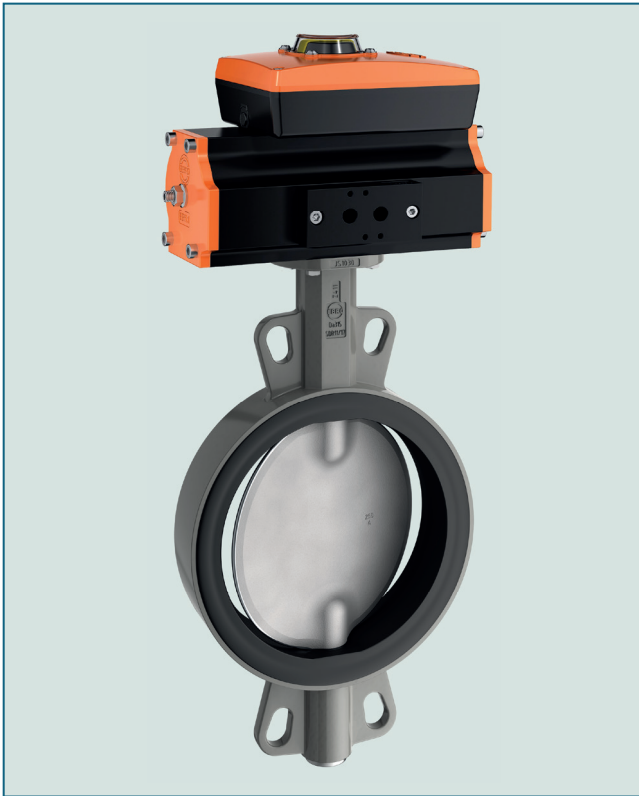


# WAFER TYPE BUTTERFLY VALVE Z 411-A



Resilient seated, centrally mounted wafer type valve with inside diameter for PE/PP piping systems.

## TECHNICAL DATA

Nominal diameter:	DA 50 - DA 630 DN 40 - DN 600 SDR11, SDR17 & SDR17.6
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1 Works standard
Flange accommodation:	EN 1092 PN 10 ASME Class 150 AS 4087 PN 16 others on request
Top flange:	EN ISO 5211
Flange Surface Design:	EN 1092 Form A/B ASME RF, FF
Marking:	EN 19
Tightness check:	EN 12266 (leakage rate A) ISO 5208, category 3
Working standard:	EN 593
Temperature range:	-10°C to +160°C (depending on pressure, medium and material)
Operating pressure:	max. 10 bar higher pressures on request

## FEATURES

- Proven solution for the plastic piping industry
- Can be used as a control and shut-off valve
- Tailor-made components according to standard
- Increased safety through the use of unchanged standard collars (no unscrewing, no chamfer, no spacer rings, no individual valve collars)
- Clear identification, definite allocation
- Adapted to standard PE/PP pressure pipes and fittings
- Flow-optimised (minimum pressure losses)
- gas-tight
- Any mounting position
- Can be dismantled, sorted for recycling
- Replaceable liner
- Maintenance-free (no periodic greasing required)
- Suitable for:
  - Food
  - TA-Air
  - DVGW Gas/Water
  - ATEX Directive 2014/34/EU (with type examination)

