

DOUBLE FLANGED BUTTERFLY VALVE F012-K1 / WN



Double flanged butterfly valve with short construction length to be used in heavy duty applications.

TECHNICAL DATA

Nominal diameter:	DN 150 - DN 2000 (bigger sizes upon request)
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1 Works standard
Flange accommodation:	EN 1092 PN 6/10/16 ASME Class 150 AS/NZS 4087 PN 16 Flange accommodation for works standard on request
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, Kategorie 3
Temperature range:	-40°C to +200°C (depending on pressure, medium and material)
Operating pressure:	16 bar (others on request)

FEATURES

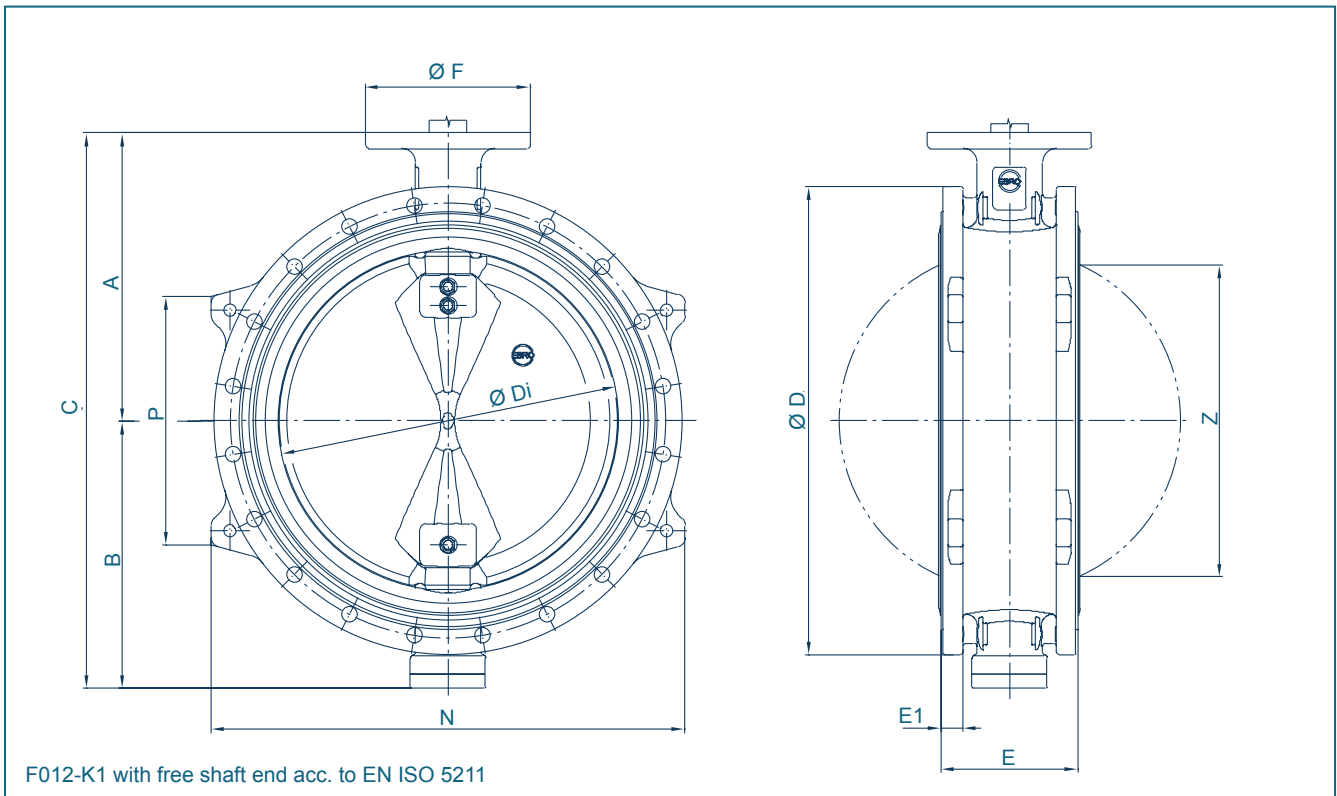
- Absolutely tight sealing with flow in either direction
- The valve body and disc are accurately machined which results in low operating torque and long service life and reliability
- Triple shaft bearings prevent shaft deflection and guarantee optimum guidance even after many years of operating service
- Can be disassembled, material-specific recycling possible
- Single flange mounting is possible
- Can be installed in any desired position
- Maintenance-free
- Fully repairable valve

