

## Relief / overflow valve, angle type Article 171-VA

diameter DN 15 up to DN 100

Relief / overflow valve with proportional opening and closing characteristic are used for example in pumping circuits and pipeline systems, in which a constant pressure condition must be ensured.

The relief valves serve as protection of:

- pumps against overloading in closed circuits for neutral / non-neutral, non-sticky liquids

For regulation in:

- pressure systems for neutral / not neutral gases and steams
- depending on the sealing- also for water vapour

The medium can circulate in the bypass line of a pump or pipeline. The preset overflow valves can be adjusted within the spring range.

### Connections:

**Inlet:** flange acc. to DIN 1092-1, Form B PN 16 / PN 40  
PN 63 / PN 100 / PN 250

**Outlet:** flange acc. to DIN 1092-1, Form B PN 16 / PN 40  
Optionally also available with flange connections acc. to ASME B 16.5, class 150 or class 300.

The appropriate valve design and sealing must be used according to the application.



	ambient -10°C ... +80°C
	medium -10°C ... +280°C (depends on the sealing)

<b>Approvals:</b>	
pressure equipment directive: 97/23/EG	
declaration of conformity	

### possible versions of valves heads



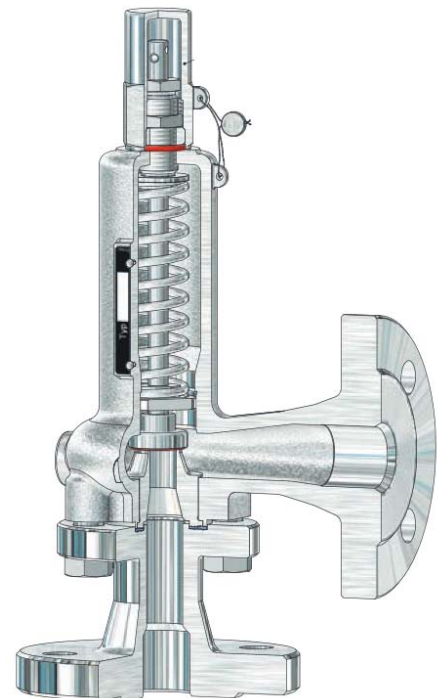
lifting lever  
head A



gastight cap  
head C



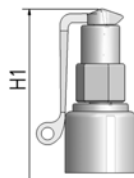
hand wheel  
head F



## Relief / overflow valve, angle type Article 171-VA

diameter DN 15 up to DN 100

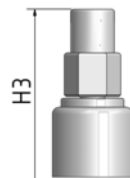
description	material
inlet body	
DN 15 - DN 25	stainless steel 1.4571
DN 32 - DN 100	stainless steel 1.4581
outlet body	
DN 15 - DN 25	stainless steel 1.4581
DN 32 - DN 65	stainless steel 1.4581
DN 80 - DN 100	stainless steel 1.4571
spring	stainless steel 1.4310
disc	stainless steel 1.4571



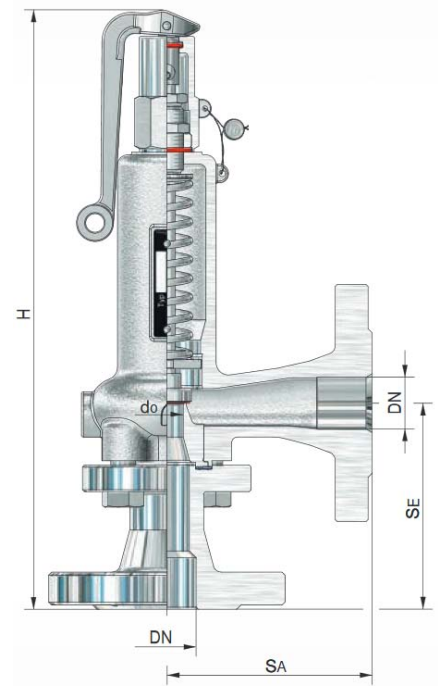
head A



head F



head C



size (BG)	inlet		d <sub>o</sub> (mm)	S <sub>E</sub> (mm)	DN (mm)	outlet		dimensions		set pressure		weight (kg)
	diameter	PN (bar)				PN (bar)	SA (mm)	H1 (mm)	H3 (mm)	P min bar (g)	P max bar (g)	
<b>I</b>	DN 15	16-160	8 / 12,5 / 16 / 18	90	15	16/40	90	282	268	0,20	300	4,3
	DN 20		8 / 12,5 / 16 / 18	95	20		95	287	273	0,20	125	4,5
	DN 25		8 / 12,5 / 16 / 18	100	25		100	292	278	0,10	40	4,6
<b>II</b>	DN 32		16 / 20 / 25	105	32		105	395	375	0,10	90	9,6
	DN 40		20 / 25 / 32	115	40		115	405	385	0,10	75	10,0
<b>III</b>	DN 50		25 / 32 / 40	125	50		125	450	430	0,10	100	15,0
	DN 65		32 / 40 / 50	145	65		145	470	450	0,05	40	19,3
<b>IV</b>	DN 80		32 / 40 / 50 / 58	155	80		155	700	620	0,05	25	36,8
	DN 100		50 / 60 / 70	175	100		175	730	650	0,05	25	40,5



