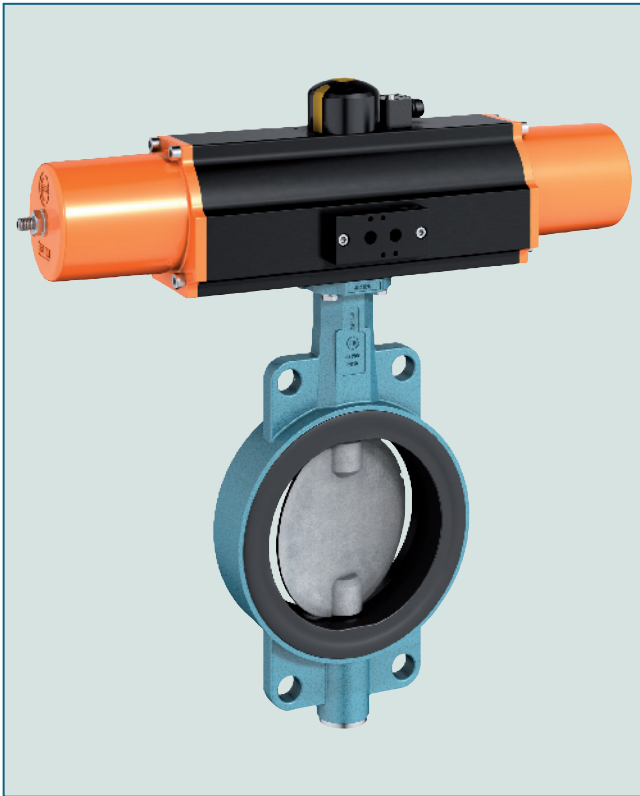


WAFER TYPE BUTTERFLY VALVE Z 411-A



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

TECHNICAL DATA

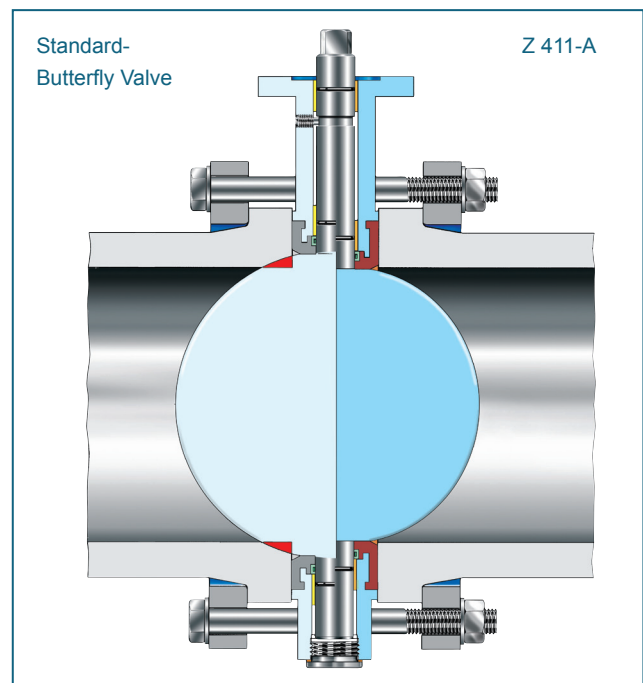
Nominal diameter:	da 50 (DN 40) - da 630 (DN 600) (SDR11) da 50 (DN 40) - da 500 (DN 500) (SDR17 / SDR17.6 / SDR33)
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1
Flange accommodation:	EN 1092 PN 10
Top flange:	EN ISO 5211
Marking:	EN 19
Tightness check:	EN 12266 (Leakage rate A) ISO 5208. Category 3
Temperature range:	+14°F to +320°F (depending on pressure, medium and material)
Operating pressure:	max. 150 psi SDR 11.0 (PE-80) max. 150 psi SDR 17.0 (PE-100) max. 150 psi SDR 17.6 (PE-80) max. 90 psi SDR 33.0 (PE-100)

