



Cub Series Flanged Floating Ball Valves



Canadian Owned, Canadian Operated, Proudly Canadian



Butler Cub Series 2-Piece Flanged Floating Ball Valve

When performance matters most, industry leaders turn to Butler. Our Cub Series flanged floating ball valves bring together rugged cast-steel construction, precision engineering, and proven certification to deliver unmatched reliability in the toughest operating environments.

Built to exceed expectations, the Cub Series combines heavy-duty durability with low-maintenance operation, giving operators the confidence to run longer, safer, and more efficiently. Every valve is backed by globally recognized standards — including API 6D, API 607 fire-test, and ASME B16.34 — ensuring consistent performance and peace of mind in critical service applications.

With its robust design, comprehensive testing, and Butler’s commitment to quality, the Cub Series delivers strength you can trust, performance you can count on, and long-term value that sets a new benchmark in flow control.

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

- ✓ Sizes Range: 2" – 8"
- ✓ Pressure Rating: ASME Class 150, 300, 600
- ✓ Reduced & Full Port
- ✓ 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 the ball, stem and body
- ✓ Complete material traceability
- ✓ CSA Z245.15-22
- ✓ ISO 5211 mounting top work
- ✓ NACE MR0175/ISO 15156-1
- ✓ Pressure relief groove/slot in seats
- ✓ Lockable handle (lock not included)



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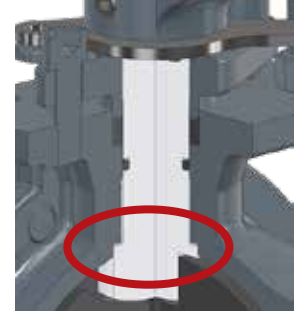
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Butler Cub Series Design Features



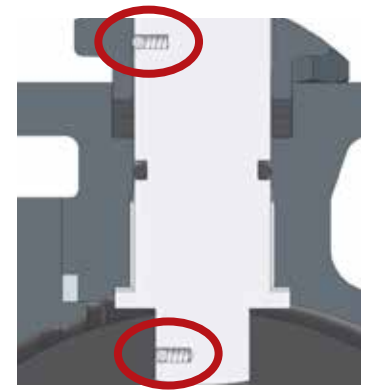
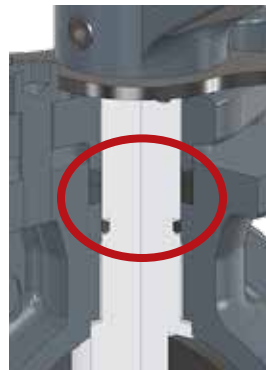
1 | Fire Safe Seat Design

Fire-safe seat design ensures reliable sealing in both normal and fire-exposed conditions. Soft seats provide primary sealing, while a secondary metal-to-metal seal maintains shutoff if soft materials are compromised. Designed in accordance with API 607 fire testing standards.



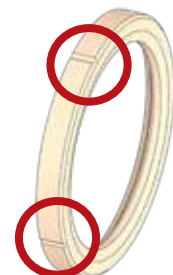
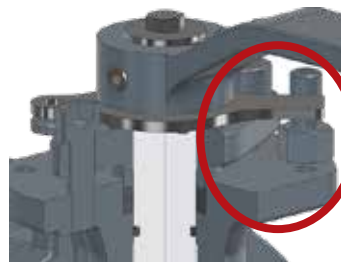
2 | Anti Blow-Out Stem

The anti blow-out stem design features a bottom-entry stem retained by an internal shoulder, preventing stem ejection under pressure. This safety feature ensures the stem remains securely in place even if external components are loosened or removed.



3 | Stem Sealing

Adjustable stem packing with integrated o-ring delivers reliable low-emission sealing. Designed for ISO 15848-1 compliance, the dual-seal system reduces fugitive emissions and maintains performance under cycling conditions. The adjustable gland allows easy in-service tightening for extended service life.



4 | Antistatic Stem Design

The stem incorporates a precision ball-and-spring mechanism that provides a controlled conductive path for dissipating electrostatic charge. This design helps prevent charge accumulation by enabling consistent contact and discharge, reducing the risk of electrostatic discharge in sensitive applications.

