KEYSTONE FIGURE 1/2 BUTTERFLY VALVES

A heavy duty industrial resilient seated butterfly valve
Figure 1 - Wafer body design
Figure 2 - Lugged body design

GENERAL APPLICATION

The through shaft design is a reliable solution for arduous conditions in the following applications

- Shipbuilding
- Water works
- HVAC
- Power plants
- Chemical industry
- Pump outlets
- Tank drains
- Ship side

TECHNICAL DATA

Pressure:	5 kg/cm² (75 psi) 10 kg/cm² (150 psi)
Temperature:	-40 °C to 120 °C (-40 °F to 248 °F)
Size:	DN 50 to 1000 (NPS 2 to 40)
Flange Accommodation:	JIS 5K/10K KS 5K/10K ASME 150

End of line service:
Apply for 3 kg/cm² at rated pressure 5 kg/cm² and 6 kg/cm² at rated pressure 10 kg/cm²
Please consult the factory for other flange accommodation

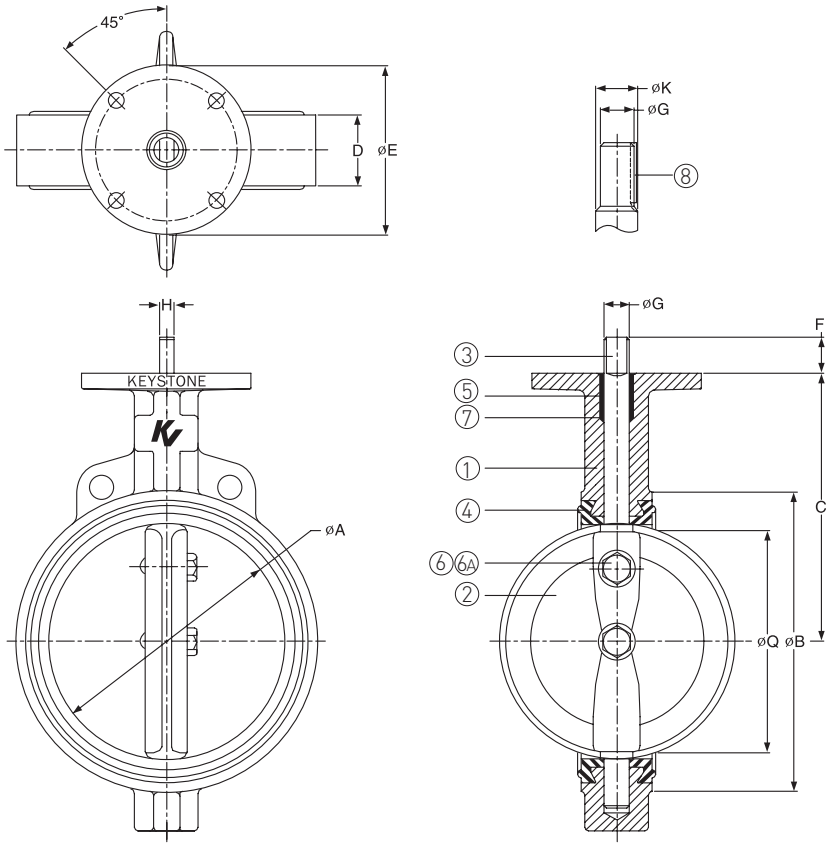
FEATURES

- Factory testing of every valve at full rating ensures 100% tight shut-off.
- Actuator flange is standardized for easy operator interchangeability and direct mounting of Keystone range of actuators.
- Primary seal is formed by preloaded contact between disc and seat. These seals protect valve from fluid contact.
- Bi-directional stem seal is suitable for pressure and is self- adjusting.
- The disc hub edge is rounded and polished to provide full concentric seating without seat obstruction to flow, as well as to ensure maximum seat life.
- Replaceable elastomer seat isolates the shaft and body parts from the stream and also serves as the flange gasket.
- Moulded-in O-ring provides positive flange sealing and eliminates the need for additional gaskets.
- Heavy duty top bushing absorbs side thrust and torque loads.
- Heavy duty one piece shaft design provides high strength and positive disc control.
- Stainless steel disc screws allow quick and easy disassembly.
- Disc screw connection is positive shake proof and stronger than shaft.