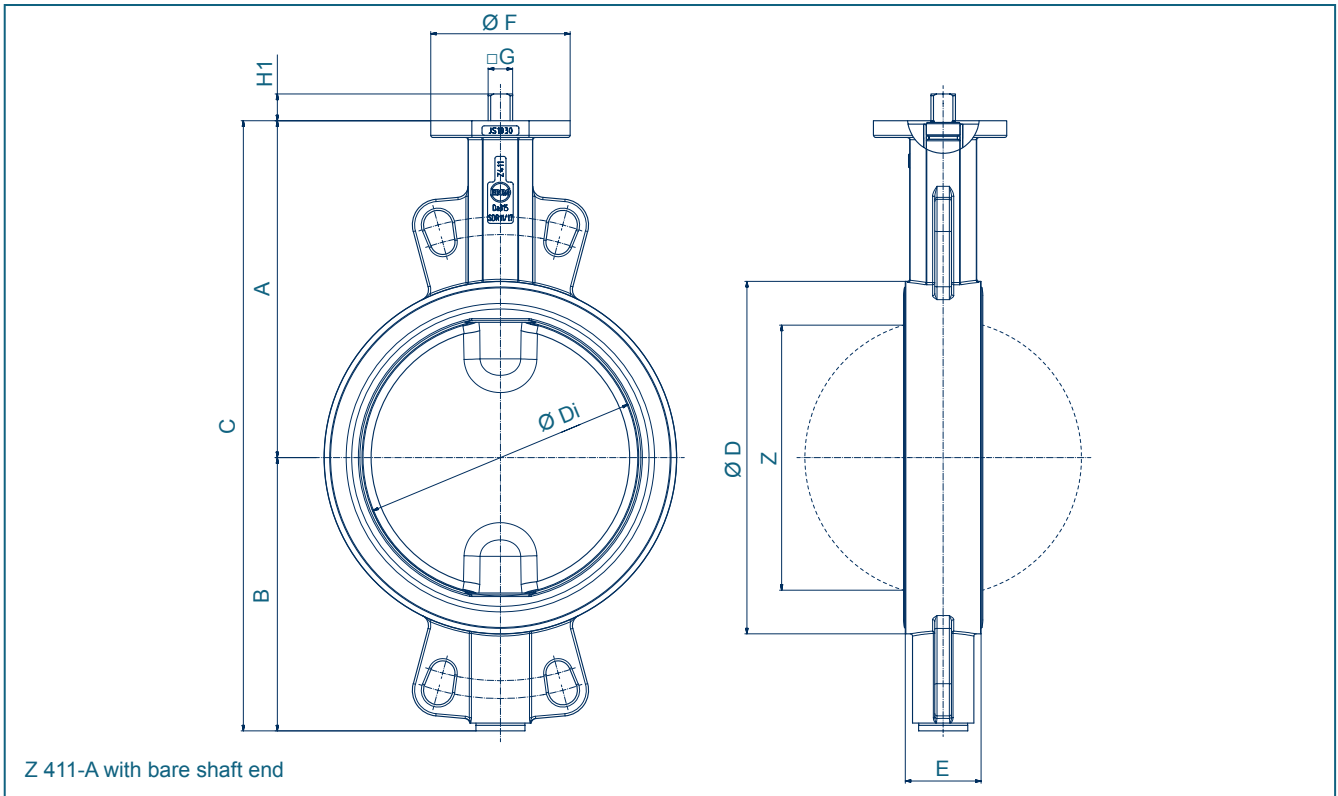
## GENERAL APPLICATIONS

- Semiconductor industry
- Water Management
- Battery industry
- Agriculture & Food Industry
- Energy & Environment
- Mobility & Aviation
- Drainage systems
- Paints & lacquers (silicone-free)



Type plate for clear identification of the Z411-A.

