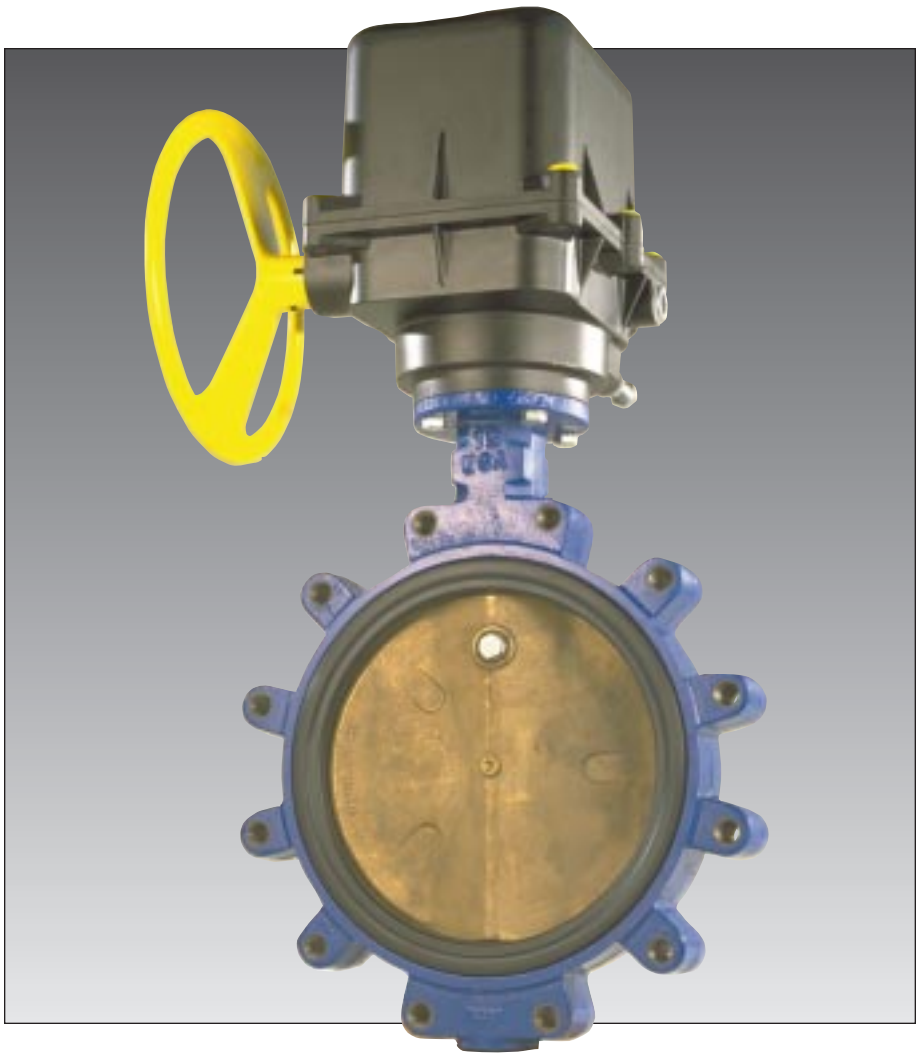
KEYSTONE

tyco valves & controls

Resilient Seated Butterfly Valves
Sizes 2–12-inch to 175 psi
Sizes 14–36-inch to 150 psi



Features and Benefits

- Triple function resilient seat provides bi-directional drop-tight shutoff and totally isolates the valve body and stem from the line media.
- Molded-in O-ring seat design serves as flange seals, totally eliminating the need for gaskets between the flanges and the valve.
- Unique dovetail seat retention design allows convenient and economical field replacement.
- Superior one-piece thru-shaft design provides high strength and positive disc control.
- Internal shaft seal prevents external media from entering valve and also adjusts for pressure and shaft rotation.
- Heavy-duty, corrosion resistant top bushing provides upper stem support, absorbs actuator sideloading and extends valve cycle life.
- Polished disc edge ensures optimal performance and maximum seat life.
- Stainless steel torque plug (2–12-inch), disc screws (14–20-inch) and taper pins (24–36-inch) provide positive leak-proof connections while allowing for quick and easy disassembly.
- One-piece body with extended neck allows clearance for flanges and insulation.
- Each valve is factory-tested to 110 percent of manufacturer's pressure rating.