BG IV



BG III



BG II



BG I

## Relief / overflow valve, angle type Article 171-VA

diameter DN 15 up to DN 100

### pressure range PN 16 / PN 40

diameter	article number		
	head A lifting lever	head F hand wheel	head C cap
DN 15	33.1635.6.11-A	33.1661.6.11-F	33.1636.6.11-C
DN 20	33.1635.6.13-A	33.1661.6.13-F	33.1636.6.13-C
DN 25	33.1635.6.15-A	33.1661.6.15-F	33.1636.6.15-C
DN 32	33.1635.6.18-A	33.1661.6.18-F	33.1636.6.18-C
DN 40	33.1635.6.19-A	33.1661.6.19-F	33.1636.6.19-C
DN 50	33.1635.6.21-A	33.1661.6.21-F	33.1636.6.21-C
DN 65	33.1635.6.24-A	33.1661.6.24-F	33.1636.6.24-C
DN 80	33.1635.6.25-A	33.1661.6.25-F	33.1636.6.25-C
DN 100	33.1635.6.27-A	33.1661.6.27-F	33.1636.6.27-C



### pressure range PN 63

diameter	article number		
	head A lifting lever	head F hand wheel	head C cap
DN 15	33.1637.6.11-A	33.1665.6.11-F	33.1638.6.11-C
DN 25	33.1637.6.15-A	33.1665.6.15-F	33.1638.6.15-C
DN 32	33.1637.6.18-A	33.1665.6.18-F	33.1638.6.18-C
DN 40	33.1637.6.19-A	33.1665.6.19-F	33.1638.6.19-C
DN 50	33.1637.6.21-A	33.1665.6.21-F	33.1638.6.21-C
DN 65	33.1637.6.24-A	33.1665.6.24-F	33.1638.6.24-C
DN 80	33.1637.6.25-A	33.1665.6.25-F	33.1638.6.25-C
DN 100	33.1637.6.27-A	33.1665.6.27-F	33.1638.6.27-C

### pressure range PN 100

diameter	article number		
	head A lifting lever	head F hand wheel	head C cap
DN 15	33.1637.6.11-A	33.1665.6.11-F	33.1638.6.11-C
DN 25	33.1637.6.15-A	33.1665.6.15-F	33.1638.6.15-C
DN 32	33.1637.6.18-A	33.1665.6.18-F	33.1638.6.18-C
DN 40	33.1637.6.19-A	33.1665.6.19-F	33.1638.6.19-C
DN 50	33.1637.6.21-A	33.1665.6.21-F	33.1638.6.21-C
DN 65	33.1637.6.24-A	33.1665.6.24-F	33.1638.6.24-C

### pressure range PN 160

diameter	article number		
	head A lifting lever	head F hand wheel	head C cap
DN 15	33.1637.6.11-A	33.1665.6.11-F	33.1638.6.11-C
DN 25	33.1637.6.15-A	33.1665.6.15-F	33.1638.6.15-C
DN 40	33.1637.6.19-A	33.1665.6.19-F	33.1638.6.19-C
DN 50	33.1637.6.21-A	33.1665.6.21-F	33.1638.6.21-C

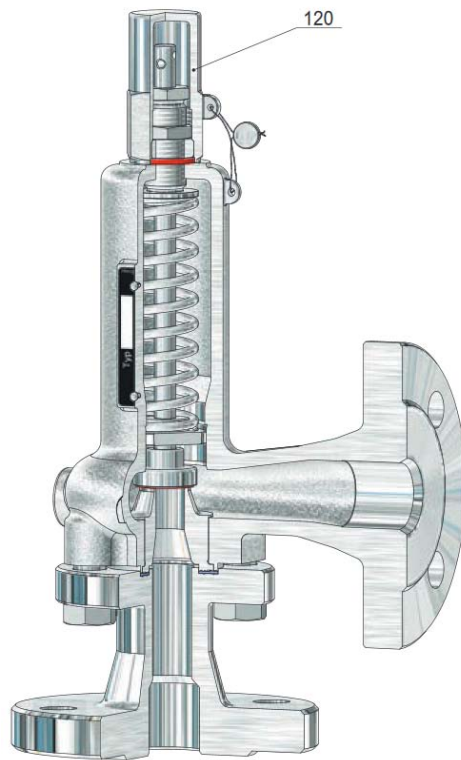
### pressure range PN 250

diameter	article number		
	head A lifting lever	head F hand wheel	head C cap
DN 15	33.1663.6.11-A	33.1666.6.11-F	33.1664.6.11-C
DN 25	33.1663.6.15-A	33.1666.6.15-F	33.1664.6.15-C

