
BRAY/McCANNALOK
NAVY



 **Bray**[®]

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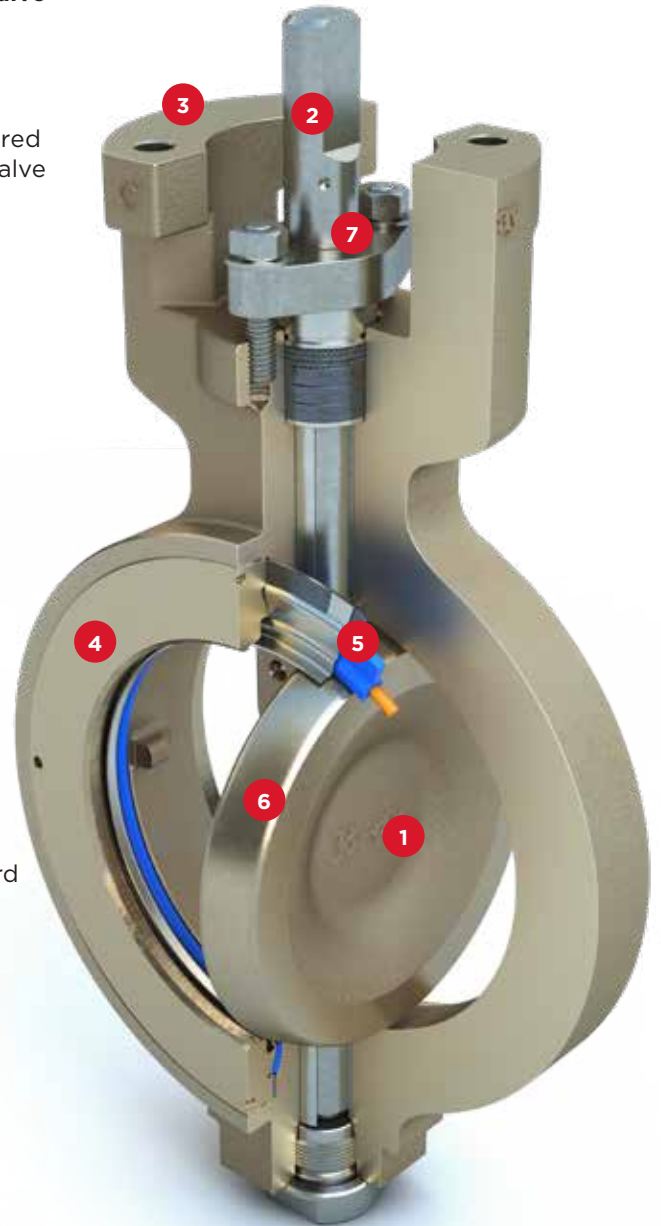
THE HIGH PERFORMANCE COMPANY

BRAY/MCCANNALOK NAVY

The Bray/McCannalok Navy High Performance Butterfly Valve is precision engineered to comply with MIL-V-24624

Based on Bray's award winning double offset design, the Bray/McCannalok Navy valve incorporates over 40 years of proven industry performance into a new, highly versatile valve. Engineered for bidirectional zero leakage, this high performance butterfly valve is certified to the highest military standards.

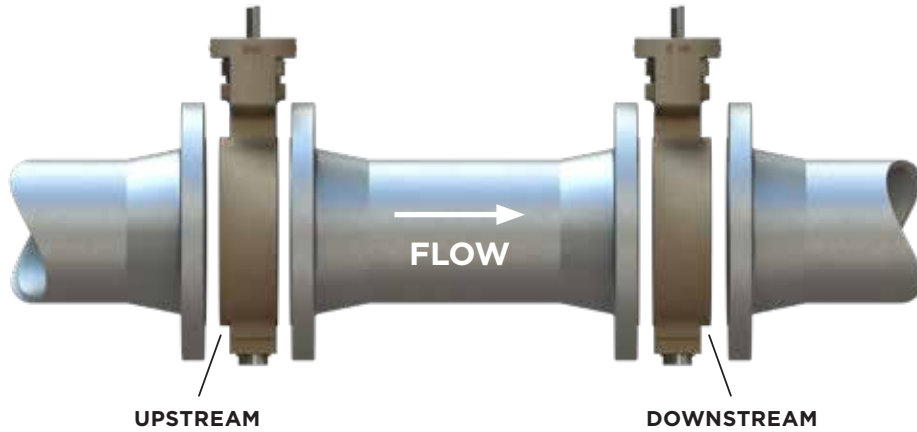
- 1 → **DOUBLE OFFSET DESIGN** | Produces a cam-like action that reduces seat wear and eliminates seat deformation when the disc is in the open position.
- 2 → **STEM** | The high strength stem utilizes Double "D" or keyed connections to eliminate hysteresis.
- 3 → **INTEGRAL ACTUATION MOUNTING** | Eliminates the need for additional mounting kits and minimizes the effects of shock and vibration.
- 4 → **RECESSED SEAT RETAINER** | Seat retainer is totally encapsulated inside the body which eliminates any external leak paths for line media.
- 5 → **RESILIENT SEAT** | Fully encapsulated energized seat provides bidirectional zero leakage sealing.
- 6 → **CONTOURED DISC** | Engineered to maximize flow and minimize torque for optimal Cv values.
- 7 → **OPEN/CLOSE INDICATION** | Machined dimple on the stem easily identifies valve disc position by rotating toward the cast "O" (open) and "C" (closed) letters on the body.



