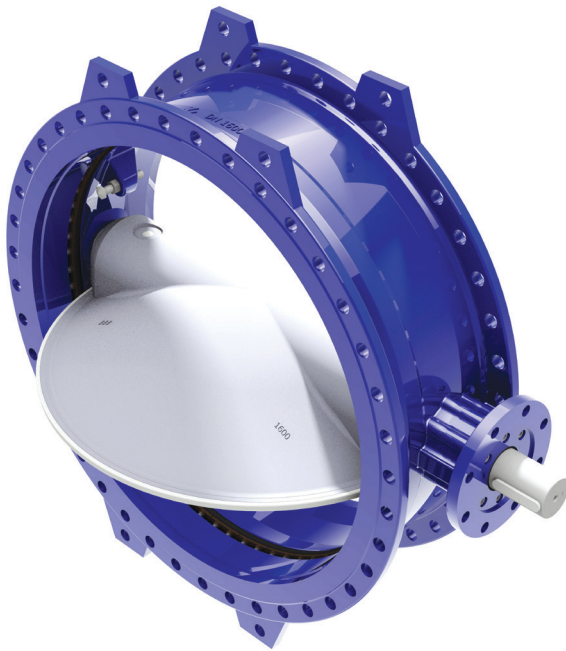




KEYSTONE FIGURE 56 DOUBLE FLANGED BUTTERFLY VALVE

Valve for use in power generation plants, municipal water treatment and industrial applications



FEATURES

- Face to face is in compliance with EN558, series 13 (short) and 14 (long) for sizes up to and including DN 2000. Sizes DN 2100 and above face to face is according to AWWA C516.
- Replaceable actuator flange in accordance to ISO 5211.
- Cast double flanged butterfly valve, which can be drilled acc. various flange standards (JIS, BS, ISO/EN, ASME and AWWA). Dead-end service capability with down stream piping removed.
- Body and disc protective coatings or rubber linings are available for sea water or corrosive services.
- Low headloss thru optimized disc design.
- The special seat and disc edge contours reduce seating torque, provide better shut-off and longer service life.
- The seat is adjustable in order to optimize the required shut-off tightness with the accompanying torque, for unidirectional or bidirectional operation.
- Replaceable seat without special tooling, dismantling or removing the valve from the line.
- A stainless steel disc edge resists against corrosion and avoids encrust build-up for consistent sealing.
- Dry shaft design.
- High strength stub shafts have full 1½ diameter penetration into disc-hubs with close tolerance-fit.
- Self lubricating sleeve bearings allow valve installation with the shaft horizontal or vertical.
- All valves comply to PED DIRECTIVE 2014/68/EU and CE marking.

GENERAL APPLICATION

The valve offers an excellent, cost effective solution for municipal water treatment, desalination, power generation and industrial applications.

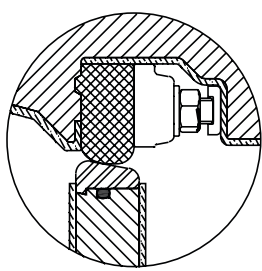
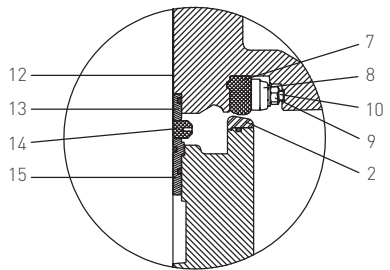
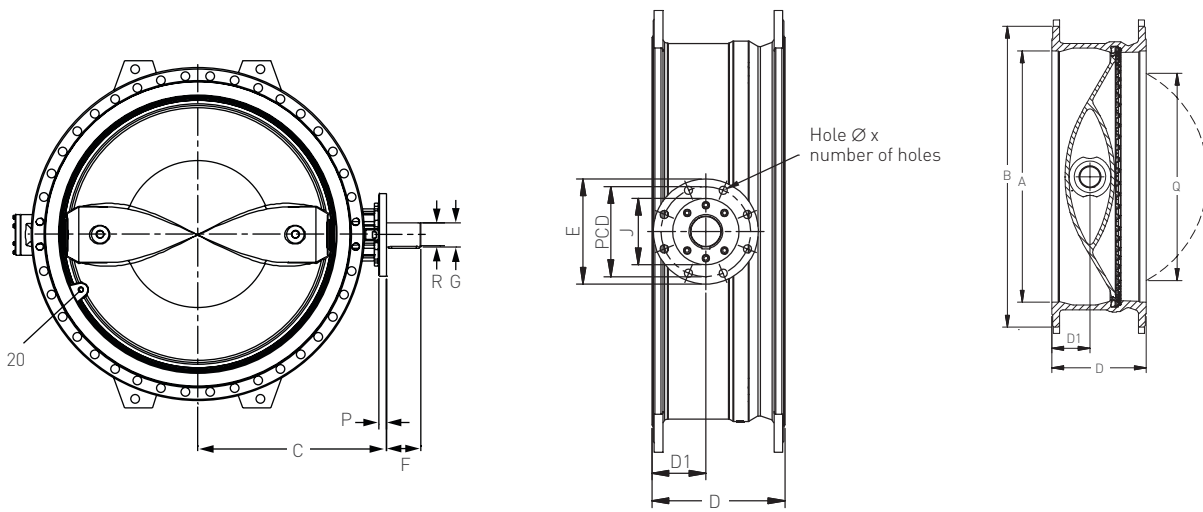
TECHNICAL DATA

