

# HIGH-PERFORMANCE BUTTERFLY VALVE HP 114-E



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

## TECHNICAL DATA

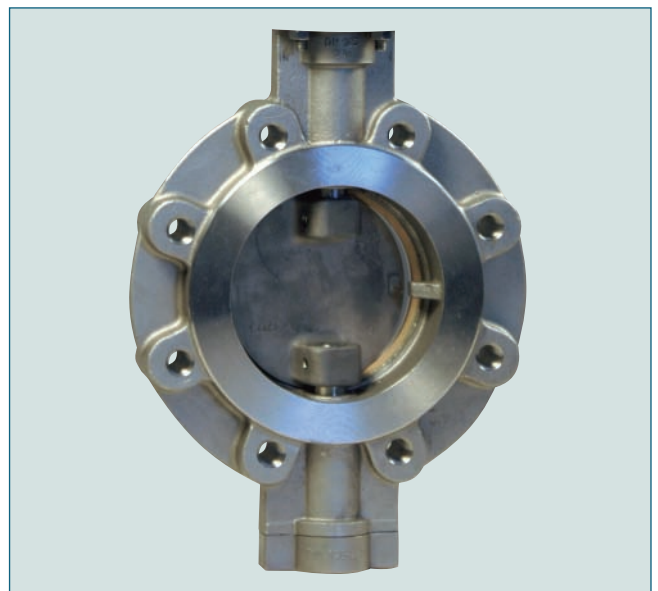
Nominal diameter:	DN 50 – DN 200 larger nominal diameter on request
Face-to-face:	EN 558 Series 20 (DIN 3202 T3 K1) ISO 5752 Series 20 (DIN 3202 T3 K1) API 609 Table 1 BS 5155 Series 4 NF E 29-305.1
Flange accommodation:	DIN 2501 PN 10/16 DIN 2632/33 ANSI B 16.5, Class 150 AWWA C 207 AS 2129 Table D and E BS 10 Table D and E JIS B 2211-5 K JIS 2212-10 K
Flange Surface Design:	DIN 2526, Form A-E, ANSI RF
Top flange:	EN ISO 5211 NF E 29-402
Marking:	DIN EN 19
Tightness check:	
- for R-PTFE Sitz:	DIN 3230-BO (Leakage Rate 1)
- for Inconel Sitz:	DIN 3230-BN (Leakage Rate 1) ISO 5208, Category 3 API 598 Table 5 ANSI B 16-104, Class VI
Temperature range:	-196 °C to + 550 °C higher temperatures on request
Differential pressure:	see Pressure/Temp. Diagram
Vacuum:	>10 <sup>-2</sup> mbar

## FEATURES

- Shut-off and control of gaseous and liquid media
- Disc and shaft have double-eccentric bearing
- Two seat ring systems available: R-PTFE and Inconel-FS
- Seal variants:  
soft-sealing (R-PTFE) 230 °C max.  
metallic sealing (Inconel) 550 °C max.
- Maintenance-free
- Long service life, even at high switching frequencies
- FIRE SAFE BS 6755 PART 2