SPECIFICATIONS & STANDARDS

Size Range	2"-14"
Body Style	Style A (Wafer), Style B (Lug)
Temperature Range	-20°F to 500°F
Pressure Rating	ASME Class 150
Face-to-Face	MIL-V-24624
Qualification	MIL-V-24624
Design Standards	MIL-V-24624, ASME B16.34

SEAT RETAINER ORIENTATION



TORQUE VALUES (lb-in) | ASME CLASS 150

Valve Size (NPS)	Valve Differential Pressure (psig)								MAST* (lb-in)	
	Less than 150		150 to 200		200 to 250		250 to 285		Material Type I	Material Type III
	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream		
2	590	630	600	670	620	700	630	730	1,347	1,283
2.5	680	720	690	770	700	810	710	840	1,968	1,874
3	750	800	760	830	770	870	780	900	1,968	1,874
4	850	900	880	980	890	1,050	910	1,100	1,968	1,874
5	1,420	1,500	1,470	1,630	1,500	1,750	1,600	1,850	3,368	3,207
6	1,660	1,750	1,690	1,880	1,800	2,000	1,900	2,100	3,368	3,207
8	2,600	2,800	2,690	2,950	2,750	3,100	2,860	3,200	5,544	5,310
10	3,900	4,200	4,100	4,530	4,250	4,860	4,400	5,100	10,251	13,766
12	6,500	6,900	6,600	7,350	6,700	7,790	6,900	8,100	14,454	13,766
14	12,300	13,000	12,600	14,000	13,200	15,500	13,600	17,000	27,818	26,493

All values subject to change without notice.