5 | Stop Bolt at Gland Flange

A stop bolt is provided at the gland flange to prevent contact and over-travel of gland bolts during valve operation. This feature protects against loosening caused by repeated open/close cycles and helps maintain proper packing compression.

6 | Seat Relief Hole

The seats are equipped with a relief hole to prevent cavity overpressure by allowing trapped fluid to equalize with the upstream side. This feature protects the valve seats and body from pressure buildup caused by thermal expansion.

Butler Cub Series

Part Number Codes

HOW TO ORDER - FLANGED FLOATING 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	S	H	T	2	F	L

Sample

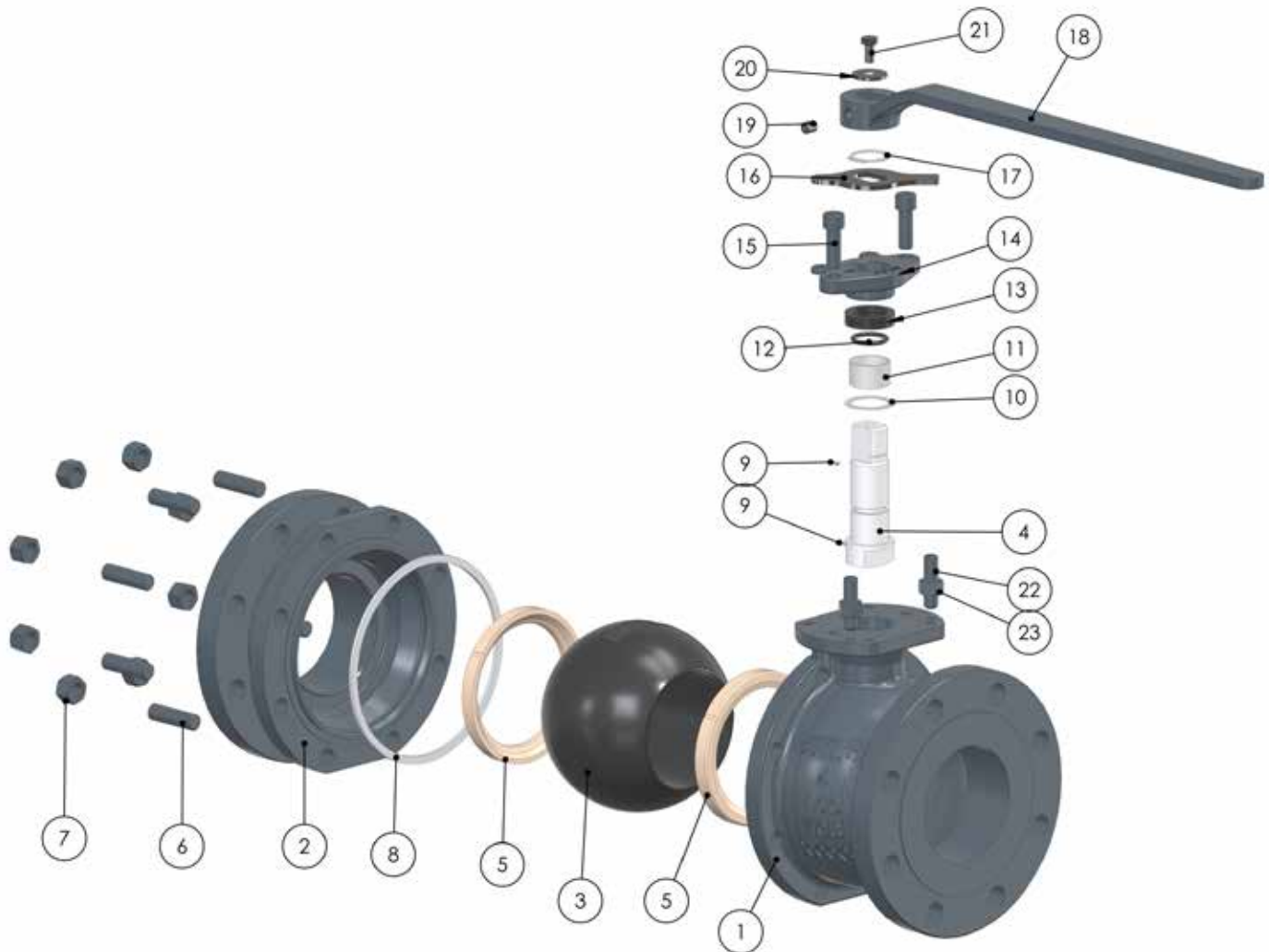
A - SIZE INCHES		B - CLASS PRESSURE		C - FACE		D - PORT		E - BODY		F - TRIM (BALL & STEM)	
2	2	1	150	R	RF	R	REDUCED	S	A216 WCB	S	316SS
3	3	3	300	FF	FF	F	FULL	L	A352 LCC	X	ALTERNATE
4	4	6	600					SS	A351 CF8M		
6	6	9	900								
8	8										

