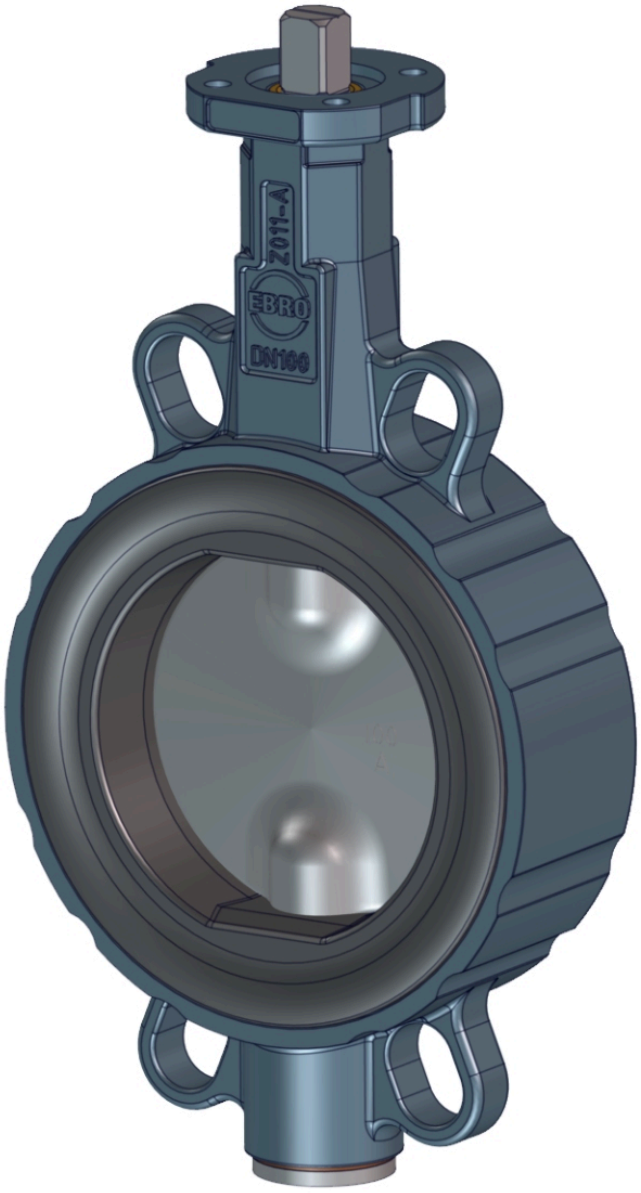
Technical data sheet

Wafer-type butterfly valve Z011-A
with bare shaft



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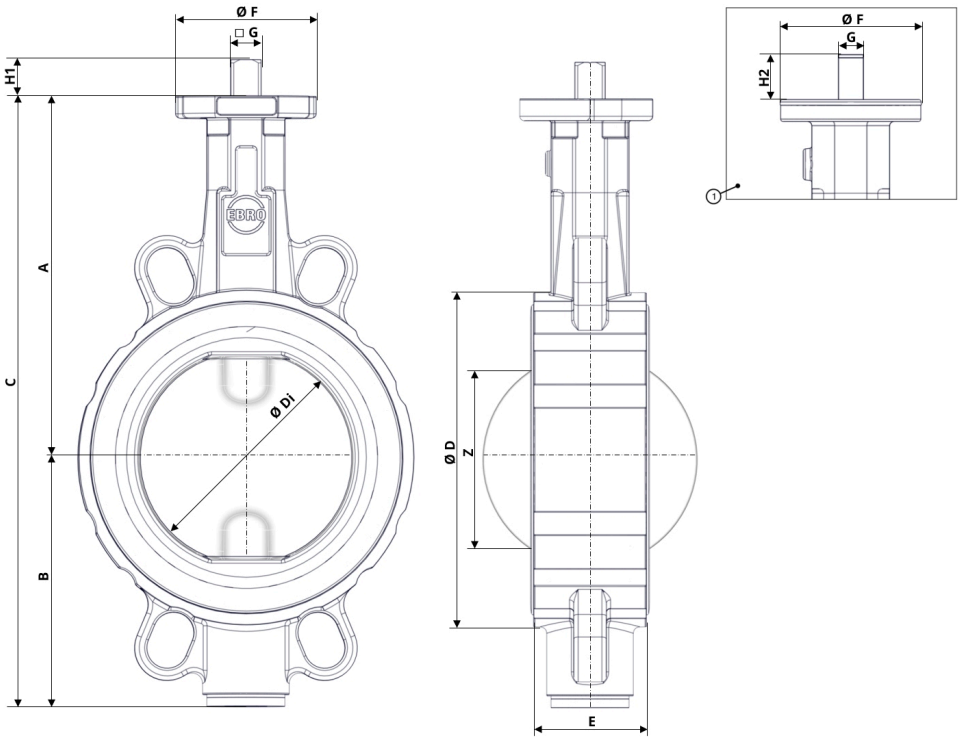
en
Version 1.1 from 01/06/2026

