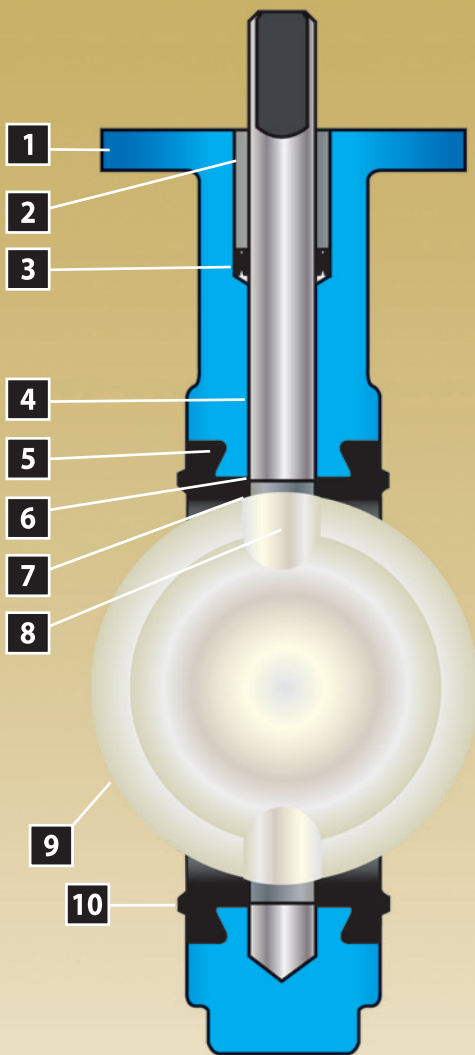


## 709/719 RESILIENT SEATED BUTTERFLY VALVES





## FEATURES AND BENEFITS

**1** Bodies are machined to high tolerances. Guaranteed standard dimensions for interchangeability of parts and operators.

**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** Two-piece body and one-piece disc/stem makes field replacement of seat and disc/stem quick and easy.

**5** The special snap-in Resil-O-Seat™ design secures seat in place without bonding. The Resil-O-Seat™ is 100% field replaceable - no special tools required. All standard seats are Food Grade with the exception of Viton.

**\*6** The ABZ Ring Seal on the Teflon® seat is a molded part of the seat. It is of special design so as to contain an o-ring creating a positive seal around the stem as well as between the seat and valve body. This positive secondary seal eliminates leakage into the stem journal as well as migration of line media behind the seat. Teflon® ring seals are located at top and bottom on all Teflon® seated valves.

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

**8** Specially designed disc/stem prevents distortion of disc under high pressure. Thin disc allows for maximum open flow.

**9** Disc edge is individually processed through machining for a smooth edge, providing a bubble tight shut-off and maximum seat life.

**10** Resil-O-Seat™ forms a seal against all standard ANSI 125/150 flanges. Gasketing requirements are eliminated.

**709 is a wafer style body**

**719 is a full lug style body**

## STANDARD CONSTRUCTION SPECIFICATIONS:

**Body:** Cast Iron and 316 Stainless Steel

**Disc/Stem:** 316 Stainless Steel, 17-4 Stainless Steel, and 17-4 Stainless Steel/Teflon® PFA covered Disc

**Resilient Seat:** Teflon® seats with EPDM, Buna or Viton backing material. EPDM, Buna-N, Viton

**Stem Bushing:** Teflon® – Graphite Impregnated

**Stem Packing:** Buna-N and Viton

*Additional materials are available for a wide selection of applications.*

*\*ABZ Ring Seal not incorporated in 2" valves.*

### NOTES:

1. Dimension "K" not applicable to 10" or 12" size. The 10" and 12" stem is round with 1/4" Key.
2. The figures 709 and 719 cannot be used on pipe or flange with an inside diameter less than "E" dimension.
3. Valves are rated up to 150 PSI bi-directional service and 75 PSI end of line rating. Undercut disc is rated up to 50 PSI bi-directional service and 25 PSI end of line rating. Teflon® PFA covered disc rated to 100 PSI bi-directional service, 50 PSI end of line rating and not available in undercut. Teflon® seats are not available with an undercut 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.

## Torque Chart - Figure 709/719

Valve Size	NORMAL CONDITIONS				SEVERE CONDITIONS			
	$\Delta P=0$	$\Delta P=50$	$\Delta P=100$	$\Delta P=150$	$\Delta P=0$	$\Delta P=50$	$\Delta P=100$	$\Delta P=150$
1	60	68	72	76	80	86	90	96
1 1/2	107	114	120	127	133	143	150	160
2	221	230	240	250	373	384	400	406
2 1/2	269	283	288	302	454	464	475	486
3	322	341	365	379	540	568	589	611
4	480	514	542	576	816	848	886	918
5	653	706	754	806	1,102	1,162	1,220	1,274
6	907	1,008	1,109	1,210	1,529	1,642	1,756	1,868
8	1,512	1,714	1,915	2,112	2,549	2,776	3,002	3,229
10	2,318	2,621	2,900	3,224	3,910	4,250	4,590	4,931
12	3,125	3,629	4,138	4,637	5,270	5,838	6,404	6,971

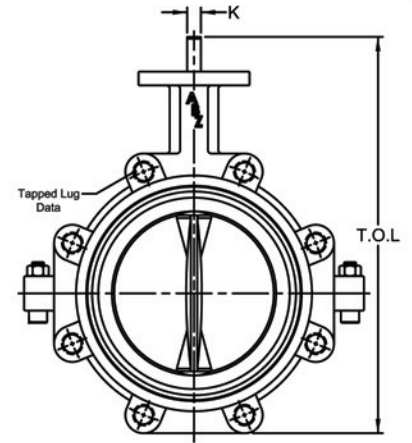
Undercut disc available. All torques shown in inch lbs. 20% Safety factor already included.