General Applications

Ideally suited for many high performance applications, such as fire protection, water treatment, cooling systems, food and beverage and bulk product handling. Consult factory for appropriate materials for specific services.

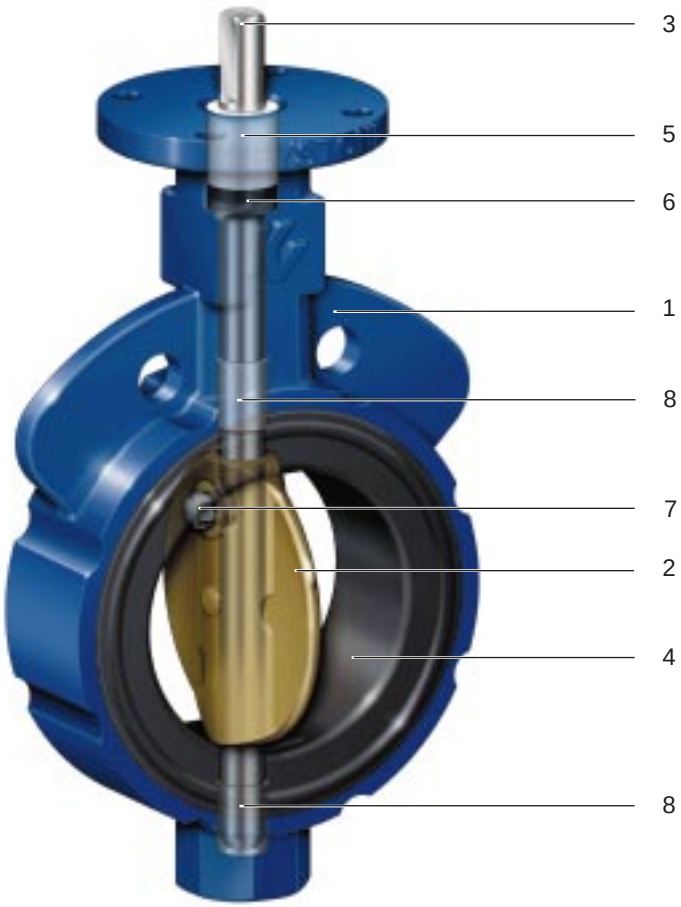
Technical Data

Size Range:
Figure AR1 (wafer style) 2–36-inch
Figure AR2 (lugged style) 2–24-inch

Flange Standard: ANSI Class 125/150

(Consult factory for additional drilling standards.)

