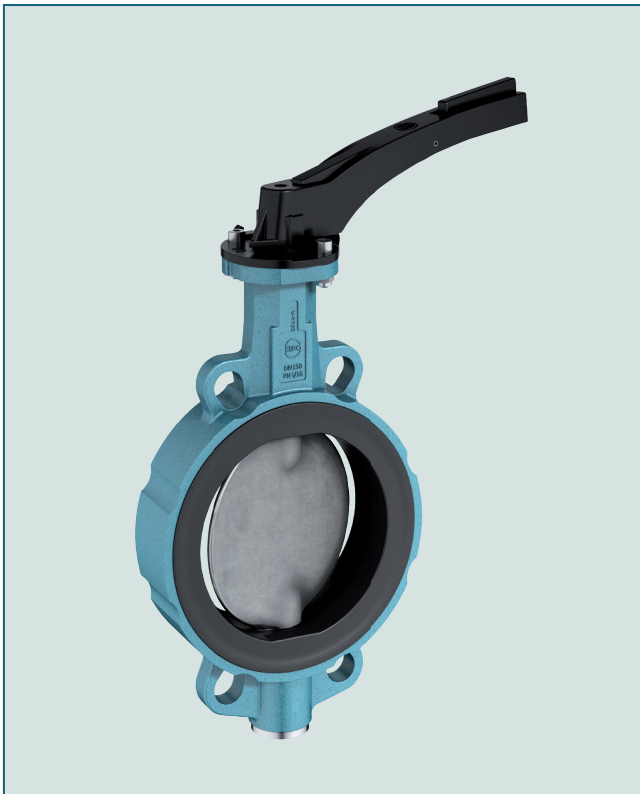


WAFER PATTERN BUTTERFLY VALVE TYPE Z 011-A



A universally applicable wafer type valve acc. to EN 593.
The large variety of basic materials allows applications in different industries.

TECHNICAL DATA

Nominal diameter:	DN 20 - DN 1200 (DN 20 only PN 10/16)
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1
Flange accommodation:	EN 1092 PN 6/10/16 ASME Class 150 AS 4087 PN 16
Flange Surface Design:	EN 1092 Form A/B ASME RF, FF
Top flange:	EN ISO 5211
Marking:	EN 19
Tightness check:	EN 12266 (Leakage rate A) ISO 5208, Category 3
Temperature range:	-40°C to +200°C (depending on pressure, medium and material)
Operating pressure:	max. 16 bar

FEATURES

- Absolutely tight sealing with flow in either direction
- The valve body and disc are accurately machined which results in low operating torque and long service life and reliability
- Triple shaft bearings prevent shaft deflection and guarantee optimum guidance even after many years of operational service
- Four flange mounting holes ensure correct valve location when installing
- Can be installed in any desired position
- Maintenance-free
- Can be disassemble, material-specific recycling possible
- For paint and lacquers, a silicon-free version is available