Sizes:	DN 700 - 3000
Pressure:	10/16* bar
Temperature:	-40°C to +120°C
Flange acc.:	PN 10/16**

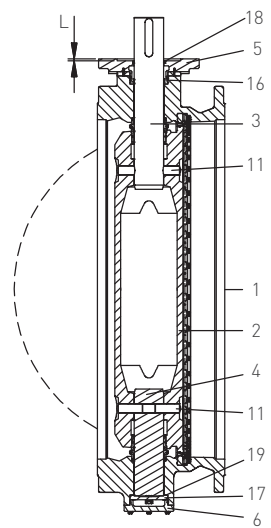
* Sizes 1300-2000 require a ribbed disc for 16 bar; above 2000 mm, 10 bar only.

** Other drillings, contact factory.

KEYSTONE FIGURE 56 DOUBLE FLANGED BUTTERFLY VALVE



Rubber lined



PARTS LIST

Part	Name
1	Body
2	Disc
3	Upper shaft
4	Lower shaft
5	Actuator flange
6	Bottom cover
7	Seat
8	Seat retaining segment
9	Seat retaining nut
10	Seat retaining screw
11	Disc pins and sleeve
12	Bearing
13	Sleeve body/shaft
14	Shaft seal
15	Sleeve disc/shaft
16	Secondary seal ring
17	Axial positioning ring
18	Dirtscraper
19	Axial bearing
20	Travel stop

VALVE DIMENSIONS (mm)

Size DN	A	B ^[1]	C	D ^[2]	D1	Q ^[5]	G ^[3]	Actuator flange acc. ISO 5211	Mass (kg)
700	700	895	623	292	86	658	70	F-14 / F-16	385
800	800	1015	623 ^[4]	318	99	757	70	F-16 / F-25	525
900	900	1115	673 ^[4]	330	97	859	80	F-16 / F-25	640
1000	1000	1230	730	410	159	934	90	F-25 / F-30	875
1100	1100	1340	798	470	197	1012	100	F-25 / F-30	1080
1200	1200	1455	848	470	185	1129	100	F-30 / F-35	1285
1300	1300	1575	917	530	212	1216	120	F-30 / F-35	1595
1400	1400	1675	968	530	219	1319	120	F-30 / F-35	1905
1500	1500	1785	1038	600	250	1405	140	F-35 / F-40	2270
1600	1600	1915	1088	600	243	1518	140	F-35 / F-40	2640
1800	1800	2115	1210	670	286	1711	160	F-35 / F-40	3485
2000	2000	2325	1333	760	350	1884	180	F-40 / F-48	4555
2100	2100	2438	1397	533	233	2050	200	F-48 / F-60	5070
2200	2200	2550	1447	533	233	2145	200	F-48 / F-60	5425
2400	2400	2760	1569	584	264	2340	200	F-48 / F-60	6915
2600	2600	2960	1690	762	270	2530	220	F-48 / F-60	13650
2800	2800	3180	1785	762	362	2650	240	F-48 / F-60	14380
3000	3000	3405	1938	711	316	2950	260	F-48 / F-60	20145

NOTES

- PN 10 flanges. For other flanges contact factory.
- EN558 Basic series 13 for sizes below DN 2000. For sizes DN 2000 and above the standard is AWWA C516. Basic series 14 also available upon request.
- Stemhead diameter to be selected according application.
- For actuator flange F-25 only.
- Q is the disc chordal dimension at face of valve for disc clearance into pipe fitting or equipment.
- Specify size, figure number, part name, material and flange accommodations when ordering spare parts
- Closing clockwise.
- Standard inner body coating: epoxy. For other coatings and rubber linings contact factory.
- For buried service applications contact factory.
- Recommended flow is with the seat downstream.