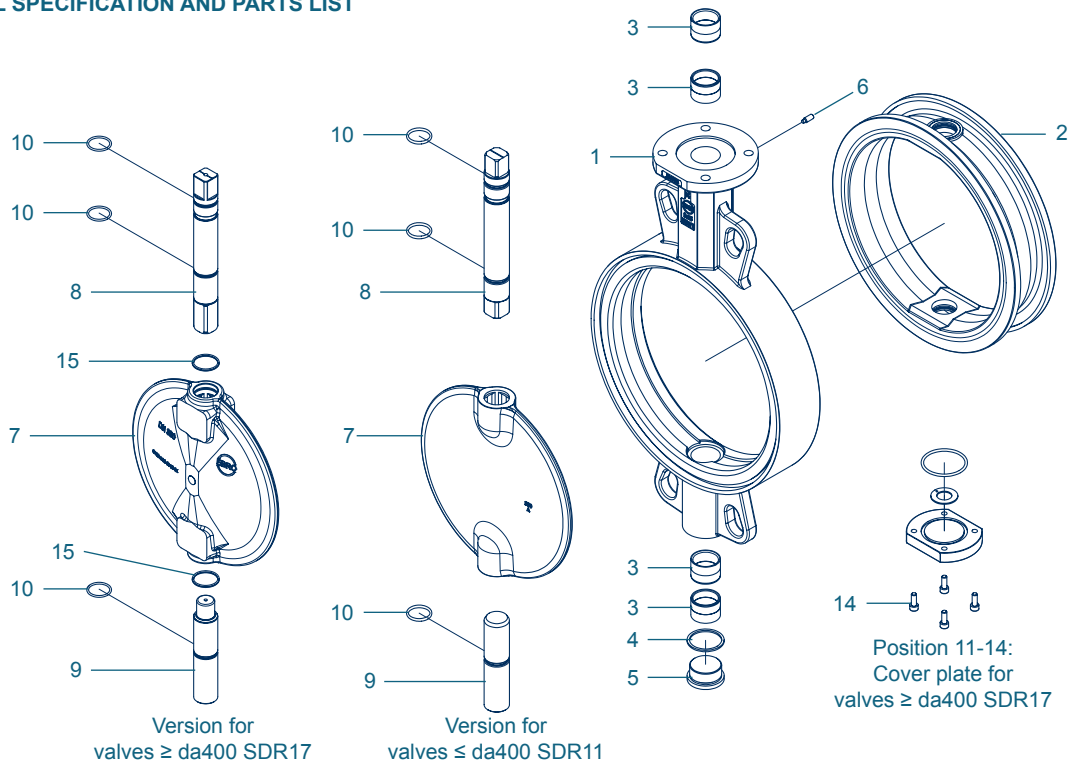
# WAFER TYPE BUTTERFLY VALVE Z 411-A



da Outer Ø	DN (mm)		Dimensions [mm]											Weight (kg) EN-JS1030
			A	B	C	ØD	ØDi	E	ØF	Flange	□G	H1	Z	
50	40	SDR 11/17/17,6	113	66	179	80	38	33	54	F04	11	13,5	22	1,8
63	50	SDR 11/17/17,6	126	84	210	95	48,5	43	54	F04	11	13,5	25	2,2
75	65	SDR 11/17/17,6	134	93	227	115	63,5	46	54	F04	11	13,5	45	2,9
90	80	SDR 11/17/17,6	157	104	261	138	78,5	46	65	F05	14	17	65	4
110	100	SDR 11/17/17,6	167	115	282	158	98,5	52	65	F05	14	17	85	5,2
125	100	SDR 11/17/17,6	167	115	282	158	98,5	52	65	F05	14	17	85	5,2
140	125	SDR 11	173,5	121,5	295	168	111						97,5	5,6
		SDR 17/17,6	180	127	307	188	123	56	65	F05	14	17	111	6,9
160	150	SDR 11/17/17,6	180	128	308	185	123	56	65	F05	14	17	111	6,5
180	150	SDR 11/17/17,6	203	150	353	212	148	56	90	F07	17	20	139	9,5
200	200	SDR 11/17/17,6	209,5	159	368,5	226,5	161,5	60	90	F07	17	20	151	10,3
225	200	SDR 11	220	169	389	250	182						173	11,8
		SDR 17/17,6	228	176	404	268	198	60	90	F07	17	20	190	13,2
250	250	SDR 11/17/17,6	243	205	448	263	198	60	90	F07	17	20	190	13,1
280	250	SDR 11	256	218,5	474,5	309	224,5						215	18,6
		SDR 17/17,6	266	212	478	320	248	68	125	F10	22	24	240	22,5
315	300	SDR 11/17/17,6	302	245	547	316	248	68	125	F10	22	24	240	22,3
355	350	SDR 11	319,5	264,5	584	359	286						276	29,1
		SDR 17/17,6	326	269,5	595,5	368	296	78	125	F10	22	24	287	30,4
400	400	SDR 11	363	306	669	368	296		125	F10	22	24	287	33,4
		SDR 17/17,6	363	313	676	409	337,5	78	150	F12	27	29	329,5	40
450	500	SDR 11	420	371	791	448	365,5						351,5	62,4
		SDR 17/17,6	420	371	791	468	390	102	150	F12	27	29	377,5	61,3
500	500	SDR 11	420	371	791	468	390	102	150	F12	27	29	377,5	61,3
		SDR 17/17,6	420	372,5	792,5	524	426	114	175	F14	36	38	412	99,2
560	600	SDR 11	475	424	899	524	426	114	175	F14	36	38	412	102
		SDR 17/17,6	475	424	899	570	489	127	210	F16	36	38	473,5	108
630	600	SDR 11	475	424	899	570	489	127	210	F16	36	38	473,5	108
		SDR 17/17,6	475	425	900	632	538	154	300	F25	46	48	517	181

