

Coreline

2pc butterfly valves

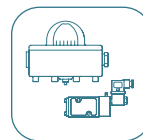
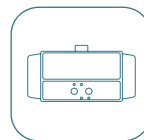
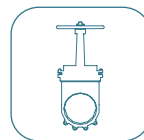
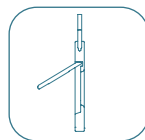
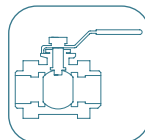
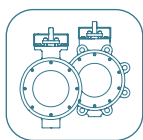


Fig.235

English



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Specifications

Specifications

Nominal diameter:	DN50-DN600
Standard differential pressure:	16 bar for DN50-DN200, 10 bar for DN250-DN600
Flange accommodation:	DN50-DN300: EN1092 PN10, PN16. ASME B16.5 Class150. JIS B 2239 10K, 16K. BS10 Table D, Table E DN350-DN600: EN1092 PN10, PN16. ASME B16.5 Class150. BS10 Table D, Table E
Face to face:	EN558 Series 20, API 609 Table 1
Top flange:	EN ISO 5211
Temperature range:	-40°C to +200°C (depending on pressure, medium and material)
Tightness test:	ISO 5208 Rate A, API 598 Table 5 (medium: water)



The butterfly valves meet the safety requirements of the pressure Equipments Directive 97/23/EC (PED) appendix 1 for fluids of the groups 1 and 2.