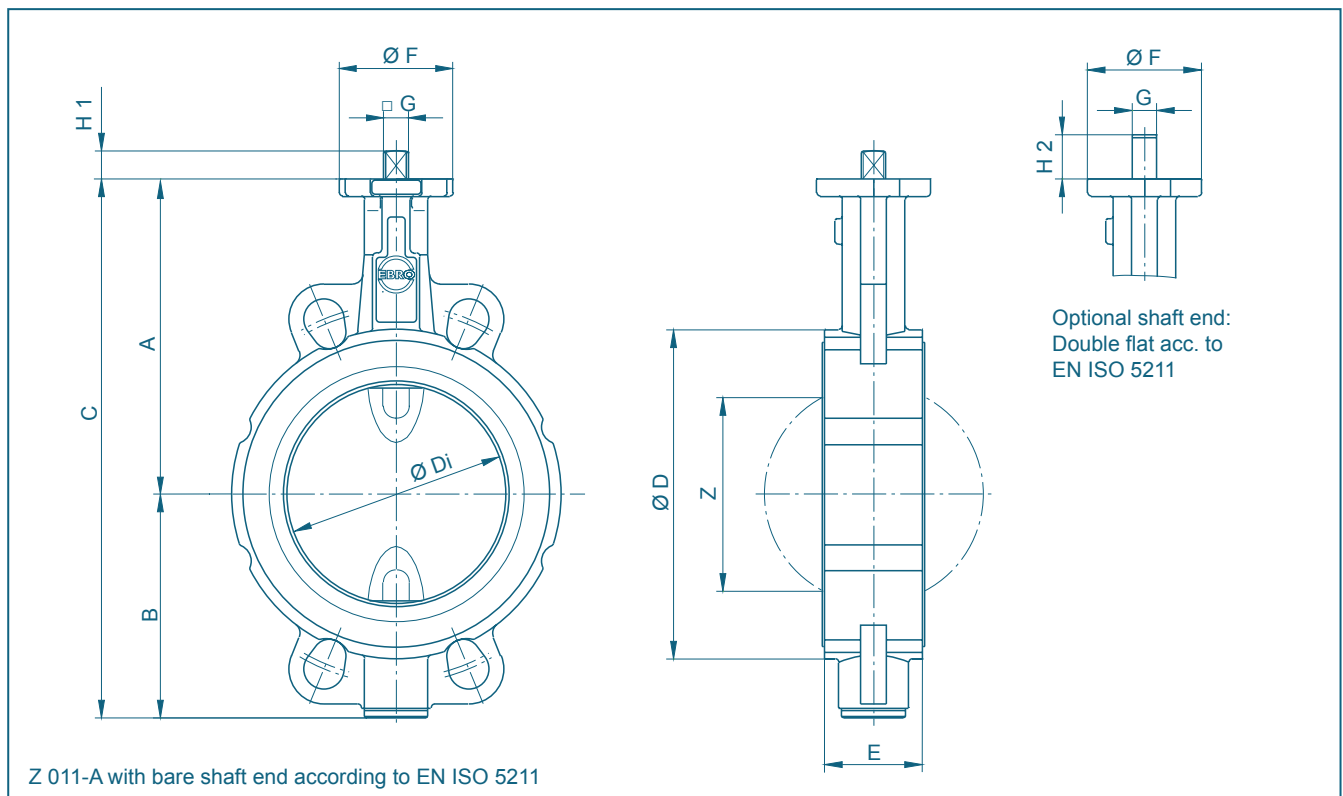
GENERAL APPLICATIONS:

- Chemical and petrochemical industries
- Water and waste water technology
- Pneumatic materials handling technology
- Shipbuilding
- Power generation industry
- Transport of hazardous materials (EN 14432)