Dimension sheet



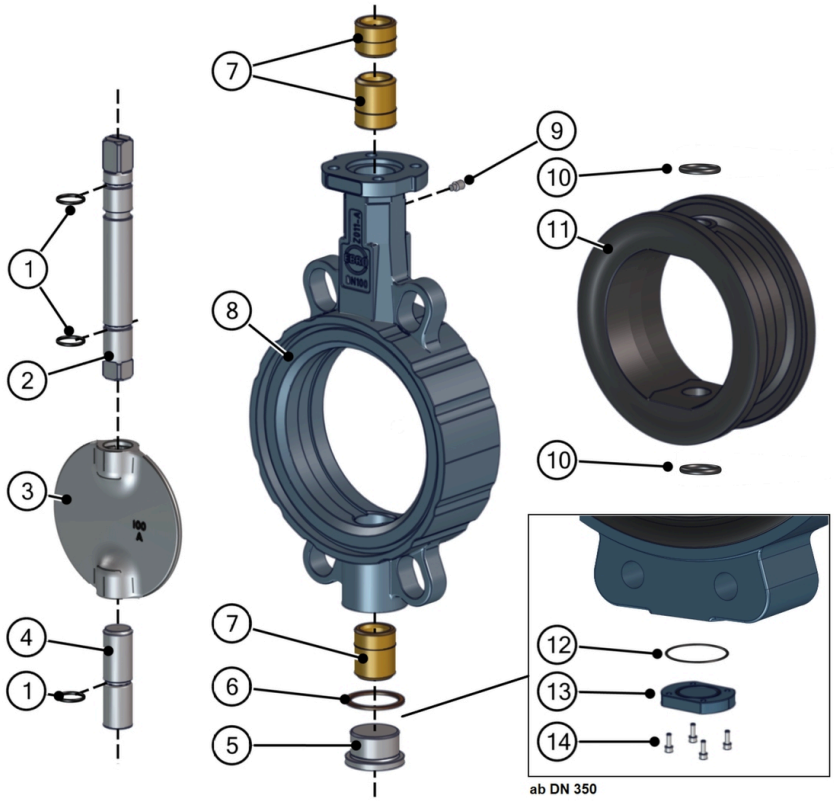
		Main dimensions [mm]												Weight [kg]	
DN	NPS	A	B	C	Ø D	Ø Di	E	Ø F	Flange	□ G	H1	H2	Z	Split shaft	TS shaft
20	¾	104	39	143	59	31.5	33	54	F04	11	13.5	19	-	1.3	-
25	1	104	45	149	63	31.5	33	54	F04	11	13.5	19	-	1.3	-
32	1¼	104	50	154	68	31.5	33	54	F04	11	13.5	19	-	1.4	-
40	1½	113	66	179	80	38	33	54	F04	11	13.5	19	22	1.8	-
50	2	126	85	211	95	47.6	43	54	F04	11	13.5	19	26.7	2.2	-
65	2½	134.5	93.5	228	115	62.7	46	54	F04	11	13.5	19	46.8	2.9	-
80	3	157	104.5	261.5	133	77.8	46	65	F05	14	17	25	66.2	4.0	4.5
100	4	167.5	115.5	283	155	97.8	52	65	F05	14	17	25	86.1	5.2	5.8
125	5	180	128	308	185	122.8	56	65	F05	14	17	25	112.4	6.9	7.5
150	6	203	152	355	210	147.6	56	90	F07	17	20	30	139.8	9.5	11.0
200	8	228.5	177.5	406	265	197.8	60	90	F07	17	20	30	191.4	13.2	15.0
250	10	266	213	479	318	247.8	68	125	F10	22	23.5	39	241.2	22.5	25.5
300	12	290.5	238	528.5	368	296	78	125	F10	22	23.5	39	288.2	31.5	35.0
350	14	332	278	610	415	337.3	78	150	F12	*	*	-	330.9	39.4	99.21
400	16	363	322	685	473	389.8	102	150	F12	*	*	-	379.1	58.7	64.5
450	18	397	346	743	530	425.8	114	210	F16	*	*	-	413.4	91.0	95.5
500	20	437	382	819	574	488.9	127	210	F16	*	*	-	475.3	107.0	113.5

