

KEYSTONE

Resilient Seated Butterfly Valve Sizes 2 thru 12-inch to 250 psi

Features and Benefits

- Molded-in resilient seat provides bubble-tight shutoff to 250 psi.
- Offered in two body styles: wafer and lug. The lugged body is drilled and tapped for isolation and removal of downstream piping at full rated pressure.
- Round, polished disc and hub edge provides 360 degree concentric seating, minimum flow restriction, lower torques and longer seat life.
- Upper and lower inboard bronze bearings ensure longer service life with low operating torques.
- Thru-stem design provides high strength and positive disc control with standardized end connection for operator interchangeability.
- Extended neck allows adequate clearance for flanges and insulation.
- Bi-directional, self-adjusting stem seal, located in the upper journal, is suitable for vacuum and pressure while also preventing external contamination of the stem area.
- Heavy-duty corrosion resistant top bushing, located in the upper journal, absorbs actuator side thrust.
- Cast-in top plate is an integral part of the body and is standardized to allow direct mounting of all Tyco actuators.
- Each valve is factory tested to 110 percent of specified pressure rating.



General Application

Heating, ventilation, air conditioning and general industrial services.

Technical Data

Size Range : 2 thru 12-inch wafer and lug style

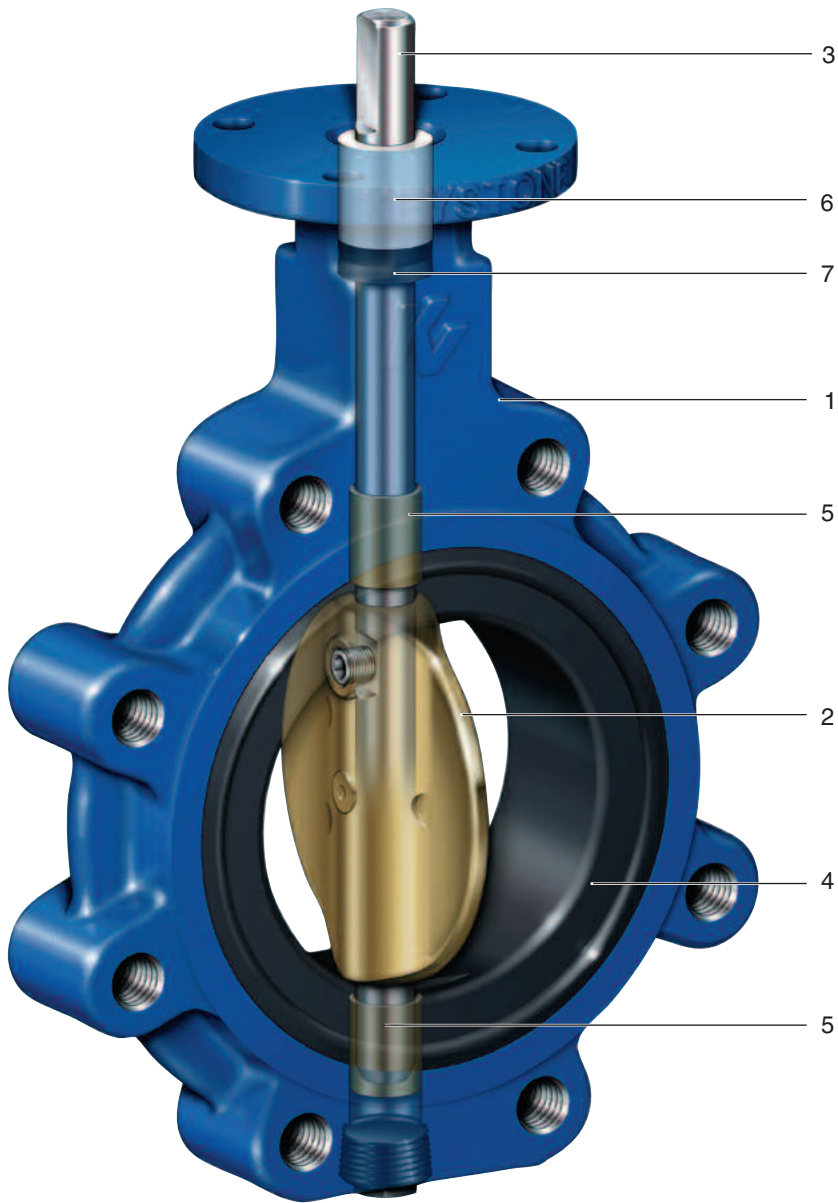
Pressure Rating : 250 psi bi-directional shutoff. Lugged body style is rated for 250 psi bi-directional dead-end service with downstream piping removed.