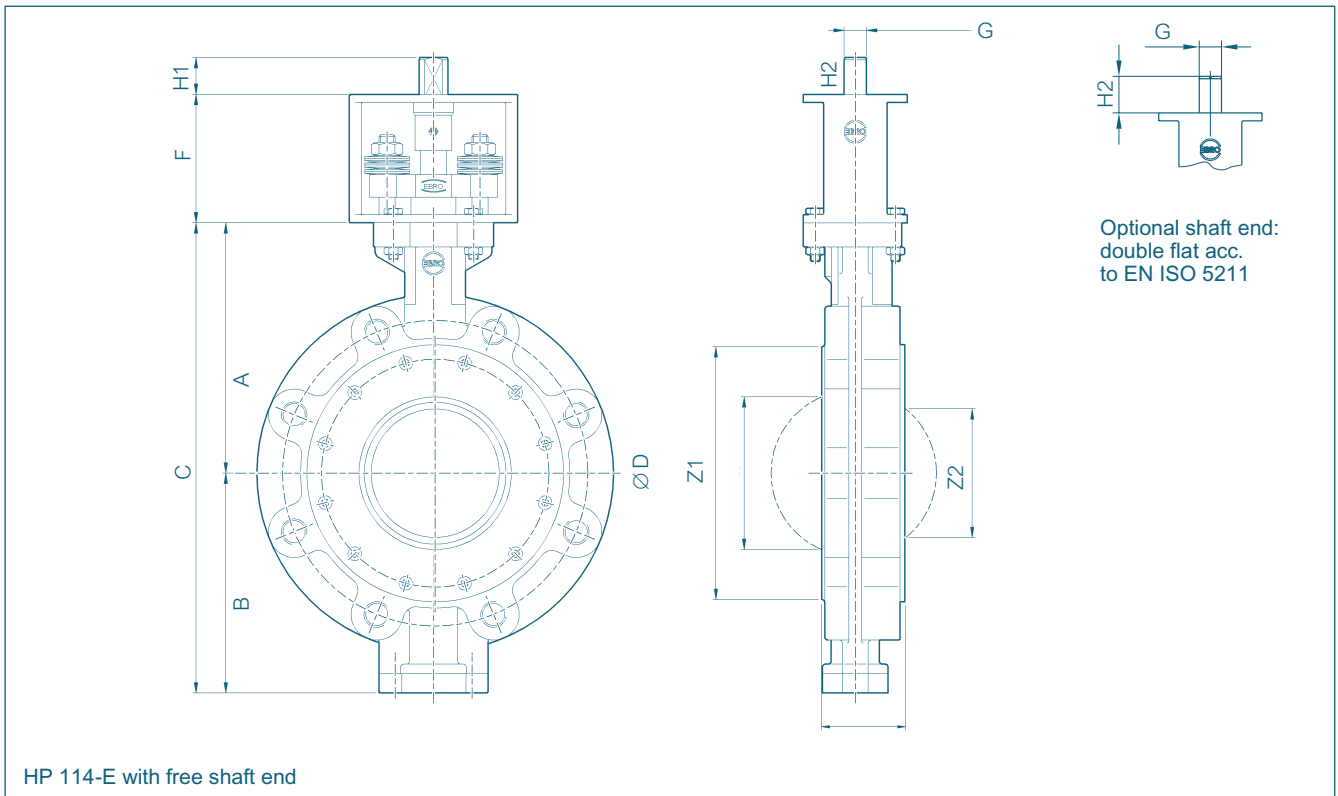
## GENERAL APPLICATIONS

- 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	122	43	80	F05	12	15	14	23	41	-	51	8,4
65	2½	131	112	243	122	43	80	F05	12	15	14	23	41	-	51	8,4
80	3	141	122	263	138	46	80	F05	12	15	14	23	71	55	80	9,7
100	4	156	137	293	158	52	80	F05	12	15	14	23	95	82	103	11,8
125	5	180	172	352	186	56	80	F07	14	18	17	28	115	106	124	16,8
150	6	194	186	380	216	56	80	F07	14	18	17	28	144	136	151	21,8
200	8	219	212	431	270	60	80	F10	17	18	22	37	188	182	196	33,6

Subject to change without notice.

# ACTUATORS HP 114-E

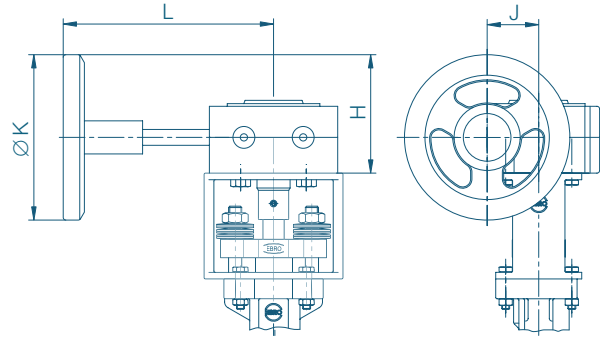
## WORM GEAR FOR PTFE-SEAT

DN [mm]	Size [in]	Gear	H	J	K	L	Weight [kg]
50-125	2-5	Size II	89	39	125	159	1,4
150	6	Size III	129	47	200	202	2,3
200	8	Size IV	129	60	200	252	2,8

## FOR INCONEL-SEAT

DN [mm]	Size [in]	Gear	H	J	K	L	Weight [kg]
50-100	2-4	Size II	89	39	125	159	1,4
125-150	5-6	Size III	129	47	200	202	2,3
200	8	Size IV	158	76	250	280	6,3

The dimensioning of actuators refers to an operating pressure of 10 bar.