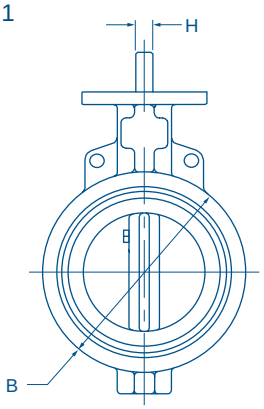
Keystone Figure AR1/AR2

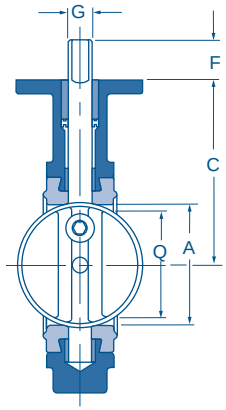


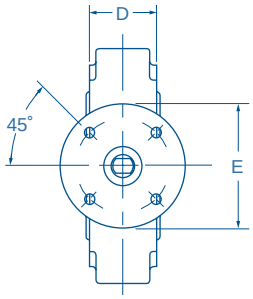
Materials

Part	Standard Material	Material Specification	Optional Material
1. Body	Cast iron	ASTM A-126, Class B	
	Ductile iron	ASTM A-395 GR 60/40/18	
	Carbon steel	ASTM A-216 WCB (Figure AR2 only)	
	Stainless steel	ASTM A-351 CF8M (Figure AR2 8” to 20” only)	
2. Disc	Ductile iron	ASTM A-536 GR 65/45/12	
	Aluminum bronze	ASTM B-148, UNS C95200 Grade A	
	316 Stainless steel	ASTM A-743, CF8M	
3. Stem	316 Stainless steel (2–12-inch)	ASTM A-276 UNS S31600	
	18-8 Stainless steel (14–20-inch)	ASTM A-276 UNS S30400	
	17-4 PH Stainless steel (24–36-inch)	ASTM A-564 UNS S17400	
	Phosphate treated steel (2–20-inch)	ASTM A 108 UNS G10450	
4. Seat	NBR food grade (0°F–212°F)		Fluoroelastomer (FKM)
	EPDM food grade (-40°F–250°F)		White NBR
5. Upper stem bushing	Polyester (2–20-inch)		
	Bronze (24–36-inch)		
6. Stem packing	NBR		
7. Torque plug (2–12-inch)	316 Stainless steel	ASTM A-276 UNS S31600 condition A	
7. Disc screws (14–20-inch)	316 Stainless steel	ASTM F-593 Group 2 condition CW1	
7. Taper pins (24–36-inch)	17 - 4 PH Stainless steel	ASTM A564 UNS S17400 H1075	
8. Bearings (2–12-inch)	Sintered metal		

Figure AR1
Wafer







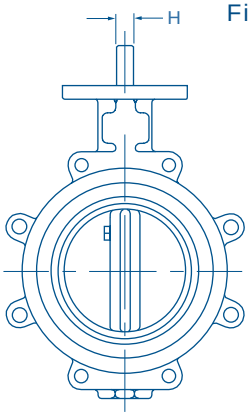


Figure AR2
Lugged

Figure AR1 - Dimensions (inches)

Size	A	B	C	D	E	F	G	H	Q	Key	Top Plate Drilling Bolt Circle	No. Holes	Hole Dia.	Weight (lbs)	Adapt. Code
2	2	4 1/8	5 1/2	1 5/8	4	1 1/4	9/16	3/8	1 3/8	N/A	3 1/4	4	7/16	6.3	BAB
2 1/2	2 1/2	4 5/8	6	1 3/4	4	1 1/4	9/16	3/8	2 1/16	N/A	3 1/4	4	7/16	8.5	BAB
3	3	5 1/8	6 1/4	1 3/4	4	1 1/4	9/16	3/8	2 9/16	N/A	3 1/4	4	7/16	10.0	BAB
4	4	6 3/8	7	2	4	1 1/4	5/8	7/16	3 5/8	N/A	3 1/4	4	7/16	14.0	BAC
5	5	7 3/8	7 1/2	2 1/8	4	1 1/4	3/4	1/2	4 3/4	N/A	3 1/4	4	7/16	18.0	BAD
6	5 3/4	8 1/2	8	2 1/8	4	1 1/4	3/4	1/2	5 1/2	N/A	3 1/4	4	7/16	22.0	BAD
8	7 3/4	10 11/16	9 1/2	2 1/2	6	1 1/4	7/8	5/8	7 1/2	N/A	5	4	9/16	38.0	CAE
10	9 3/4	13	10 3/4	2 1/2	6	2	1 1/8	N/A	9 19/32	1/4 x 1/4	5	4	9/16	51.0	CAF
12	11 3/4	14 13/16	12 1/4	3	6	2	1 1/8	N/A	11 9/16	1/4 x 1/4	5	4	9/16	71.0	CAF
14	13 1/4	16 7/8	12	3	6	3	1 3/8	N/A	13 1/8	5/16 x 5/16	5	4	9/16	114.0	CAG
16	15 1/4	19 1/4	12 61/64	4	6	3	1 5/8	N/A	15	3/8 x 3/8	5	4	9/16	193.0	CAH
18	17 1/4	21 1/2	14 1/2	4 1/4	8	4 1/4	1 7/8	N/A	16 7/8	1/2 x 3/8	6 1/2	4	13/16	222.0	DAJ
20	19 1/4	23 3/4	15 7/8	5	8	4 1/4	1 7/8	N/A	18 3/4	1/2 x 3/8	6 1/2	4	13/16	315.0	DAJ
24	23 1/4	28 1/4	19 1/2	5 15/16	8	4 1/4	1 7/8	N/A	22 5/8	1/2 x 3/8	6 1/2	4	13/16	506.0	DAJ
30	29 1/4	34 5/8	23	6 9/16	8	4 1/4	2 1/4	N/A	28 11/16	1/2 x 3/8	6 1/2	4	13/16	610.0	DAK
36	35 1/4	41 1/4	27 3/4	7 7/8	8	5 1/2	2 7/8	N/A	34 1/2	3/4 x 1/2	6 1/2	4	13/16	1,185.0	DAV

