Resilient Seated Butterfly Valves

ABZ VALVE

A GFT COMPANY

Figures 396/397

Sizes
2" - 72"
Rated Up To 200 PSI

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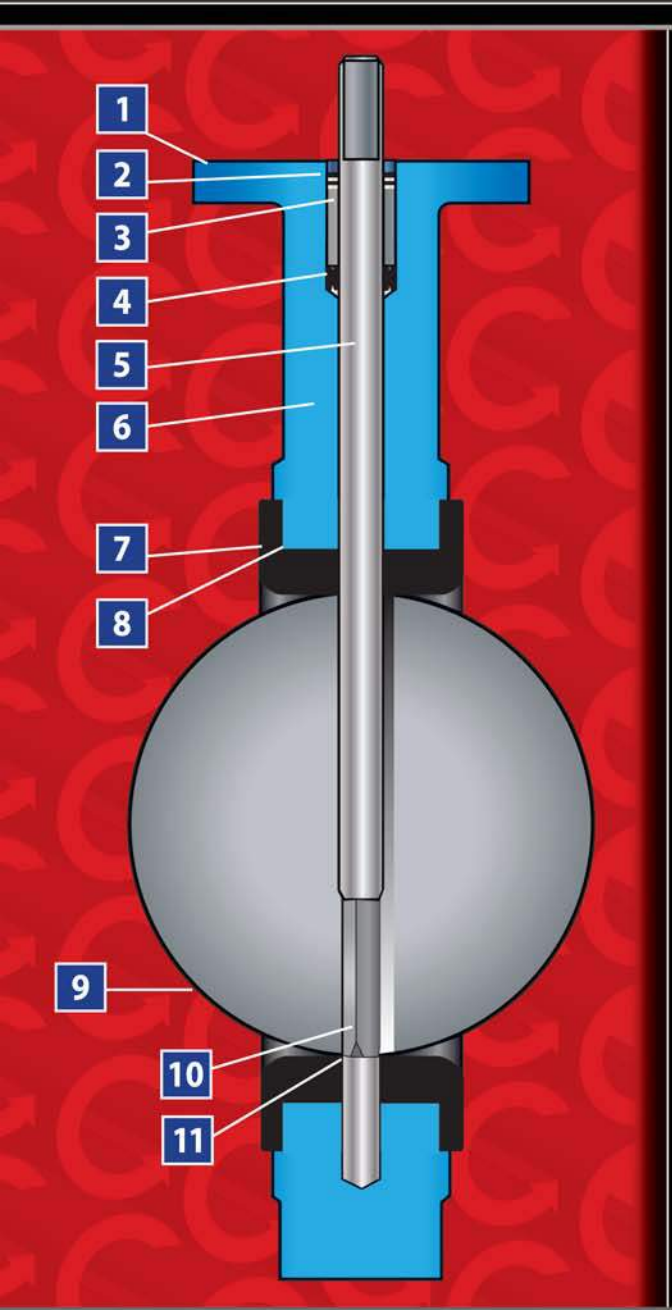
ABZ Precision Built Butterfly Valves

Molded in Seated Valves for Chemical and Abrasion Resistance Applications.

The figures 396/397 provide excellent flexibility with a variety of trim materials. These are available for a wide selection of applications.



1 All bodies are machined to high tolerances for guaranteed dimensions.

2 Series of snap rings and washers hold the stem, bushing and packing in and acts as a blowout proof engagement on 2″ to 24″.

3 Top bushing protects the stem from side thrust of operators. They are made of impact and corrosion resistant materials.

4 Special double-V-shape of stem seal self-adjusts to protect the stem area for either vacuum or pressure use.

5 2″ thru 24″ Stem extends through disc and aligns with socket in body. Stem end has standard dimensions for operator interchangeability.

6 Long neck allows for insulation requirements.

7 Molded Seat forms a seal against all standard ANSI 125/150 flanges. Gasketing requirements are eliminated.

8 The Seat is a vulcanized design on 2″ to 24″. These are rated for full dead end pressure and full vacuum. On valves 26″ and larger the seat is a phenolic backed design.

9 Disc edge is individually processed through machining and hand buffing for a smooth edge, providing a bubble tight shutoff and maximum seat life.