Aluminium version. Available Sizes: DN 50 - DN 400

WAFER PATTERN BUTTERFLY VALVE TYPE Z 011-A

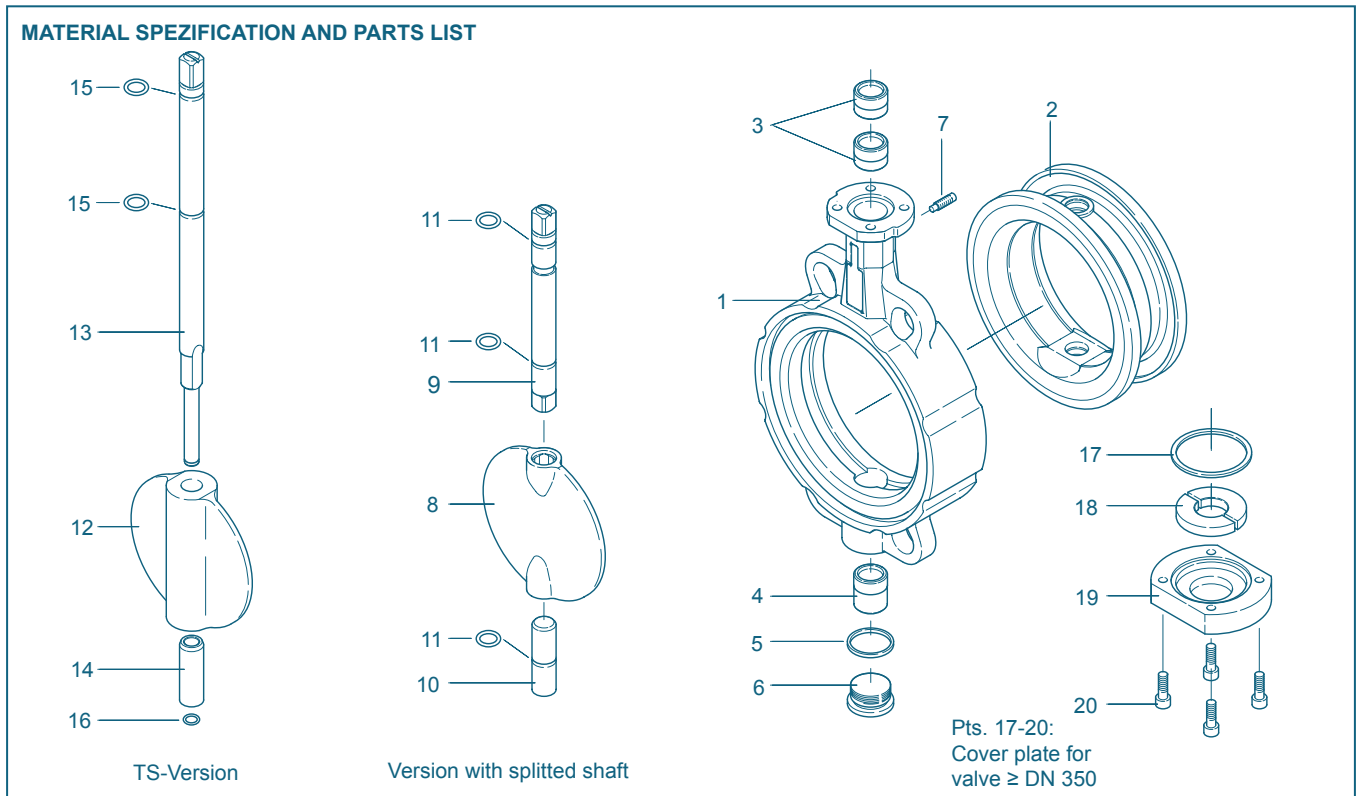


DN [mm]	Size [in]	Dimensions [mm]											Weight [kg] (GG-25)		
		A	B	C	D	Di	E	F	Flange	G	H1	H2	Z	2 Piece shaft	TS- shaft
20	¾	104	45	149	59	31,5	33	54	F04	11	12	19	-	1,3	-
25	1	104	45	149	63	31,5	33	54	F04	11	12	19	-	1,3	-
32	1¼	104	50	154	68	31,5	33	54	F04	11	12	19	-	1,4	-
40	1½	113	66	179	80	38	33	54	F04	11	12	19	22	1,8	-
50	2	126	84	210	95	48,5	43	54	F04	11	12	19	25	2,2	-
65	2½	134	93	227	115	63,5	46	54	F04	11	12	19	45	2,9	-
80	3	157	104	261	138	78,5	46	65	F05	14	16	25	65	4,0	4,5
100	4	167	115	282	158	98,5	52	65	F05	14	16	25	85	5,2	5,8
125	5	180	127	307	188	123,5	56	65	F05	14	16	25	111	6,9	7,5
150	6	203	150	353	212	148	56	90	F07	17	19	30	139	9,5	11,0
200	8	228	176	404	268	199	60	90	F07	17	19	30	190	13,2	15,0
250	10	266	212	478	320	248	68	125	F10	22	24	39	240	22,5	25,5
300	12	291	237	528	370	296	78	125	F10	22	24	39	287	31,5	35,0
350	14	332	269	601	408	338	78	150	F12	*	*	-	330	39,4	45,0
400	16	363	314	677	470	388	102	150	F12	*	*	-	378	58,7	64,5
450	18	397	335	732	530	430,5	114	210	F16	*	*	-	417	91,0	95,5
500	20	437	371	808	574	494,5	127	210	F16	*	*	-	474	107,0	113,5
600	24	498	469	967	675	590	154	300	F16/F25	*	*	-	563	171,0	198,0
700	28	581	507	1088	772	680	165	300	F16/F25	*	*	-	660	251,0	304,0
800	32	630	556	1186	874	780	190	300	F25	*	*	-	757	355,0	375,0
900	36	696	617	1313	973	880	203	300	F25	*	*	-	860	456,0	498,0
1000	40	771	675	1446	1070	980	216	350	F30	*	*	-	956	570,0	718,0
1200	48	880	810	1690	1510	1170	254	350	F30	*	*	-	1154	-	1156,0