# WAFER TYPE BUTTERFLY VALVE Z 411-A

## MATERIAL SPECIFICATION AND PARTS LIST



Pt.	Description	Material	Material-No.	ASTM	Pt.	Description	Material	Material-No.	ASTM		
1	<b>Body</b>	Nodular Cast Iron	GGG-40	0.7040	60-40-18	8/9	<b>Shaft</b>	Stainless Steel	X14CrMoS17	1.4104	430 F
2	<b>Seat*</b>	NBR	Nitrile butadiene rubber					X5(X2)CrNiMo17-12-2	1.4404/1.4401	316	
		EPDM	Ethylene propylene diene monomer rubber		10	<b>O-Ring</b>	NBR	Nitrile butadiene rubber			
		CSM	Chlorosulphated polyethylene				FPM	Fluorocarbon rubber			
		FKM	Fluorocarbon rubber		11	<b>O-Ring da 400 - da 630</b>	NBR	Acrylnitril-Butadien-Kautschuk			
3	<b>Bearing bush</b>	Brass	MS 58	2.0401	B 45	12	<b>Shaft retainer da 400 - da 630</b>	Brass	MS 58	2.0401	B 45
		Polyamide				13	<b>Cover plate da 400 - da 630</b>	Gray Cast Iron	GG-25	0.6025	40 B
4	<b>Seal DIN 7603</b>	Stainless Steel	X5CrNiMo17-12-2	1.4401	316	14	<b>Screw da 400 - da 630</b>	Steel	45 H galvanized		
		PTFE						Stainless Steel	A2-70		B 8
		Copper	Cu		Copper			Stainless Steel	A4-70		B8M
5	<b>Plug screw DIN 908</b>	Stainless Steel	G-X6CrNiMo18-10		CF8M	15	<b>O-Ring</b>	NBR	Nitrile butadiene rubber		
		Stainless Steel	A4-70		B8M			FPM	Fluorocarbon rubber		
7	<b>Disc</b>	Stainless Steel	G-X6CrNiMo18-10	1.4408	CF8M						
	Coating	Halar, Rilsan,									
	Surface quality	mirror finished									
											Other materials upon request

\* others on request

Subject to change without notice

# WAFER TYPE BUTTERFLY VALVE Z 411-A

## TORQUE

- The values listed in the table are initial breakaway torques, taken with liquids and lubricant media.

- Please regard these as approximate values, as the objective value depends on different factors like pressure, medium, rubber, quality, temperature ... etc.

- Our engineers look forward to help you with exact values for your application.