* MAST = Maximum Allowable Stem Torque

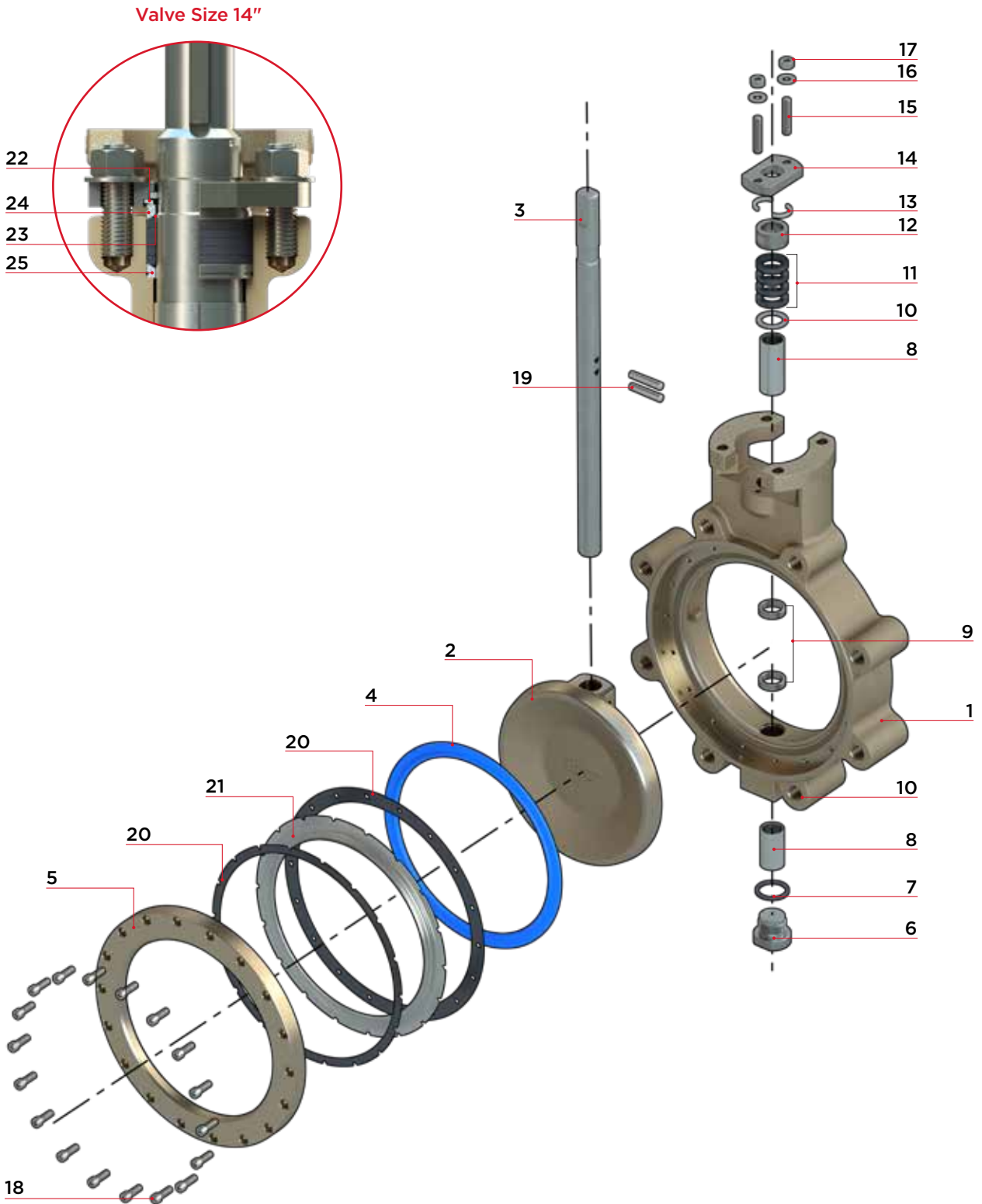
The values specified are based on the initial breakaway torque.

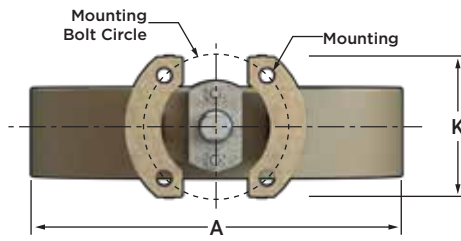
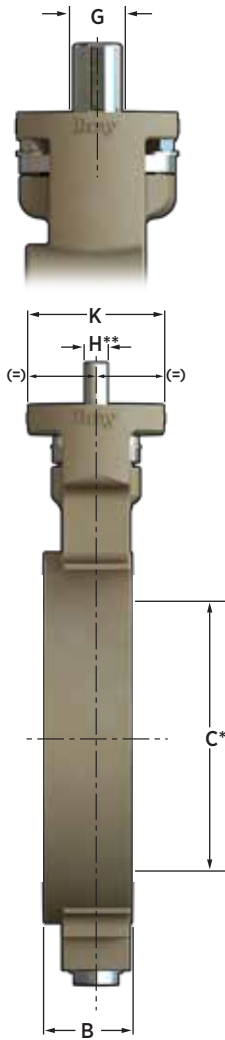
For dynamic torque calculation please refer to the technical manual or contact your local Bray office.

Regarding the selection of actuators, please consult your local office.

Item	Description	Material Type I	Material Type III
1	Body	316 Stainless Steel	Nickel Aluminum Bronze
2	Disc	316 Stainless Steel/ENP	Monel® M30C/ENP
3	Stem	17-4 PH	Monel® K500
4	Seat Assembly	RPTFE/Silicone	RPTFE/Silicone
5	Seat Retainer	316 Stainless Steel	Nickel Aluminum Bronze
6	Locating Plug	316 Stainless Steel	Monel®
7	Locating Plug Gasket	Graphite	Graphite
8	Bearings	316 Stainless Steel/TFE	Monel®/TFE
9	Disc Spacers	316 Stainless Steel	Monel®
10	Thrust Washer	316 Stainless Steel	Monel®
11	Stem Seal Set	Graphite	Graphite
12	Gland Ring	316 Stainless Steel	Monel®
13	Retaining Ring	316 Stainless Steel	Monel®
14	Gland Retainer	316 Stainless Steel	Monel®
15	Stud	316 Stainless Steel	Monel® K500
16	Washers	316 Stainless Steel	Monel®
17	Hex Nut	316 Stainless Steel	Monel® K500
18	Cap Screws	316 Stainless Steel	Monel® K500
19	Taper Pins	17-4 PH	Monel® K500
20	Gaskets	Graphite	Graphite
21	Metal Seat	Inconel®	Inconel®
22	Spring Washers	316 Stainless Steel	Monel® K500
23	Grounding Washer	316 Stainless Steel	Monel® K500
24	Upper Gland Ring	316 Stainless Steel	Monel® K500
25	Lower Gland Ring	316 Stainless Steel	Monel® K500

