

Building connections that last™



ABZ 101/102

2"–12" Resilient Seated Butterfly Valves Datasheet



2"-12" Resilient Seated Butterfly Valves ABZ 101/102



Fig. 101
Wafer style body

Fig. 102
Full lug style body

Standard Construction Specifications

Body

Cast Iron, Ductile Iron (Lug) and Aluminum (Wafer)

Disc/Stem

316 Stainless Steel, Aluminum Bronze, Ductile Iron, Epoxy Coated Ductile Iron

Stem

316 Stainless Steel, 416 Stainless Steel, Carbon Steel

Resilient Seat

EPDM, Buna-N, Viton, Natural Rubber, White Buna, White Neoprene

Stem Bushing

Teflon® - Graphite Impregnated

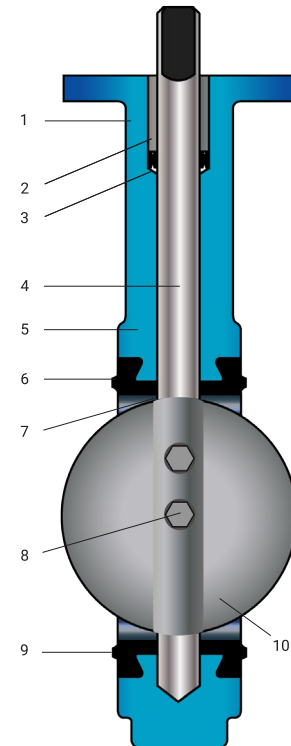
Stem Packing

Buna-N and Viton

Additional materials are available for a wide selection of applications.

Features and Benefits

1. Body machined to high tolerances. Guaranteed standard dimensions for interchangeability of parts and actuators.
2. Top bushings protect the stem from side thrust of operators. They are made of impact and corrosion resistant materials.
3. Special double-V-shape of stem seal self-adjusts to protect the stem area for either vacuum or pressure use.
4. Stem extends through disc and aligns with socket in body. Stem end has standard dimensions for operator interchangeability.
5. Long neck allows for insulation requirements.
6. The special snap-in Resil-O-Seat™ design fixes seat in place without bonding. The Resil-O-Seat is 100% field replaceable - no special tools required.
7. Stem and body are isolated from the line media by the interference fit of the primary seal created between the disc and seat.
8. Stainless steel cap screws securely hold disc to stem. O-ring seal prevents leakage into the stem area and creates a positive connection.
9. Resil-O-Seat forms a seal against all standard ANSI 125/150 flanges. Gasketing requirements are eliminated.
10. Disc edge is individually processed through machining and hand buffing for a smooth edge, providing a bubble tight shutoff and maximum seat life.



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Torque Chart – Fig. 101/102

Valve Size	Normal Conditions					Severe Conditions				
	$\Delta P=0$	$\Delta P=50$	$\Delta P=100$	$\Delta P=150$	$\Delta P=175$	$\Delta P=0$	$\Delta P=50$	$\Delta P=100$	$\Delta P=150$	$\Delta P=175$
2"	221	230	240	250	254	373	384	400	406	410
2½"	269	283	288	302	311	454	464	475	486	497
3"	322	341	365	379	392	540	568	589	611	634
4"	480	514	542	576	590	816	848	886	918	936
5"	653	706	754	806	854	1,102	1,162	1,220	1,274	1,301
6"	907	1,008	1,109	1,210	1,260	1,529	1,642	1,756	1,868	1,926
8"	1,512	1,714	1,915	2,112	2,215	2,549	2,776	3,002	3,229	3,343
10"	2,318	2,621	2,900	3,224	3,372	3,910	4,250	4,590	4,931	5,101
12"	3,125	3,629	4,138	4,637	6,112	5,270	5,838	6,404	6,971	7,258