KEYSTONE FIGURE 56 DOUBLE FLANGED BUTTERFLY VALVE

VALVE DATA

ACTUATOR FLANGE DIMENSIONS (mm)

Type	Actuator flange dimensions acc. ISO 5211							Shaft dimensions	
	E	J	L	P	PCD	Hole ø	No of holes	F	G _{h9}
F14	175	100	5	20	140	17.5	4	60	50/60/70
F16	210	130	6	25	165	22.0	4	75	70/80
F25	300	200	6	30	254	17.5	8	105	80/90/100
F30	350	230	6	35	298	22.0	8	125	90/100
F35	415	260	6	40	356	33.0	8	175	120/140/160
F40	475	300	9	45	406	39.0	8	195	140/160/180
F48	560	370	9	50	483	39.0	12	245	160/180/200
F60	686	470	9	50	603	39.0	20	305	220/240/260/280

KEYWAY DIMENSIONS (mm)

G _{h9}	Key size N9	R	G _{h9}	Key size N9	R
50	14 x 9	44.5	160	40 x 22	147
60	18 x 11	53.0	180	45 x 25	165
70	20 x 12	63.0	200	45 x 25	185
80	22 x 14	71.0	220	50 x 28	203
90	25 x 14	81.0	240	56 x 32	220
100	28 x 16	90.0	260	56 x 32	240
120	32 x 18	109.0	280	63 x 32	260
140	36 x 20	128.0			

K_v VALUES

Disc opening	Size in mm									
	700	800	900	1000	1100	1200	1300	1400	1500	1600
5°	369	483	611	754	912	1086	1274	1478	1697	1930
10°	761	994	1258	1553	1879	2236	2624	3043	3494	3975
15°	1196	1562	1977	2440	2953	3514	4124	4783	5491	6247
20°	1718	2243	2839	3505	4241	5048	5924	6870	7887	8973
25°	2218	2897	3666	4526	5477	6518	7649	8872	10184	11587
30°	2870	3749	4745	5858	7088	8435	9899	11481	13179	14995
35°	3805	4970	6290	7765	9396	11182	13123	15220	17472	19879
40°	4870	6361	8051	9939	12026	14312	16797	19481	22363	25444
45°	6218	8122	10279	12691	15356	18274	21447	24873	28554	32488
50°	7827	10223	12939	15974	19329	23003	26996	31309	35942	40894
55°	9915	12950	16390	20234	24483	29137	34196	39659	45527	51800
60°	12306	16073	20343	25115	30389	36165	42444	49225	56508	64294
65°	15394	20106	25447	31416	38013	45239	53093	61575	70686	80425
70°	18764	24508	31018	38294	46335	55143	64716	75056	86161	98032
75°	23091	30159	38170	47124	57020	67858	79639	92363	106029	120637
80°	26439	34533	43706	53958	65289	77699	91188	105757	121405	138132
85°	28831	37656	47659	58838	71194	84727	99436	115323	132386	150625
90°	30962	40440	51181	63187	76456	90989	106786	123846	142170	161758
	1700	1800	2000	2100	2200	2400	2600	2800	3000	
5°	2179	2443	3016	3325	3649	4343	5095	5909	6783	
10°	4487	5031	6211	6848	7515	8944	10482	12157	13955	
15°	7052	7906	9761	10762	11811	14056	16496	19132	21962	
20°	10130	11357	14021	15458	16965	20190	23707	27495	31563	
25°	13081	14665	18105	19961	21907	26071	32780	38017	43641	
30°	16928	18978	23430	25832	28350	33739	40690	47990	55830	
35°	22441	25159	31061	34244	37584	44728	53213	62113	71421	
40°	28724	32203	39757	43832	48106	57250	67501	79151	92207	
45°	36676	41117	50762	55965	61422	73097	86166	100889	117489	
50°	46165	51756	63897	70446	77315	92011	108031	126166	146793	
55°	58477	65559	80937	89233	97934	116549	137062	160995	188775	
60°	72581	81372	100459	110756	121555	144660	169530	198330	232338	
65°	90792	101788	125664	138544	152053	180956	214386	253832	300252	
70°	110669	124071	153175	168875	185341	220571	263359	316229	377253	
75°	136188	152681	188496	207816	228080	271434	328965	394717	474598	
80°	155938	174823	215831	237953	261155	310796	372214	448071	548806	
85°	170042	190635	235352	259476	284776	338907	403511	482356	577041	
90°	182610	204725	252747	278654	305824	363956	433629	513676	607394	

NOTES

Rated K_v = the volume of water in m³/hr that will pass through a given valve opening at a pressure drop of 1 bar.