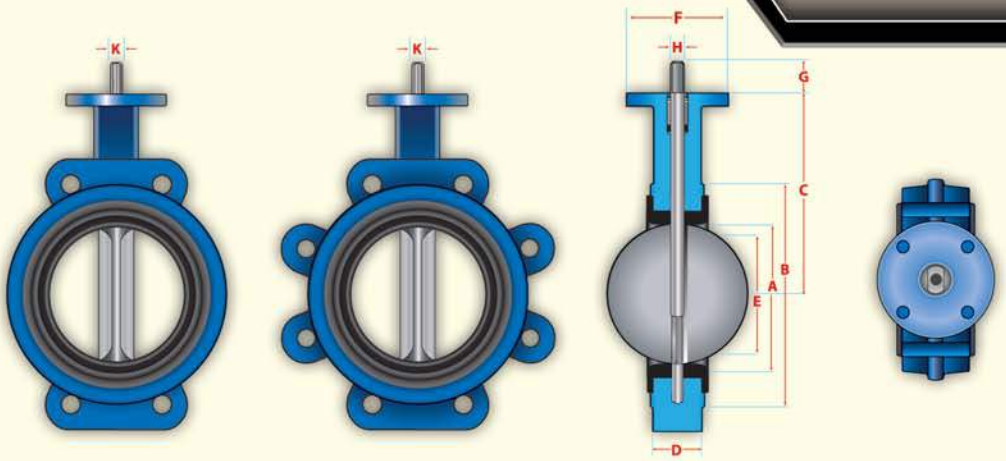
10 The stem to disc engagement on 2″ to 24″ is an internally driven design. On valves 26″ and larger the stem to disc engagement is by taper pins.

11 Stem and body are isolated from the line media by the interference fit of the primary seal created between the disc and seat.

396 is a wafer style body.
397 is a full lug style body.

FIGURES 396/397

Valve Dimensions



Valve Size	DIMENSIONS									TOP PLATE DRILLING			TAPPED LUG DATA			WEIGHT (POUNDS)	
	A	B	C	D	E	F	G	H	K	Bolt Circle	No. Holes	Hole Dia.	Bolt Circle	No. Holes	Tap	396	397
2	2	3 1/2	5 1/2	1 5/8	1 3/8	4	1 1/4	9/16	3/8	3 1/4 / F07	4	7/16	4 3/4	4	5/8-11 UNC	7	8
2 1/2	2 1/2	4	6	1 3/4	2 1/16	4	1 1/4	9/16	3/8	3 1/4 / F07	4	7/16	5 1/2	4	5/8-11 UNC	8	9
3	3 1/8	4 3/4	6 1/4	1 3/4	2 9/16	4	1 1/4	9/16	3/8	3 1/4 / F07	4	7/16	6	4	5/8-11 UNC	9	10
4	4 1/8	5 15/16	7	2	3 5/8	4	1 1/4	5/8	7/16	3 1/4 / F07	4	7/16	7 1/2	8	5/8-11 UNC	13	20
5	4 15/16	7 1/8	7 1/2	2	4 3/4	4	1 1/4	3/4	1/2	3 1/4 / F07	4	7/16	8 1/2	8	3/4-11 UNC	19	23
6	6	8 3/16	8	2 1/8	5 1/2	4	1 1/4	3/4	1/2	3 1/4 / F07	4	7/16	9 1/2	8	3/4-11 UNC	20	27
8	7 15/16	10 1/4	9 1/2	2 1/2	7 1/2	6	1 1/4	7/8	5/8	5	4	9/16	11 3/4	8	3/4-10 UNC	36	43
10	9 3/4	12 5/8	10 3/4	2 1/2	9 5/8	6	2	1 1/8	1/4 x 1/4	5	4	9/16	14 1/4	12	7/8-9 UNC	49	63
12	11 1/2	14 5/8	12 1/4	3	11 9/16	6	2	1 1/8	1/4 x 1/4	5	4	9/16	17	12	7-8-9 UNC	70	90
14	13 1/8	17	12	3	13 1/8	6	2 1/4	1 3/8	5/16 x 5/16	5	4	9/16	18 3/4	12	1-8 UNC	95	115
16	15 3/16	19 5/8	12 15/16	4	15	6	2 1/4	1 5/8	3/8 x 3/8	5	4	9/16	21 3/4	16	1-8 UNC	144	187
18	17 3/16	21 7/16	14 1/2	4 5/16	16 7/8	8	3	1 7/8	1/2 x 1/2	6 1/2	4	13/16	22 3/4	16	1 1/8-7 UNC	180	216
20	19 3/16	23 13/16	15 7/8	5	18 3/4	8	3	2 1/8	1/2 x 1/2	6 1/2	4	13/16	25	20	1 1/8-7 UNC	277	334
24	24 5/16	28 1/2	22 1/4	6	22 5/8	8	3	2 1/8	1/2 x 1/2	6 1/2	4	13/16	29 1/2	20	1 1/4-7 UNC	417	519
30	29 5/16	38 3/4	26	6 9/16	28 9/16	1 13/16	3 3/4	63.35mm	*18x8 mm	10	8	18mm	36	28	1 1/4-7 UNC	660	930
36	34	46	28 3/8	8	33 1/8	1 13/16	5 1/8	75mm	*20x9 mm	10	8	18mm	42 3/4	32	1 1/2-6 UNC	1570	1770
42	40 9/16	53	33 3/4	9 7/8	39 3/8	1 13/16	6	85mm	*22x10 mm	10	8	18mm	49 1/2	36	1 1/2-6 UNC	2070	2470
48	45 11/16	59 1/2	37	10 7/8	44 3/8	13 3/4	6.5	105mm	*28x12 mm	11 3/4	8	22mm	56	44	1 1/2-6 UNC	2710	3130

Undercut disc available as special order.