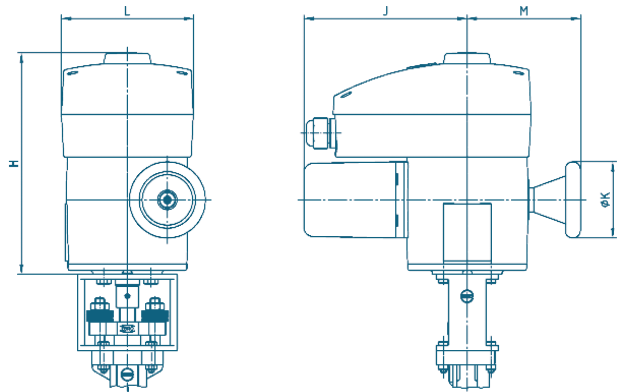
## ELECTRIC ACTUATOR FOR PTFE-SEAT

DN [mm]	Size [in]	Actuator Type	H	J	K	L	M	Weight [kg]
50-125	2-5	E 65	233	172	80	139	119	7,0
150-200	6-8	E 110	251	245	125	139	134	14,0

## FOR INCONEL-SEAT

DN [mm]	Size [in]	Actuator Type	H	J	K	L	M	Weight [kg]
50-100	2-4	E 65	233	172	80	139	119	7,0
125-200	5-8	E 110	251	245	125	139	134	14,0

The dimensioning of actuators refers to an operating pressure of 10 bar.

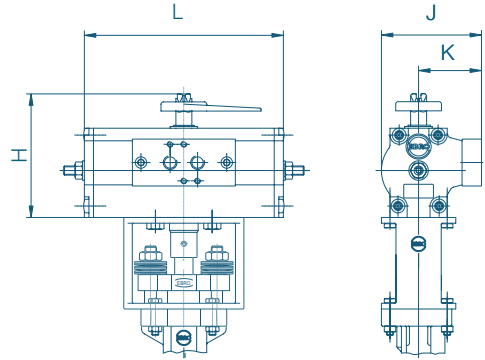


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# ACTUATORS HP 114-E

## PNEUMATIC DOUBLE ACTING FOR PTFE-SEAT

DN [mm]	Size [in]	Actuator Type	H	J	K	L	Weight [kg]
50-100	2-4	EB 5	108	88	55	174	1,7
125-150	5-6	EB 6	123	103	62	208	2,6
200	8	EB 8	136	115	68	250	4,3



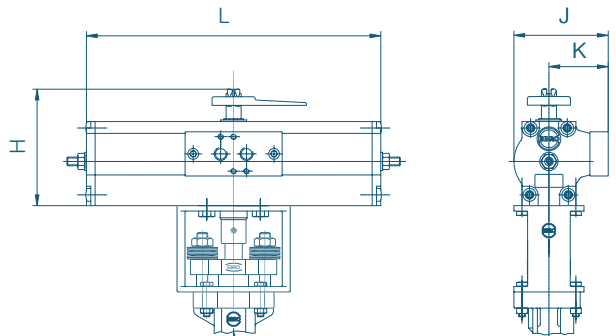
## FOR INCONEL-SEAT

DN [mm]	Size [in]	Actuator Type	H	J	K	L	Weight [kg]
50-80	2-3	EB 6	108	88	55	174	1,7
100	4	EB 6	123	103	62	208	2,6
125-150	5-6	EB 8	136	115	68	250	4,3
200	8	EB 10	155	135	79	312	6,8

The dimensioning of actuators refers to an operating pressure of 10 bar and a control air pressure of 6 bar.

## PNEUMATIC SPRING RETURN FOR PTFE-SEAT

DN [mm]	Size [in]	EBF Actuator	H	J	K	L	Weight [kg]
50-80	2-3	EB 5	108	88	55	273	3,0
100	4	EB 6	123	103	62	326	5,0
125	5	EB 8	136	115	68	389	7,7
150	6	EB 10	155	135	79	526	14,3
200	8	EB 12	182	159	94	656	25,4



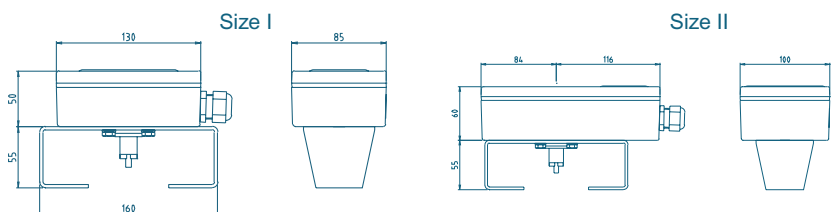
## FOR INCONEL-SEAT

DN [mm]	Size [in]	EBF Actuator	H	J	K	L	Weight [kg]
50-80	2-3	EB 8	123	103	62	326	5,0
100	4	EB 8	136	115	68	389	7,7
125-150	5-6	EB 10	155	135	79	526	14,3
200	8	EB 12	182	159	94	656	25,4

The dimensioning of actuators refers to an operating pressure of 10 bar and a control air pressure of 6 bar.

