

HIGH PERFORMANCE BUTTERFLY VALVE HP 111-E



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

TECHNICAL DATA

Nominal diameter:	DN 50 - DN 200 (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 ASME Class 150 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:	-10°C to +450°C
Differential pressure:	see pressure/ temperature diagram
Vacuum:	up to 1mbar absolute

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-seat) max. 450°C
- Maintenance-free
- Long service life, even at high switching frequencies

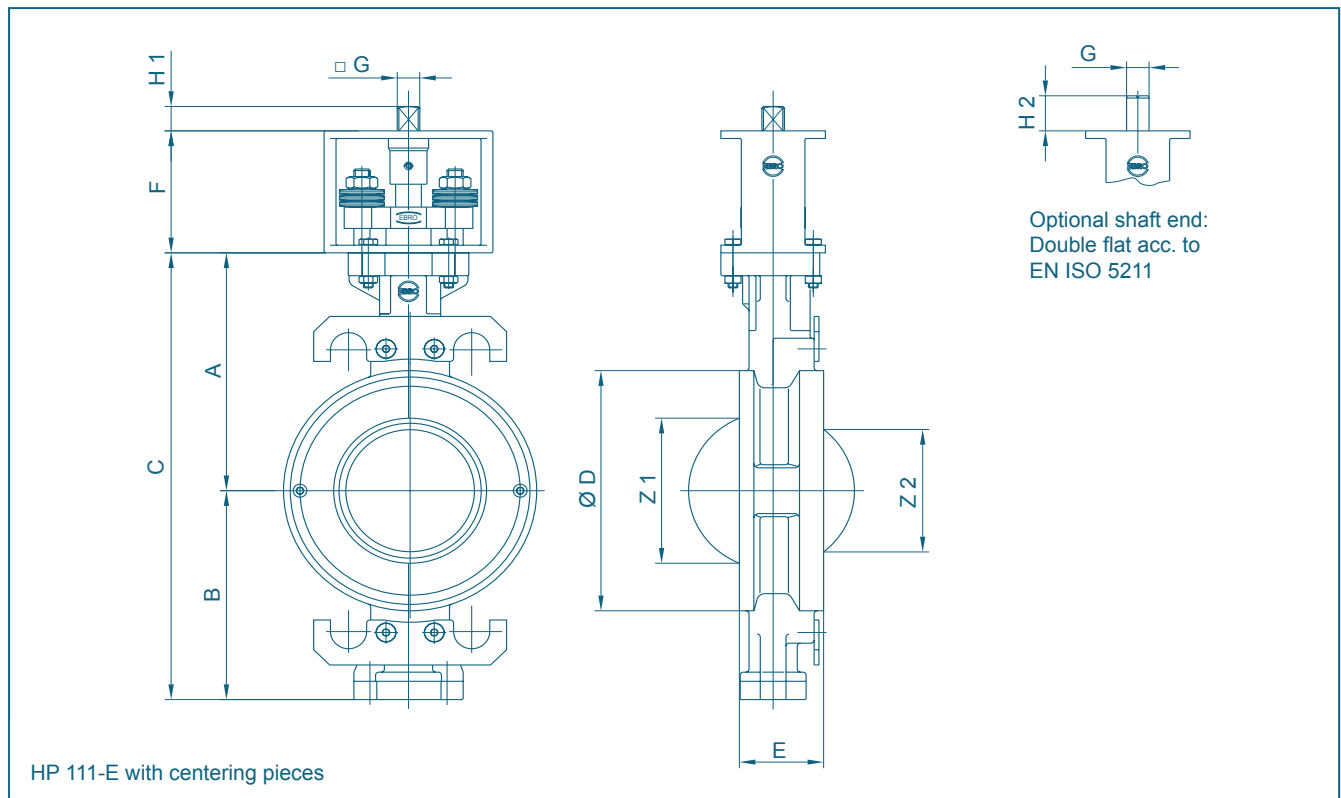
GENERAL APPLICATIONS

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



The splitted shaft design allows better flow characteristics up to a nominal pressure of 19 bar.