G - SEALS		H - SEATS		I - PCS		J - TYPE		K - OPERATOR	
H	HNBR	R	RPTFE	1	UNIBODY	F	FLOATING	L	LEVER
V	VITON	T	TFM1600	2	2PC			G	GEAR
A	AFLAS	D	DEVLON					B	BARE STEM
F	FFKM	P	PEEK					ACT	ACTUATED
X	ALTERNATE	M	METAL						

Consult Butler for sizes not shown.

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

Butler Cub Series Component Parts 2", 3", 4" Class 150, 300, 600

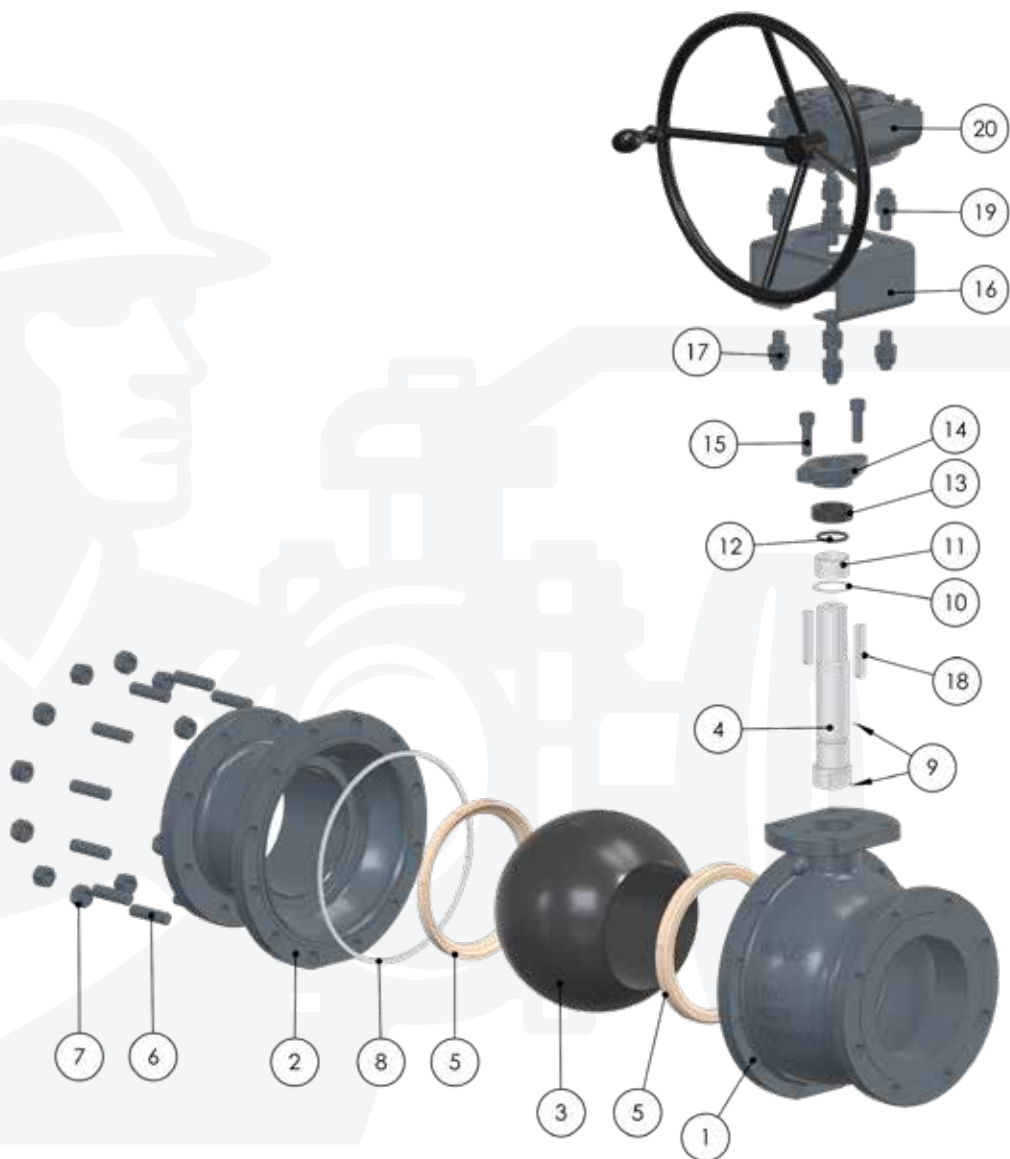


PART NO.	DESCRIPTION
1	Body
2	Cap
3	Ball
4	Stem
5	Seat
6	Body Stud
7	Body Bolt
8	Body Gasket

PART NO.	DESCRIPTION
9	Antistatic Ball & Spring
10	Thrust Washer
11	Stem Bearing
12	Stem O-Ring
13	Packing
14	Packing Gland
15	Packing Bolt
16	Stop Plate

PART NO.	DESCRIPTION
17	Snap Ring
18	Lever
19	Lever Screw
20	Washer
21	Bolt
22	Stop Bolt
23	Stop Nut

Butler Cub Series Component Parts 6" & 8" Class 150, 300, 600

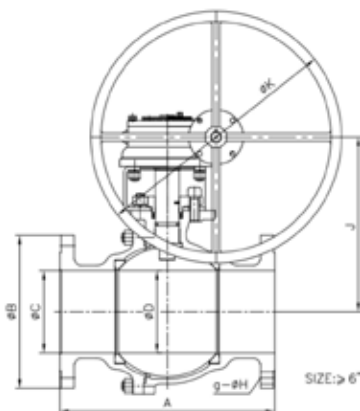
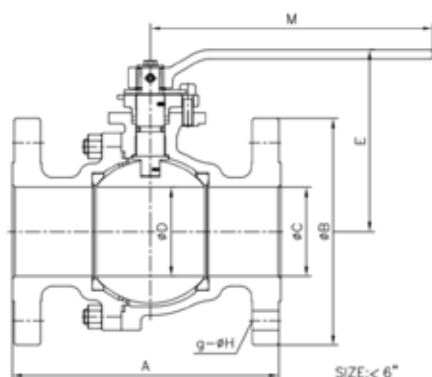


PART NO.	DESCRIPTION
1	Body
2	Cap
3	Ball
4	Stem
5	Seat
6	Body Stud
7	Body Bolt

PART NO.	DESCRIPTION
8	Body Gasket
9	Antistatic Ball & Spring
10	Thrust Washer
11	Stem Bearing
12	Stem O-Ring
13	Packing
14	Packing Gland

PART NO.	DESCRIPTION
15	Packing Bolt