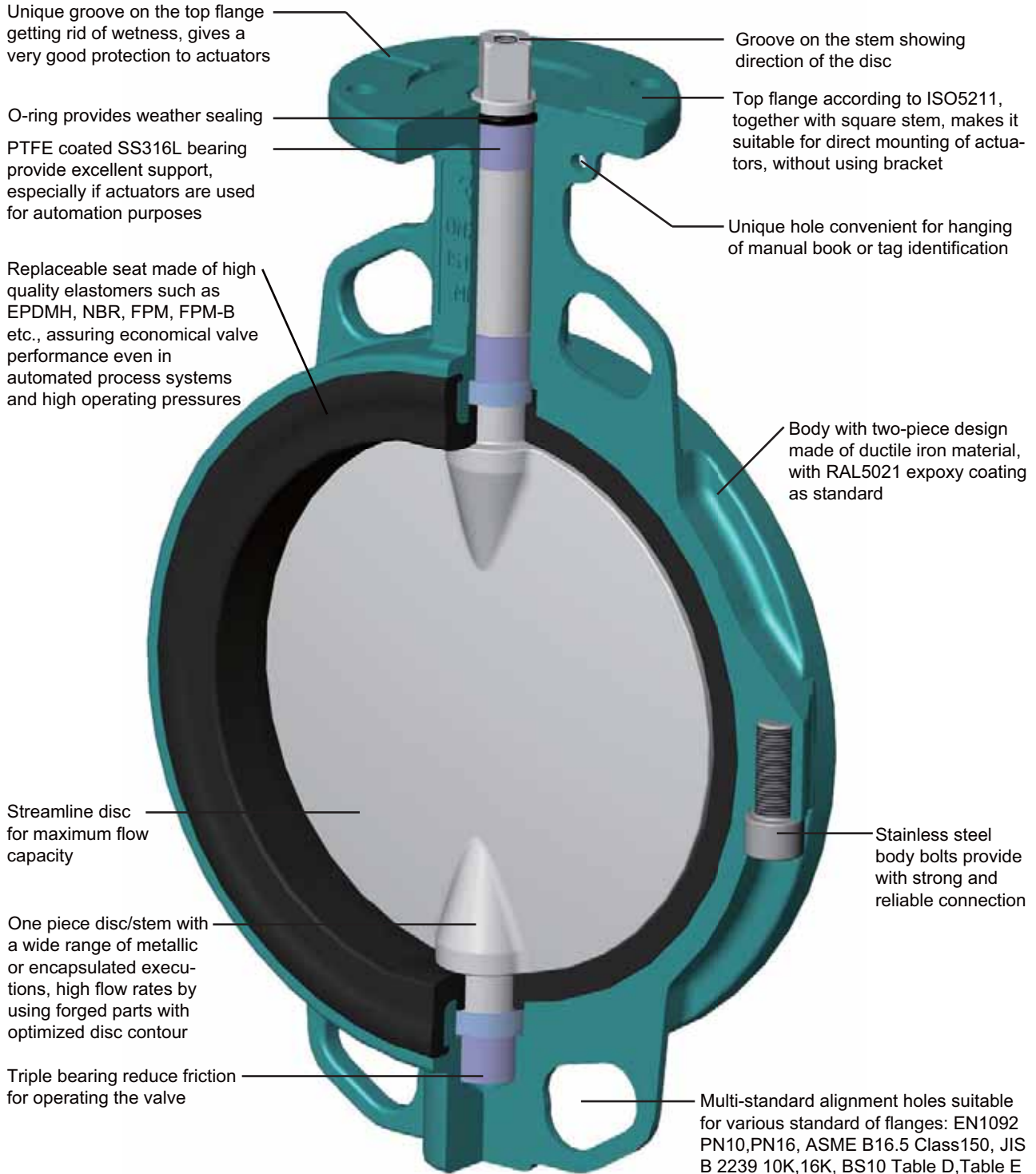


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