tyco / Flow Control

Total Flow Control Solutions™

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Materials



Materials		
Part	Material	Material Standards
1 Body	Cast iron	ASTM-A 126 Class B
2 Disc	Aluminum bronze	ASTM-B 148 UNS C95200 Grade A
	316 SS	ASTM-A 743 CF8M
3 Stem	416 SS	ASTM-A 582 UNS S41600
4 Molded-in liner	EPDM NBR	
5 Inboard bearings	Bronze	
6 Upper bushing	Polyester	
7 Upper stem seal	NBR	

Valve C_v s

Size (in)	Size [mm]	10°	20°	30°	40°	50°	60°	70°	80°	90°
2	50	0	1.3	5	14	26	40	52	59	60
2½	65	0	1.4	6	21	44	74	107	138	150
3	80	0	1.5	8	29	67	115	175	234	262
4	100	1	15	48	107	196	318	463	589	647
5	125	3	32	99	206	362	579	832	1,045	1,141
6	150	4	47	145	295	510	810	1,160	1,450	1,580
8	200	6	84	239	450	751	1,190	1,754	2,385	2,892
10	250	9	133	360	652	1,064	1,683	2,524	3,596	4,593
12	300	12	192	509	899	1,449	2,288	3,470	5,085	6,682

Note

C_v is the valve flow capacity expressed as the flow rate of 60°F water, in US gallons per minute, which produces a 1 psi pressure drop across the valve.