16	Mounting Bracket
17	Mounting Ball & Nut
18	Stem Keys
19	Stud & Bolt, Gear
20	Gear Box

Butler Cub Series Dimensional Data Class 150, 300, 600



CLASS 150 - DIMENSIONS

Valve Size		A = RF		B		Øc		ØD		E		gxØH		J		ØK		M		Approx. WEIGHT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2x1.5	50x40	7.00	178	6.00	152	1.93	49	1.50	38	5.00	127	4 x 3/4	4 x 19.1	-	-	-	-	9.84	250	19.8	9.0
2	50	7.00	178	6.00	152	1.93	49	1.93	49	5.57	141.5	4 x 3/4	4 x 19.1	-	-	-	-	9.84	250	24.3	11.0
3 x 2	80 x 50	8.00	203	7.50	191	2.99	76	1.93	49	5.57	141.5	4 x 3/4	4 x 19.1	-	-	-	-	9.84	250	31.3	14.2
3	80	8.00	203	7.50	190	2.99	76	2.99	76	6.93	176	4 x 3/4	4 x 19.1	-	-	-	-	13.78	350	48.5	22.0
4 x 3	100 x 80	9.00	229	9.00	229	3.94	100	2.99	76	6.93	176	8 x 3/4	8 x 19.1	-	-	-	-	13.78	350	59.5	27.0
4	100	9.00	229	9.00	229	3.94	100	3.94	100	8.05	204.5	8 x 3/4	8 x 19.1	-	-	-	-	18.11	460	81.6	37.0
6 x 4	150 x 100	15.50	394	11.00	279	5.91	150	3.94	100	8.05	204.5	8 x 7/8	8 x 22.2	-	-	-	-	18.11	460	103.6	47.0
6	150	15.50	394	11.00	279	5.91	150	5.91	150	-	-	8 x 7/8	8 x 22.2	12.32	313	14.17	360	-	-	220.5	100.0
8	200	18.00	457	13.50	343	7.91	201	7.91	201	-	-	8 x 7/8	8 x 22.2	15.47	393	18.11	460	-	-	383.7	174.0