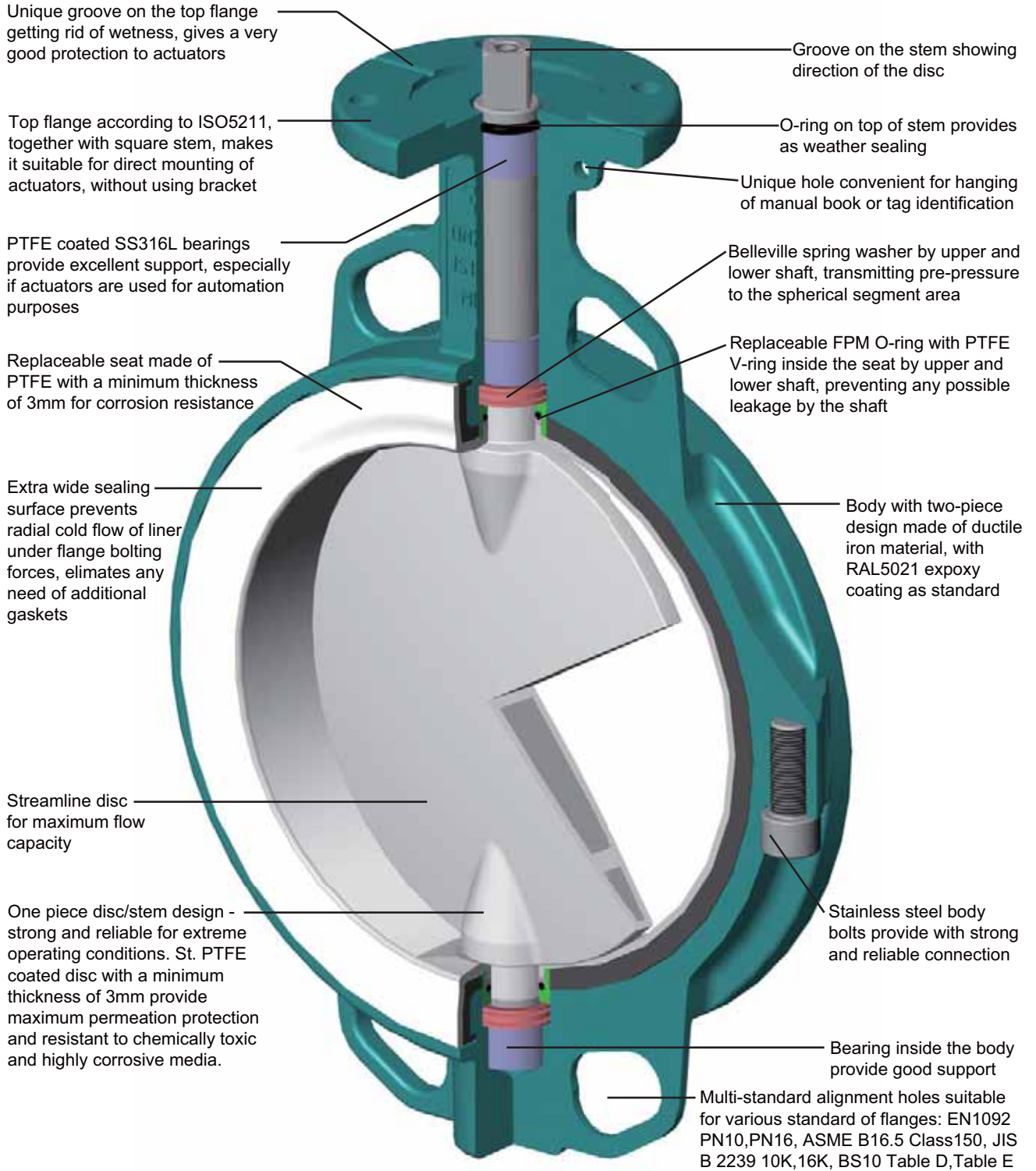
Design features of rubber seat butterfly valves

