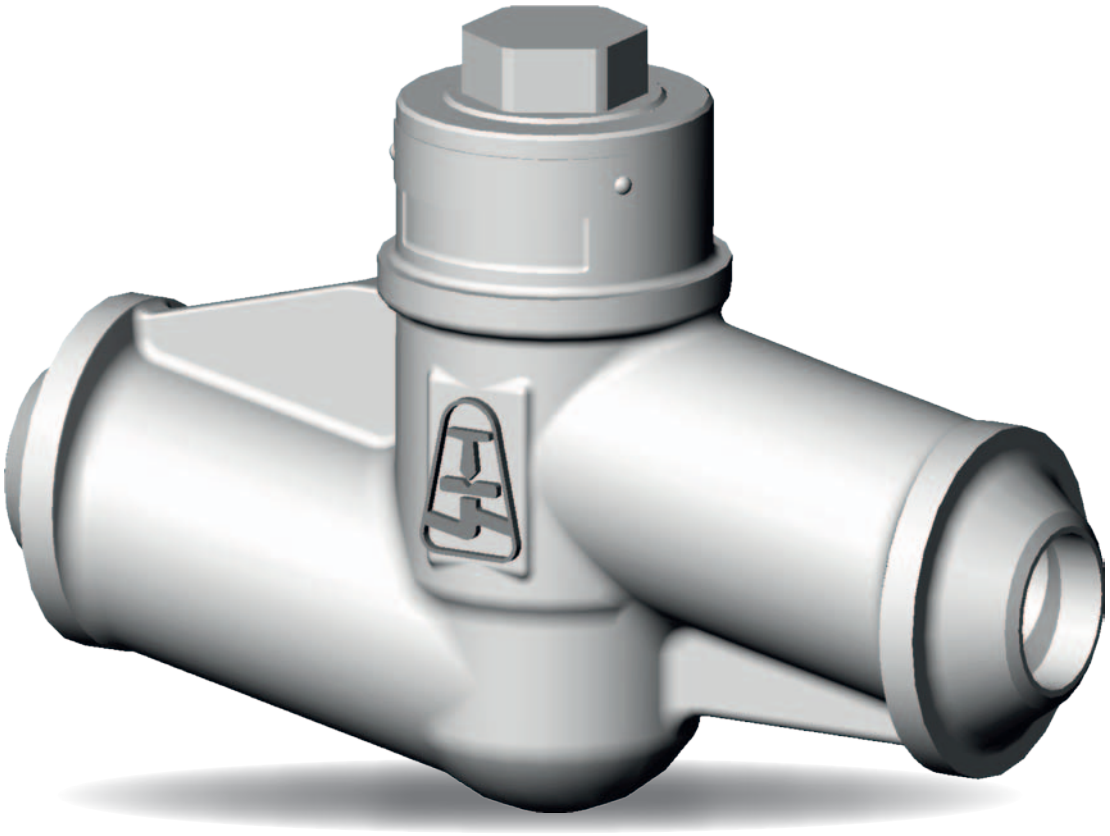
HIGH-PRESSURE LIFT CHECK VALVE Z15.2

PN 63–500; DN 10–65; T_{MAX}: 600 °C



APPLICATION

- steam, water, gas, oil, petroleum products, aggressive and non-aggressive substances

CONNECTION

- weld ends, flanged, socket weld, combination

OPERATION

- self-acting control

DESCRIPTION

- design of the body is straight sealing
- closing spring (except DN 10, 15)
- conical seat
- sealing surface is welded by hard facing (13Cr) or Stellite 6
- complies with the requirements of the directive 2014/68/EU
- testing is carried out according to standard EN 12266-1; part 2