KEYSTONE FIGURE 56 DOUBLE FLANGED BUTTERFLY VALVE

MATERIALS

PRESSURE-TEMPERATURE DIAGRAM

Seat material	Disc material	Body material	Size range DN (mm)	Valve function*	Temperature in °C											
					-40	-30	-20	-15	-10	0	50	100	120	130	150	160
EPDM	all	DI	700-1200	FLANGED / EOL							16 bar/16 bar					
	all (reinforced discs)	DI	1300-2000 reinforced disc	FLANGED / EOL							16 bar/16 bar					
	all	DI	2100-3000	FLANGED / EOL							10 bar/10 bar					
	all	DI LT	700-1200	FLANGED / EOL					16 bar/16 bar							
	all (reinforced discs)	DI LT	1300-2000 reinforced disc	FLANGED / EOL					16 bar/16 bar							
	all	DI LT	2100-3000	FLANGED / EOL					10 bar/10 bar							
NBR	all	DI	700-1200	FLANGED / EOL							16 bar/16 bar					
	all (reinforced discs)	DI	1300-2000 reinforced disc	FLANGED / EOL							16 bar/16 bar					
	all	DI	2100-3000	FLANGED / EOL							10 bar/10 bar					
	all	DI LT	700-1200	FLANGED / EOL					16 bar/16 bar							
	all (reinforced discs)	DI LT	1300-2000 reinforced disc	FLANGED / EOL					16 bar/16 bar							
	all	DI LT	2100-3000	FLANGED / EOL					10 bar/10 bar							

* Flanged/EOL - Flanged/End of line
DI LT - Low temperature

FIGURE 56 MATERIAL OVERVIEW PART

Part	Description	Material standard / grade / designation / number	Equivalent grades	Remarks
Body	Ductile iron	EN1563 - JS-1030 // EN-GJS-400-15 // 5.3106	ASTM A536 - 65-45-12	
	Ductile iron low temperature	EN1563 - JS-1025 // EN-GJS-400-18-LT // 5.3103	ASTM A395 - 60-40-18	
	Stainless steel	EN10213 - G-X5CrNiMo 19-11-2 // 1.4408	ASTM A351 - CF8M / J92900	
	Steel	EN10213 - GP240GH // 1.0619	ASTM A216 - WCB / J03002	
Disc	Ductile iron / Stainless steel edge	EN1563 - JS-1030 // EN-GJS-400-15 // 5.3106 + SS316	ASTM A536 - 65-45-12 + SS316	
	Stainless steel	EN10213 - G-X5CrNiMo 19-11-2 // 1.4408	ASTM A351 - CF8M / J92900	
	Nickel aluminium bronze	EN1982 - CuAl10Fe5Ni5 // CC333G	ASTM B148 - C95800	BS 1400 AB2 // 2.0975.01
Shaft	Stainless steel	EN10088-3 - X17CrNi 16-2 // 1.4057	ASTM A479/A276 - S43100	
	Duplex stainless steel	EN10088-3 - X2CrNiMoN22-5-3 // 1.4462	ASTM A479/A276 - S31803	
Disc pin	Duplex stainless steel	EN10088-3 - X2CrNiMoN22-5-3 // 1.4462	ASTM A479/A276 - S31803	
Disc pin sleeve	Stainless steel 316L (pipe)	EN10088-3 - X2CrNiMo18-4-3 // 1.4435	SS316 equivalent	
	Stainless steel	EN10088-3 - X5CrNiMo17-12-2 // 1.4401		
Bearing	Glass reinforced PTFE			
Sleeve body/shaft	Stainless steel 316L (pipe)	EN10088-3 - X2CrNiMo18-4-3 // 1.4435	SS316 equivalent	Alternative grades: 316 - 1.4401 // 1.4404
Sleeve disc/shaft	Duplex stainless steel	EN10088-3 - X2CrNiMoN22-5-3 // 1.4462	ASTM A479/A276 - S31803	
Seat retaining segment	Stainless steel	EN10213-4 - G-X5CrNiMo 19-11-2 // 1.4408	ASTM A351 - CF8M / J92900	
	Nickel aluminium bronze	EN1982 - CuAl10Fe5Ni5 // CC333G	ASTM B148 - C95800	BS 1400 AB2 // 2.0975.01
Seat retaining screw	Stainless steel	A4 Waxed	SS316 equivalent	
	Duplex stainless steel	EN10088-3 - X2CrNiMoN22-5-3 // 1.4462	ASTM A479/A276 - S31803	
Seat retaining nut	Stainless steel	A4 Waxed	SS316 equivalent	
	Duplex stainless steel	EN10088-3 - X2CrNiMoN22-5-3 // 1.4462	ASTM A479/A276 - S31803	
Bottom cover	Ductile iron	EN1563 - JS-1030 // EN-GJS-400-15 // 5.3106	ASTM A536 - 65-45-12	
Top plate	Ductile iron	EN1563 - JS-1030 // EN-GJS-400-15 // 5.3106	ASTM A536 - 65-45-12	
Secondary seal ring	Bronze	EN1982 - CuSn5Zn5Pb5 // CC491K	ASTM B148-C83600	DIN1705 2.1096 / BS1400-LG2
Axial positioning ring	Bronze	EN1982 - CuSn5Zn5Pb5 // CC491K	ASTM B148-C83600	DIN1705 2.1096 / BS1400-LG2
Axial bearing	Glass reinforced PTFE			

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