Design features

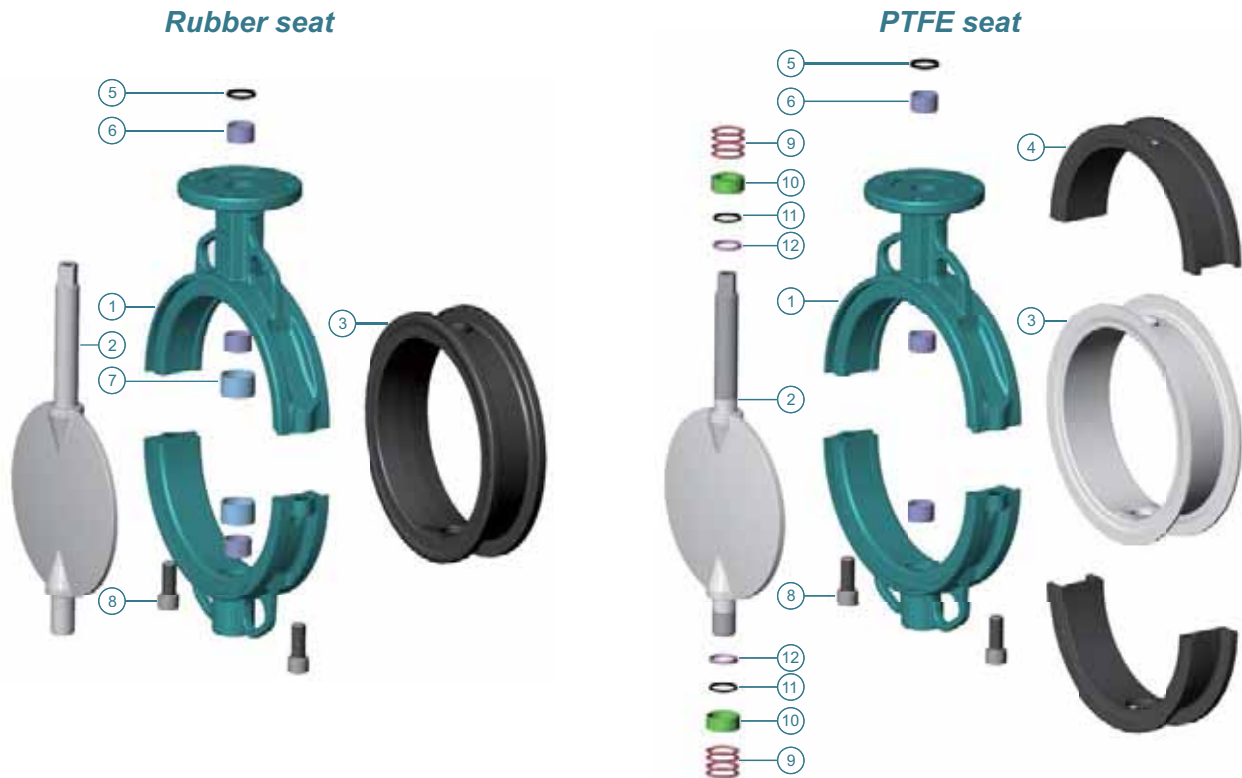


Design features of PTFE lined butterfly valves

Design features

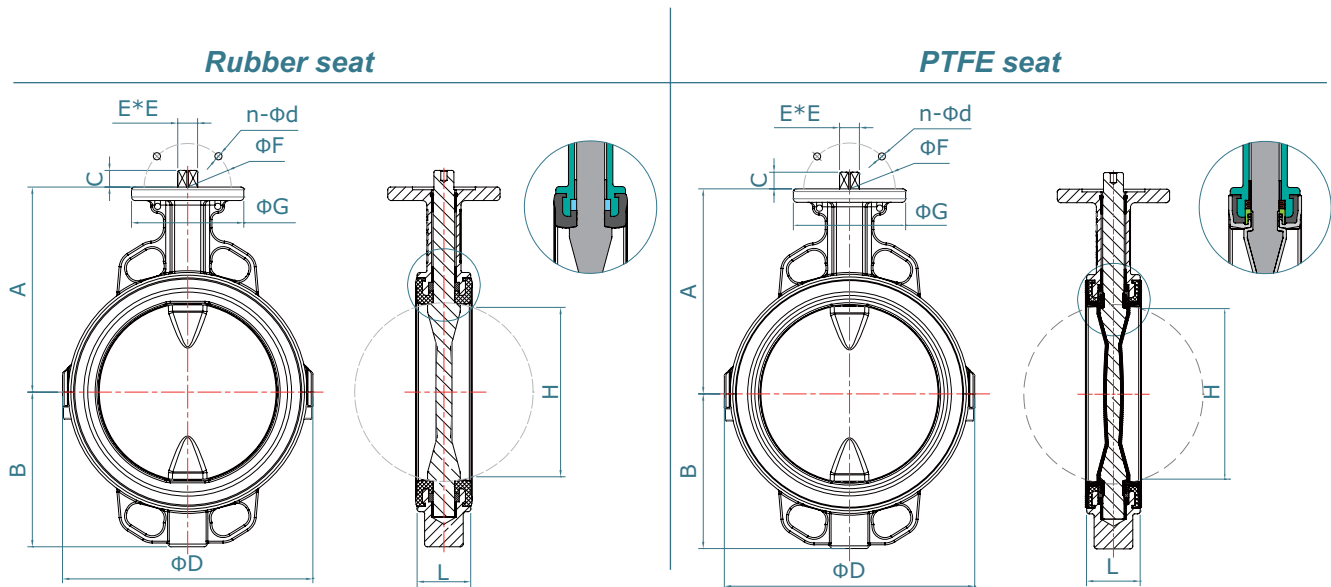


Part list and material specification



No.	Part name	Material	Specification
1	Body	Ductile iron	EN1563 JS1030
2	Disc / shaft one piece	Stainless steel	ASTM A276 316L / ASTM A276 316L (DN50-DN200) ASTM A351 CF8M / ASTM A351 CF8M (DN250-DN600)
		Alloy steel	1.4462/1.4462
		St. PTFE coated / Stainless steel	St. PTFE coated / 17-4PH
		St. PTFE coated / Alloy steel	St. PTFE coated/1.4462
3	Seat	NBR	-15°C~+85°C
		EPDM	-20°C~+120°C
		EPDM-H	-20°C~+130°C
		EPDM-FDA	-20°C~+110°C
		EPDM-WRAS	-20°C~+110°C
		FPM	-15°C~+180°C
		FPM-B	-15°C~+180°C
		PTFE	-40°C~+200°C
4	Elastomer insert	Silicon	
5	Weather seal	NBR	
6	Bearing	SS316L with PTFE coated	
7	Gland	PTFE	
8	Screw	SS316	
9	Bellev. spr. washer	SS321	
10	Stuffing collar	SS316	
11	O-ring	FPM	
12	V-ring	PTFE	