## SWITCH BOX SERIES MSK/NSK

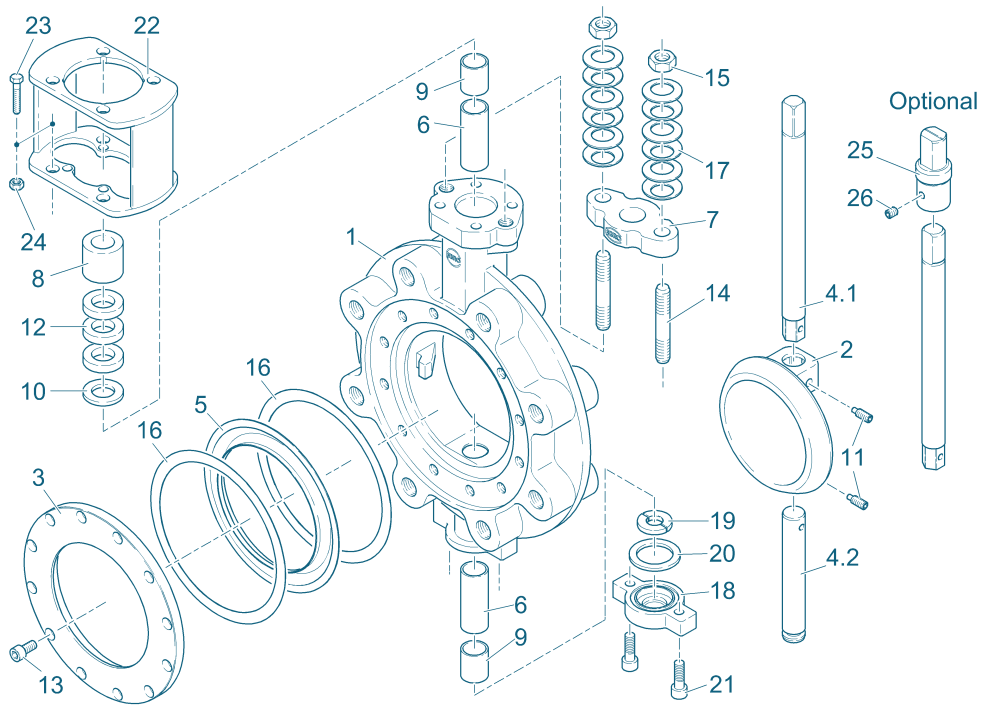
MSK:  
Switch Box with integrated micro limit switches.  
NSK:  
Switch Box with integrated proximity switches.



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# HIGH-PERFORMANCE BUTTERFLY VALVE HP 114-E