BASIC DESIGN OPTIONS

- delivery according to TRD 201 on request

PRESSURE-TEMPERATURE-RATINGS

Material	PN	Admissible operating pressure PS [bar] at operating temperature TS [°C]																
		-10	50	100	150	200	250	280	300	350	380	390	400	410	420	430	440	450
P250GH (C22.8) (1.0460)	63	63	63	63	63	63	56,7	53,2	50,4	44,9	41,0	40,2	39,4	38,4	37,5	36,5	35,6	34,7
	100	100	100	100	100	100	90,0	84,5	80,0	71,3	65,0	63,8	62,5	61,0	59,5	58,0	56,5	55,0
	160	160	160	160	160	160	144	135	128	114	104	102	100	97,6	95,2	92,8	90,4	88,0
	250	250	250	250	250	250	225	212	200	178	163	159	156	153	149	145	141	138
	320	320	320	320	320	320	288	271	256	228	208	204	200	195	190	186	181	176
	400	400	400	400	400	400	360	340	320	285	260	255	250	244	238	232	226	220

Material	PN	Admissible operating pressure PS [bar] at operating temperature TS [°C]																
		-10	200	250	300	350	400	450	475	490	500	510	520	530	540	550	575	580	600
16Mo3 (1.5415)	63	63	63	63	63	59	56,7	52,9	50,4	44,1	36,5	25,7	20,4	16,3	-	-	-	-	-
	100	100	100	100	100	94	90	84	80	70	58	40,8	32,4	25,8	-	-	-	-	-
	160	160	160	160	160	151	144	134	128	112	92,8	65,3	51,8	41,3	-	-	-	-	-
	250	250	250	250	250	238	225	210	200	175	145	102	81	64,5	-	-	-	-	-
	320	320	320	320	320	302	288	268,8	256	224	186	131	104	82,6	-	-	-	-	-
	400	400	400	400	400	379	360	336	320	280	232	163	130	103	-	-	-	-	-
	500	500	500	500	500	473	450	420	400	350	290	204	162	129	-	-	-	-	-

Material	PN	Admissible operating pressure PS [bar] at operating temperature TS [°C]																	
		-10	200	250	300	350	400	450	475	490	500	510	520	530	540	550	570	580	600
13CrMo4-5 (1.7335)	63	63	63	63	63	63	63	56,7	55,3	52,3	50,4	40,3	32,8	27,1	21,2	17,0	10,5	-	-
	100	100	100	100	100	100	100	90	87,8	83	80	64	52,0	43,0	33,6	27,0	16,6	-	-
	160	160	160	160	160	160	160	144	140	133	128	102	83,2	68,8	53,8	43,2	26,6	-	-
	250	250	250	250	250	250	250	225	220	208	200	160	130	108	84	67,5	41,5	-	-
	320	320	320	320	320	320	320	288	281	266	256	205	166	138	108	86,4	53,1	-	-
	400	400	400	400	400	400	400	360	351	332	320	256	208	172	134	108	66,4	-	-
	500	500	500	500	500	500	500	450	439	415	400	320	260	215	168	135	83,0	-	-

Material	PN	Admissible operating pressure PS [bar] at operating temperature TS [°C]																	
		-10	200	250	300	350	400	450	475	490	500	510	520	530	540	550	575	580	600
11CrMo9-10 (1.7383)	63	63	63	63	63	63	63	56,7	54,2	51,7	50,4	40,3	35,3	30,2	26,5	22,7	16,4	15,1	11,6
	100	100	100	100	100	100	100	90,0	86,0	82,0	80,0	64,0	56,0	48,0	42,0	36,0	26,0	24,0	18,4
	160	160	160	160	160	160	160	144	138	131	128	102	89,6	76,8	67,2	57,6	41,6	38,4	29,4
	250	250	250	250	250	250	250	225	215	205	200	160	140	120	105	90,0	65,0	60,0	46,0
	320	320	320	320	320	320	320	288	275	262	256	205	179	154	134	115	83,2	76,8	58,9
	400	400	400	400	400	400	400	360	344	328	320	256	224	192	168	144	104	96,0	73,6
	500	500	500	500	500	500	500	450	430	410	400	320	280	240	210	180	130	120	92