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

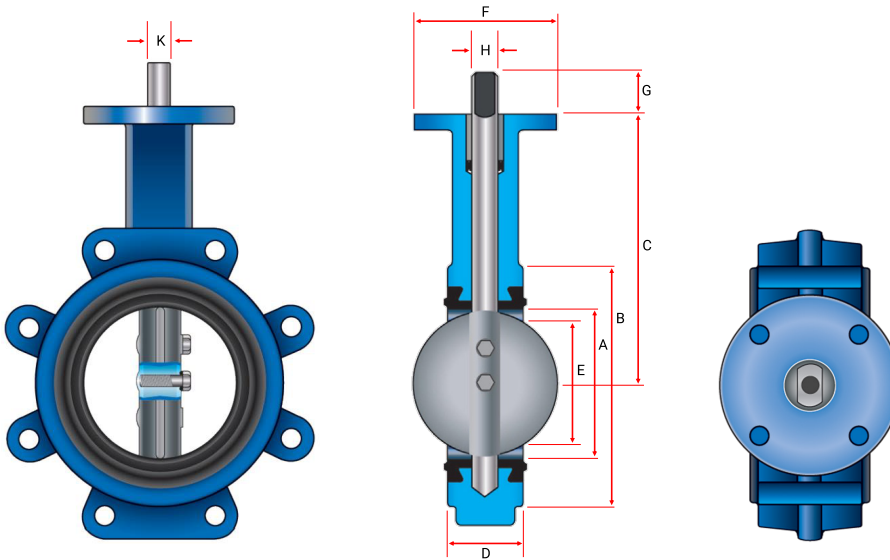
Rated Flow Coefficient (Cv) – Fig. 101/102

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
2½"	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"	47.00	251.7	578	1,002	1,665	2,654	4,398	6,466	8,026

Sized for stainless disc, does not cover encapsulated disc trims.

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 20°–75° open.

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Notes

1. Dimension "K" not applicable to 12" size. The 12" stem is round with 1/4" Key.
2. The figures 101, 102 and 108 cannot be used on pipe or flange with an inside diameter less than the "E" dimension.
3. Valves are rated up to 175 PSI bi-directional service and 85 PSI end of line rating. Undercut disc is rated up to 50 PSI bi-directional service and 25 PSI end of line rating. Preferred direction is with disc bolts on downstream side of disc.
4. 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.
5. Compatible with ANSI Class 125/150 flange standards.

Dimensional Chart – Fig. 101/102

Valve Size Inches	Approximate Valve Dimensions - inches											Top Plate Drilling			102 Tapped Lug Data			Weight (Pounds)	
	ØA	ØB	C	D	E	ØF	G	ØH	K	Key	T.O.L	Bolt Circle	No. Holes	Hole Dia.	Bolt Circle	No. Holes	Tap	201	202
	2"	2.13	4.00	5.50	1.63	1.66	4	1.25	0.562	0.375	—	9.25	3.25	4	7/16	4.75	4	5/8 X 11 UNC	6
2-1/2"	2.56	4.75	6.00	1.75	2.13	4	1.25	0.562	0.375	—	10.15	3.25	4	7/16	5.50	4	5/8 X 11 UNC	8	10
3"	3.13	5.25	6.25	1.75	2.82	4	1.25	0.562	0.375	—	10.62	3.25	4	7/16	6.00	4	5/8 X 11 UNC	9	10
4"	4.13	6.87	7.00	2.00	3.88	4	1.25	0.625	0.437	—	12.42	3.25	4	7/16	7.50	8	5/8 X 11 UNC	14	18
5"	5.20	7.62	7.50	2.13	4.96	4	1.25	0.625	0.437	—	13.43	3.25	4	7/16	8.50	8	3/4 X 10 UNC	16	22
6"	6.13	8.75	8.00	2.13	5.95	4	1.25	0.625	0.437	—	14.39	3.25	4	7/16	9.50	8	3/4 X 10 UNC	18	24
8"	8.13	11.00	9.50	2.50	7.98	6	1.25	0.750	0.500	—	16.93	5.00	4	9/16	11.75	8	3/4 X 10 UNC	35	44
10"	10.13	13.37	10.75	2.50	10.02	6	1.25	0.875	0.625	—	19.69	5.00	4	9/16	14.25	12	7/8 X 9 UNC	50	62
12"	12.09	16.12	12.25	3.00	11.94	6	2.00	1.125	—	1/4 X 1/4	23.17	5.00	4	9/16	17.00	12	7/8 X 9 UNC	79	93

Dimensions subject to change without notice.

About ASC Engineered Solutions

ASC Engineered Solutions is defined by quality—in its products, services and support. With more than 1,400 employees, the company's portfolio of precision-engineered piping support, valves and connections provides products to more than 4,000 customers across industries, such as mechanical, industrial, fire protection, oil and gas, and commercial and residential construction. Its portfolio of leading brands includes ABZ Valve®, AFCON®, Anvil®, Anvil EPS, Anvil Services, Basic-PSA, Beck®, Catawissa, Cooplet®, FlexHead®, FPPI®, Gruklok®, J.B. Smith, Merit®, North Alabama Pipe, Quadrant®, SCI®, Sharpe®, SlideLOK®, SPF® and SprinkFLEX®. With headquarters in Commerce, CA, and Exeter, NH, ASC also has ISO 9001:2015 certified production facilities in PA, TN, IL, TX, AL, LA, KS, and RI.



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