## MATERIAL SPECIFICATION AND PARTS LIST



Pt.	Description	Material	Material-No.	ASTM	Pt.	Description	Material	Material-No.	ASTM		
1	<b>Body</b>	Carbon Steel	GP240GH(GS-C25N)	1.0619	WCB	14	<b>Threaded pin</b>	Stainless Steel	A2-70	1.4301	B8
		Stainless Steel	G-X5CrNiMo19-11	1.4408	CF8M			15	<b>Hex. nut</b>	Stainless Steel	A2
2	<b>Disc</b>	Stainless Steel	G-X5CrNiMo19-11	1.4408	CF8M	16	<b>Graphit seal (for metal seat)</b>	Graphite			
		Steel	S23JR (RSt37-2)	1.0038	283-C			17	<b>Belleville spr. washer</b>	Spring Steel	50CrV4
3	<b>Clamping ring</b>	Stainless Steel	X5CrNiMo17-12-2	1.4401	316					Stainless Steel	X10CrNi18-8
		4.1	<b>Upper Shaft</b>	Stainless Steel	X4CrNiMo16-5-1	1.4418	18	<b>Cover plate</b>	Stainless Steel	GX5CrNiMo19-11	1.4408
Stainless Steel	X5CrNiCuNb16-4			1.4542	19	<b>Segmente</b>			Stainless Steel	X6CrNiMoTi17-12-2	1.4571
4.2	<b>Lower Shaft</b>	Stainless Steel	X4CrNiMo16-5-1	1.4418			20	<b>Seal</b>	Graphite		
		R-PTFE	PTFE-Compound						PTFE		
5	<b>Seat ring</b>	Inconel	Inconel 625				NBR				
		6	<b>Shaft bearing</b>	Stainless Steel	X6CrNiMoTi17-12-2	1.4571	nitrite	316	Ti		
Stainless Steel	X5CrNiMo17-12-2			1.4401	PTFE	316					
7	<b>Gland flange</b>	Stainless Steel	G-X5CrNiMo19-11	1.4408	CF8M	21	<b>Hex.-socket screw</b>	Stainless Steel	A4-70		
		8	<b>Thrust collar</b>	Stainless Steel	X5CrNi18-10			1.4301	304	22	<b>Bracket</b>
9	<b>Spacer sleeve</b>			Stainless Steel	X6CrNiMoTi17-12-2	1.4571	316	Ti	23		
		10	<b>Suppor. washer</b>	Stainless Steel	X6CrNiMoTi17-12-2	1.4571	316	Ti		24	<b>Hex. nut</b>
11	<b>Set screw</b>			Stainless Steel	A4-70			25	<b>Shaft adapter</b>		
		12	<b>Shaft seal</b>	Graphite						26	<b>Set screw</b>
PTFE						27	<b>Centering piece</b>	Stainless Steel	X6CrNiMoTi17-12-2		
13	<b>Hex.-socket screw</b>	Stainless Steel	A4-70	1.4401	B8M			28	<b>Countersunk screw</b>	Stainless Steel	A2

Other materials upon request.

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## TORQUE

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

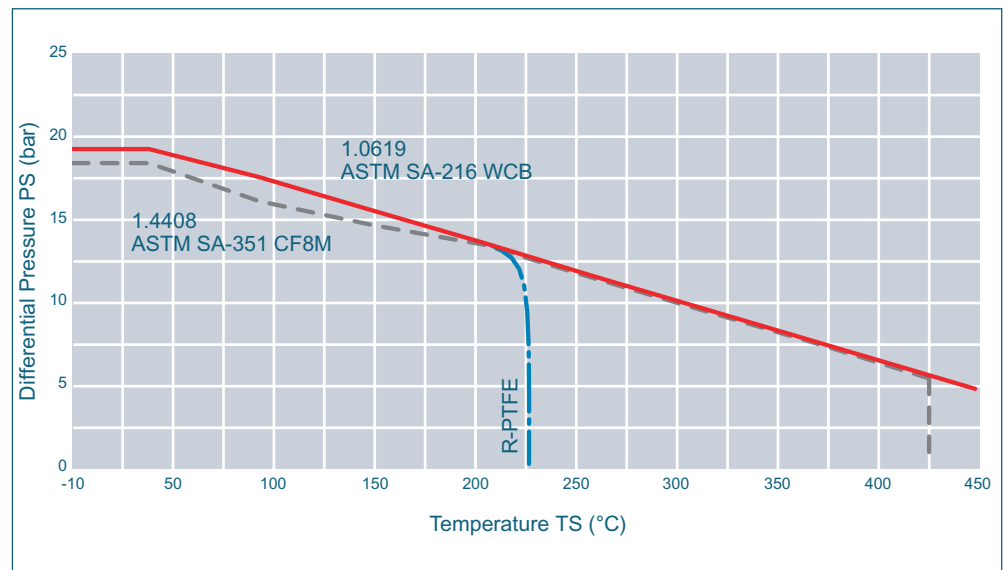
## PRESSURE /TEMPERATURE DIAGRAM

----- 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-seat

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 (m<sup>3</sup> per hour) is the flow of water at a temperature of 5 °C to 30 °C (41 °F to 86 °F) Δp of 1 bar.

- The K<sub>V</sub>-values specified are based on tests carried out by the Delft Hydraulics Laboratories, the Netherlands.

- Permissible velocity of flow V<sub>max</sub> 4,5 m/s for liquids and V<sub>max</sub> 70 m/s for gases.

For further values, please contact our engineers.

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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