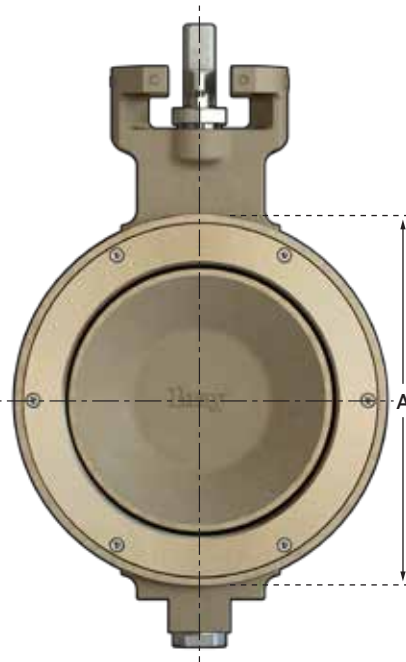
EXPLODED VIEW



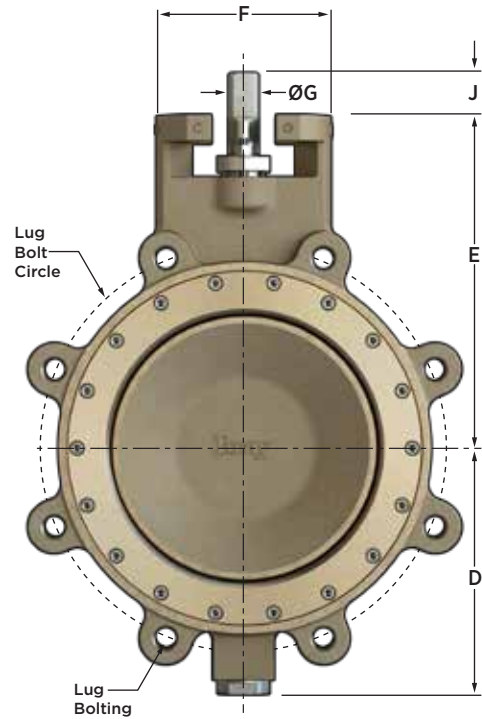


*C Dimension is minimum pipe ID at valve face (without gaskets.)