		Main dimensions [mm]												Weight [kg]	
DN	NPS	A	B	C	Ø D	Ø Di	E	Ø F	Flange	□ G	H1	H2	Z	Split shaft	TS shaft
600	24	498	445	943	675	581.4	154	300	F16/F25	*	*	-	564	171.0	198.0
700	28	581	507	1088	772	674	165	300	F16/F25	*	*	-	657.6	251.0	304.0
800	32	630	556	1186	874	780	190	300	F25	*	*	-	760.6	355.0	375.0
900	36	696	617	1313	973	880	203	300	F25	*	*	-	860.4	456.0	498.0
1000	40	771	675	1446	1078	979	216	350	F30	*	*	-	960	570.0	718.0

(* Corresponding to the assembled actuator)
Item 1 = Double-D option
Weight indication based on a valve body of 5.1301

Material specifications & bill of materials

Split-shaft version

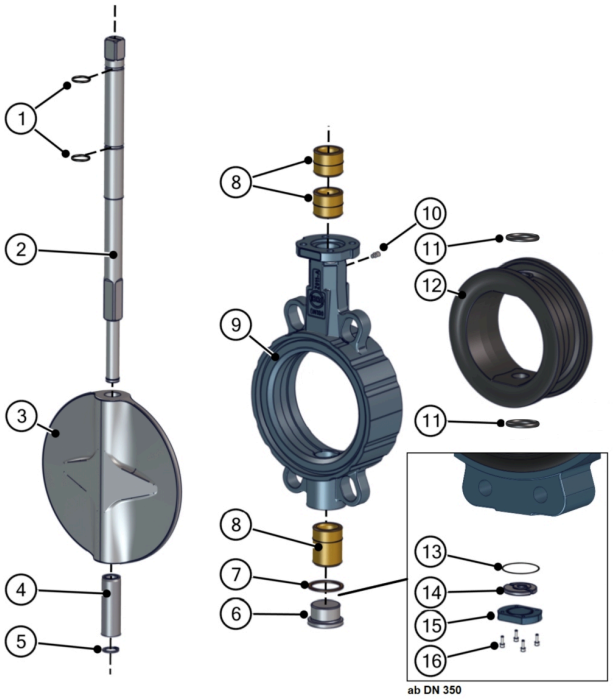


Item	Naming	Piece	Material group[1]	Material no.
1	O-ring	3	NBR	
			FKM	
			EPDM	
2	Upper shaft	1	Stainless steel	1.4122, 1.4104, 1.4401/1.4404, 1.4418, 1.4462, 1.4410
			Hastelloy®	2.4610
3	Valve disc[2]	1	Stainless steel	1.4408, 1.4404, 1.4462, 1.4469
			Hastelloy®	2.4686
			Aluminum bronze	2.0975
			Cast iron	5.3106
			Coatings:ECTFE, PA11, EPDM, NBR, SBR, FKM, EBRODUR	
4	Lower shaft	1	Stainless steel	1.4122, 1.4104, 1.4401/1.4404, 1.4418, 1.4462, 1.4410
			Hastelloy®	2.4610
5	Screw plug	1	Stainless steel	
6	Seal ring	1	Copper	

Item	Naming	Piece	Material group[1]	Material no.
7	Bearing bushing	2/3	Brass	
			Polyamide	
			Nitrided steel	
			Aluminum bronze	
8	Valve body	1	Aluminum alloy	3.2163, 3.2161
			Cast iron	5.1301, 5.3103, 5.3106
			Cast steel	1.0619
			Stainless steel	1.4408
9	Blow-out protection[3]	1	Stainless steel	
10	O-ring[4]	2	depending on the liner material	
11	Liner	1	NBR	
			EPDM	
			CSM	
			FKM	
			VMQ	
			SBR	
12	O-ring[5]	1	NBR	
			FKM	
13	End cap[5]	1	Cast iron	
			Stainless steel	
			Aluminum alloy	
14	Screw[5]	4	Steel	
			Stainless steel	

[1] Materials in the default version. Other materials and surface treatments available upon request
[2] Additional surface treatments such as electropolished and mirror-polished are available as options
[3] Operation without blow-out protection not allowable!
[4] In the vulcanized insert (from DN250)
[5] From DN 350 onwards

TS version with through-going shaft



Item	Naming	Piece	Material group[1]	Material no.
1	O-ring	2	NBR	
			FKM	
			EPDM	
2	TS-shaft	1	Stainless steel	1.4122, 1.4104, 1.4401/1.4404, 1.4462, 1.4410
3	TS-valve disc[2]	1	Stainless steel	1.4408, 1.4469
			Aluminum bronze	2.0975
			Hastelloy®	2.4686
			Cast iron	5.3106
			Coatings:ECTFE, PA11, EPDM, NBR, SBR, FKM, EBRODUR	
4	Bushing	1	Stainless steel	
5	Blow-out protection[3]	1	Stainless steel	
6	Screw plug	1	Stainless steel	
7	Seal ring	1	Copper	
8	Bearing bushing	2/3	Brass	
			Polyamide	
			Nitrided steel	
			Aluminum bronze	

