

Safety Relief Valve

AT 4510, 4511, 4519, 4520,
4575, 4576

Dimension range	PN	Temperatuer range	Material
DN 15-100	16	-10 - 300 °C	Cast iron
DN 15-150	40	-85 - 450 °C	Steel
DN 15-100	40	-270 - 400 °C	Sainless seel

Range of Application

Safety valve to protect pressure vessels and pipe systems with liquids, air, gases and steam. Suitable as overflow valve at constant backpressure.

Quality Assurance

Approved by TÜV and most of the classification authorities

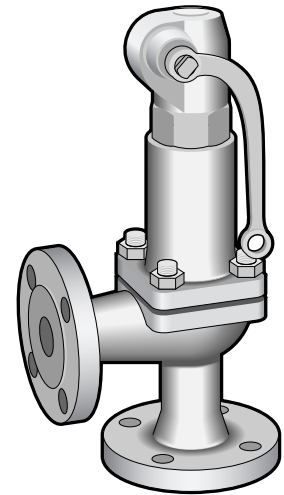
Fulfil requirements acc. to ISO 4126.

Certificate SS-EN 10204, type 2, 3 and from most of the classification authorities.

Type of certificate has to be specified upon ordering.

CE-marking

Fulfil PED 97/23/EC acc. to category IV group 1 and 2.



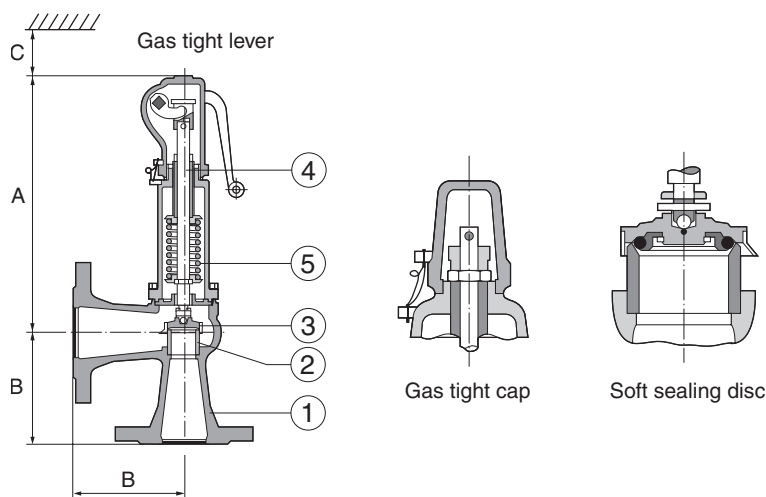
AT 4510 - 4576

Material Specification

		AT 4510/AT 4511	AT 4519/AT 4520	AT 4575/AT 4576
1	Body	GG-25	GP-240GH (GS-C25)	GX5CrNiMo19-11-2
2	Seat	X2CrNiMo17-12-2	X2CrNiMo17-12-2	X2CrNiMo17-12-2
3	Disc	X39CrMo17-1	X39CrMo17-1	X2CrNiMo17-12-2
4	Spindle	X20Cr13	X20Cr13	X2CrNiMo17-12-2
5	Spring	W.nr. 1.1200	W.nr. 1.1200	X10CrNi18-8
6	Guide	GGG-40/X12CrMoS17	GGG-40/X12CrMoS17	X6CrNiMoTi17.122
7	Bonnet	GGG-40	GGG-40	G-X6 CrNiMo 18 10
8	Spring plate, 2 pcs	W.nr. 1.0718/0.8040	W.nr. 1.0718/0.8040	G-X6 CrNiMo 18 10
9	Adjusting screw	X12CrMoS17	X12CrMoS17	X2 Cr Ni Mo 1713 2
10	Ball	X40Cr13	X40Cr13	X40Cr13
11a	Cap (2)	GG-25	GG-25	X2CrNiMo 17 13 2
11b	Lever (4)	GGG-40	GGG-40	G-X6Cr Ni Mo 1810
12a	Soft sealing	EPDM	EPDM	EPDM (D)
12b	Soft sealing	Neoprene (K)	Neoprene (K)	Neoprene (K)
12c	Soft sealing	Viton® (L)	Viton® (L)	Viton® (L)

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Dimension and weight

AT 4510, 4511, 4519, 4520

DN	15	20	25	32	40	50	65	80	100	125*	150*
Seat Ø	12	18	18	18	23	29	37	46	60	74	92
A (2)	218	218	218	218	218	233	315	360	400	500	600
A (4)	215	215	215	215	215	230	330	375	435	540	640
B	90	95	100	105	115	125	145	155	175	200	225
C	150	150	150	200	200	250	250	300	350	400	450
Weight	5	6	6	8	9	12	15	20	33	48	65

*Only AT 4519/AT 4520. measurements in mm, weight in kg. (2)=gas tight cap. (4)=gas tight lever.

AT 4575, 4576

DN	15	20	25	32	40	50	65	80	100
Seat Ø	12	18	18	18	23	29	37	46	60
A (2)	200	200	200	200	200	210	285	330	415
A (4)	215	215	215	215	215	230	280	325	410
B	90	95	100	105	115	125	145	155	175
C	150	150	150	200	200	250	250	300	350
Weight	5	6	6	8	9	12	15	20	33

Measurements in mm, weight in kg. (2)=gas tight cap. (4)=gas tight lever.