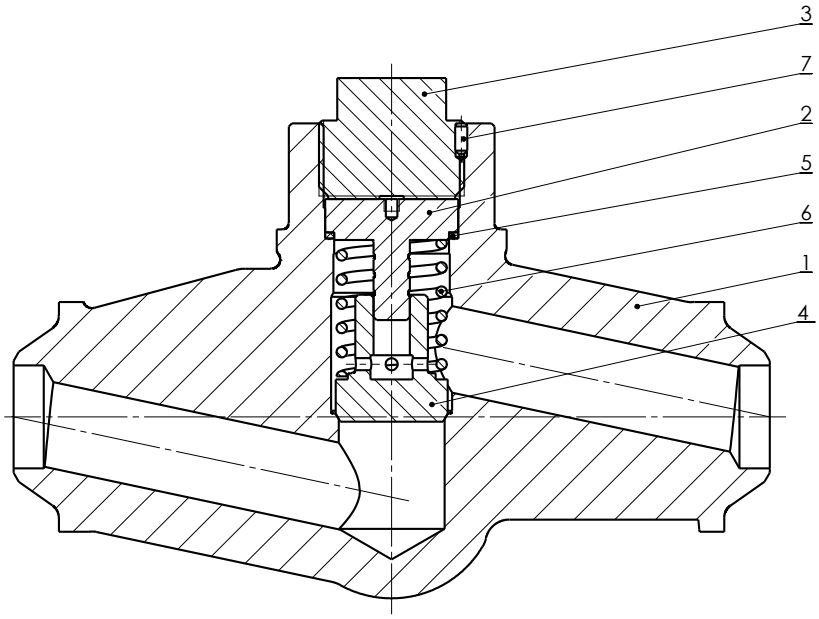
Material	PN	Admissible operating pressure PS [bar] at operating temperature TS [°C]																	
		-10	200	250	300	350	400	450	475	490	500	510	520	530	540	550	575	580	600
X6CrNiMoTi 17-12-2 (1.4571) [1)]	63	63	61,7	57,9	54,9	53,3	51,4	50,1	50,1	49,9	49,9	49,9	49,6	49,6	49,4	49,1	48,6	40,3	35,3
	100	100	98,0	92,5	87,2	84,2	81,6	79,6	79,6	79,2	79,2	79,2	78,8	78,8	78,4	78,0	77,2	64,0	56,0
	160	160	157	148	140	135	131	127	127	127	127	127	126	126	125	125	124	102	89,6
	250	250	245	231	218	211	204	199	199	198	198	198	197	197	196	195	193	160	140
	320	320	314	293	279	270	261	255	255	253	253	253	252	248	236	228	193	160	140
	400	400	392	370	349	337	326	318	318	317	317	317	315	310	295	285	193	160	140

Material	PN	Admissible operating pressure PS [bar] at operating temperature TS [°C]						
		-196	20	100	200	300	350	400
X6CrNiMo-Ti17-12-2 (1.4571) [2]	63	63,0	63,0	60,5	51,7	42,8	40,3	37,8
	100	100	100	96,0	82,0	68,0	64,0	60,0
	160	160	160	154	131	109	102	96,0
	250	250	250	240	205	170	160	150

1) Use of valve above 400 ° C only for media without risk of intercrystalline corrosion

2) Application for temperatures from -196 °C to +400 °C, material variant 2 – see below

USED MATERIALS



Pos.	Part	Material					
1	Body	P250GH (C22.8) (1.0460)	16Mo3 (1.5415)	13CrMo4-5 (1.7335)	11CrMo9-10 (1.7383)	X6CrNiMo-Ti Ti17-12-2 (1.4571) [1]	X6CrNiMoTi17-12-2 (1.4571) [2]
	Hard facing of body sealing surface	13Cr	Stellite 6				
2	Cover	P250GH (C22.8) (1.0460)	X22CrMoV12-1 (1.4923)				X6CrNiMoTi17-12-2 (1.4571)
3	Nut	P250GH (C22.8) (1.0460)	X22CrMoV12-1 (1.4923)				X6CrNiMoTi17-12-2 (1.4571)
4	Disc	X20Cr13 (1.4021)	X22CrMoV12-1 (1.4923)				X6CrNiMoTi17-12-2 (1.4571)
	Hard facing of body sealing surface	Hardened	Stellite 6				
5	Gasket	Graphite					
6	Spring [3]	X10CrNi18-8 (1.4310)					
7	Pin	X5CrNi18-10 (A2) (1.4301)					