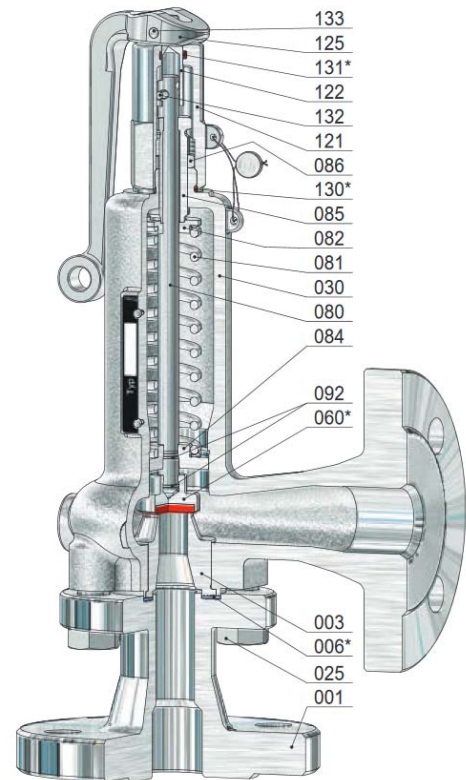
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## Relief / overflow valve, angle type Article 171-VA

diameter DN 15 up to DN 25



Size I DN 15 up to DN 25  
head C



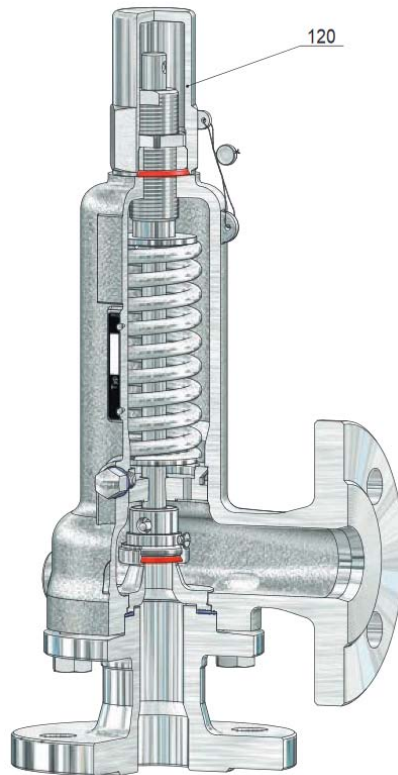
Size I DN 15 up to DN 25  
head A

Pos.	piece	description	Pos.	piece	description
001	1	inlet body	086	1	lock nut
003	1	seat	092	2	lock ring
006*	1	packing ring	120	1	cap
025	4	screw	121	1	lifting cap
030	1	spring bonnet	122	1	coupling
060*	1	disc, complete	125	1	lifting lever
560	1	disc	130*	1	o-ring
062	1	disc sealing	131*	1	o-ring
080	1	spindle	132	1	groove pin
081	1	spring	133	1	groove pin
082	1	springplate, upper			
084	1	springplate, lower			
085	1	adjusting screw			

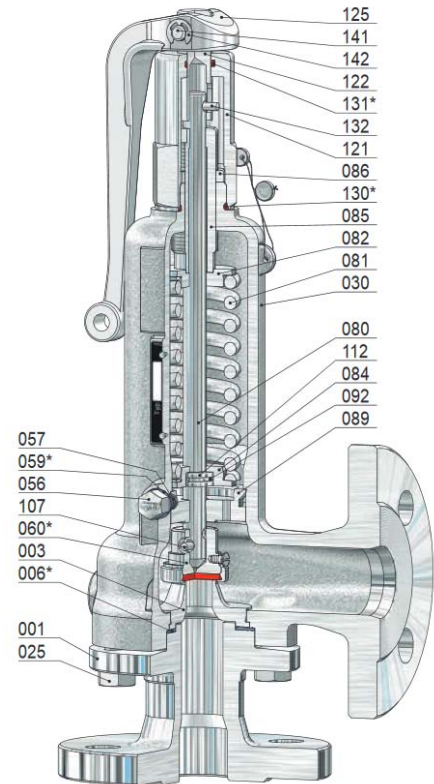
\* expendable parts

## Relief / overflow valve, angle type Article 171-VA

diameter DN 32 up to DN 40



Size II DN 32 up to DN 40  
head C



Size II DN 32 up to DN 40  
head A

Pos.	piece	description	Pos.	piece	description
001	1	inlet body	085	1	adjusting screw
003	1	seat	086	1	lock nut
006*	1	packing ring	089	1	guide plate
025	4	screw	092	1	lock ring
030	1	spring bonnet	107	1	spring pin
056	2	lock nut	112	1	split ring
057	2	screwed pin	120	1	cap
059*	2	packing ring	121	1	lifting cap
060*	1	disc, complete	122	1	coupling
062	1	disc	125	1	lifting lever
063	1	soft sealing	130*	1	o-ring
067	1	disc ring	131*	1	o-ring
080	1	security screw	132	1	groove pin
081	1	spindle	141	1	bolt
082	1	spring	142	2	stop washer
084	1	springplate, upper			
		springplate, lower			