CLASS 300 - DIMENSIONS

Valve Size		A = RF		B		Øc		ØD		E		gxØH		J		ØK		M		Approx. WEIGHT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2x1.5	50x40	8.50	216	6.50	165	1.93	49	1.50	38	5.00	127	8 x 3/4	8 x 19.1	-	-	-	-	9.84	250	26.5	12.0
2	50	8.50	216	6.50	165	1.93	49	1.93	49	5.57	141.5	8 x 3/4	8 x 19.1	-	-	-	-	9.84	250	30.9	14.0
3 x 2	80 x 50	11.13	283	8.25	210	2.99	76	1.93	49	5.57	141.5	8 x 7/8	8 x 22.2	-	-	-	-	9.84	250	81.4	36.9
3	80	11.13	283	8.25	210	2.99	76	2.99	76	6.93	176	8 x 7/8	8 x 22.2	-	-	-	-	13.78	350	68.4	31.0
4 x 3	100 x 80	12.00	305	10.00	254	3.94	100	2.99	76	6.93	176	8 x 7/8	8 x 22.2	-	-	-	-	13.78	350	88.2	40.0
4	100	12.00	305	10.00	254	3.94	100	3.94	100	8.05	204.5	8 x 7/8	8 x 22.2	-	-	-	-	23.82	605	110.3	50.0
6 x 4	150 x 100	15.88	403	12.50	318	5.91	150	3.94	100	8.05	204.5	12 x 7/8	12 x 22.2	-	-	-	-	23.82	605	154.4	70.0
6	150	15.88	403	12.50	318	5.91	150	5.91	150	-	-	12 x 7/8	12 x 22.2	12.56	319	18.11	460	-	-	280.0	127.0
8	200	19.75	502	15.00	381	7.91	201	7.91	201	-	-	12 x 1	12 x 25.4	15.71	399	23.62	600	-	-	520.4	236.0

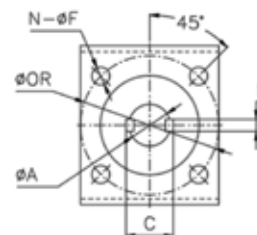
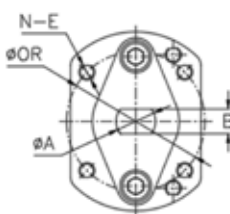
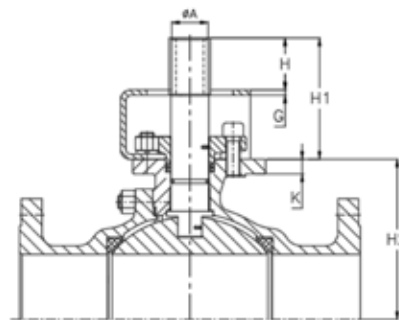
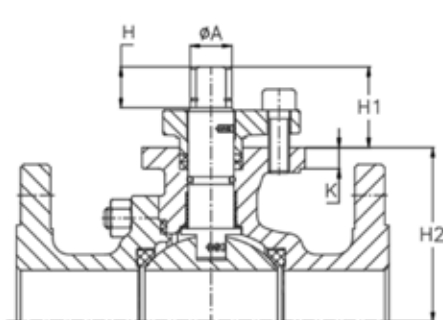
CLASS 600 - DIMENSIONS