* According to mounted actuator

Subject to change without notice

WAFER PATTERN BUTTERFLY VALVE TYPE Z 011-A



Pt.	Description	Material	Material-No.	ASTM	Pt.	Description	Material	Material-No.	ASTM
1	Body				9/10	Shafts			
	Aluminiumalloy	G-AISI9Cu3	3.2163	B 380.1		Stainless Steel	X39CrMo17-1	1.4122	
		G-AISI8Cu3	3.2161	A 380			X14CrMoS17	1.4104	430 F
	Grey Cast Iron	GG-25	0.6025	40 B			X5/(X2)CrNiMo17-12-2	1.4401/1.4404	316
	Nodular Cast Iron	GGG-40	0.7040	60-40-18			Hastelloy	2.4883	Hastelloy
		GGG-40.3	0.7043			Aluminum Bronze	CuAl10Ni	2.0975	
	Carbon Steel	GS-C25	1.0619	WCB	11	O-ring			
	Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M		NBR	Nitrile butadiene rubber		
2	Seat				12	TS-disc			
	NBR	Nitrile butadiene rubber				Nodular Cast Iron	GGG-40	0.7040	60-40-18
	EPDM	Ethylene propylene diene monomer rubber				Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M
	CSM	Chlorosulfonated polyethylene rubber				Aluminium Bronze	G-CuAl10Ni	2.0975	C 95800
	FPM	Fluorocarbon rubber				Coating	Halar,Rilsan		
	VSI	Silicone rubber				Surface quality	electropolished, mirror finished		
	SBR-green	Styrene butadiene rubber			13	TS-shaft			
3/4	Bearing bush					Stainless Steel	X14CrMoS17	1.4104	430 F
	Brass	MS 58	2.0401	B 45			X39CrMo17-1	1.4122	
	Polyamide	PA 66					X5CrNiMo17-12-2	1.4401	316
	PTFE	Polytetrafluorethylene				Aluminum Bronze	CuAl10Ni	2.0975	
5	Seal DIN 7603				14	Sleeve			
	Copper	Cu		Copper		Stainless Steel	X5CrNi18-10	1.4301	304
6	Plug screw DIN 908				15	O-ring			
	Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M		NBR	Nitrile butadiene rubber		
7	Set screw DIN 915					FPM	Fluorocarbon rubber		
	Steel	45 H galvanized			16	Retaining ring			
	Stainless Steel	A4-70		B8M		Stainless Steel	X39CrMo17-1	1.4122	
8	Disc				17	O-ring			
	Steel	St 52.3	1.0570	572-50		NBR	Nitrile butadiene rubber		
	Stainless Steel	G-X5CrNiMo19-11-2	1.4301	304	18	Shaft retainer			
		G-X6CrNiMo18-10	1.4408	CF8M		Brass	MS 58	2.0401	B 45
		X2CrNiMo17-12-2	1.4404	316 L	19	Cover plate			
		X6CrNiMoTi17-12-2	1.4571	316 Ti		Grey Cast Iron	GG-25	0.6025	40 B
		G-X2CrNiMoN26-7-4	1.4469	F 51	20	Screw			
		Hastelloy	2.4883	Hastelloy		Steel	45 H galvanized		
	Aluminium Bronze	G-CuAl10Ni	2.0975	C 95800		Stainless Steel	A2-70		B 8
	Coating	Halar, Rilsan, NBR, EPDM					A4-70		B8M
	Surface quality	electropolished, mirror finished							
									Other materials upon request