GENERAL APPLICATIONS

- Offshore
- Water and waste water technology
- Shipbuilding
- Power plants



DOUBLE FLANGED BUTTERFLY VALVE F012-K1

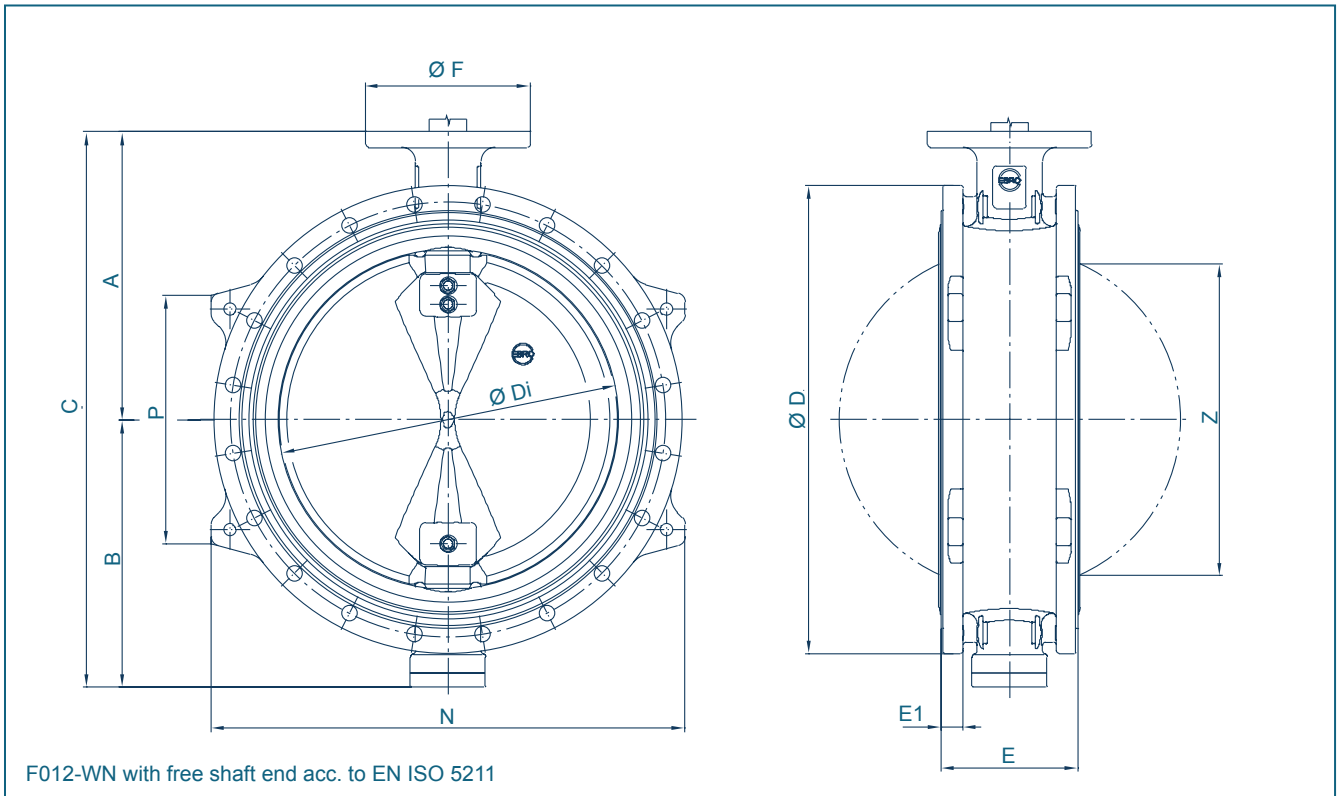


DN [mm]	Size [inch]	Dimensions [mm]											Bearings fixed adjustable	Weight [kg] (EN-JS-1030)		
		A	B	C	Ø Di	Ø D	E1	E	Ø F	Flange	N	P			Z	
150	6	203	150	353	148	305	15	56	90	F07	---	---	140	x	-	26
200	8	228	176	404	198	350	17	60	90	F07	---	---	192	x	-	34
250	10	266	212	478	248	430	19	68	125	F10	---	---	241	x	-	50
300	12	291	237	528	296	480	24	78	125	F10	---	---	288	x	-	72
400	16	363	314	677	390	605	28	102	150	F12	---	---	379	x	-	86
450	18	397	335	732	426	675	30	114	175	F14	---	---	414	x	-	128
450	18	465	385	850	426	770	27	114	210	F16	---	---	414	x	-	150
500	20	437	405	842	489	710	30	127	210	F16	---	---	475	x	-	163
600	24	498	445	943	582	780	33	154	300	F25	---	---	564	x	-	170
600	24	498	445	943	582	830	33	154	300	F25	860	400	564	x	-	260
700	28	581	507	1088	674	905	33	165	300	F25	---	---	658	x	-	296