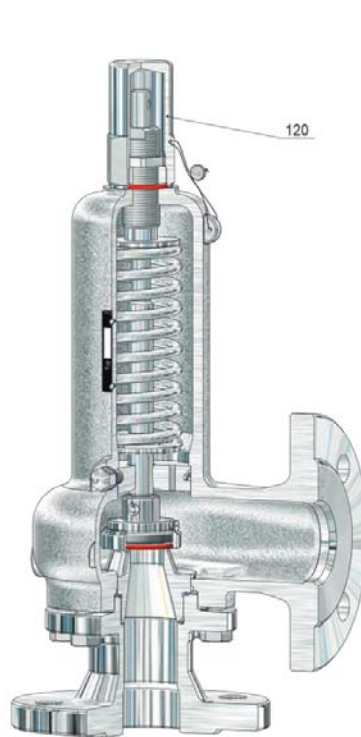
\* expendable parts

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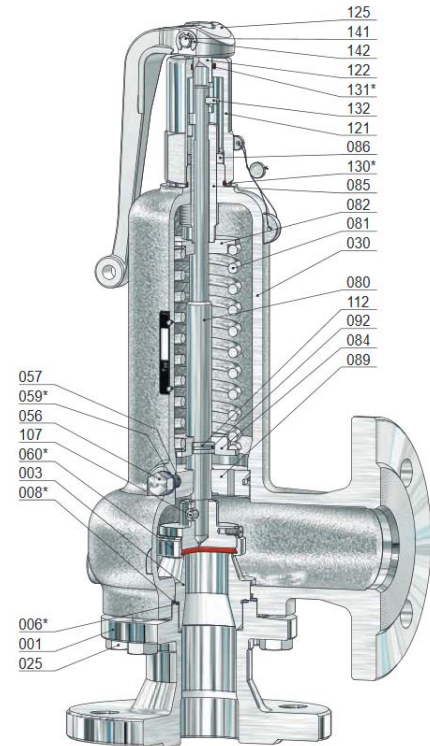


**Relief / overflow valve, angle type**  
**Article 171-VA**

**diameter DN 50 up to DN 65**



**Size III DN 50 up to DN 65**  
**head C**



**Size III DN 50 up to DN 65**  
**head A**

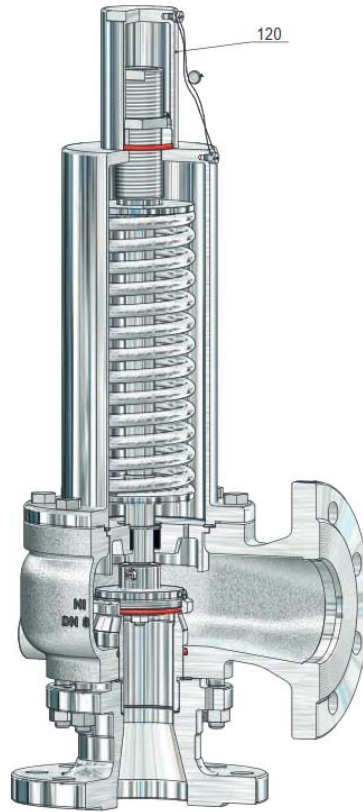
Pos.	piece	description	Pos.	piece	description
001	1	inlet body	084	1	spring plate, lower
003	1	seat	085	1	adjusting screw
006*	1	packing ring	086	1	lock nut
008*	1	packing ring	089	1	guide plate
025	8	screw	092	1	lock ring
030	1	spring bonnet	107	1	spring pin
056	2	lock nut	112	1	split ring
057	2	screwed pin	120	1	cap
059*	2	packing ring	121	1	lifting cap
060*	1	disc, complete	122	1	coupling
062	1	disc	125	1	lifting lever
063	1	disc ring	130*	1	o-ring
067	1	security screw	131*	1	o-ring
080	1	spindle	132	1	groove pin
081	1	spring	141	1	bolt
082	1	springplate, upper	142	2	stop washer