Dimensions and valve torque



DN	A	B	C	D	E	F	n	d	G	H	L
50	126	65	13.5	116	11	50	4	8	65	25.2	43
65	157	79	13.5	136	11	50	4	8	65	59.1	46
80	157	79	13.5	136	11	50	4	8	65	59.1	46
100	167	97	17.5	170	14	70	4	10	90	85.3	52
125	180	129	17,5	196	14	70	4	10	90	111.7	56
150	203	142	18.5	227	17	70	4	10	90	139.1	56
200	228	172	18.5	279	17	102	4	12	125	190.7	60
250	266	213	24.5	336	22	102	4	12	125	240.5	58
300	291	242	24.5	392	22	125	4	14	150	289.6	78
350	332	262	30	445	27	125	4	14	150	330.9	78
400	363	303.5	30	503	27	125	4	14	150	376.4	102
450	397	324.5	39	553	36	140	4	18	175	424.9	114
500	425	357	39	608	36	140	4	18	175	473.2	127
600	498	419	49	717	46	165	4	22	210	569.5	154

Valve torque (Nm)

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Torque/Rubber	11	16	22	32	50	98	185	260	330	570	750	1150	2100	2650
Torque/PTFE	30	35	42	55	70	115	180	270	360	460	650	750	1000	1350

The torque values specified are based on water with room temperature under standard pressure rating.
 The values specified are based on the initial breakaway torque (disc disengages from seat, torque then drops).
 Dynamic torque specifications are available upon request.

Flow capacities and valve sizing

Kv value (m³/h at 1bar P)

DN	20°	30°	40°	50°	60°	70°	80°	90°
50	7	15	35	60	90	132	170	190
65	8	18	38	65	105	155	185	215
80	16	33	75	125	190	270	335	390
100	22	48	95	160	260	385	485	590
125	40	85	165	250	450	645	815	1020
150	60	130	240	400	645	955	1220	1500
200	95	230	465	800	1180	1815	2410	3050
250	175	350	710	1160	1610	2420	3650	4500
300	265	522	990	1700	2600	4000	6000	7210
350	350	650	1200	1800	2900	4600	7200	8800
400	520	980	1500	2500	4200	6500	9200	11000
450	670	1300	2200	3900	6200	9200	12300	15000
500	900	1600	3000	5400	8200	11800	15600	18000
600	1300	2200	4200	7500	11300	16500	21200	24500

Valve Sizing

Determining the size of butterfly valves for control purposes should not be done on the basis of the nominal diameter of the pipe but should be calculated on the basis of the operating characteristics in order to attain the correct control characteristics.

You only need to consider the opening angle when determining the size of control valves. When determining the valve nominal diameter calculate the Kv value from the below formula:

Liquid:

$$K_v = Q \times \sqrt{\frac{W}{\Delta p}}$$

K_v = Flow coefficient.

Q = Max. flow volume in m³/h.

w = Exact weight in kg/m³.

Δp = Pressure drop in bar.

V_N = Max. flow in Nm³/h.

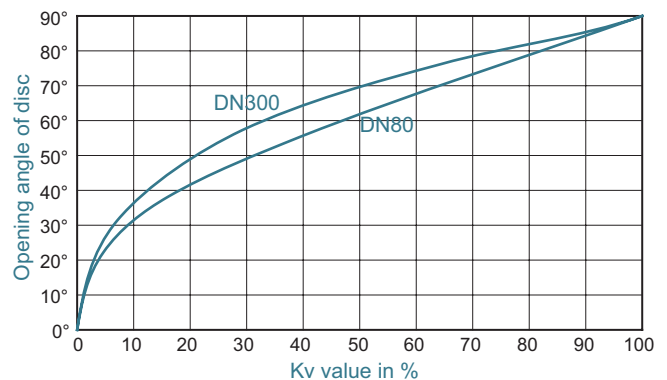
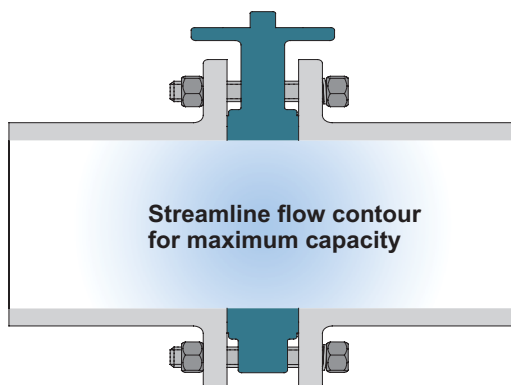
Gas:

$$K_v = \frac{V_N}{514} \sqrt{\frac{G \times T}{\Delta p \times p_d}}$$

G = Exact weight in kg/Nm³.