700	28	581	507	1088	674	927	48	165	300	F25	---	---	658	x	-	345
700	28	581	507	1088	674	910	38	165	350	F25/F30	920	510	658	x	x	374
800	32	630	556	1186	780	1020	35	190	300	F25	---	---	761	-	x	345
800	32	630	556	1186	780	1025	42	190	350	F25/F30	1060	500	761	x	-	442
800	32	660	595	1255	780	1085	54	190	415	F25/F30/F35	---	---	761	-	x	735
800	32	630	556	1186	780	1060	52	190	300	F25	---	---	761	-	x	537
900	36	696	617	1313	880	1120	37	203	300	F25	---	---	861	x	-	573
900	36	696	617	1313	880	1168	52	203	350	F25/F30	---	---	861	x	-	428
900	36	740	635	1375	880	1175	52	203	350	F25/F30	1190	600	861	-	x	454
1000	40	771	675	1446	980	1230	37	216	350	F35/F30	---	---	960	-	x	573
1000	40	771	675	1446	980	1250	37	216	350	F25/F30	---	---	960	x	-	492
1000	40	771	675	1446	980	1255	41	216	416	F30/F35	1280	500	960	x	-	610
1000	40	771	675	1446	980	1288	52	216	350	F25/F30	---	---	960	x	x	621
1200	48	905	810	1715	1176	1480	41	254	350	F30	---	---	1152	x	x	672
1200	48	935	810	1745	1176	1511	60	254	475	F30/F35/F40	1560	760	1152	x	-	651