\* expendable parts

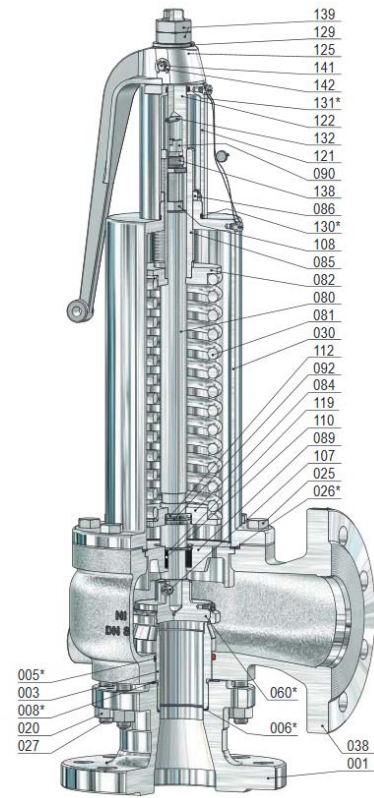
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## Relief / overflow valve, angle type Article 171-VA

diameter DN 80 up to DN 100



Size IV DN 80 up to DN 100  
head C



Size IV DN 80 up to DN 100  
head A

Pos.	piece	description	Pos.	piece	description	Pos.	piece	description
001	1	inlet body	073	1	o-ring	121	1	lifting cap
003	1	seat	074	1	discplate	122	1	coupling
005*	1	o-ring	080	1	spindle	125	1	lifting lever
006*	1	packing ring	081	1	spring	129	1	pressure plate
008*	1	packing ring	082	1	springplate, upper	130*	1	o-ring
020	8	nut	084	1	springplate, lower	131*	1	o-ring
025	8	screw	085	1	adjusting screw	132	1	groove pin
026*	1	packing ring	086	1	lock nut	138	1	screw
027	8	stud bolt	089	1	guide plate	139	2	nut
030	1	spring bonnet	090	1	screw	141	1	bolt
038	1	outlet body	092	1	lock ring	142	2	stop washer
060*	1	disc, complete	107	1	spring pin			
560	1	disc	108	1	nut			
062	1	soft sealing	110	1	bush			
063	1	disc ring	112	1	split ring			
065	1	disc bolt	119	1	locking ring			
067	1	security screw	120	1	cap			

\* expendable parts

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## Relief / overflow valve, angle type, Article 171-VA

Discharge capacities											
Water at 20°C (10 <sup>3</sup> kg/h)											
	Size I					Size II					
inlet	15/20	15/25	25	25	25	32	32	32	40	40	40
d <sub>o</sub> [mm]	12,5	8	12,5	16	18	16	20	25	20	25	32
aw, max	0,16	0,07	0,16	0,15	0,10	0,19	0,16	0,14	0,15	0,15	0,12
pe [bar(g)]											
0,1	0,3			0,5	0,4		0,8	1,1		1,2	1,5
0,2	0,4			0,7	0,6		1,1	1,5		1,7	2,2
0,3	0,5			0,8	0,7		1,4	1,9		2,0	2,7
0,4	0,6			1,0	0,8		1,6	2,2		2,4	3,1
0,5	0,7			1,1	0,9		1,8	2,5		2,6	3,5
1,0	1,0			1,5	1,3		2,5	3,5		3,7	4,9
1,5	1,2			1,9	1,6		3,1	4,3		4,6	6,0
2,0	1,4			2,2	1,8		3,6	4,9		5,3	6,9
2,5	1,6			2,4	2,0		4,0	5,5		5,9	7,7
3,0	1,7			2,6	2,2		4,4	6,0		6,5	8,5
3,5	1,9			2,9	2,4		4,8	6,5		7,0	9,2
4,0	2,0			3,1	2,6		5,1	7,0		7,5	9,8
4,5	2,1			3,2	2,7		5,4	7,4		7,9	10,5
5	2,2			3,4	2,9		5,7	7,8		8,4	11,0
6	2,4			3,7	3,2		6,2	8,5		9,2	12,0
7	2,6			4,0	3,4		6,7			9,9	
8	2,8			4,3	3,6		7,2			10,5	
9	3,0			4,6	3,9		7,7			11,0	
10	3,1			4,8	4,1		8,1			12,0	
12	3,4			5,3	4,5		8,8			13,0	
14	3,7			5,7	4,8		9,5			14,0	
16	4,0			6,1	5,2		10,0			15,0	
18	4,2			6,5	5,5		10,5			16,0	
20	4,4			6,8	5,8		11,5			17,0	
25	5,0			7,7			13,0			19,0	
30	5,5			8,4			14,0			20,5	
35	5,9			9,7			15,0			22,0	
40	6,3						16,0			24,0	
45	6,7										
50	7,0	1,26	7,0			13,5			18,0		
60		1,38	7,7			15,0			2,0		
70		1,50	8,3			16,0			21,5		
80		1,60	8,9			17,5			23,0		
90		1,70	9,5			18,5			24,0		
100		1,79	10,0			19,5			25,5		
110		1,87	10,5								
120		1,96	11,0								
130		2,04									
140		2,12									
150		2,19									
160		2,26									
170		2,33									
180		2,40									
190		2,46									
200		2,53									
210		2,59									
220		2,65									
230		2,71									
240		2,77									
250		2,83									