1) Use of valve above 400 °C only for media without risk of intercrystalline corrosion

2) Application for temperatures from -196° C to +400 °C, material variant 2

3) DN10 and DN15 – valve design without spring

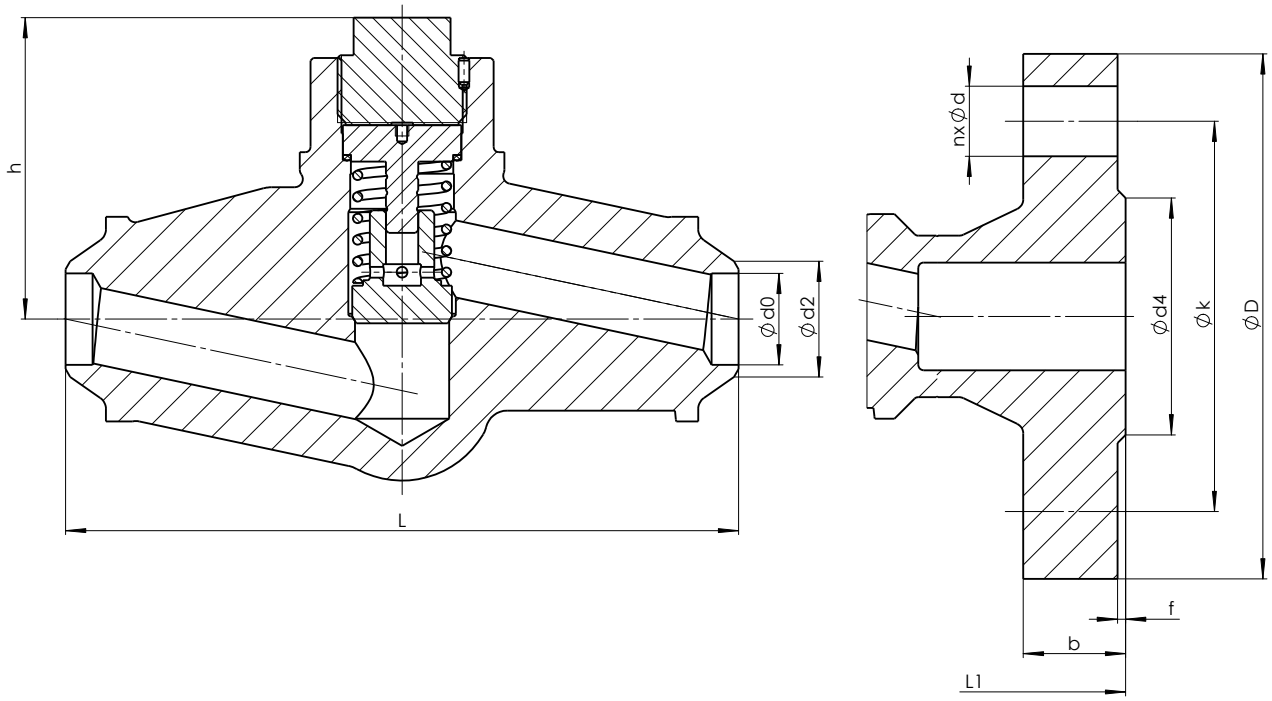
VALVE DIMENSIONS

1. Flanged

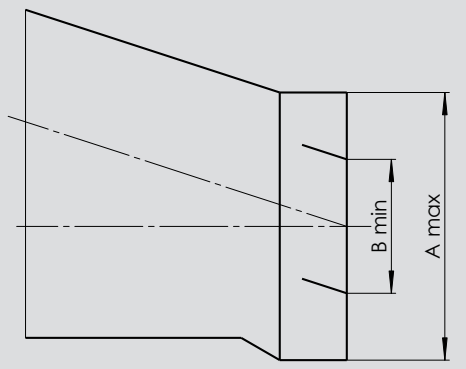
Face-to-face dimensions: as per table
Flanges: EN 1092-1, (DIN 2501/1972)