Face-to-face: K1

Subject to change without notice

DOUBLE FLANGED BUTTERFLY VALVE F012-WN



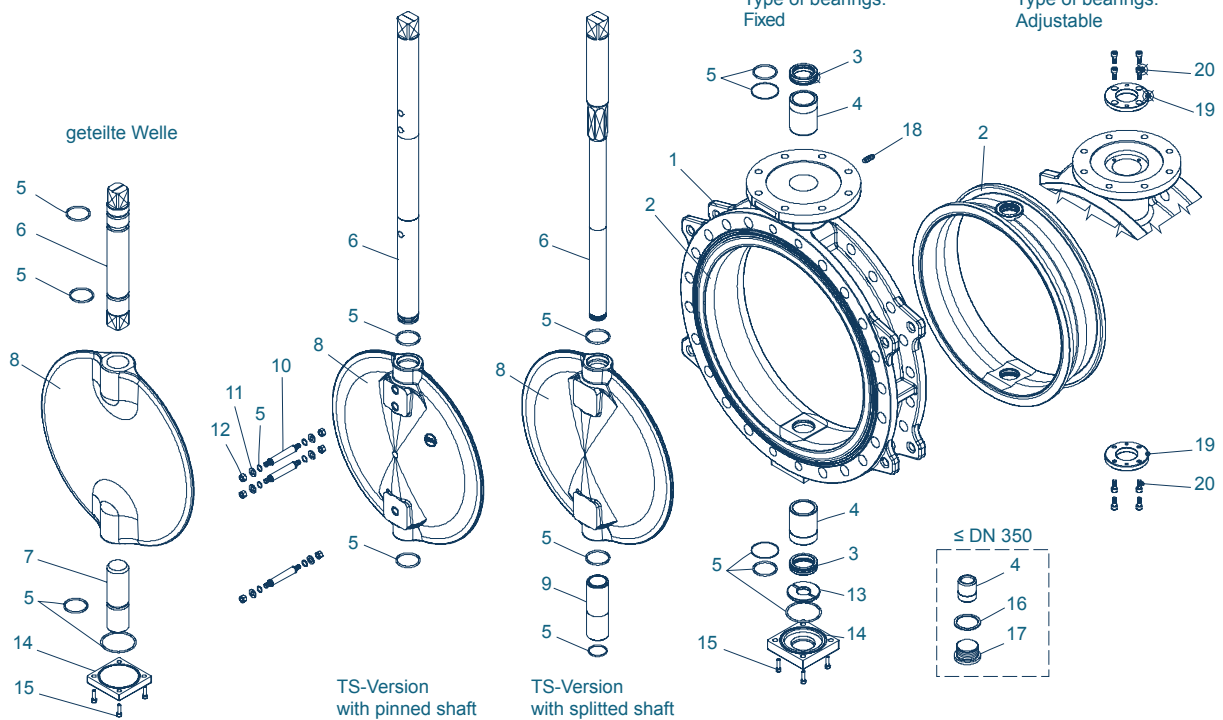
DN [mm]	Size [inch]	Dimensions [mm]											Bearings fixed adjustable	Weight [kg] (EN- JS-1030)		
		A	B	C	Ø Di	Ø D	E1	E	Ø F	Flange	N	P			Z	
350	14	332	269	601	338	540	26	92	150	F12	-	-	331	x	-	86
550	22	456	405	861	525	750	43	229	210	F16	-	-	490	x	-	256
550	22	495	405	900	538	760	46	154	300	F16/F25	770	400	518	x	-	244
650	26	540	460	1000	628	890	47	165	300	F25	-	-	610	x	-	360
750	30	590	550	1140	725	1000	50	190	300	F25	-	-	703	x	-	442
750	30	670	589	1259	725	1092	50	292	350	F25/F30	1120	520	668	-	x	735
750	30	590	550	1140	725	1015	46	292	350	F25/F30	1037	450	668	-	x	537
750	30	615	570	1185	725	997	47	292	350	F25/F30	1010	530	668	x	-	573
850	34	720	605	1325	831	1111	53	203	350	F25/F30	-	-	757	x	-	616
1050	42	817	725	1542	1030	1346	60	254	475	F30/F35/F40	1406	660	847	x	-	1020
1100	44	840	760	1600	1077	1405	43	216	350	F30	1470	660	1073	x	-	1068
1100	44	840	760	1600	1070	1404	43	254	415	F35	1470	660	1064	x	-	1087
1300	52	970	910	1880	1272	1630	65	280	415	F35	1700	800	1256	x	-	1607
1350	54	1000	905	1905	1338	1685	65	280	475	F35/F40	1760	700	1327	x	-	1809
1400	56	1025	970	1995	1372	1685	65	280	475	F35/F40	1760	700	1348	-	x	1820
1400	56	1025	970	1995	1372	1745	66	280	475	F35/F40	1780	940	1348	-	x	1924
1500	60	1115	1060	2175	1469	1855	65	280	560	F40/F48	1930	700	1446	-	x	2210
1600	64	1115	1100	2215	1566	1930	65	280	475	F40	2000	800	1544	x	-	2440
1600	64	1115	1100	2215	1566	1930	65	440	415	F35	2000	800	1506	x	-	2678
1800	72	1320	1175	2495	1778	2130	65	280	475	F35/F40	2160	900	1759	x	-	3140
1800	72	1320	1195	2515	1778	2197	65	280	560	F35/F40/F48	2230	1000	1759	x	-	2985
1950	78	1400	1290	2690	1958	2365	75	525	560	F48	2400	1000	1890	x	-	4275
2000	80	1400	1280	2680	1958	2265	75	525	560	F48	2350	1000	1890	x	-	4126
2000	80	1400	1290	2690	1958	2365	75	525	560	F48	2400	1000	1890	x	-	4275