FEATURES

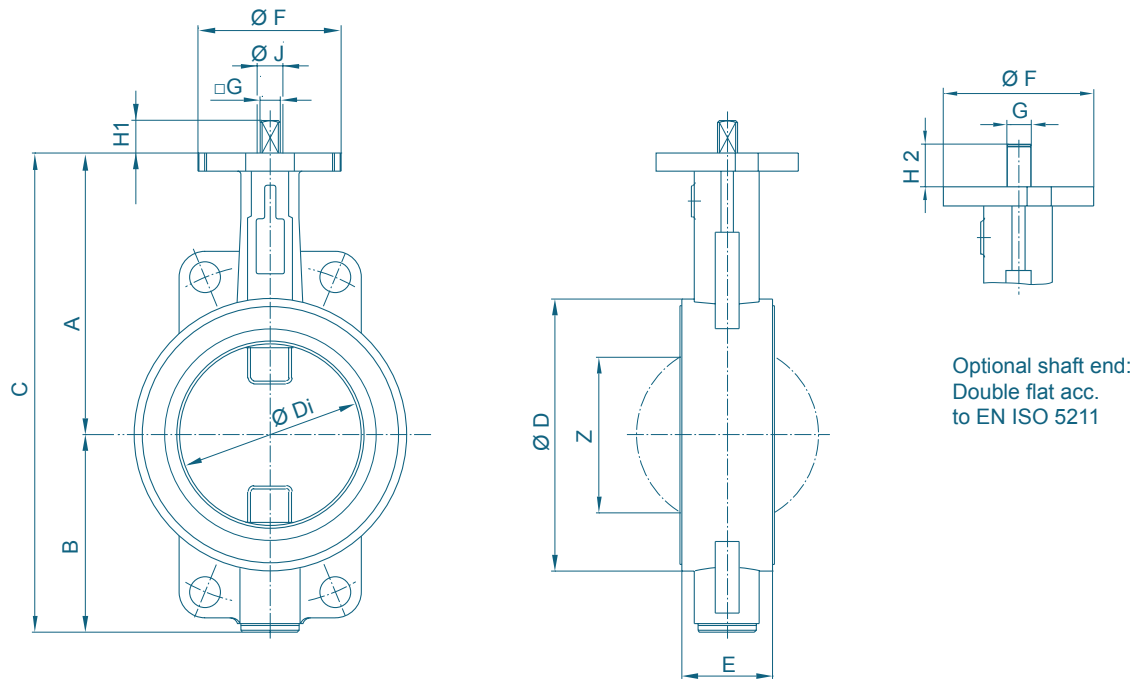
- Adapted butterfly valve for PE/PP piping systems
- The disc diameter corresponds to the inside diameter of PE HD and PP pressure pipes (SDR11 / SDR17 / SDR17.6 / SDR33)
- Short stubs must not be removed by boring. The plant reliability will not be reduced
- There is no need to manufacture and install complicated spacers
- Can be mounted in any desired position
- Triple shaft bearings prevent shaft deflection and guarantee optimum guidance even after many years of operational service
- Interchangeable seat
- Maintenance-free
- Can be disassembled, material-specific recycling possible
- For max. pressure, a through-going shaft (TS) is mounted for sizes ≥ 16 inch

