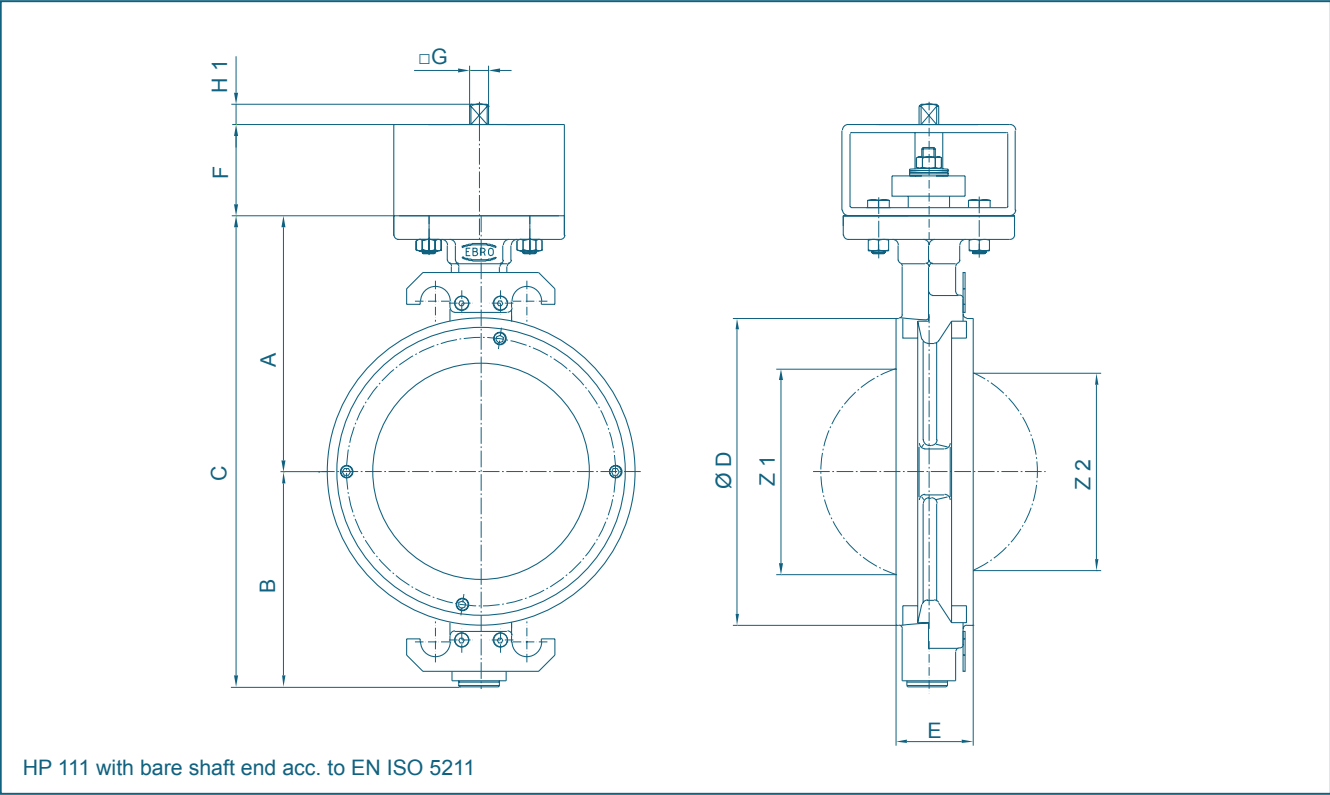


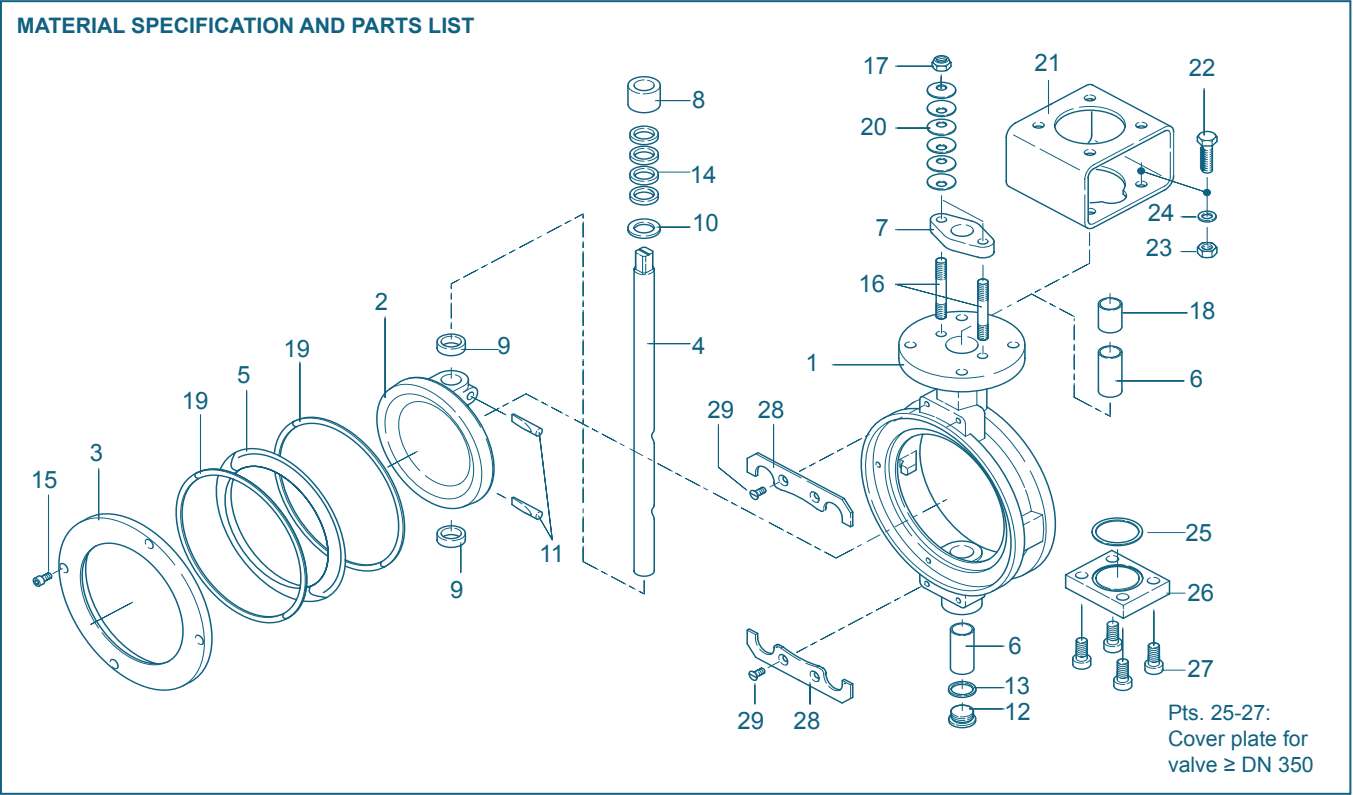
HIGH PERFORMANCE BUTTERFLY VALVE HP 111



DN [mm]	Size [in]	Dimensions [mm]										min. pipe-Ø	Weight [kg]
		A	B	C	D	E	F	Flange	G	H1	Z1	Z2	
50	2	133	99	232	112	43	80	F05	12	15	40,9	-	7,4
65	2½	133	99	232	112	43	80	F05	12	15	40,9	-	7,4
80	3	142	113	255	138	46	80	F05	12	15	70,7	54,4	8,0
100	4	158	124	282	160	52	80	F05	12	15	94,2	81,6	8,6
125	5	181	140	321	192	56	80	F07	14	18	114,5	105,3	12,6
150	6	195	154	349	216	56	80	F07	14	18	143,5	135,4	14,8
200	8	225	191	416	270	60	80	F10	17	18	187,4	181,2	22,9
250	10	268	222	490	326	68	80	F12	22	23	235,2	228,8	33,5
300	12	300	255	555	378	78	90	F12	27	28	280,7	275,8	48,0
350	14	345	304	649	438	92	100	F14	27	28	322,8	315,9	94,7
400	16	375	339	714	488	102	100	F14	36	36	371,6	363,9	115,0
450	18	412	340	752	530	114	120	F16	36	36	426,8	426,8	141,0
500	20	425	399	824	593	127	120	F16	46	46	468,7	466	186,0
550	22	456	405	861	635	154	200	F25	46	46	525,7	525,7	236,0
600	24	490	468	958	692	154	200	F25	55	55	544,2	542,2	310,0

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HIGH PERFORMANCE BUTTERFLY VALVE HP 111