## Rated Flow Coefficient (Cv) - Figure 709/719

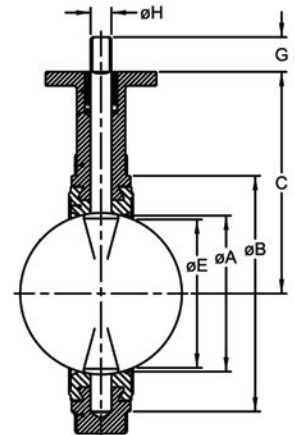
Valve Size	ANGLE OF DISC OPENING								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
1	0.06	0.6	2.9	4.9	8.4	13	23	41	88
1 1/2	0.22	1.7	6	12	23	41	71	109	155
2	1.67	7.7	17	29	49	76	121	184	263
2 1/2	2.50	11.0	25	44	70	112	186	321	445
3	3.33	15.7	37	64	107	170	290	492	701
4	5.00	27.7	63	111	180	286	499	926	1,321
5	8.33	43.7	99	178	280	456	794	1,473	2,123
6	13.33	58.7	136	243	391	634	1,129	1,950	2,826
8	20.00	107.3	247	436	697	1,127	1,940	3,604	5,272
10	31.67	174.0	394	699	1,108	1,823	3,132	5,733	8,395
12	47.00	251.7	578	1,007	1,690	2,734	4,618	8,309	12,214

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

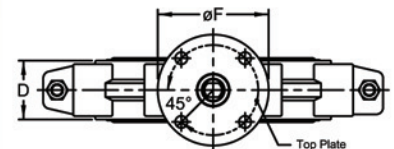
Cv is defined as the volume of water in U.S.G.P.M. that will flow through a given restriction or valve opening with a pressure drop of one (1) p.s.i. at room temperature. Recommended control angles are between 20°-75° open.



Flow View



Section View



Top View

## Dimensional Chart - Figure 709/719

Valve Size	DIMENSIONS											TOP PLATE DRILLING			FIG. 719 TAPPED LUG DATA			WEIGHT (POUNDS)	
	A	B	C	D	E	F	G	H	K	Keyway	T.O.L.	Bolt Circle	No. Holes	Hole Dia.	Bolt Circle	No. Holes	Tap	709	719
*1"	1 3/16	2 3/8	3 5/32	1 1/8	11/16	3 1/2	3/4	3/8	1/4	-	5.08	1 1/4	4	5/16	N/A	N/A	N/A	2	N/A
*1 1/2"	1 3/4	3 1/4	3 3/4	1 3/16	1 7/16	2 3/8	3/4	3/8	1/4	-	6.06	1 3/4	4	9/32	4 3/4	2	N/A	3	N/A
2"	2	3 7/8	5 1/2	1 5/8	1 3/8	4	1 1/4	9/16	3/8	-	9.25	3 1/4	4	7/16	4 3/4	4	5/8" - 11 unc	7	8
*2 1/2"	2 1/2	4 5/8	6	1 3/4	2 1/16	4	1 1/4	9/16	3/8	-	10.06	3 1/4	4	7/16	5 1/2	4	5/8" - 11 unc	9	11
3"	3	5 1/4	6 1/4	1 3/4	2 9/16	4	1 1/4	9/16	3/8	-	10.66	3 1/4	4	7/16	6	4	5/8" - 11 unc	10	12
4"	4	6 3/8	7	2	3 5/8	4	1 1/4	5/8	7/16	-	12.53	3 1/4	4	7/16	7 1/2	8	5/8" - 11 unc	15	21
*5"	5	7 5/8	7 1/2	2 1/8	4 3/4	4	1 1/4	3/4	1/2	-	13.31	3 1/4	4	7/16	8 1/2	8	3/4" - 10 unc	12	4
6"	5 3/4	8 1/2	8	2 1/8	5 1/2	4	1 1/4	3/4	1/2	-	14.40	3 1/4	4	7/16	9 1/2	8	3/4" - 10 unc	20	28
8"	7 3/4	10 5/8	9 1/2	2 1/2	7 1/2	6	1 1/4	7/8	5/8	-	17.25	5	4	9/16	11 3/4	2	3/4" - 10 unc	36	46
10"	9 3/4	13	10 3/4	2 1/2	9 5/8	6	2	1 1/8	-	1/4 x 1/4	20.38	5	4	9/16	14 1/4	12	7/8" - 9 unc	49	65
12"	11 3/4	15 3/4	12 1/4	3	11 9/16	6	2	1 1/8	-	1/4 x 1/4	23.07	5	4	9/16	17	12	7/8" - 9 unc	74	98

\*Not available with Teflon® PFA disc.

‡Not available with Teflon® seat.

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