KEYSTONE FIGURE 1/2 BUTTERFLY VALVES

PARTS LISTS AND DIMENSIONAL DRAWINGS

FIGURE 1 - VALVE DATA - WAFER



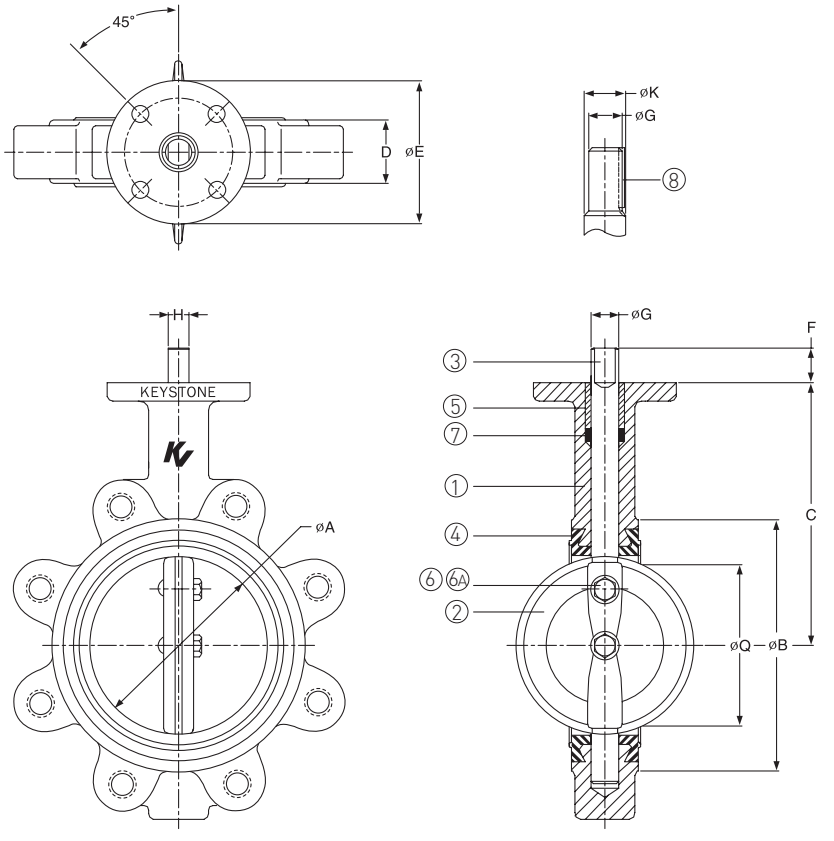
PARTS LIST

Part	Name
1	Body
2	Disc
3	Stem
4	Seat
5	Bushing
6	Disc screw
6A	O-ring
7	Packing
8	Key

NOTES

1. Valve size shown is the DN 150 (NPS 6).
2. 'Q' is the disc chordal dimension at face of valve for disc clearance into pipe fitting or equipment.
3. The valve dimensions are for reference only. For detailed information, please consult factory.

FIGURE 2 - VALVE DATA - LUGGED



PARTS LIST

Part	Name
1	Body
2	Disc
3	Stem
4	Seat
5	Bushing
6	Disc screw
6A	O-ring
7	Packing
8	Key

NOTES

1. Body provided with lugs tapped as shown.
2. Valve size shown is the DN 150 (NPS 6).
3. 'Q' is the disc chordal dimension at face of valve for disc clearance into pipe fitting or equipment
4. The valve dimensions are for reference only For detailed information, please consult factory.

KEYSTONE FIGURE 1/2 BUTTERFLY VALVES

DIMENSIONAL DATA

VALVE DIMENSIONS (mm)

Size											Top plate data			Weight (kg)	
DN (NPS)	ØA	ØB	C	D	ØE	F	ØG	H	ØK	ØQ	B.C.D.	Hole no.	Hole dia.	Figure 1	Figure 2
50 (2)	51	105	140	41	102	32	14.3	9.5	-	36	82.6	4	11	3.0	4.0
65 (2½)	64	118	152	45	102	32	14.3	9.5	-	51	82.6	4	11	3.6	5.5
80 (3)	76	132	159	45	102	32	14.3	9.5	-	68	82.6	4	11	4.0	6.0
100 (4)	102	161	178	51	102	32	15.9	11.1	-	94	82.6	4	11	6.0	8.0
125 (5)	127	186	191	54	102	32	19.1	12.7	-	121	82.6	4	11	7.5	10.0
150 (6)	146	215	203	54	102	32	19.1	12.7	-	141	82.6	4	11	9.0	11.0
200 (8)	197	270	241	64	152	32	22.2	15.9	-	195	127.0	4	13	16.4	19.0
250 (10)	248	330	273	64	152	51	28.6	-	-	248	127.0	4	13	22.0	30.0
300 (12)	298	376	311	76	152	51	28.6	-	-	297	127.0	4	13	30.8	42.0
350 (14)	337	426	305	76	152	76	34.9	-	-	337	127.0	4	13	52.0	64.0
400 (16)	387	484	329	102	152	76	41.3	-	-	383	127.0	4	13	61.0	79.5
450 (18)	438	543	368	108	203	108	47.6	-	-	434	165.0	4	21	86.0	107.0
500 (20)	489	597	403	127	203	108	47.6	-	54	482	165.0	4	21	110.0	145.0
550 (22)	525	635	460	151	203	90	60.0	-	65	518	165.0	4	21	140.0	210.0
600 (24)	575	688	495	151	203	90	60.0	-	65	570	165.0	4	21	176.0	243.0
650 (26)	617	731	530	170	254	90	60.0	-	70	609	210.0	4	21	208.0	287.0
700 (28)	667	781	565	170	254	90	60.0	-	70	660	210.0	4	21	237.0	310.0
750 (30)	717	845	585	190	254	117	75.0	-	80	705	210.0	4	21	346.0	414.0
800 (32)	771	885	645	190	254	115	75.0	-	80	763	210.0	4	21	311.0	441.0
900 (36)	865	1000	691	230	300	150	90.0	-	95	851	254.0	8	17	585.0	713.0
1000 (40)	962	1110	744	250	360	176	107.9	-	110	945	317.5	8	21	726.0	-