Dimensions

221 Wafer

222 Lug

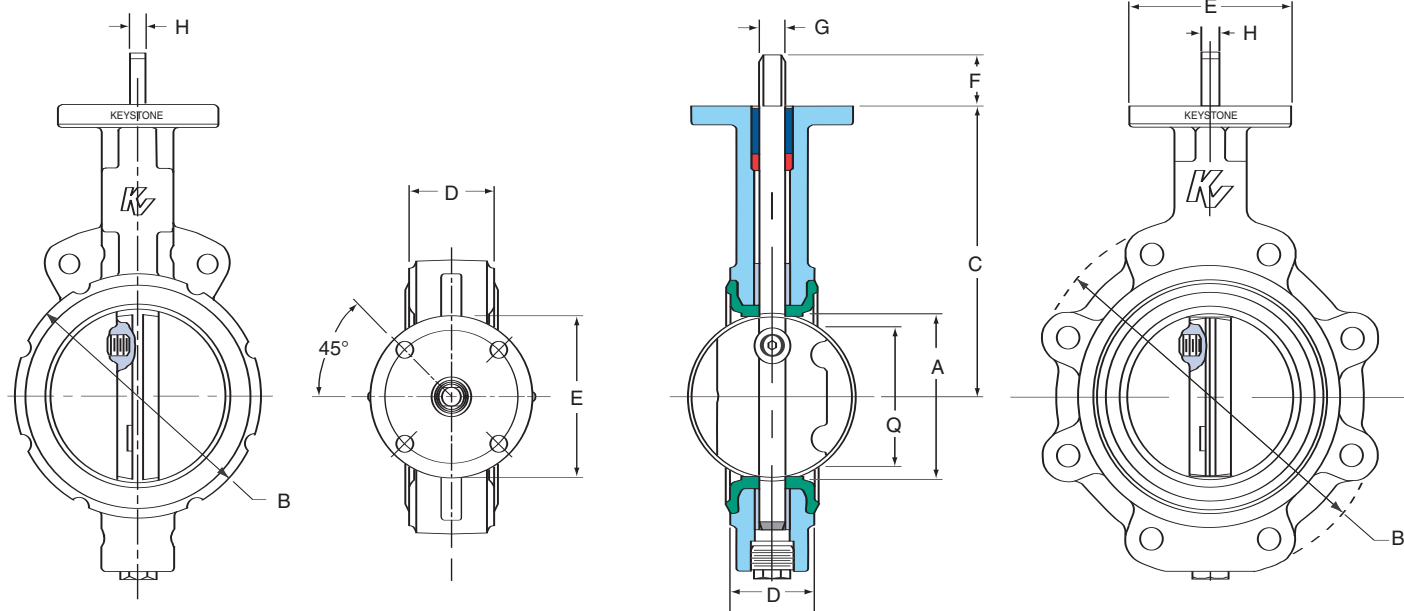


Figure 221 Dimensions (inches)

Size	A	B	C	D	Q	E	F	G	H	Key	Top Plate Drilling			Weight (lbs.)	Adapt. Code
											Bolt Circle	No. Holes	Hole Diam.		
2	2 ¹ / ₁₆	4 ¹ / ₈	5 ⁵ / ₁₆	1 ¹¹ / ₁₆	1 ³ / ₈	4	1 ¹ / ₄	9 ¹ / ₁₆	3 ³ / ₈	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	7.7	BAB
2 ¹ / ₂	2 ⁹ / ₁₆	4 ⁵ / ₈	5 ¹⁵ / ₁₆	1 ¹³ / ₁₆	2	4	1 ¹ / ₄	9 ¹ / ₁₆	3 ³ / ₈	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	8.8	BAB
3	3 ¹ / ₁₆	5 ³ / ₁₆	6 ⁵ / ₁₆	1 ¹³ / ₁₆	2 ⁵ / ₈	4	1 ¹ / ₄	9 ¹ / ₁₆	3 ³ / ₈	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	10.2	BAB
4	4 ¹ / ₁₆	6 ³ / ₈	7 ¹ / ₈	2 ¹ / ₁₆	3 ¹¹ / ₁₆	4	1 ¹ / ₄	5 ⁸ / ₁₆	7 ¹ / ₁₆	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	16.9	BAC
5	5 ¹ / ₁₆	7 ³ / ₈	7 ¹¹ / ₁₆	2 ¹ / ₄	4 ³ / ₄	4	1 ¹ / ₄	3 ⁴ / ₁₆	1 ¹ / ₂	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	19.9	BAD
6	5 ¹³ / ₁₆	8 ¹ / ₂	8 ⁵ / ₁₆	2 ¹ / ₄	5 ⁹ / ₁₆	4	1 ¹ / ₄	3 ⁴ / ₁₆	1 ¹ / ₂	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	25.3	BAD
8	7 ¹³ / ₁₆	10 ¹¹ / ₁₆	9 ¹ / ₂	2 ³ / ₈	7 ³ / ₄	6	1 ¹ / ₄	7 ⁸ / ₁₆	5 ⁸ / ₁₆	N/A	5	4	9 ¹ / ₁₆	40.5	CAE
10	9 ¹³ / ₁₆	13	10 ⁷ / ₈	2 ¹¹ / ₁₆	9 ³ / ₄	6	2	1 ¹ / ₈	N/A	1 ¹ / ₄ x 1 ¹ / ₄	5	4	9 ¹ / ₁₆	61.1	CAF
12	11 ¹³ / ₁₆	14 ¹³ / ₁₆	12 ¹ / ₄	3 ¹ / ₈	11 ³ / ₄	6	2	1 ¹ / ₈	N/A	1 ¹ / ₄ x 1 ¹ / ₄	5	4	9 ¹ / ₁₆	82.7	CAF

Figure 222 Dimensions (inches)