T = Absolute temp. in ° Kelvin.

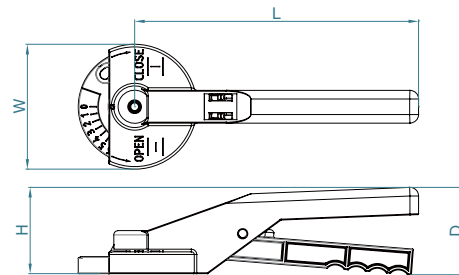
P_d = Absolute pressure downstream in bar



Hand lever and gear box

Aluminium hand lever

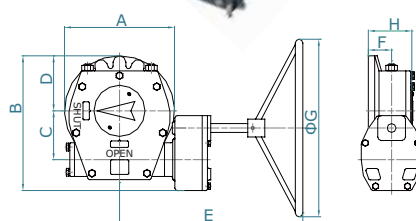
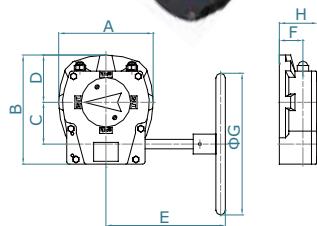
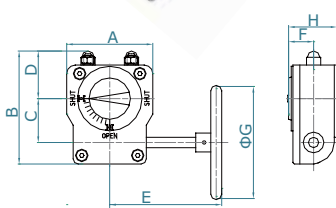
Convenient installation and usage. Excellent surface design and comfortable operating.
Position can be locked by fixing one bolt and nut in the lever hole.



DN	D	H	L	W	[KG]
50-80	56	65	195	74	0.28
100-125	78	82	269	101	0.63
150	78	82	269	101	0.63
200	101	100	330	145	1.46
250	101	100	330	145	1.46

Gear box

Light weight design for quarter turn valves.
Strong and reliable construction with through going shaft.



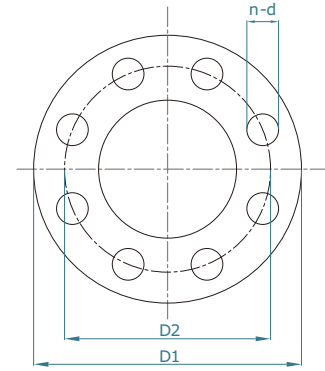
DN	Ratio	A	B	C	D	E	F	G	H	[kg]
50-80	40:1	80	98	43	45	99	26	100	48	1.3
100-150	37:1	100	115	50	55	115	27	120	54	2
200-250	45:1	146	155	60	81	220	38	300	71	5.6
300-400	42:1	165	182	66	76	208	42	300	72	11
450	60:1	200	231	89	100	277	50	400	81	17
500-600	68:1	252	296	123	118	357	50	400	91	32

Standard material: DN50-DN250: Aluminium housing; DN300-DN600: Cast iron housing.

The matching of gear box code to valve dimension are calculated on standard working conditions for our butterfly valves.
The gear boxes can also be delivered to other kind of quarter turn valves.

Mating flange dimensions

- ISO 7005/1/2/3 PN6, PN10, PN16, PN20 metallic flanges
- DIN2501 PN6, PN10, PN16 flanges, mating dimensions
- BS4504 PN6, PN10, PN16 flanges and bolting, metric series
- ANSI B16.5 Class150 pipe flanges and flanged fittings
- MSSSP44 Class150 steel pipeline flanges
- BS10 Flanges and bolting for pipes, valves and fittings
- API605 Class150 large diameter carbon steel flanges
- JISB2211 JIS 5K basic dimensions of 5bar ferrous materials pipe flanges
- JISB2212 JIS 10K Basic dimensions of 10bar ferrous Materials pipe flanges
- JISB2213 JIS 16K Basic dimensions of 16bar ferrous materials pipe flanges

