	8900	-
16"	400	37200	37200	38150	34500	27500	-
18 x 14	450 x 350	12100	12100	12100	11800	11800	-
18"	450	49000	49000	49000	45000	37000	-
20 x 16	500 x 400	15300	15300	15300	13800	12000	-
20"	500	59000	59000	68500	55200	48000	-
24 x 20	600 x 500	28200	28200	28200	25100	20600	-
24"	600	92000	92000	98860	83800	70000	-

Note: Consult Butler for sizes not shown.

METHOD OF CALCULATING FLOW

The Flow Coefficient "Cv" of a valve is the flow rate of water (gallons/minute) through a fully opened valve, with a pressure drop of 1 psi across the valve. To find the flow of liquid through valve from the Cv, use the following formulas:

Liquid Flow

QL = Flow rate of liquid (gal./min.)

ΔP = Differential pressure across the valve (psi)

G = Specific gravity of liquid (for water, G=1)

$$Q_L = C_v \sqrt{\frac{\Delta P}{G}}$$

Gas Flow

Qg = Flow rate of gas (CFH at STP)

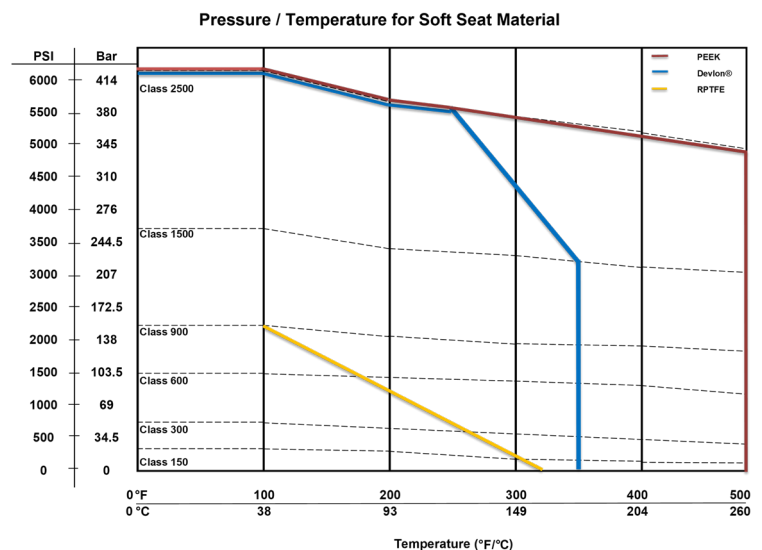
$$Q_g = 61C_v \sqrt{\frac{P_2 \Delta P}{G}}$$

For non-critical flow

$$\left\{ \frac{\Delta P}{P_2} < 1.0 \right\}$$

MATERIAL TEMPERATURE LIMITS						
MATERIAL		SPECIFICATION	FAHRENHEIT [°F]		CELSIUS [°C]	
			MIN.	MAX.	MIN.	MAX.
BODY	Carbon Steel	ASTM A105N	-20	800	-29	427
	Low Temp Carbon Steel	ASTM A350 LF2, Cl 1	-50	800	-46	427
	Stainless Steel	ASTM A182 F316	-425	850	-254	454
SPE SEAT	RPTFE	RPTFE	-50	320	-100	160
	Devlon®	Devlon®	-50	320	-46	160
	PEEK	PEEK	-148	500	-100	260
	Metal (TCC Coated)	Metal	-50	650	-46	343
DPE SEAT	HNBR LT AED	HNBR LT AED	-67	320	-55	160
	VITON® GLT AED	VITON® GLT AED	-50	410	-46	210
	ATLAS® AED	ATLAS® AED	23	482	-5	250
SEAL	LT HNBR 90	LT HNBR 90	-50	302	-46	150
	Viton® GLT 90	Viton® GLT 90	-50	392	-46	200
	AFLAS® 90	AFLAS® 90	5	392	-15	200

Note: Consult Butler for materials based on application.





A Varigate Valve & Fitting Brand

Butler, a Varigate Valve & Fitting brand, is built on Canadian strength, Canadian ingenuity, and Canadian resolve. From our headquarters in Calgary, Alberta, we power the flow control systems that keep North America's most demanding industries moving. We don't just participate in this landscape — **we help define it.**

We bring together a portfolio of valve and flow line solutions shaped by decades of real world experience. Our mission is simple: **deliver performance without hesitation.** Whether it's long range project planning or a critical same day requirement, Butler shows up with speed, clarity, and solutions that work.

Our product lineup reflects the full force of our capability — from essential components like hammer unions and butterfly valves to advanced, engineered technologies such as API 6D trunnion mounted ball valves. Every product carries the same message: **reliability isn't optional — it's who we are.**

Quality is our signature. We operate under internationally recognized certifications and management systems that guide every decision, every build, and every shipment. With in house engineering and product management working in tight formation, we ensure that every Butler product delivers the durability, consistency, and confidence our customers expect.

And at the heart of it all is our identity:

Canadian Owned. Canadian Operated. Proudly Canadian.

This isn't just a tagline — **it's our promise.** It's the standard we hold ourselves to and the commitment we bring to every customer, every project, every day.

Butler isn't just a brand. **Butler is a benchmark.**

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