Subject to change without notice

WAFER PATTERN BUTTERFLY VALVE TYPE Z 011-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

DN [mm]	Size [in]	Adapted disc size pressure rating			
		3 bar disc	6 bar disc	10 bar disc	16 bar disc
20	¾	5	5	5	-
25	1	5	5	5	-
32	1¼	5	5	5	-
40	1½	8	8	8	8
50	2	9	9	9	9
65	2½	18	18	18	18
80	3	8	10	18	24
100	4	9	18	28	37
125	5	15	22	45	59
150	6	36	45	78	125
200	8	59	76	140	200
250	10	150	180	200	240
300	12	200	240	280	360
350	14	350	540	610	700
400	16	420	620	750	850
450	18	720	746	860	1500
500	20	900	1100	2255	3690
600	24	1050	2100	3000	5830
700	28	1560	2240	3450	8100
800	32	2070	3800	6600	11200
900	36	2700	4900	7100	14500
1000	40	4600	6780	11500	24400
1200	48	7800	12000	21000	44000

All values in Nm

K_V-VALUES

- The K_V-values [m³ 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_V-values specified are based on tests carried out by the Delfter Hydraulics Laboratories, the Netherlands

- Permissible velocity of flow
V_{max} 4,5 m/s for liquids,
V_{max} 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.

DN [mm]	Size [in]	Opening angle α°								
		20°	30°	40°	50°	60°	70°	80°	90°	
20	¾	-	3,46	5,95	7,97	9,7	11,2	12,8	14,5	
25	1	-	3,53	7,33	11,5	15,8	20,0	24,0	27,3	
32	1¼	-	2,56	7,97	15,5	24,2	33,0	40,8	46,6	
40	1½	0,94	4,96	11,9	20,7	30,4	40,2	49,0	55,8	
50	2	3,84	10,1	20,7	34,4	49,7	65,2	79,5	91,2	
65	2½	9,5	16,6	39,1	72,6	113	157	199	235	
80	3	15,6	20,6	51,4	102	165	234	304	368	
100	4	24,9	39,8	96,5	183	288	398	503	589	
125	5	51,8	67,2	135	256	428	652	926	1250	
150	6	76,5	97,3	197	375	629	957	1360	1830	
200	8	137	187	373	697	1160	1760	2510	3400	
250	10	227	271	563	1090	1850	2830	4010	5390	
300	12	287	409	820	1550	2610	4050	5880	8120	
350	14	399	488	1070	2110	3590	5480	7760	10400	
400	16	557	703	1360	2600	4470	7060	10400	14600	
450	18	716	907	1810	3440	5830	8980	13000	17800	
500	20	875	1110	2250	4280	7180	10900	15500	20900	
600	24	1230	1550	3150	6010	10090	15400	21800	29400	
700	28	1100	1770	3590	6610	10900	16400	23200	31400	
800	32	1670	2680	5450	10000	16500	24900	35200	47600	
900	36	1960	3150	6390	11800	19300	29200	41300	55900	
1000	40	2430	3890	7910	14600	23900	36100	51100	69100	
1200	48	3500	5620	11400	21000	34500	52100	73800	99800	