GENERAL APPLICATIONS

- Where PE/PP pipes are used



WAFER TYPE BUTTERFLY VALVE Z 411-A



Z 411-A with bare shaft end

DN [in]	Ø = da ^{***} [in]	Dimensions [in]																	Weight [lb]		
		A	B	C	SDR 11			SDR 17/ 17.6			SDR 33			E	ØF	Flan- ge	G	H1		H2	ØJ
40	50	4.45	2.60	7.05	3.15	1.46	0.87	3.15	1.46	0.87	3.15	1.46	0.87	1.30	2.13	F04	0.43	0.47	0.75	0.55	4.00
50	63	4.96	3.31	8.27	3.74	1.91	0.98	3.74	1.91	0.98	3.74	1.91	0.98	1.69	2.13	F04	0.43	0.47	0.75	0.55	4.90
65	75	5.28	3.66	8.94	4.53	2.50	1.77	4.53	2.50	1.77	4.53	2.50	1.77	1.81	2.13	F04	0.43	0.47	0.75	0.55	6.40
80	90	6.18	4.09	10.28	5.43	3.09	2.56	5.43	3.09	2.56	5.43	3.09	2.56	1.81	2.56	F05	0.55	0.63	0.98	0.71	8.80
100	110	6.57	4.53	11.10	6.22	3.88	3.35	6.22	3.88	3.35	6.22	3.88	3.35	2.05	2.56	F05	0.55	0.63	0.98	0.71	11.50
100	125	6.57	4.53	11.10	6.22	3.88	3.35	6.22	3.88	3.35	6.22	3.88	3.35	2.05	2.56	F05	0.55	0.63	0.98	0.71	16.50
125	140	7.09	5.00	12.09	6.54	4.38	3.86	7.40	4.86	4.37	7.40	4.86	4.37	2.20	2.56	F05	0.55	0.63	0.98	0.71	18.70
150	160	7.99	5.91	13.90	7.32	4.85	4.37	7.32	4.85	4.37	8.35	5.83	5.47	2.20	3.54	F07	0.67	0.75	1.18	0.87	22.00
150	180	7.99	5.91	13.90	8.35	5.83	5.47	8.35	5.83	5.47	8.35	5.83	5.47	2.20	3.54	F07	0.67	0.75	1.18	0.87	23.80
200	200	8.98	6.93	15.91	8.90	6.36	5.94	8.90	6.36	5.94	9.84	7.17	6.81	2.36	3.54	F07	0.67	0.75	1.18	0.87	24.70
200	225	8.98	6.93	15.91	9.84	7.17	6.81	10.55	7.80	7.48	10.55	7.80	7.48	2.36	3.54	F07	0.67	0.75	1.18	0.87	27.60
250	250	10.47	8.35	18.82	10.55	7.80	7.40	10.55	7.80	7.40	12.13	8.83	8.46	2.68	3.54	F07	0.67	0.75	1.18	0.87	41.90
250	280	10.47	8.35	18.82	12.40	8.83	8.46	12.60	9.76	9.45	12.60	9.76	9.45	2.68	4.92	F10	0.87	0.94	1.54	1.18	45.20
300	315	11.54	9.33	20.79	14.09	10.04	9.61	14.09	10.04	9.61	14.09	11.01	10.63	3.07	4.92	F10	0.87	0.94	1.54	1.18	61.70
350	355	13.07	10.59	23.66	14.37	11.25	10.71	15.43	12.26	11.77	15.43	12.26	11.77	3.62	4.92	F10	0.87	0.94	1.54	1.18	79.40
400	400	14.29	12.36	26.65	16.85	12.87	12.28	17.20	13.76	13.23	17.20	13.76	13.23	4.02	5.91	F12	**	**	-	1.57	165.30*
500	450	17.20	15.94	33.15	17.87	14.40	13.58	17.87	14.40	13.58	20.00	16.10	15.35	5.00	5.91	F12	**	**	-	1.57	231.50*
500	500	17.20	15.94	33.15	20.00	16.10	15.35	21.50	17.31	16.61	21.50	17.31	16.61	5.00	5.91	F12	**	**	-	1.57	246.90*
600	560	18.70	16.46	35.16	20.87	16.77	16.22	-	-	-	-	-	-	5.00	8.27	F16	**	**	-	1.97	264.60*
600	630	18.70	16.46	35.16	22.60	19.21	18.62	-	-	-	-	-	-	5.00	8.31	F17	**	**	-	1.97	297.60*

* through going shaft only (TS-version)

Subject to change without notice

** according to the mounted actuator

*** auto diameter

WAFER TYPE BUTTERFLY VALVE Z 411-A

TORQUE

- The torque values specified (Md) are based on liquid and lubricant media
 - Powdery (non-lubricant) media Md x 1.3
 - Dry gases/high viscous media Md x 1.2
 - The values specified are based on the initial breakaway torque
 - Dynamic torque specification available upon request
- Regarding the dimensioning of actuators. please contact our engineers.