ACTUATOR SELECTION

Actuator	Figure	Remark
Handle	F401	Leverlock
Gear	F420 to F430	Range of heavy duty gear operators available
Pneumatic	F89U	Double acting and spring return rack and pinion designs
Gear and pneumatic	F453/F89U	Declutchable gear unit provides manual override for the Keystone pneumatic actuator
Electric	EPI2	Compact electric actuators

K_v VALUES

Disc	Valve size (DN)																					
opening	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1000
10°	1.7	2.6	3.4	5	9	15	21	33	49	65	86	110	130	160	190	225	260	300	340	433	540
20°	7.0	10.0	14.0	25	38	52	95	155	220	290	380	490	610	750	860	990	1120	1290	1460	2249	2770
30°	16.0	22.0	33.0	54	86	120	220	340	510	660	860	1120	1380	1680	1980	2320	2670	3050	3440	4498	5830
40°	26.0	38.0	57.0	95	160	220	380	610	860	1200	1550	1980	2490	2960	3440	4130	4820	5510	6200	7872	9610
50°	43.0	60.0	95.0	150	240	340	590	950	1460	1890	2410	3100	3960	4730	5500	6530	7570	8510	9460	12975	15480
60°	69.0	95.0	150.0	240	390	550	950	1550	2320	2920	3870	4990	6190	7390	8600	9900	11200	13350	15500	19895	24910
70°	110.0	160.0	240.0	400	640	950	1550	2580	3780	4820	6360	8260	10300	12450	14600	16750	18900	22350	25800	32870	42120
80°	170.0	250.0	370.0	620	950	1380	2410	3960	5850	7740	9460	12900	15500	18950	22400	26700	31000	34400	37800	51900	62280
90°	190.0	280.0	430.0	710	1120	1630	2840	4640	6880	8600	11200	15500	18900	22350	25800	30100	34400	39550	44700	60550	73510

NOTES

Rated K_v=the volume of water in m^3/hr that will pass through a given valve opening at a pressure drop of 1 bar

C_v=1.156 K_v

MATERIAL SELECTION

Part name	Material	ASME standard	KS standard
Body	Cast iron	A126 Class B	D4301 GC200/GC250
	Ductile iron	A536 Grade 65-45-12	D4302 GCD400/GCD450
	Cast steel	A216 Grade WCB	D4101 SC480
Disc	Stainless steel	A351 Grade CF8/CF8M	D4103 SSC13A/14A
	Al-bronze	B148-C95200	D6024 CAC701
Stem	304 stainless steel	A276 Type 304	D3706 STS304
	316 stainless steel	A276 Type 316	D3706 STS316
Seat	EPDM	-	-
	Buna-N	-	-
Packing	Buna-N	-	-
Bushing	Acetal	-	-

NOTES

Other materials or combination of materials are available on request.

MODEL CODING SYSTEM

	Valve size (DN)	Figure number	Trim code
Example:	**50**	**F2**	**T065**

Trim code	Body	Disc	Stem	Seat
T065	Cast iron	Al bronze	304SS	Buna-N
T062	Cast iron	Al bronze	304SS	EPDM
T329	Cast iron	304SS	304SS	Buna-N
T331	Cast iron	304SS	304SS	EPDM
T089	Ductile iron	Al bronze	304SS	Buna-N
T087	Ductile iron	Al bronze	304SS	EPDM
T093	Ductile iron	304SS	304SS	Buna-N
T045	Ductile iron	304SS	304SS	EPDM
T123	Cast steel	Al bronze	304SS	Buna-N
T423	Cast steel	Al bronze	304SS	EPDM
T097	Cast steel	304SS	304SS	Buna-N
T105	Cast steel	304SS	304SS	EPDM