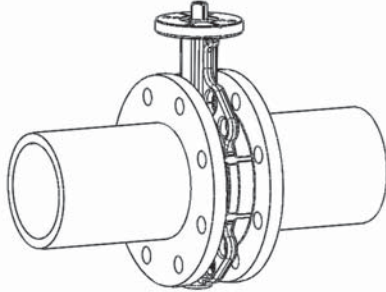


Size		PN6 (Cast iron)						PN10 (Cast iron)						PN16 (Cast iron)						PN20						ANSI Class150						MSS BS Class150											
DN	NPS	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n							
50	2"	140	110	14	12	4	165	125	19	16	4	165	125	19	16	4	150	121	18	16	4	152	121	19.1	5/8"	4																	
65	2 1/2"	160	130	14	12	4	185	145	19	16	4	185	145	19	16	4	180	140	18	16	4	178	140	19.1	5/8"	4																	
80	3"	190	150	19	16	4	200	160	19	16	8	200	160	19	16	8	190	153	18	16	4	191	152	19.1	5/8"	4																	
100	4"	210	170	19	16	4	220	180	19	16	8	220	180	19	16	8	230	191	18	16	8	229	191	19.1	5/8"	8																	
125	5"	240	200	19	16	8	250	210	19	16	8	250	210	19	16	8	255	216	22	20	8	254	216	22.4	3/4"	8																	
150	6"	265	225	19	16	8	285	240	23	20	8	285	240	23	20	8	280	242	22	20	8	279	241	22.4	3/4"	8																	
200	8"	320	280	19	16	8	340	295	23	20	8	340	295	23	20	12	345	299	22	20	8	343	299	22.4	3/4"	8																	
250	10"	375	335	19	16	12	395	350	23	20	12	400	355	28	24	12	405	362	26	24	12	406	362	25.4	7/8"	12																	
300	12"	440	395	23	20	12	445	400	23	20	12	455	410	28	24	12	485	432	26	24	12	483	432	25.4	7/8"	12	483	432	25	7/8"	12												
350	14"	490	445	23	20	12	505	460	23	20	16	520	470	28	24	16	535	476	29.5	27	12	533	476	28.5	1"	12	535	476	29	1"	12												
400	16"	540	495	23	20	16	565	515	28	24	16	580	525	31	27	16	600	540	29.5	27	16	597	540	28.5	1"	16	595	540	29	1"	16												
450	18"	595	550	23	20	16	615	565	28	24	20	640	585	31	27	20	635	578	32.5	30	16	635	578	31.8	1 1/8"	16	635	578	32	1 1/8"	16												
500	20"	645	600	23	20	20	670	620	28	24	20	715	650	34	30	20	700	635	32.5	30	20	699	635	31.8	1 1/8"	20	700	635	32	1 1/8"	20												
600	24"	755	705	26	24	20	780	725	31	27	20	840	770	37	33	20	815	750	35.5	33	20	813	749	35.1	1 1/4"	20	815	749	35	1 1/4"	20												

It should be noted that the diameters of bolt holes in steel and copper alloy flanges are different from cast iron flanges.