Size	A	B	C	D	Q	E	F	G	H	Key	Top Plate Drilling			Tapped Lug Data			Weight (lbs.)	Adapt. Code
											Bolt Circle	No. Holes	Hole Diam.	Bolt Circle	No. Holes	Tap		
2	2 ¹ / ₁₆	4 ³ / ₄	5 ⁵ / ₁₆	1 ¹¹ / ₁₆	1 ³ / ₈	4	1 ¹ / ₄	9 ¹ / ₁₆	3 ³ / ₈	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	4 ³ / ₄	4	5 ⁸ / ₁₆ -11 UNC-2B	9.0	BAB
2 ¹ / ₂	2 ⁹ / ₁₆	5 ¹ / ₄	5 ¹⁵ / ₁₆	1 ¹³ / ₁₆	2	4	1 ¹ / ₄	9 ¹ / ₁₆	3 ³ / ₈	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	5 ¹ / ₂	4	5 ⁸ / ₁₆ -11 UNC-2B	10.5	BAB
3	3 ¹ / ₁₆	5 ¹³ / ₁₆	6 ⁵ / ₁₆	1 ¹³ / ₁₆	2 ⁵ / ₈	4	1 ¹ / ₄	9 ¹ / ₁₆	3 ³ / ₈	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	6	4	5 ⁸ / ₁₆ -11 UNC-2B	11.9	BAB
4	4 ¹ / ₁₆	7	7 ¹ / ₈	2 ¹ / ₁₆	3 ¹¹ / ₁₆	4	1 ¹ / ₄	5 ⁸ / ₁₆	7 ¹ / ₁₆	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	7 ¹ / ₂	8	5 ⁸ / ₁₆ -11 UNC-2B	21.4	BAC
5	5 ¹¹ / ₁₆	8 ¹ / ₈	7 ¹¹ / ₁₆	2 ¹ / ₄	4 ³ / ₄	4	1 ¹ / ₄	3 ⁴ / ₁₆	1 ¹ / ₂	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	8 ¹ / ₂	8	3 ⁴ / ₁₆ -10 UNC-2B	25.7	BAD
6	5 ¹³ / ₁₆	9 ¹ / ₄	8 ⁵ / ₁₆	2 ¹ / ₄	5 ⁹ / ₁₆	4	1 ¹ / ₄	3 ⁴ / ₁₆	1 ¹ / ₂	N/A	3 ¹ / ₄	4	7 ¹ / ₁₆	9 ¹ / ₂	8	3 ⁴ / ₁₆ -10 UNC-2B	31.0	BAD
8	7 ¹³ / ₁₆	11 ⁷ / ₁₆	9 ¹ / ₂	2 ³ / ₈	7 ³ / ₄	6	1 ¹ / ₄	7 ⁸ / ₁₆	5 ⁸ / ₁₆	N/A	5	4	9 ¹ / ₁₆	11 ³ / ₄	8	3 ⁴ / ₁₆ -10 UNC-2B	48.0	CAE
10	9 ¹³ / ₁₆	13 ⁷ / ₈	10 ⁷ / ₈	2 ¹¹ / ₁₆	9 ³ / ₄	6	2	1 ¹ / ₈	N/A	1 ¹ / ₄ x 1 ¹ / ₄	5	4	9 ¹ / ₁₆	14 ¹ / ₄	12	7 ⁸ / ₁₆ -9 UNC-2B	75.8	CAF
12	11 ¹³ / ₁₆	15 ¹¹ / ₁₆	12 ¹ / ₄	3 ¹ / ₈	11 ³ / ₄	6	2	1 ¹ / ₈	N/A	1 ¹ / ₄ x 1 ¹ / ₄	5	4	9 ¹ / ₁₆	17	12	7 ⁸ / ₁₆ -9 UNC-2B	106.5	CAF

Note

'Q' dimension is the minimum allowable pipe or flange inside diameter at the centered body face to protect the disc sealing edge against damage when opening the valve.

Tyco Valves & Controls

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