Subject to change without notice

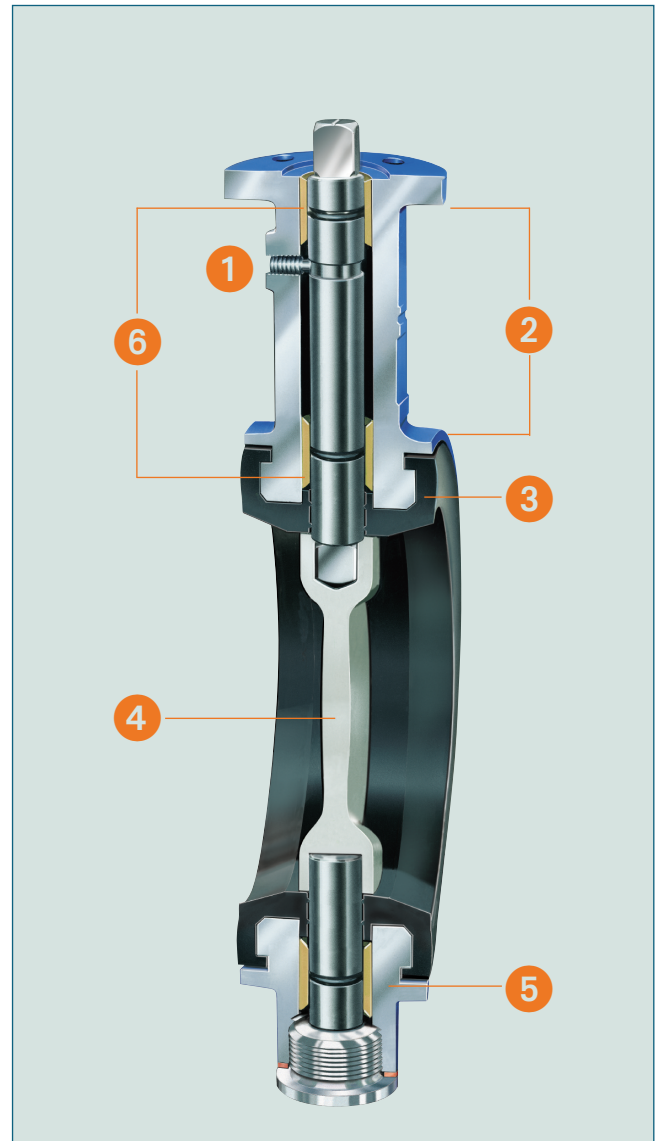
QUALITY FEATURES

RESILIENT SEATED VALVES

SUMMARY OF THE PRODUCT ADVANTAGES

- 1 The shaft safety device prevents inadvertant shaft removal when fitting actuators or undertaking maintenance procedures.
- 2 EBRO Butterfly valves comply with the requirements of the Heating System regulations dated 1st June 1994.
- 3 The special construction of the liner* (incorporating location beads for positioning within the body to prevent „working“ in operation) efficiently seals against the medium, the shaft locations and the connecting pipeworks flanges. Supplementary gasket seals for the adjacent flanges are not required.
- 4 The sealing surface of the disc being mirror finished guarentees the benefit of low operating torque and tight valve sealing up to the maximum working pressure 16 bars. This design gives high flow characteristics.
- 5 The valve body is completely precision machined in order that the valve liner with shaft locations can be accurately positioned to ensure minimal operational wear and an extended reliable service life.
- 6 The shaft is carried in multiple bearings with shaft deflection due to high pressure being prevented, thus ensuring optimal guidance, positive location and long service life.

* See picture 2



picture 1

- 1 Around the centre of the whole circumference of the liner is a raised locating ring to engage with an corresponding recess in the valve body, thus assuring the exact position of the liner.
- 2 Positive location and retention of the liner within the body is by means of circumferential lug profiles on the liner with matching recesses in the body.
- 3 The collars at the shaft locations ensure accurate positioning of the liner within the valve body (sizes DN 250 and larger have an integral vulcanized in steel ring).
- 4 The end connection sealing faces of the liner have a convex form. During assembly of the valve into the pipeline controlled deformation of the volume of the liner achieved when clamping between flanges (see picture 1). This controlled deformation restricts any increase in operating torque and eliminates damage to or destruction of the elastomers.



picture 2