Size		BS TABLE D						BS TABLE E						JIS 5K						JIS 10K						JIS 16K																										
DN	NPS	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n	D1	D2	d	Bolt	n																
50	2"	152.4	114.3	19.1	5/8"	4	152.4	114.3	19.1	5/8"	4	130	105	15	12	4	155	120	19	16	4	155	120	19	16	8	200	160	23	20	8																					
65	2 1/2"	165.1	127	19.1	5/8"	4	165.1	127	19.1	5/8"	4	155	130	15	12	4	175	140	19	16	4	175	140	19	16	8	200	160	23	20	8																					
80	3"	184.2	146.1	19.1	5/8"	4	184.2	146.1	19.1	5/8"	4	180	145	19	16	4	185	150	19	16	8	200	160	23	20	8	225	185	23	20	8																					
100	4"	215.9	177.8	19.1	5/8"	4	215.9	177.8	19.1	5/8"	8	200	165	19	16	8	210	175	19	16	8	225	185	23	20	8	250	210	25	22	8																					
125	5"	254	209.6	19.1	5/8"	8	254	209.6	19.1	5/8"	8	235	200	19	16	8	250	210	23	20	8	270	225	25	22	8	300	255	27	24	8																					
150	6"	279.4	235	19.1	5/8"	8	279.4	235	22.2	3/4"	8	265	230	19	16	8	280	240	23	20	8	305	260	25	22	12	330	285	27	24	12																					
200	8"	336.6	292.1	19.1	5/8"	8	336.6	292.1	22.2	3/4"	8	320	280	23	20	8	330	290	23	20	12	350	305	25	22	12	380	330	27	24	12																					
250	10"	406.4	355.6	22.2	3/4"	8	406.4	355.6	22.2	3/4"	12	385	345	23	20	12	400	355	25	22	12	430	380	27	24	12	460	410	29	26	12																					
300	12"	457.2	406.4	22.2	3/4"	12	457.2	406.4	25.4	7/8"	12	430	390	23	20	12	445	400	25	22	16	480	430	27	24	16	510	460	29	26	16																					
350	14"	527.1	469.9	25.4	7/8"	12	527.1	469.9	25.4	7/8"	12	480	435	25	22	12	490	445	25	22	16	540	480	33	30	16	570	520	31	28	16																					
400	16"	577.9	520.7	25.4	7/8"	12	577.9	520.7	25.4	7/8"	12	540	495	25	22	16	560	510	27	24	16	605	540	33	30	16	635	585	31	28	16																					
450	18"	641.4	584.2	25.4	7/8"	12	641.4	584.2	25.4	7/8"	16	605	555	25	22	16	620	565	27	24	20	675	605	33	30	20	705	655	31	28	20																					
500	20"	704.9	641.2	25.4	7/8"	16	704.9	641.2	25.4	7/8"	16	655	605	25	22	20	675	620	27	24	20	730	660	33	30	20	760	710	31	28	20																					
600	24"	825.5	755.7	28.5	1"	16	825.5	755.7	31.7	1 1/8"	16	770	720	27	24	20	795	730	33	30	24	845	770	39	36	24	875	825	35	32	24																					

Installation guide



- Check that the specifications on the identification plate meet the requirements regarding pressure, temperature and media.
 - The piping must have a straight line and the flanges have to be parallel.
 - There must be a distance between the flanges, corresponding to the face-to-face dimensions of the butterfly valve.
 - The butterfly valve can be mounted in any direction. However if there are a lot of dirt particles on the bottom of the pipe, it will be suitable to mount of the disc.
 - Before commissioning, the pipework has to be rinsed out to remove dirt and remnants of welding material, to avoid damage on the liner. During the rinsing procedure, the butterfly valve has to be positioned as open and may not be operated before the rinsing has been completed.
-
- Welding operations may not be performed nearby the butterfly valve, as welding drops can damage the liner.
 - Do not use gaskets. The liner works as sealing to the atmosphere.
 - Where vacuum, high flow rate or water hammering can occur, flanges without a loose collar should be used, to obtain the best conditions.
 - Carefully place the butterfly valve between the flanges, with the disc in closed position. (Fig. 1)
 - Check that the flange covers the area of the liner. Afterwards tighten the bolt on the flange by hand. (Fig. 2)
 - Carefully open and close the valve to check that the disc centralizes and the disc does not touch the flange. With the disc in the open position, tighten crosswise with a wrench. (Fig. 3)

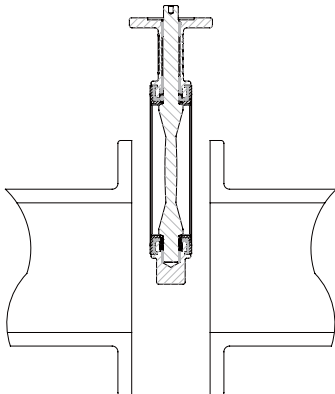


Fig. 1

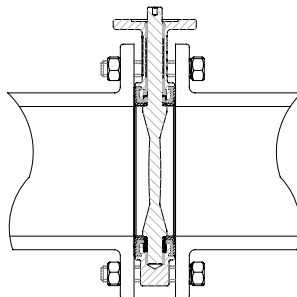


Fig. 2

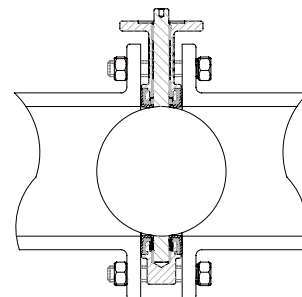


Fig. 3

Coreline

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