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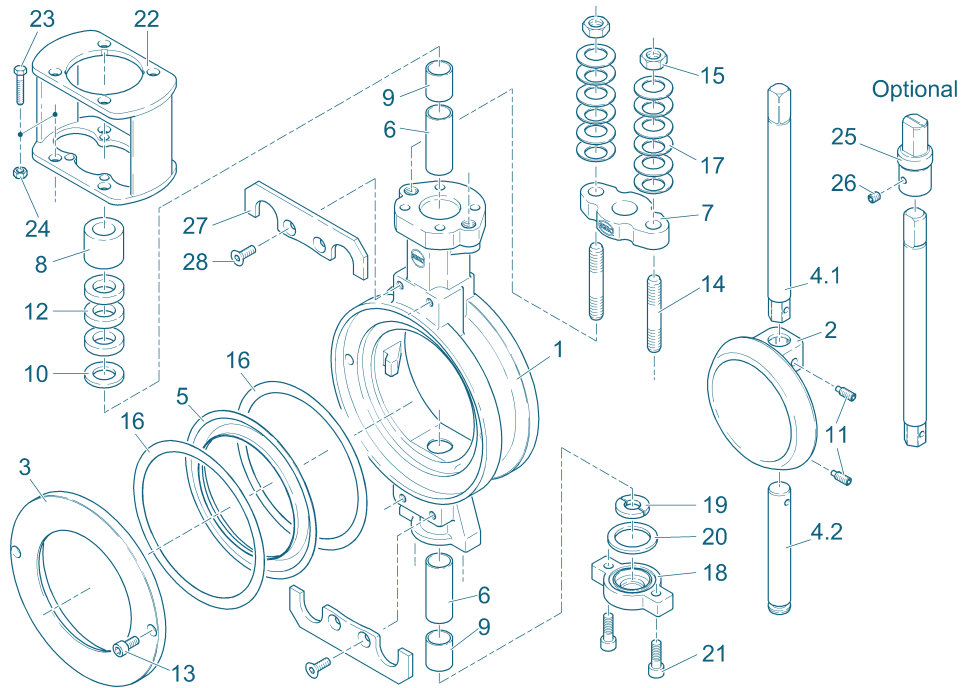
DN [mm]	Size [in]	Dimensions [mm]													min. pipe-Ø	Weight [kg]
		A	B	C	D	E	F	Flange	□G	H1	G	H2	Z1	Z2		
50	2	131	112	243	112	43	80	F05	12	15	14	23	41	-	51	5,8
65	2½	131	112	243	112	43*	80	F05	12	15	14	23	41	-	51	5,8
80	3	141	122	263	138	46	80	F05	12	15	14	23	71	55	80	5,9
100	4	156	137	293	158	52	80	F05	12	15	14	23	95	82	103	7,4
125	5	180	172	352	186	56	80	F07	14	18	17	28	115	106	124	11,3
150	6	194	186	380	216	56	80	F07	14	18	17	28	144	136	151	13,8
200	8	219	212	431	270	60	80	F10	17	18	22	37	188	182	196	24,6

*Special face to face

Subject to change without notice

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MATERIAL SPECIFICATION AND PARTS LIST