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## Relief / overflow valve, angle type, Article 171-VA

Discharge capacities													
Water at 20°C (10 <sup>3</sup> kg/h)													
	Size III						Size IV						
inlet	50	50	50	65	65	65	80	80	80	80	100	100	100
d <sub>o</sub> [mm]	25	32	40	32	40	50	32	40	50	58	50	60	70
aw, max	0,15	0,13	0,11	0,13	0,11	0,10	0,22	0,16	0,16	0,13	0,18	0,16	0,14
pe [bar(g)]													
0,1		1,7											
0,2		2,4	3,1		3,1	4,4		4,6	7,1	7,8	8,0	10,0	12,0
0,3		2,9	3,8		3,8	5,5		5,6	8,7	9,6	9,8	12,5	15,0
0,4		3,3	4,4		4,4	6,3		6,5	10,0	11,0	11,0	14,5	17,0
0,5		3,7	5,0		5,0	7,0		7,2	11,0	12,3	12,5	16,0	19,5
1,0		5,3	7,0		7,0	10,0		10,0	16,0	17,4	18,0	23,0	27,5
1,5		6,5	8,6		8,6	12,0		12,5	19,5	21,4	22,0	28,0	33,5
2,0		7,5	9,9		9,9	14,0		14,5	22,5	24,7	25,5	32,5	38,5
2,5		8,4	11,0		11,0	16,0		16,0	25,0	27,6	28,5	36,5	43,5
3,0		9,2	12,0		12,0	17,5		17,5	27,5	30,2	31,0	40,0	47,5
3,5		9,9	13,0		13,0	18,5		19,0	30,0	32,7	33,5	43,0	51,0
4,0		10,5	14,0		14,0	20,0		20,5	32,0	34,9	36,0	46,0	55,0
4,5		11,5	15,0		15,0	21,0		21,5	34,0	37,0	38,0	49,0	58,0
5		12,0	15,5		15,5	22,5		23,0	35,5	39,0	40,0	51,5	61,0
6		13,0	17,0		17,0	24,5		25,0	39,0	42,8	44,0	56,0	67,0
7		14,0			18,5			27,0	42,0		47,5	61,0	
8		15,0			20,0			29,0	45,0		51,0	65,0	
9		16,0			21,0			30,5	48,0		54,0	69,0	
10		17,0			22,0			32,0	50,5		57,0	72,5	
12		18,5			24,5			35,5	55,0		62,0	79,5	
14		20,0			26,5			38,0	60,0		67,0	86,0	
16		21,5			28,0			41,0	64,0		72,0	92,0	
18		22,5			30,0			43,5	68,0		76,0	97,5	
20		24,0			31,5			45,5	71,5		80,5	103,0	
25		26,5			35,0			51,0	80,0		90,0	115,0	
30		29,0			38,5			56,0			98,5		
35		31,5			41,5			60,5			106,0		
40		33,5			44,5			64,5			113,0		
45													
50	26,5			37,5			63,5						
60	29,0			41,0			70,0						
70	31,0			44,5			75,0						
80	33,5			47,5									
90	35,5			50,5									
100	37,5			53,0									
110													
120													
130													
140													
150													
160													
170													
180													
190													
200													
210													
220													
230													
240													
250													

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## Relief / overflow valve, angle type, Article 171-VA

Discharge capacities											
saturated steam [kg/h] or t/h											
	Size I					Size II					
inlet	15/20	15/25	25	25	25	32	32	32	40	40	40
d <sub>o</sub> [mm]	12,5	8	12,5	16	18	16	20	25	20	25	32
aw, max	0,23	0,10	0,23	0,19	0,14	0,27	0,23	0,19	0,23	0,20	0,17
pe [bar(g)]											
0,4	16			23	20		41	54		58	77
0,5	18			26	23		46	61		65	87
0,6	20			29	25		51	67		71	96
0,7	22			31	27		56	72		77	104
0,8	23			33	30		60	78		83	112
0,9	25			35	32		65	83		88	120
1,0	27			38	34		69	89		94	128
1,5	36			49	45		91	116		123	169
2,0	44			60	55		113	144		152	210
2,5	52			71	66		134	171		180	250
3,0	60			81	75		153	197		207	289
3,5	67			90	84		171	221		232	324
4,0	74			100	93		189	245		257	359
4,5	81			110	102		208	268		282	393
5	88			119	111		226	292		307	428
6	102			139	129		263	339		357	497
7	117			158	147		299			406	
8	131			177	165		335			456	
9	145			196	183		371			505	
10	159			215	201		408			554	
12	187			254	237		480			652	
14	215			292	272		552			750	
16	244			330	308		624			848	
18	272			368	343		696			956	
20	300			406	379		768			1010	
25	370			501			948			1290	
30	441			597			1130			1530	
35	512			693			1310			1780	
40	583			789			1490			2030	
45	655										
50	727	129	727			1400		1860			
60		155	873			1680		2230			
70		183	1030			1980		2640			
80		209	1170			2250		3000			
90		236	1330			2550		3400			
100		264	1480			2860		3800			
110		293	1650								
120		323	1820								
130		354									
140		387									
150		422									
160		459									
170		499									
180		542									
190		590									
200		647									
210		718									
220		925									
230											
240											
250											