Figure AR2 - Dimensions (inches)

Size	A	B	C	D	E	F	G	H	Q	Key	Top Plate Drilling Bolt Circle	No. Holes	Hole Dia.	Tapped Lug Data Bolt Circle	No. Holes	Tap	Weight (lbs)	Adapt. Code
2	2	4 1/8	5 1/2	1 5/8	4	1 1/4	9/16	3/8	1 3/8	N/A	3 1/4	4	7/16	4 3/4	4	5/8 - 11 UNC	7.0	BAB
2 1/2	2 1/2	4 5/8	6	1 3/4	4	1 1/4	9/16	3/8	2 1/16	N/A	3 1/4	4	7/16	5 1/2	4	5/8 - 11 UNC	10.0	BAB
3	3	5 3/16	6 1/4	1 3/4	4	1 1/4	9/16	3/8	2 9/16	N/A	3 1/4	4	7/16	6	4	5/8 - 11 UNC	11.5	BAB
4	4	6 3/8	7	2	4	1 1/4	5/8	7/16	3 5/8	N/A	3 1/4	4	7/16	7 1/2	8	5/8 - 11 UNC	18.0	BAC
5	5	7 3/8	7 1/2	2 1/8	4	1 1/4	3/4	1/2	4 3/4	N/A	3 1/4	4	7/16	8 1/2	8	3/4 - 10 UNC	22.5	BAD
6	5 3/4	8 1/2	8	2 1/8	4	1 1/4	3/4	1/2	5 1/2	N/A	3 1/4	4	7/16	9 1/2	8	3/4 - 10 UNC	28.5	BAD
8	7 3/4	10 11/16	9 1/2	2 1/2	6	1 1/4	7/8	5/8	7 1/2	N/A	5	4	9/16	11 3/4	8	3/4 - 10 UNC	49.0	CAE
10	9 3/4	13	10 3/4	2 1/2	6	2	1 1/8	N/A	9 19/32	1/4 x 1/4	5	4	9/16	14 1/4	12	7/8 - 9 UNC	69.0	CAF
12	11 3/4	14 13/16	12 1/4	3	6	2	1 1/8	N/A	11 9/16	1/4 x 1/4	5	4	9/16	17	12	7/8 - 9 UNC	107.0	CAF
14	13 1/4	16 3/4	12	3	6	3	1 3/8	N/A	13 1/8	5/16 x 5/16	5	4	9/16	18 3/4	12	1 - 8 NC	143.0	CAG
16	15 1/4	19	12 61/64	4	6	3	1 5/8	N/A	15	3/8 x 3/8	5	4	9/16	21 1/4	16	1 - 8 NC	238.0	CAH
18	17 1/4	21 3/8	14 1/2	4 1/4	8	4 1/4	1 7/8	N/A	16 7/8	1/2 x 3/8	6 1/2	4	13/16	22 3/4	16	1 1/8 - 7 NC	261.0	DAJ
20	19 1/4	23 1/2	15 7/8	5	8	4 1/4	1 7/8	N/A	18 3/4	1/2 x 3/8	6 1/2	4	13/16	25	20	1 1/8 - 7 NC	366.0	DAJ
24	23 1/4	28 1/4	19 1/2	5 15/16	8	4 1/4	1 7/8	N/A	22 5/8	1/2 x 3/8	6 1/2	4	13/16	29 1/2	20	1 1/4 - 7 NC	576.0	DAJ

Notes

1. 'H' Dimension refers to flat on stem.
2. '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.

DRINKING WATER SYSTEM COMPONENTS CLASSIFIED BY UNDERWRITERS LABORATORIES INC. IN ACCORDANCE WITH STANDARD ANSI/NSF 61-1998 (3N75) MECHANICAL DEVICES.

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