2. Weld ends, socket weld

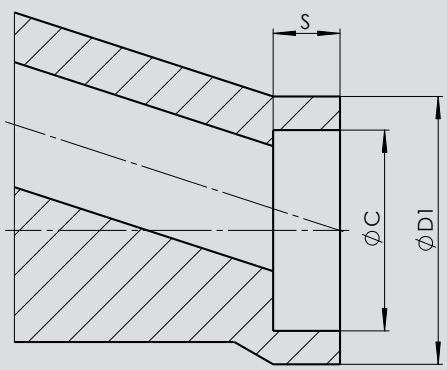
Face-to-face dimensions: as per table
Dimensions of welding ends: DIN 3239 – part 1
Groove form: DIN 2559 – sheet 1 – form 22
Socket weld: B16.11, DIN 3239 – part 2



WELDING ENDS



Unmachined weld ends



Socket weld ends

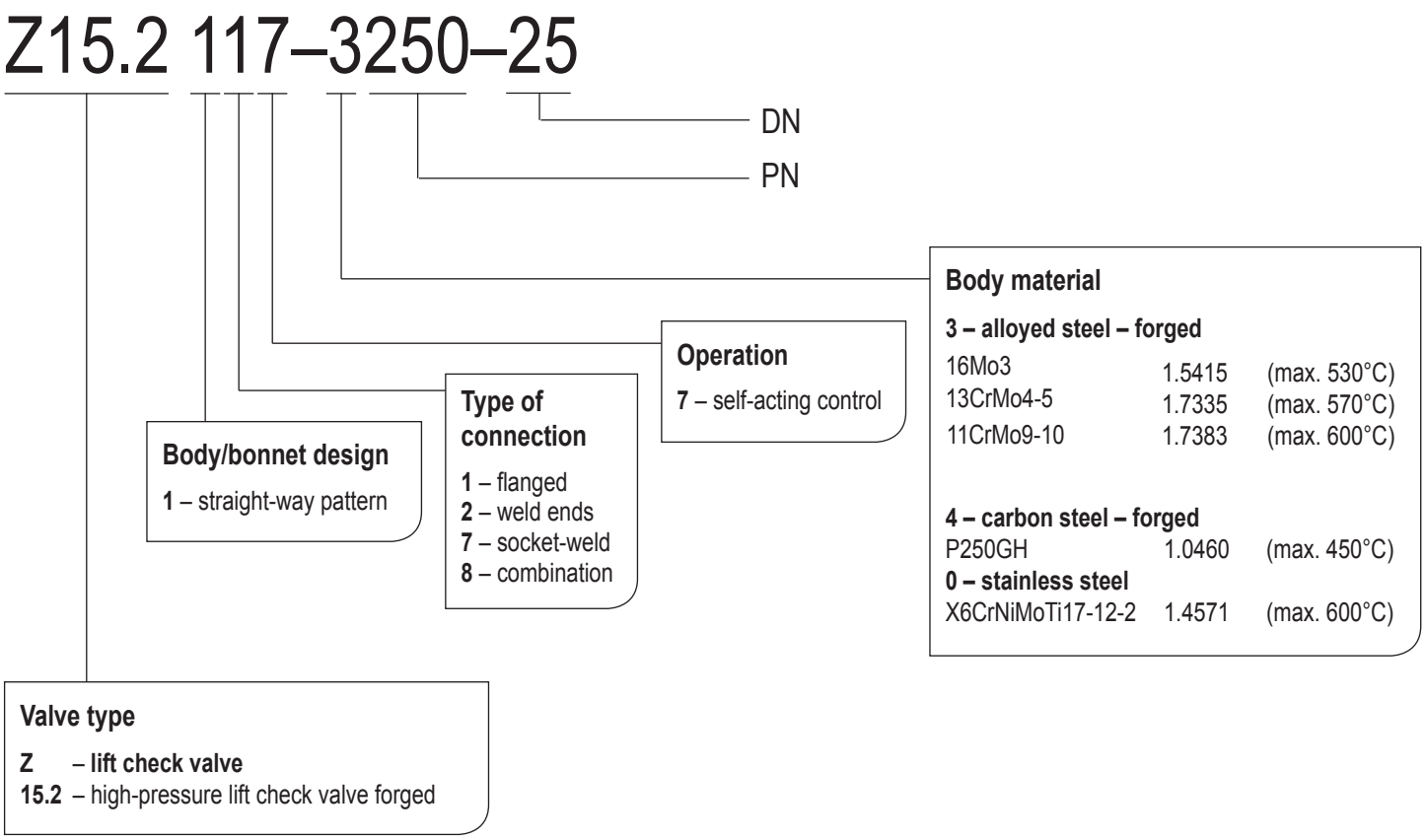
WELDING DESIGN

Nominal pressure	Nominal size	Face-to-face	Centre-to-top	Weld ends		Socket weld dle ASME B16.11, resp. DIN 3239-2			Dimension of unmachined weld ends		Approximate weight	Pipe dimensions
PN	DN	L	h	d_2	d_0	$ØD_{1\ -0,5}$	$øC^{+0,2}$	b_{min}	A_{max}	B_{min}	m [kg]	
63, 100	10	150	71	18	13,0	33	18	9,5	35	9	1,7	17,2x2,0
	15	150	71	22	17,0	33	22	9,5	35	14	1,8	21,3x2,0
	20	160	83	28	22,0	48	27,5	12,7	50	19	2,6	26,9x2,3
	25	160	83	34	28,5	48	34,5	12,7	50	24	2,6	33,7x2,6
	32	250	111	43	37,0	76	43	12,7	75	29	7,8	42,4x2,6
	40	250	111	49	43,0	76	49	12,7	75	35	7,8	48,3x2,6
	50	250	111	61	54,0	76	61	15,9	75	35	7,8	60,3x3,2
	65	340	-	77	69	90	74	16	100	48	-	76,1x3,6
160	10	150	71	18	13,0	33	18	9,5	35	9	1,7	17,2x2,0
	15	150	71	22	17,0	33	22	9,5	35	14	1,8	21,3x2,0
	20	160	83	28	22,0	48	27,5	12,7	50	19	2,6	26,9x2,3
	25	160	83	34	27,5	48	34,5	12,7	50	24	2,6	33,7x3,2
	32	250	111	43	36,0	76	43	12,7	75	29	7,8	42,4x3,6
	40	250	111	49	41,0	76	49	12,7	75	35	7,8	48,3x3,6
	50	250	111	61	52,5	76	61	15,9	75	35	7,8	60,3x4,0
	65	340	-	77	65	90	74	16	100	48	-	76,1x5,6
250	10	150	71	18	12	33	18	9,5	35	9	1,7	17,2x2,6