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## Relief / overflow valve, angle type, Article 171-VA

Discharge capacities													
saturated steam [kg/h] or t/h													
	Size III						Size IV						
inlet	50	50	50	65	65	65	80	80	80	80	100	100	100
d <sub>o</sub> [mm]	25	32	40	32	40	50	32	40	50	58	50	60	70
aw, max	0,21	0,18	0,15	0,18	0,16	0,14	0,30	0,22	0,22	0,18	0,25	0,22	0,19
pe [bar(g)]													
0,4		83	110		112	158		0,16	0,25	0,27	0,28	0,36	0,43
0,5		93	124		126	178		0,18	0,28	0,31	0,32	0,40	0,48
0,6		103	136		139	196		0,19	0,30	0,34	0,35	0,44	0,52
0,7		111	148		151	213		0,21	0,33	0,35	0,38	0,47	0,57
0,8		120	159		162	229		0,23	0,35	0,39	0,41	0,51	0,61
0,9		128	170		174	245		0,24	0,38	0,42	0,44	0,54	0,65
1,0		136	181		186	262		0,26	0,40	0,45	0,47	0,58	0,69
1,5		179	238		247	346		0,34	0,53	0,59	0,62	0,76	0,91
2,0		223	295		308	429		0,42	0,66	0,73	0,77	0,95	1,10
2,5		265	349		368	508		0,50	0,79	0,87	0,91	1,10	1,30
3,0		306	398		425	581		0,58	0,91	1,00	1,00	1,30	1,50
3,5		343	446		476	651		0,65	1,00	1,10	1,10	1,50	1,70
4,0		380	494		527	721		0,72	1,10	1,20	1,30	1,60	1,90
4,5		416	542		578	791		0,79	1,20	1,40	1,40	1,80	2,10
5		453	590		629	661		0,86	1,30	1,50	1,50	1,90	2,30
6		526	685		731	999		1,00	1,60	1,70	1,80	2,20	2,60
7		599			832			1,10	1,80		2,00	2,60	
8		672			933			1,30	2,00		2,30	2,90	
9		744			1030			1,40	2,20		2,50	3,20	
10		817			1130			1,50	2,40		2,80	3,50	
12		962			1330			1,80	2,90		3,20	4,10	
14		1100			1530			2,10	3,30		3,70	4,70	
16		1250			1740			2,40	3,70		4,20	5,40	
18		1390			1930			2,60	4,10		4,70	6,00	
20		1540			2140			2,90	4,60		5,20	6,60	
25		1900			2640			6,60	5,70		6,40	8,10	
30		2260			3140			4,30			7,70		
35		2620			3640			5,00			8,90		
40		2990			4150			5,70			10,00		
45							6210						
50	2650			3730			7460						
60	3190			4480			8800						
70	3760			5280									
80	4280			6010									
90	4850			6810									
100	5430			7620									
110													
120													
130													
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subject technical changes

## Relief / overflow valve, angle type, Article 171-VA

Discharge capacities											
air at 0°C (m <sup>3</sup> /h)											
	Size I					Size II					
inlet	15/20	15/20	25	25	25	32	32	32	40	40	40
d <sub>o</sub> [mm]	8	12,5	12,5	16	18	16	20	25	20	25	32
aw, max	0,10	0,23	0,23	0,19	0,14	0,27	0,23	0,19	0,23	0,20	0,17
pe [bar(g)]											
0,1		9		14	12		23	31		33	44
0,2		13		20	17		33	45		48	64
0,3		16		24	21		42	56		60	80
0,4		19		28	25		50	66		70	94
0,5		22		32	28		57	75		79	107
1,0		34		48	43		87	112		119	162
1,5		45		62	57		117	148		156	215
2,0		57		77	71		146	184		195	269
2,5		67		91	85		173	221		232	323
3,0		77		104	97		198	255		269	374
3,5		87		117	109		222	287		302	421
4,0		96		130	122		247	319		336	467
4,5		106		144	134		272	351		369	514
5		116		157	146		296	383		403	561
6		135		183	170		346	446		470	654
7		154		209	195		395			537	
8		174		235	219		445			604	
9		193		261	243		494			671	
10		212		287	268		544			739	
12		251		340	317		643			873	
14		290		392	366		742			1010	
16		328		445	415		841			1140	
18		367		497	464		940			1280	
20		406		550	513		1040			1410	
25		503		681			1290			1750	
30		601		813			1540			2090	
35		698		945			1790			2430	
40		796		1080			2040			2770	
45		894									
50	176	991	991			1910			2540		
60	211		1190			2280			3040		
70	246		1380			2660			3540		
80	281		1580			3030			4040		
90	316		1770			3410			4540		
100	350		1970			3780			5040		
110	385		2160								
120	419		2350								
130	453										
140	487										
150	521										
160	554										
170	587										
180	620										
190	652										
200	684										
210	716										
220	748										
230	779										
240	810										
250	840										