**H Dimension is the stem flats on valve sizes up to 12" and Overkey dimension for 14"



STYLE A



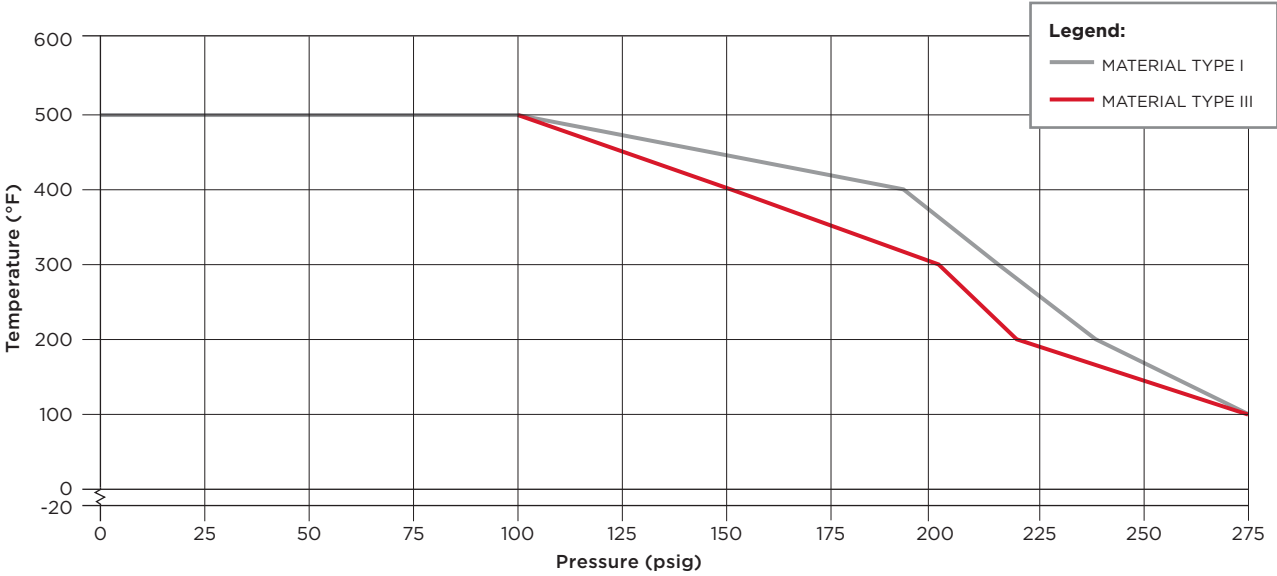
STYLE B

DIMENSIONS (in)

Valve Size (NPS)	A	B	C*	D	E	F	G	H**	J	K	Mounting Data			Lug Bolting Data		
											BCD	No. Holes	Hole Dia.	BCD	No. Holes	Thread UN-2B
2	4.0	1.8	1.8	3.7	6.0	4.3	0.6	0.4	1.3	3.3	3.3	4	0.4	4.8	4	5/8-11
2.5	4.7	1.9	2.3	3.9	6.4	4.3	0.6	0.4	1.3	3.3	3.3	4	0.4	5.5	4	5/8-11
3	5.0	1.9	2.9	4.2	6.6	4.3	0.6	0.4	1.3	3.3	3.3	4	0.4	6.0	4	5/8-11
4	6.8	2.1	3.7	4.8	7.5	4.3	0.6	0.4	1.3	3.3	3.3	4	0.4	7.5	8	5/8-11
5	7.3	2.3	4.8	5.2	7.5	4.3	0.7	0.5	1.3	3.3	3.3	4	0.4	8.5	8	3/4-10
6	8.5	2.3	5.9	5.6	8.0	4.3	0.7	0.5	1.3	3.3	3.3	4	0.4	9.5	8	3/4-10
8	10.8	2.5	7.8	7.1	9.5	5.0	0.9	0.6	1.3	3.8	4.0	4	0.5	11.8	8	3/4-10
10	12.8	2.8	9.8	8.6	10.8	6.0	1.2	0.9	2.0	4.5	5.0	4	0.5	14.3	12	7/8-9
12	15.0	3.2	11.7	10.4	12.3	6.0	1.4	0.9	2.0	4.5	5.0	4	0.5	17.0	12	7/8-9
14	16.3	3.6	12.9	12.0	13.8	6.0	1.8	1.538	2.0	4.5	5.0	4	0.5	18.8	12	1-8

All values subject to change without notice.
For 14" valve, key width is 0.040"

PRESSURE/TEMPERATURE CHART



Cv VALUES

Valve Size (NPS)	Disc Position (Opening Angle°)								
	90°	80°	70°	60°	50°	40°	30°	20°	10°
2	105	95	80	65	45	30	15	10	5
2.5	160	135	100	80	50	30	15	10	5
3	245	235	205	160	115	75	40	20	5
4	465	455	390	310	220	145	80	40	10
5	820	700	520	375	245	150	80	45	15
6	1230	975	680	465	300	200	125	75	30
8	2710	2160	1540	1025	665	440	270	160	65
10	3815	3060	2155	1445	930	620	400	220	90
12	5720	4585	3225	2175	1400	930	600	335	135
14	7400	5900	4160	2805	1830	1210	785	435	170

All values subject to change without notice.

WEIGHT (lbs)

Valve Size (NPS)	Style A		Style B	
	Material Type I	Material Type III	Material Type I	Material Type III
2	11	11	13	13
2.5	13	14	16	16
3	14	14	16	16
4	19	19	23	23
5	25	25	31	32
6	31	31	37	37
8	47	48	55	56
10	79	81	97	97
12	115	119	143	145
14	160	168	201	207



THE HIGH PERFORMANCE COMPANY

Bray International, Inc.
13333 Westland East Blvd.
Houston, Texas 77041
Tel: 281.894.5454
www.bray.com

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