Valve Size		A = RF		B		Øc		ØD		E		gxØH		J		ØK		M		Approx. WEIGHT	
IN	DN	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
2x1.5	50x40	11.50	292	6.50	165	1.93	49	1.50	38	5.00	127	8 x 3/4	8 x 19.1	-	-	-	-	9.84	250	35.3	16.0
2	50	11.50	292	6.50	165	1.93	49	1.93	49	6.04	153.5	8 x 3/4	8 x 19.1	-	-	-	-	13.78	350	45.2	20.5
3 x 2	80 x 50	14.00	356	8.25	210	2.99	76	1.93	49	6.04	153.5	8 x 7/8	8 x 22.2	-	-	-	-	13.78	350	65.0	29.5
3	80	14.00	356	8.25	210	2.99	76	2.99	76	7.46	189.5	8 x 7/8	8 x 22.2	-	-	-	-	23.82	605	88.2	40.0
4 x 3	100 x 80	17.00	432	10.75	273	3.94	100	2.99	76	7.46	189.5	8 x 1	8 x 25.4	-	-	-	-	23.82	605	130.1	59.0
4	100	17.00	432	10.75	273	3.94	100	3.94	100	9.86	250.5	8 x 1	8 x 25.4	-	-	-	-	41.34	1050	187.4	85.0

Topworks, Stem & Torque Data

Legend

ØA = Stem Diameter
 B = Stem Flattening Dimension
 C = Stem Diameter Over Keys
 D = Key Width
 N = Number of Bolts
 E = Flange Threaded Hole
 ØF = Yoke Hole Diameter
 G = Min. Yoke Thickness
 K = Top Flange Thickness
 OR = Bolt Circle Diameter
 H = Driving Height



≤4" & 6R 150~600lb

6" & 8" 150~600lb

Bore Size	ANSI Class	ISO5211 F#	BREAK TORQUE (in.lbf)	MAST TORQUE (17-4PH)	Dimension (in.) Full Bore												
					ØA	B	C	D	E (Metric)	ØF	G	K	N	OR	H	H1	H2
2	150	F07	443	2843	0.787	0.551	/	/	M8*1.25	/	/	0.394	4	2.756	0.768	1.516	3.268
	300	F07	620	2843	0.787	0.551	/	/	M8*1.25	/	/	0.394	4	2.756	0.768	1.516	3.268
	600	F10	1107	4537	0.945	0.630	/	/	M10*1.5	/	/	0.492	4	4.016	0.945	1.713	3.543
3	150	F10	797	4537	0.945	0.630	/	/	M10*1.5	/	/	0.492	4	4.016	1.024	1.850	4.370
	300	F10	1062	4537	0.945	0.630	/	/	M10*1.5	/	/	0.492	4	4.016	1.024	1.850	4.370
	600	F10	1921	8862	1.181	0.787	/	/	M10*1.5	/	/	0.492	4	4.016	1.142	1.988	4.685
4	150	F10	1461	8862	1.181	0.787	/	/	M10*1.5	/	/	0.492	4	4.016	1.142	1.988	5.276
	300	F10	1921	8862	1.181	0.787	/	/	M10*1.5	/	/	0.492	4	4.016	1.142	1.988	5.276
	600	F14	6328	30475	1.654	1.102	/	/	M16*2	/	/	0.669	4	5.512	1.535	2.618	5.945
6	150	F14	6195	30475	1.654	/	1.890	0.472	/	0.709	0.236	0.669	4	5.512	2.362	5.512	7.283
	300	F14	9736	30475	1.654	/	1.890	0.472	/	0.709	0.236	0.669	4	5.512	2.362	5.512	7.283
8	150	F16	9736	39986	1.811	/	2.087	0.551	/	0.866	0.315	0.866	4	6.496	3.150	7.087	9.409
	300	F16	16817	39986	1.811	/	2.087	0.551	/	0.866	0.315	0.866	4	6.496	3.150	7.087	9.409