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## Relief / overflow valve, angle type, Article 171-VA

Discharge capacities													
air at 0°C (m <sup>3</sup> /h)													
	Size III						Size IV						
inlet	50	50	50	65	65	65	80	80	80	80	100	100	100
d <sub>o</sub> [mm]	25	32	40	32	40	50	32	40	50	58	50	60	70
aw, max	0,21	0,18	0,15	0,18	0,16	0,14	0,30	0,22	0,22	0,18	0,25	0,22	0,19
pe [bar(g)]													
0,1		48											
0,2		69	91		92	130		132	206	226	235	296	354
0,3		86	114		115	163		164	256	282	294	369	440
0,4		101	134		135	192		192	300	331	346	432	517
0,5		114	152		154	218		218	340	376	395	490	586
1,0		173	230		236	332		327	512	569	601	737	881
1,5		229	304		315	441		433	676	752	798	974	1160
2,0		286	378		395	550		542	846	940	992	1220	1450
2,5		342	450		475	656		650	1010	1120	1170	1460	1730
3,0		396	516		550	752		757	1180	1300	1340	1700	2000
3,5		445	580		619	846		851	1330	1460	1510	1910	2250
4,0		495	644		687	940		945	1480	1620	1680	2130	2500
4,5		544	709		756	1030		1040	1620	1790	1840	2340	2750
5		594	773		825	1130		1130	1770	1950	2010	2550	3000
6		693	902		962	1310		1320	2070	2270	2350	2980	3500
7		792			1100			1510	2360		2680	3400	
8		891			1240			1700	2660		3020	3830	
9		990			1370			1890	2950		3360	4250	
10		1090			1510			2080	3250		3690	4680	
12		1290			1790			2460	3850		4370	5530	
14		1480			2060			2840	4430		5040	6390	
16		1680			2340			3220	5030		5710	7240	
18		1880			2620			3600	5620		6390	8100	
20		2080			2890			3980	6220		7060	8950	
25		2580			3580			4930	7700		8750	11100	
30		3080			4280			5880			10400		
35		3580			4970			6840			12100		
40		4080			5670			7790			13800		
45													
50	3620			5080			8470						
60	4330			6090			10100						
70	5050			7090			10800						
80	5760			8090									
90	6470			9090									
100	7180			10100									
110													
120													
130													
140													
150													
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## Relief / overflow valve, angle type, Article 171-VA

diameter DN 15 up to DN 100

### Table of soft sealings

BSA - short sign	ISO - short sign	ASTM - short sign	material - type	Range of pressure boundary		Range of application
				flat sealing	o-ring	
<b>Elastomers</b>						
EPDM <sup>1)</sup>	EPDM	EPDM	APTK® Ethylene-Propylene- Diene-Kautschuk	≤ 16 bar -40°C to +120°C	< 120 bar -40°C to +140°C	Good resistance against a lot of chemicals, hot water, steam, alkaline solution, acids, alcohol. Average mechanical characteristics. Ozone resistant, not oil resistant.
FPM <sup>1)</sup>	FPM	FKM	Viton® Fluor-Kautschuk	≤ 25 bar -20°C to +200°C	< 200 bar -20° C to +200° C	Good resistance against a lot of chemicals, mineral oil, hot air, acid. Average to good mechanical characteristics.
NBR <sup>1)</sup>	NBR	NBR	Acrylnitrile- Butadiene-Kautschuk	-	-20° C to +120° C	Good mechanical properties and higher abrasion resistance compared to other elastomers.
<b>Thermoplastes</b>						
PTFE <sup>1)</sup>	PTFE	PTFE	Teflon® Polytetrafluorethylene	≤ 15/25 bar -200°C to +260°C		Good resistance against chemicals, acid, alkaline solution, solvent, oil. Good thermal and average mechanical characteristics.

<sup>1)</sup> standard soft sealing