Pt.	Description	Material	Material-No.	ASTM	Pt.	Description	Material	Material-No.	ASTM		
1	Body	Carbon Steel	GP240GH (GS-C25N)	1.0619	WCB	14	Threaded pin	Stainless Steel	A2-70	1.4301	B 8
		Stainless Steel	G-X5CrNiMo19-11	1.4408	CF8M			15	Hex. nut	Stainless Steel	A 2
2	Disc	Stainless Steel	G-X5CrNiMo19-11	1.4408	CF8M	16	Graphite seal (for metal seat)	Graphite			
		Steel	S23JR (RST37-2)	1.0038	283-C			17	Belleville spring washer	Spring Steel	50CrV4
3	Clamping ring	Stainless Steel	X5CrNiMo17-12-2	1.4401	316	18	Cover plate			Stainless Steel	X10CrNi18-8
		4.1	Upper shaft	Stainless Steel	X4CrNiMo16-5-1			1.4418	19	Segment	Stainless Steel
Stainless Steel	X5CrNiCuNb16-4			1.4542	20	Seal	Graphite				
4.2	Lower shaft	Stainless Steel	X4CrNiMo16-5-1	1.4418			21	Hex.-socket screw	PTFE		
		5	Seat ring	R-PTFE	PTFE-Compound				22	Bracket	NBR
Inconel	Inconel 625				23	Hex. bolt	FPM				
6	Shaft bearing	Stainless Steel	X6CrNiMoTi17-12-2	1.4571 nitriert			316 Ti	24	Hex. nut	Stainless Steel	A4-70
		Stainless Steel	X5CrNiMo17-12-2	1.4401/PTFE	316	25	Shaft adapter			Stainless Steel	A 2
7	Gland flange	Stainless Steel	G-X5CrNiMo19-11	1.4408	CF8M			26	Set screw	Stainless Steel	GX5CrNiMoN26-7-4
		8	Thrust collar	Stainless Steel	X5CrNi18-10	1.4301	304			27	Centering piece
9	Spacer sleeve			Stainless Steel	X6CrNiMoTi17-12-2	1.4571	316 Ti	28	Countersunk screw		
		10	Suppor. washer	Stainless Steel	X6CrNiMoTi17-12-2	1.4571	316 Ti			28	Countersunk screw
11	Set screw			Stainless Steel	A4-70						
		12	Shaft seal	Graphite							
PTFE											
13	Hex.-socket screw	Stainless Steel	A4-70	1.4401	B8M						
	Other materials upon request										

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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]	
		R-PTFE	Inconel	R-PTFE	Inconel
50-65	2-2½	27	35	28	42
80	3	28	55	30	65
100	4	51	90	61	100
125	5	63	150	83	172
150	6	125	170	136	220
200	8	205	350	260	430

All values in Nm

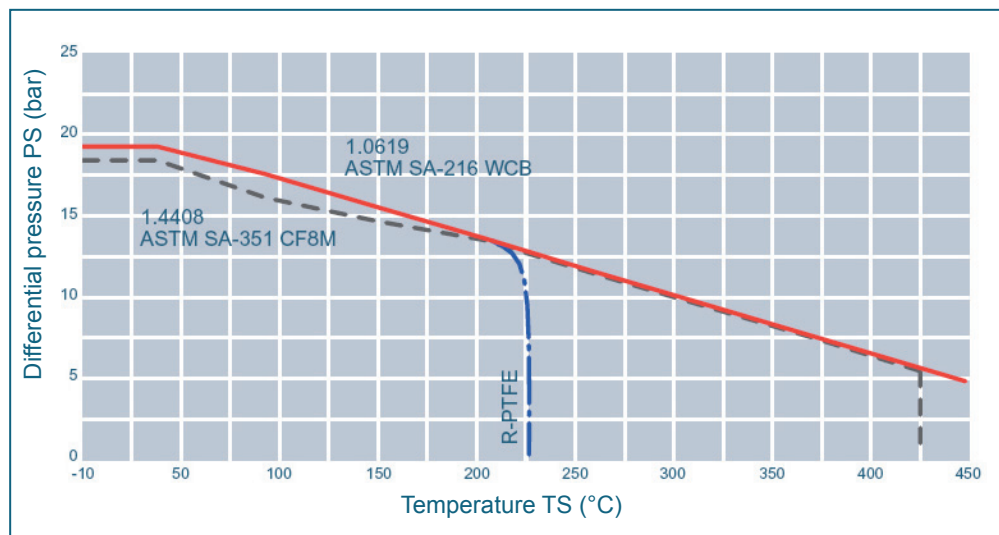
PRESSURE/TEMPERATURE DIAGRAM

----- 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_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

DN [mm]	Size [in]	Opening angle α°							
		20°	30°	40°	50°	60°	70°	80°	90°
50	2	3	13	28	39	49	58	69	81
65	2½	3	13	29	41	52	61	72	84
80	3	19	40	63	96	135	189	242	287
100	4	33	65	89	125	180	259	365	450
125	5	53	105	169	245	342	509	645	728
150	6	82	161	252	385	575	817	1010	1123
200	8	105	184	331	559	816	1217	1795	1921

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For further values, please contact our engineers.



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