Pt.	Description	Material	Material No.	ASTM	Pt.	Description	Material	Material No.	ASTM
1	Body	Carbon Steel	GS-C25N	1.0619	WCB	14	Shaft seal	PTFE	
		Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M		Graphite		
2	Disc	Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M	15	Hex.-socket screw	Stainless Steel	A4-70
3	Clamping ring	Steel	St37-2	1.0037	283-C	16	Threaded pin	Stainless Steel	A2-70
		Stainless Steel	X5CrNiMo17-12-2	1.4401	316	17	Hex. nut	Stainless Steel	A2
4	Shaft	Stainless Steel	X4CrNiMo16-5-1	1.4418		18	Spacer sleeve	Stainless Steel	X6CrNiMoTi17-12-2
5	Seat ring	R-PTFE	PTFE-Compound		19	Graphite seal (for metal seat)	Graphite		
		Inconel	Inconel 625		20	Belleville spr. washer	Spring Steel	50CrV4	1.8159
6	Shaft bearing	Stainless Steel	X5CrNiMo17-12-2	1.4401/PTFE	316		Stainless Steel	X10CrNi18-8	1.4310
			X6CrNiMoTi17-12-2	1.4571 nitrite	316 Ti	21	Bracket	Steel	St37-2 galvanized
7	Gland flange	Steel	St37-2	1.0037	283-C	22	Hex. bolt	Steel	St galvanized
		Stainless Steel	X5CrNi18-10	1.4301	304	23	Hex. nut	Steel	St galvanized
8	Thrust collar	Stainless Steel	X5CrNi18-10	1.4301	304	24	Washer	Steel	St galvanized
9	Bearing ring	Stainless Steel	X6CrNiMoTi17-12-2	1.4571 chr-pld	316 Ti	25	Seal	Graphite	
10	Suppor. washer	Stainless Steel	X6CrNiMoTi17-12-2	1.4571	316 Ti	26	Cover plate	Steel	St37-2 galvanized
11	Taper pin	Stainless Steel	X4CrNiMo16-5-1	1.4418		27	Hex.-socket screw	Stainless Steel	A2-70
12	Plug screw DIN 908	Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M	28	Centering piece	Stainless Steel	X6CrNiMoTi17-12-2
13	Seal	PTFE			29	Countersunk screw	Stainless Steel	A2	1.4301
		Graphite						SS	
	Other materials upon request								

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# HIGH PERFORMANCE BUTTERFLY VALVE HP 111



Wafer type butterfly valve in double-eccentric construction. Reliable sealing even with extreme temperature and pressure conditions.

## FEATURES

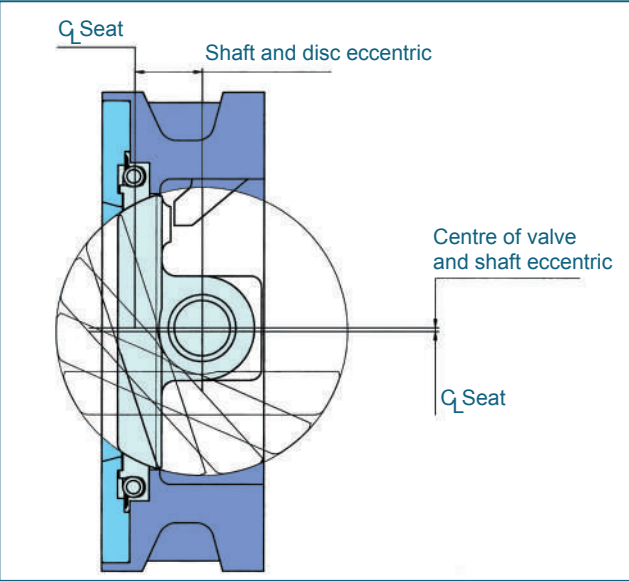
- Shut-off and control of gaseous and liquid media
- Disc and shaft have double-eccentric bearing
- Centering pieces can be used as installation aid
- Two seat ring systems available: R-PTFE and Inconel
- Seal variants:
  - soft-sealing (R-PTFE) max. 230°C
  - metallic sealing (Inconel) max. 600°C
- Maintenance-free
- Long service life, even at high switching frequencies

## GENERAL APPLICATIONS

- Chemical and petrochemical industry
- Hot water and steam systems
- District heat supply
- Vacuum systems
- Shipbuilding
- Gas process technology
- Heavy duty services

## TECHNICAL DATA

Nominal diameter:	DN 50 - DN 600 (larger nominal diameter on request)
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1
Flange accommodation:	EN 1092 PN 10/16/25/40 (to DN 150) EN 1092 PN 10/16/25 (DN 200-DN 600) ASME Class 150/300 AS 4087 PN16/21
Flange Surface Design:	EN 1092, Form A/B, ASME RF,FF
Top flange:	EN ISO 5211
Marking:	EN 19
Tightness check	
- for R-PTFE seat:	EN 12266 (Leakage rate A)
- for Inconel seat:	EN 12266 (Leakage rate B) ISO 5208, Category 3
Temperature range:	-60°C to +600°C
Differential pressure:	≤ DN150 max. 40 bar > DN150 max. 25 bar
Vacuum:	up to 1mbar absolute