Item	Naming	Piece	Material group[1]	Material no.
9	Valve body	1	Cast iron	5.1301, 5.3103, 5.3106
			Cast steel	1.0619
			Stainless steel	1.4408
10	Screw plug	1	Stainless steel	
11	O-ring[4]	2	depending on the liner material	
12	Liner	1	NBR	
			EPDM	
			CSM	
			FKM	
			VMQ	
			SBR	
13	O-ring[5]	1	NBR	
			FKM	
14	Blow-out protection[3, 5]	1	Brass	2.0401
15	End cap[5]	1	Cast iron	
			Stainless steel	
			Aluminum alloy	
16	Screw[5]	4	Steel	
			Stainless steel	

[1] Materials in the default version. Other materials and surface treatments available upon request.
[2] Additional surface treatments such as electropolished and mirror-polished are available as options.
[3] Operation without blow-out protection not allowable!
[4] In the vulcanized insert (from DN250)
[5] From DN 350 onwards

Torques

NOTICE

The values listed in the table are breakaway torques determined for liquid/lubricating media from the position of the valve disc. They should be considered reference values since the actual torques depend on various factors such as operating pressure, medium, operating conditions, etc. The safety factor for the design of the actuation is also necessary.

Valve discs in special designs can be provided.

		Torque (Md) / pressure rating [Nm]			
DN	**NPS**	**3 bar**	**6 bar**	**10 bar**	**16 bar**
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	24	24	24	24
100	4	18	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	6760	11500	24400

Additions for other media

- Powder (non-lubricating) media Md x 1.3 + safety factor
- Dry gases/high viscosity liquids Md x 1.2 + safety factor

K_v values

NOTICE

The $K_v$value [m^3/h] indicates the water flow rate at a temperature of 5 °C to 30 °C and a Δp of 1 bar.
The allowable flow velocity V_{max} is 4.5 m/s for liquids and 70 m/s for gases. At an opening angle of 30° to 70°, the valve disc is in the optimum control range. The curve is flat between 20° and 30° and between 70° and 90°, so that changing the opening angle has little effect on the flow control. Avoid cavitation.

		Opening angle α°							
DN	**NPS**	**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
850	34	1750	2820	5720	10530	17300	26100	37000	50000
900	36	1960	3150	6390	11800	19300	29200	41300	55900
1000	40	2430	3890	7910	14600	23900	36100	51100	69100

Information in m^3/h.

Technical features

Designation	Description
Nominal sizes [1]	DN 20 - DN 1000
Body design	Wafer-type (1-piece)
Temperature range [2]	-40 °C to +200 °C
Maximum allowable pressure (PS)	16 bar
Notices [1] DN 20 only available in PN 10/16 [2] Depending on pressure, medium, and material selection	

Standards

Designation	Description
Standard of use	DIN EN 593:2018-01
Marking	DIN EN 19:2024-03
Top flange	DIN EN ISO 5211:2024-10
Face-to-face	DIN EN 558:2022-09 Series 20
	ISO 5752:2021-06 Series 20
	API STD 609:2021-04 Table 1
Flange connection [1]	DIN EN 1092-1:2018-12 (Form A/B) PN 6/10/16
	ASME B16.3:2021 Class 150 (RF, FF)
	AS 4087:2011 PN 16
Tightness test [1]	DIN EN 12266-1:2012-06 (Leakage rate A)
	ISO 5208:2015-06, category AA
Notices [1] Others upon request	

Certificates and approvals

Designation	Description
Pressure equipment	Directive 2014/68/EU, CRN, PE(S)R
Directive for gas equipment	DVGW (EU/2016/426, EN 161), SVGW (EN13774:2013), AGA (AS4629-2005, AS4617-2018)
Potable water	DVGW, SVGW, KIWA, ACS, WRAS, NSF, OTH, AS
Explosion protection	ATEX 2014/34/EU, IECEX, DIN EN 14460:2018-04
Water extinguishing systems	VdS 2100-08:2011-05, VdS 2344:2014-07
Fugitive emissions	ISO 15848-1, TA-Luft
Safety integrity level	IEC 61508 Level 2 (SIL 2)
Food safety	EG 1935/2004, FDA
Tank equipment	DIN EN 14432:2014, TÜ-AGG

Designation	Description
Shipbuilding	Bureau Veritas, Lloyds Register, DNV, CCS
Notice Further certificates and approvals available upon request. Applicable only for specific nominal sizes and material combinations (except for directive on pressure equipment and safety integrity level).	