- Powdery (non-lubricant) media  
Md x 1,3

- Dry gases/high viscous media  
Md x 1,2

da Outer Ø	DN [mm]	Adapted Disc Size Pressure Rating					
		SDR 11			SDR 17 / 17,6		
		3 bar Disc	6 bar Disc	10 bar Disc	3 bar Disc	6 bar Disc	10 bar Disc
50	40	8	8	8	8	8	8
63	50	9	9	9	9	9	9
75	65	18	18	18	18	18	18
90	80	8	10	18	8	10	18
110	100	9	18	28	9	18	28
125	100	9	18	28	9	18	28
140	125	12	20	38	15	22	45
160	150	15	22	45	15	22	45
180	150	36	45	78	36	45	78
200	200	48	62	110	48	62	110
225	200	60	76	140	60	76	140
250	250	59	76	140	59	76	140
280	250	110	140	180	150	180	200
315	300	150	180	200	150	180	200
355	350	200	240	280	200	240	280
400	400	200	240	280	350	540	610
450	500	380	580	700	420	620	750
500	500	420	620	750	720	746	860
560	600	720	746	860	900	1100	2255
630	600	900	1100	2255	1000	1600	2700

All values in Nm

## K<sub>V</sub>-VALUES

- The K<sub>V</sub>-value [m<sup>3</sup> per hour] is the flow of water at a temperature of 5°C to 30°C (41°F to 86°F) at Δp of 1 bar

- The K<sub>V</sub>-values specified are based on tests carried out by the Delfter Hydraulics Laboratories, the Netherlands

- Permissible velocity of flow  
V<sub>max</sub> 4,5 m/s for liquids,  
V<sub>max</sub> 70 m/s for gases

- The throttle function is linear at an angle 30° to 70°

- Avoid cavitation

For further values, please contact our engineers.

da [mm]	DN [mm]	Size [in]	Opening angle α°															
			SDR11 - 10 bar								SDR17 - 10 bar							
			20°	30°	40°	50°	60°	70°	80°	90°	20°	30°	40°	50°	60°	70°	80°	90°
50	40	1½	1,3	4,3	11	21	32	47	60	63	1,2	5,3	12,8	22,1	32,5	43	52,5	63
63	50	2	2,7	9,5	20	35	53	74	85	89	2,9	9,3	21	37	58	77	81	82
75	65	2½	8,4	21	36	56	88	137	194	210	6,8	22	46	70	114	166	220	228
90	80	3	13	30	47	71	117	192	272	316	11	31	61	99	159	239	325	361
110	100	4	9,8	32	59	90	162	263	404	490	19	47	81	136	224	361	530	623
125	100	4	20	54	102	164	284	430	596	677	21	70	129	206	317	465	580	598
140	125	5	16	54	122	220	358	580	769	816	23	76	139	240	405	645	984	1157
160	150	6	34	89	169	278	450	690	968	1126	50	114	207	342	519	778	985	1040
180	150	6	71	90	182	367	581	884	1260	1690	76	97	196	373	626	953	1350	1820
200	200	8	42	152	249	443	747	1180	1780	2070	93	190	335	544	893	1300	1730	1860
225	200	8	55	190	359	557	967	1520	2290	2760	63	196	347	595	978	1600	2530	3160
250	250	10	66	253	431	715	1160	1870	2750	3310	136	361	567	923	1420	2050	2690	2830
280	250	10	89	310	534	892	1510	2350	3700	4450	100	304	549	961	1650	2610	4090	4990
315	300	12	146	411	729	1150	1940	2940	4180	4860	199	519	829	1370	2070	3060	3940	4140
355	350	14	140	512	914	1450	2460	3810	5880	7010	214	658	1067	1770	2850	4380	6120	7120
400	400	16	318	791	1270	1990	3050	4450	5920	6360	212	829	1380	2220	3710	5760	8880	10600
450	500	20	399	955	1490	2630	3810	6070	7870	8290	349	898	1510	2530	4190	6730	9890	11600
500	500	20	308	1050	1850	2830	4630	6930	9250	10300	534	1220	2000	3190	5110	8180	10600	11100
560	600	24	407	1320	2290	3560	5590	8170	9970	10200	-	-	-	-	-	-	-	-
630	600	24	670	1530	2600	4190	6590	10200	13600	14500	-	-	-	-	-	-	-	-

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