## TORQUE

- The values specified are based on the initial breakaway torque. (disc disengages from seat, torque then drops)

DN [mm]	Size [in]	Operating pressure							
		10 [bar]		16 [bar]		25 [bar]		40 [bar]	
		R-PTFE	Inconel	R-PTFE	Inconel	R-PTFE	Inconel	R-PTFE	Inconel
50-65	2-2½	27	35	28	42	30	58	31	66
80	3	28	55	30	65	34	90	38	100
100	4	51	90	61	100	80	120	93	140
125	5	63	150	83	172	95	220	125	285
150	6	125	170	136	220	168	300	220	360
200	8	205	350	260	430	280	505	*	*
250	10	485	505	550	620	600	860	-	-
300	12	584	740	700	970	855	1280	-	-
350	14	740	815	930	1050	1200	1370	-	-
400	16	1050	1530	1640	2240	2460	2900	-	-
450	18	1150	1700	1750	2500	2700	3500	-	-
500	20	1210	2010	1800	2760	2800	4260	-	-
550	22	3500	3750	4430	4550	6010	6800	-	-
600	24	4000	4500	4600	5740	6200	8080	-	-

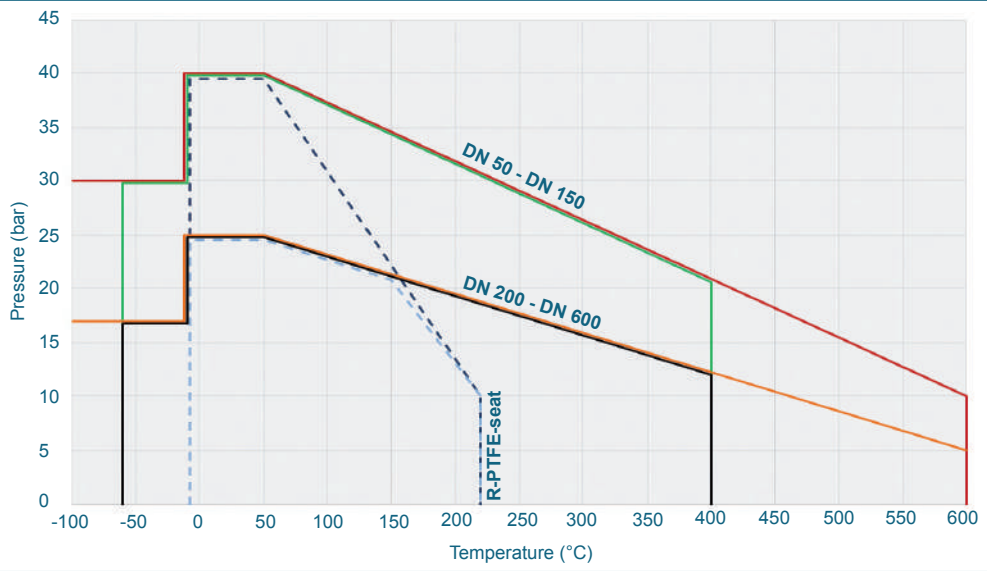
\* DN 200 PN 16 max. 25 bar

All values in Nm

## PRESSURE/TEMPERATURE DIAGRAM

- Pressure control line for GS-C25 body material and metal seat
- Pressure control line for 1.4408 body material and metal seat
- Pressure control line for R-PTFE

The diagram illustrates the performance of the standard version of our valve type HP. Valves for higher pressure or deviating temperature are available upon request.



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

- The K<sub>V</sub>-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<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.

DN [mm]	Size [in]	Opening angle α°							
		20°	30°	40°	50°	60°	70°	80°	90°
50	2	1,3	6	15	18	19	21	22	23
65	2½	1,5	7	18	22	23	24	25	25
80	3	7	30	50	68	82	97	113	115
100	4	22	60	97	119	164	199	223	251
125	5	45	100	152	195	256	346	452	493
150	6	63	109	162	250	391	588	814	845
200	8	96	168	301	509	742	1107	1581	1747
250	10	264	458	682	980	1421	2083	2882	2889
300	12	397	625	956	1368	1938	2778	3794	3940
350	14	460	720	1100	1650	2500	3400	4800	5400
400	16	550	870	1250	2000	3200	4800	6800	8080
450	18	730	1200	1800	3100	4600	6400	8400	10500
500	20	920	1600	2600	4100	6000	8500	12100	12800
550	22	1090	1950	3100	4600	7500	10200	14700	15300
600	24	1370	2250	3780	4950	9000	12500	17100	18500

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