Bore Size	ANSI Class	ISO5211 F#	BREAK TORQUE (in.lbf)	MAST TORQUE (17-4PH)	Dimension (in.) Reduced Bore												
					ØA	B	C	D	E (Metric)	ØF	G	K	N	OR	H	H1	H2
2 x 1.5	150	F07	354	2843	0.787	0.551	/	/	M8*1.25	/	/	0.394	4	2.756	0.709	1.437	2.717
	300	F07	487	2843	0.787	0.551	/	/	M8*1.25	/	/	0.394	4	2.756	0.709	1.437	2.717
	600	F07	788	2843	0.787	0.551	/	/	M8*1.25	/	/	0.394	4	2.756	0.709	1.437	2.717
3 x 2	150	F07	443	2843	0.787	0.551	/	/	M8*1.25	/	/	0.394	4	2.756	0.768	1.516	3.268
	300	F07	620	2843	0.787	0.551	/	/	M8*1.25	/	/	0.394	4	2.756	0.768	1.516	3.268
	600	F10	1107	4537	0.945	0.630	/	/	M10*1.5	/	/	0.492	4	4.016	0.945	1.713	3.543
4 x 3	150	F10	797	4537	0.945	0.630	/	/	M10*1.5	/	/	0.492	4	4.016	1.024	1.850	4.370
	300	F10	1062	4537	0.945	0.630	/	/	M10*1.5	/	/	0.492	4	4.016	1.024	1.850	4.370
	600	F10	1921	8862	1.181	0.787	/	/	M10*1.5	/	/	0.492	4	4.016	1.142	1.988	4.685
6 x 4	150	F10	1461	8862	1.181	0.787	/	/	M10*1.5	/	/	0.492	4	4.016	1.142	1.988	5.276
	300	F10	1921	8862	1.181	0.787	/	/	M10*1.5	/	/	0.492	4	4.016	1.142	1.988	5.276

Butler Cub Series Engineering Data



Cv VALUE OF FULL PORT BALL VALVE				
Size IN	DN	CL 150	CL 300	CL 600
2"	50	420	420	400
3"	80	1200	1050	1020
4"	100	2200	2100	1850
6"	150	5150	5100	—
8"	200	9500	9400	—

Cv VALUE OF REDUCED PORT BALL VALVE				
Size (in)	DN	CL 150	CL 300	CL 600
2 x 1.5	50 x 38	218	218	215
3 x 2	80 x 50	200	200	200
4 x 3	100 x 80	600	600	600
6 x 4	150 x 100	800	800	—

MATERIAL TEMPERATURE LIMITS						
MATERIAL		SPECIFICATION	FAHRENHEIT (°F)		CELSIUS (°C)	
			MIN.	MAX.	MIN.	MAX.
BODY	Carbon Steel	ASTM A216 WCB	-20	800	-29	427
	Low Temp Carbon Steel	ASTM A352 LCC	-50	800	-46	427
	Stainless Steel	ASTM A351 CF8M	-425	850	-254	454
SEAT	TEFLON	TFM 1600	-50	320	-100	160
	DEVLON®	DEVLON®	-50	320	-46	160
	PEEK	PEEK	-148	500	-100	260
STEM SEAL	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
	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.

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

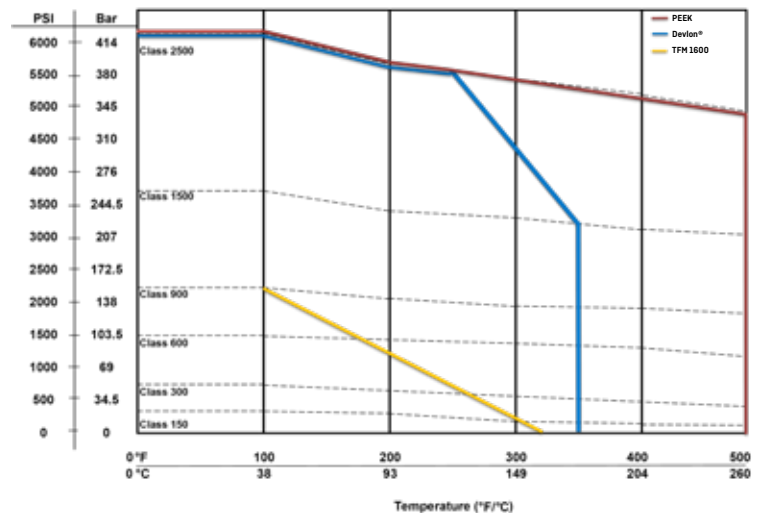
Qg = Flow rate of gas (CFH at STP)

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

For non-critical flow

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

Pressure / Temperature for Soft Seat Material









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.**

Headquarters - Canada

2000, 520 5th Avenue SW, Calgary, AB, T2P 3R7

587.353.5884 or 877.227.5884

www.varigatevalve.com