	15	150	71	22	16	33	22	9,5	35	14	1,8	21,3x2,6
	20	160	83	28	20	48	27,5	12,7	50	19	2,6	26,9x3,6
	25	160	83	35	26,5	48	34,5	12,7	50	24	2,6	33,7x3,6
	32	250	111	43	34	76	43	12,7	75	29	7,8	42,4x4,5
	40	250	111	49	38,5	76	49	12,7	75	35	7,8	48,3x5,0
	50	250	111	61	45	76	61	15,9	75	35	7,8	60,3x8,0
	65	340	-	77	59,5	90	74	16	100	48	-	76,1x8,8
320	10	150	71	18	12,0	33	18	9,5	35	9	1,7	17,2x2,6
	15	150	71	22	15,0	33	22	9,5	35	14	1,8	21,3x3,2
	20	160	83	28	19,0	48	27,5	12,7	50	19	2,6	26,9x4,0
	25	160	83	35	24,0	48	34,5	12,7	50	24	2,6	33,7x5,0
	32	250	111	43	31	76	43	12,7	75	29	7,8	42,4x6,3
	40	250	111	49	36,0	76	49	12,7	75	35	7,8	48,3x6,3
	50	250	111	77	59,5	76	61	15,9	75	35	7,8	76,1x8,8
	65	340	-	90	68	90	74	16	100	48	-	88,9x11
400	10	150	71	18	10	-	-	-	35	9	1,7	17,2x3,6
	15	150	71	28	17	-	-	-	35	14	1,8	26,9x5,0
	20	160	83	34	19,5	-	-	-	48	18	2,6	32x6,3
	25	160	83	44	28	-	-	-	48	22	2,6	42,4x8,0
	32	250	111	49	29,5	-	-	-	78	30	7,8	48,3x10,0
	40	250	111	61	39	-	-	-	78	32	7,8	60,3x11,0
	50	250	111	76	49	-	-	-	78	38	7,8	76,1x14,2
	65	340	-	-	-	-	-	-	100	48	-	-
500	10	150	71	22	11,5	-	-	-	35	9	1,7	21,3x5,0
	15	150	71	33	16,5	-	-	-	35	14	1,8	32x8,0
	20	160	83	38	20,5	-	-	-	48	18	2,6	38x8,8
	25	160	83	48	23,5	-	-	-	48	22	2,6	48,3x12,5
	32	250	111	61	33,5	-	-	-	78	30	7,8	60,3x14,2
	40	250	111	76	43,5	-	-	-	78	32	7,8	76,1x17,5
	50	250	111	76	43,5	-	-	-	78	38	7,8	76,1x17,5
	65	340	-	-	-	-	-	-	100	48	-	-