STANDARD CONSTRUCTION SPECIFICATIONS:

Body: Cast Iron (2" to 12"), Ductile Iron (14" and above)

Disc: 316 Stainless Steel, Aluminum Bronze, Nylon 11 Coated Ductile Iron, Nickel Plated Ductile Iron

Stem: 416 Stainless Steel, 316 Stainless Steel

Resilient Seat: EPDM, Buna-N, Viton

Stem Bushing: Teflon® – Graphite Impregnated

Stem Packing: Buna-N

Additional materials are available for a wide selection of applications.

NOTES:

1. Dimension "K" not applicable to 10" and larger sizes. The stem is round with a keyway.
2. *30, 36, 42, & 48 inch valves have two keyways.
3. The figures cannot be used on pipe or flange with an inside diameter less than the "E" dimension.
4. Valve sizes 2" to 12" are rated up to 200 PSI bi-directional and dead end service. Valve sizes 14" to 24" are rated up to 150 PSI bi-directional and dead end service. Valve sizes 26" and up are rated up to 150 PSI bi-directional and 75 PSI dead end service
5. Designed in accordance with sections of API 609 Category A, ASME 16.1/16.5, ASME 16.34 and MSS SP67. Design tested in accordance with API 598.
6. Compatible with ANSI Class 125/150 flange standards.

Rated Flow Coefficient (Cv) - Figure 396/397

Valve Size	ANGLE OF DISC OPENING								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
2	1.67	7.7	17	29	48	74	115	145	195
2 1/2	2.50	11.0	25	44	69	109	174	237	307
3	3.33	15.7	37	64	105	165	276	377	487
4	5.00	27.7	63	110	177	278	472	671	827
5	8.33	43.7	99	177	276	443	752	1,083	1,325
6	13.33	58.7	136	242	385	616	1,075	1,521	1,883
8	20.00	107.3	247	434	687	1,094	1,821	2,671	3,239
10	31.67	174.0	394	696	1,092	1,770	2,983	4,288	5,210
12	47.0	251.7	578	1,002	1,665	2,654	4,398	6,466	8,026
14	61.3	326	765	1,373	2,183	3,395	5,713	8,337	10,179
16	81.7	426	1,000	1,783	2,816	4,494	7,556	10,981	13,322
18	106	549	1,294	2,279	3,614	5,779	9,755	14,148	17,738
20	124	684	1,598	2,862	4,579	7,181	12,178	17,906	22,113
24	233	1,009	2,329	4,081	6,587	10,347	17,078	25,218	31,051
30	364.7	1,537	3,757	6,571	10,568	16,861	27,767	39,752	50,783
36	575	2,498	5,495	9,437	15,261	24,002	39,806	56,834	74,958
42	706	3,134	7,402	12,597	20,447	23,940	53,421	77,711	99,617
48	921.7	4,229	9,659	16,598	26,524	42,297	68,972	100,984	128,561

Cv is defined as the volume of water in U.S.G.P.M. that will flow through a given restriction or valve opening with a pressure drop of one (1) p.s.i. at room temperature. Recommended control angles are between 25°-70° open.

Torque Chart - Figure 396/397

Valve Size	NORMAL CONDITIONS					SEVERE CONDITIONS				
	Δ P=0	Δ P=50	Δ P=100	Δ P=150	Δ P=200	Δ P=0	Δ P=50	Δ P=100	Δ P=150	Δ P=200
2	221	230	240	250	258	373	384	400	406	418
2 1/2	269	283	288	302	317	454	464	475	486	507
3	322	341	365	379	400	540	568	589	611	647
4	480	514	542	576	602	816	848	886	918	955
5	653	706	754	806	871	1,102	1,162	1,220	1,274	1327
6	907	1,008	1,109	1,210	1,285	1,529	1,642	1,756	1,868	1965
8	1,512	1,714	1,915	2,112	2,260	2,549	2,776	3,002	3,229	3410
10	2,318	2,621	2,900	3,224	3,440	3,910	4,250	4,590	4,931	5203
12	3,125	3,629	4,138	4,637	6,234	5,270	5,838	6,404	6,971	7403
14	5,160	6,120	7,080	8,040	–	7,740	8,700	9,660	10,620	–
16	7,680	8,040	9,480	10,920	–	9,900	11,340	12,780	14,220	–
18	8,280	10,440	12,600	14,760	–	12,432	14,580	16,020	18,900	–
20	10,200	13,200	16,200	19,200	–	14,604	19,500	21,300	24,300	–
24	18,000	18,513	20,400	22,200	–	23,400	24,066	26,520	30,000	–
30	30,120	32,760	40,920	43,200	–	39,120	49,140	53,196	56,160	–
36	46,800	48,747	57,600	81,600	–	60,840	63,600	74,880	106,080	–
42	72,000	82,800	94,800	106,800	–	93,600	107,640	123,240	138,840	–
48	92,400	111,600	132,000	162,000	–	120,120	145,080	171,600	210,600	–

Undercut disc available as special order.

All torques shown in inch lbs. 20% Safety factor already included.

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