Face-to-face: Works standard

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MATERIAL SPECIFICATION AND PARTS LIST



Pos.	Description	Material	Material-No.	Pos.	Description	Material	Material-No.				
1	Body	Nodular Cast Iron	EN-GJS-400-15	10	Taper pin	Stainless Steel	X5CrNi18-10 1.4301				
		Carbon Steel	GP240GH			1.0619	G-X5CrNiMo19-11-2	1.4408			
2	Seat/vulcanization	NBR	Nitrile butadiene rubber	11	Washer	Stainless Steel	A4				
		EPDM	Ethylene propylene diene monomer rubber			12	Hex nut	Stainless Steel	A4		
3/4	Bearing bush	Brass	CuZn39Pb3	13	Shaft retention	Brass	CuZn39Pb3 CW614N				
						16MnCr5	1.7131				
5	O-Ring	NBR	Nitrile butadiene rubber	14	Cover plate	Sectional steel	S235JR				
		EPDM	Ethylene propylene diene monomer rubber			15	Screw	Steel	45 H galvanized		
6/7	Shaft	X14CrMoS17	1.4104	16	Seal DIN 915	Stainless Steel	A4-70				
		X2CrNiMo17-12-2	1.4122			Cooper	Cu				
		X5/(X2)CrNiMo17-12-2	1.4401/1.4404			17	Plug screw DIN 908	Machining steel	11SMnPb30 1.0718 nickel-plated		
		G-X5CrNiMo19-11-2	1.4408					Stainless Steel	G-X5CrNiMo19-11-2 1.4408		
		G-X2CrNiMoN26-7-4	1.4462					18	Threaded pin DIN 915	Steel	45 H galvanized
		CuAl10Fe5Ni5-C	1.4469							Stainless Steel	X5CrNiMo17-12-2 1.4401
8	Disc	Nodular Cast Iron	EN-GJS-400-15	19	Clamping ring	Sectional steel	S235JR				
		Stainless Steel	G-X5CrNiMo19-11-2			1.4408	20	Cylinder screw	Stainless Steel	A4	
		Aluminium Bronze	CuAl10Fe5Ni5-C			CC333G					
		Coating	Halar, Rilsan, Nonstick								
		Surface quality	electropolished, mirror finished								
9	Sleeve	Stainless Steel	X5CrNi18-10	1.4301							

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Adjustable bearings ensure tightness even with max. pressure loads.
This feature allows refixing during operation.

The shaft sealing of centric soft-seated butterfly valves is primarily effected by the surface pressure between the valve disc and the liner. Especially with large nominal diameters from DN600 and high pressures more than 16 bar, the simple surface pressure may no longer be sufficient.

EBRO has designed an adjustable shaft seal which makes it possible to increase the surface pressure in the shaft passage area so even large valves can operate at pressures of up to 25 bar.

A further advantage of this design is that the shaft seal can be adjusted by tightening the screws and thus readjusted if necessary.

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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.

DN [mm]	Size [in]	Adapted Disc Size Pressure Rating			
		3 bar disc	6 bar disc	10 bar disc	16 bar disc
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	1800	3000	5830
700	28	1600	2240	3450	8100
800	32	2200	3900	6600	11200
900	36	2800	4900	7100	14500
1000	40	4800	6760	11500	24400
1200	48	7800	12000	21000	44000
1400	56	15000	25000	40000	60000
1500	60	20000	30000	45000	75000
1600	64	25000	35000	50000	90000
1650	66	29140	40500	57000	110000
1800	72	33280	46000	64000	130000
2000	80	38400	50000	69000	150000

Bigger sizes upon request

All values in Nm

K_V-VALUES

- The K_V-value [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°
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
1400	56	5150	8260	16780	30900	50700	76500	108000	147000
1500	60	6070	9750	19800	36400	59900	90300	128000	173000
1600	64	7000	11200	22800	42000	69000	104000	148000	200000
1650	66	7500	12100	24500	45200	74200	112000	159000	215000
1800	72	9430	15100	30700	56600	93000	140300	199000	269000
2000	80	11100	17900	36400	66900	110000	166000	235000	318000

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