FLANGE DESIGN

Nominal pressure	Nominal size	Face-to-face	Number of holes	Hole	Pitch circle	Flange diameter	Flange thickness	Smooth bar	Approximate weight
PN	DN	L1	n	ød	øk	øD	b	$ød_4xf$	m [kg]
63, 100	10	230	4	14	70	100	20	40x2	2,7
	15	230	4	14	75	105	20	45x2	3,0
	20	260	4	18	90	130	22	58x2	4,6
	25	260	4	18	100	140	24	68x2	5,2
	32	390	4	22	110	155	24	78x2	11,0
	40	390	4	22	125	170	26	88x3	12,0
63	50	390	4	22	135	180	26	102x3	12,3
63	65	540	8	22	160	205	26	122x3	-
100	50	390	4	26	145	195	28	102x3	13,6
100	65	540	8	26	170	220	30	122x3	-
160	10	230	4	14	70	100	20	40x2	2,8
	15	230	4	14	75	105	20	45x2	3,0
	25	260	4	18	100	140	24	68x2	5,2
	40	390	4	22	125	170	28	88x3	12,2
	50	390	4	26	145	195	30	102x3	14,2
	65	540	8	26	170	220	34	122x3	-
250	10	230	4	18	85	125	24	40x2	3,8
	15	230	4	18	90	130	26	45x2	4,3
	25	260	4	22	105	150	28	68x2	6,2
	40	390	4	26	135	185	34	88x3	14,5
	50	390	8	26	150	200	38	102x3	16,0
	65	540	8	26	180	230	42	122x3	-
320	10	230	4	18	85	125	24	40x2	3,9
	15	230	4	18	90	130	26	45x2	4,3
	25	260	4	22	115	160	34	68x2	7,8
	40	390	4	26	145	195	38	88x3	16,5
	50	390	8	26	160	210	42	102x3	18,5
	65	540	8	30	200	255	51	122x3	-
400	10	230	4	18	85	125	28	40x2	4,3
	15	230	4	22	100	145	30	45x2	5,4
	25	260	4	26	130	180	38	68x2	10,1
	40	390	4	30	165	220	48	88x3	21,9
	50	390	8	30	180	235	52	102x3	24,5
	65	540	8	33	225	290	64	122x3	-

VALVE DESCRIPTION CODE



VALVE INSTALLATION

Recommended valve assembly - horizontal position. In the case of mounting in a position other than horizontal, a spring must be included in the valve. Medium must flow under the cone in accordance with the direction indicated on the valve body.
It is necessary to consider the following points during assembly and operation:

- operating conditions must comply with operating parameters of the valve
- proper function of the valve is affected by the presence of impurities in the pipeline and flowing medium, therefore it is necessary keep working environment a pipeline clean, for example with using filters
- the medium used must be comply with the corrosion resistance of the valve material
- use of mechanically damaged valves during the operation is prohibited

The service life of valves significantly extends regular maintenance and minor repairs carried out by trained personnel.