da [mm]	Size [in]	Operating pressure		
		SDR 11 150 [psi]	SDR 17 / 17.6 150 [psi]	SDR 33 90 [psi]
50	1½	55	55	55
63	2	64	64	64
75	2½	137	137	82
90	3	165	165	92
110	4	256	256	165
125	4	256	256	165
140	5	412	412	201
160	6	1007	714	412
180	6	1007	1007	412
200	8	1282	1282	696
225	8	1282	1282	696
250	10	1831	1831	1648
280	10	1831	1831	1648
315	12	2014	2014	1831
355	14	3295	3295	2838
400	16	5675	5675	4943
450	20	6682	6682	5950
500	20	8788	8788	8147
560	24	14463	-	-
630	24	18307	-	-

All values in Inch Lbs

C_v VALUES

- The C_v Value [US Gallon per minute] is the flow of water at a temperature of 41°F to 86°F with a pressure drop of 1 psi.
 - 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]	SDR	Opening angle α°							
				20°	30°	40°	50°	60°	70°	80°	90°
50	40	1½	11	-	2.6	9	17	24	38	50	58
			17	-	2.6	9	17	24	38	50	58
			33	-	2.6	9	17	24	38	50	58
63	50	2	11	1.4	9	15	26	44	58	76	99
			17	1.4	9	15	26	44	58	76	99
			33	1.4	9	15	26	44	58	76	99
75	65	2½	11	2	10	26	49	90	134	198	250
			17	2	10	26	49	90	134	198	250
			33	2	10	26	49	90	134	198	250
50	80	3	11	9	28	58	110	174	279	384	488
			17	9	28	58	110	174	279	384	488
			33	9	28	58	110	174	279	384	488
110	100	4	11	15	33	76	151	209	395	640	930
			17	15	33	76	151	209	395	640	930
			33	15	33	76	151	209	395	640	930
125	100	4	11	15	33	76	151	209	395	640	930
			17	15	33	76	151	209	395	640	930
			33	15	33	76	151	209	395	640	930
140	125	5	11	22	53	114	212	316	517	837	1105
			17	30	76	151	267	407	616	1012	1174
			33	30	76	151	267	407	616	1012	1174
160	150	6	11	30	76	151	267	407	616	1012	1174
			17	30	76	151	267	407	616	1012	1174
			33	30	76	151	267	407	616	1012	1174
180	150	6	11	41	105	233	419	744	1047	1570	2442
			17	41	105	233	419	744	1047	1570	2442
			33	41	105	233	419	744	1047	1570	2442
200	200	8	11	43	140	279	499	860	1279	2174	3081
			17	43	140	279	499	860	1279	2174	3081
			33	48	186	360	605	1047	1651	2884	3942
225	200	8	11	48	186	360	605	1047	1651	2884	3942
			17	50	209	407	674	1163	1860	3488	4651
			33	50	209	407	674	1163	1860	3488	4651
250	250	10	11	50	209	407	674	1163	1860	3488	4651
			17	50	209	407	674	1163	1860	3488	4651
			33	99	314	593	977	1640	2791	4826	6047
280	250	10	11	99	314	593	977	1640	2791	4826	6047
			17	145	419	767	1279	2093	3605	6163	7442
			33	145	419	767	1279	2093	3605	6163	7442
315	300	12	11	155	453	826	1349	2209	3953	6395	7674
			17	155	453	826	1349	2209	3953	6395	7674
			33	198	558	1012	1640	2674	4942	7733	8942
355	350	14	11	215	581	1070	1721	2814	5233	8140	9302
			17	279	709	1291	2116	3488	6686	9767	10837
			33	279	709	1291	2116	3488	6686	9767	10837
400	400	16	11	331	791	1430	2384	3953	7767	10814	11860
			17	407	907	1628	2791	4651	9302	12558	13372
			33	407	907	1628	2791	4651	9302	12558	13372
450	500	20	11	459	1012	1779	3058	5233	10349	12907	14535
			17	459	1012	1779	3058	5233	10349	12907	14535
			33	558	1198	2093	3628	6395	12442	14767	18605
500	500	20	11	558	1198	2093	3628	6395	12442	14767	18605
			17	581	1244	2326	3837	6860	13140	16279	21860
			33	581	1244	2326	3837	6860	13140	16279	21860
560	600	24	11	628	1302	2442	4070	7326	13488	17442	24419
630	600	24	11	709	1512	2791	4767	8372	14535	20465	27907

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