Function and Design

Spring loaded and directly acting safety relief valve.

With lever for manual testing alternatively gas tight cap.

Disc with soft sealing is recommended for fluid which is difficult to get the valve tight after discharging.

Technical Information

Pressure increase

The safety relief valve is in full open position at a pressure which exceeds the set pressure max. 10%.

For set pressure lower than 1,0 bar the pressure exceeding is set pressure +0,1

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bar.

If lower pressure exceeding is requested please contact Armatec.

Blowing down

Steam/air/gases:	Max 10% at set pressure $\geq 3,0$ bar Max 0,3 bar at set pressure $< 3,0$ bar
Liquids:	Max 20% at set pressure $\geq 3,0$ bar Max 0,6 bar at set pressure $< 3,0$ bar
If lower blowing down is requested please contact Armatec	

Pressure and temperature

DN	AT 4510/ AT 4511		AT 4519/ AT 4520		AT 4575/ AT 4576	
	Set pressure max. bar	Max. temp. 300°C	Set pressure max. bar	Max. temp. 450°C	Set pressure max. bar	Max. temp. 400°C
15	16		40		40	
20	16		40		40	
25	16		40		40	
32	16		40		40	
40	16		40		40	
50	16		40		40	
65	16		40		26	
80	16		35		25	
100	16		30		22	
125	-		32		-	
150	-		16		-	

Pressure and temperatures acc. to applied standards for respective valve material.

At temperature above 200°C the temperature has to be specified in order so high temperature spring can be delivered.

If other temperatures and pressures limits are requested please contact Armatec.

Soft sealing

Temperature range soft sealed safety valves; AT 4511, AT 4520 och AT 4576

O-ring	Neoprene (CR) K -40-+100°C i.g. refrigerants Ethylene (EPDM) D -45-+150°C i.g. hot water and steam Viton (FPM) L -20-+180°C, i.g. oil and air
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Others

Dimensioning according to given conditions can be sent on request.

Please state: fluid, at liquids even density, capacity/power, max temperature and set pressure

With bar means bar over pressure bar(ö), bar(g), bar(e), atö or kg/cm² if others not are stated.

With Nm³/h means capacity in normal cubic metre free air/gas (N=normal) and equal with m³/h if others not are stated.

Lowest set pressure of safety relief valves with soft sealing disc is 1,0 bar.

Capacity coefficient steam/gases αd D/G

DN15 metal to metal: 0,62

DN15 soft sealed: 0,59

DN20: 0,29

DN25-150: 0,38

Capacity coefficient liquids αd F

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DN15 metal to metal: 0,48
DN15 soft sealed: 0,47
DN20: 0,19
DN25-150: 0,25

Seat diameter, Do see Dimension and weight.

Dimensioning DN15-50

DN Seat Pö	15			15			20			25+32			40			50		
	Met. 12mm			Soft. 12mm			18mm			18mm			23mm			29mm		
	stea m	air	water	stae m	air	water	stea m	air	water	srea m	air	water	stea m	air	water	stea m	air	water
0,2	36	43	1678	35	41	1633	1	1	1500	32	38	1967	53	63	3211	84	99	5111
0,5	57	70	2378	54	66	2333	32	39	2111	68	84	2789	111	137	4544	177	217	7233
1	81	102	3222	77	97	3156	72	90	2867	106	133	3767	173	218	6156	277	347	9789
2	128	163	4556	121	156	4467	133	170	4056	178	227	5333	290	370	8711	461	588	13889
3	172	221	5578	163	210	5467	184	237	4967	240	309	6533	392	504	10667	624	802	17000
4	214	278	6433	203	264	6300	233	301	5733	306	396	7544	499	646	12333	793	1026	19556
5	257	333	7200	-	317	7056	279	363	6411	366	476	5100	598	777	13778	950	1233	21889
6	299	390	7878	-	370	7722	326	424	7022	426	556	9233	696	908	15111	1106	1433	24000
7	341	447	8511	-	424	8344	371	486	7578	486	637	9978	793	1039	16333	1256	1644	25889
8	383	503	9100	-	478	8922	417	547	8111	546	717	10667	891	1167	17444	1411	1856	27667
9	426	560	9656	-	532	9467	462	609	8600	606	798	11333	989	1300	18444	1567	2067	29333
10	467	617	10178	-	586	9978	508	670	9067	666	878	11889	1087	1433	19444	1722	2278	31000
12	551	729	11111	-	692	10889	599	793	9922	784	1039	13111	1278	1689	21333	2033	2689	33889
14	634	842	12000	-	800	11778	690	916	10722	904	1189	14111	1467	1956	23000	2344	3111	36667
16	718	954	12889	-	907	12667	781	1039	11444	1023	1356	15111	1667	2211	24667	2656	3522	39111
18	802	1068	13667	-	1014	13444	872	1156	12111	1133	1511	16000	1856	2478	26111	2967	3944	41556
20	887	1178	14444	-	1122	14111	963	1278	12778	1256	1678	16889	2056	2744	27556	3278	4367	43778
22	971	1289	15111	-	1222	14778	1056	1400	13444	1378	1833	17667	2256	3000	28889	3589	4778	45889
24	1056	1400	15778	-	1333	15444	1144	1522	14000	1500	2000	18444	2444	3267	30111	3900	5200	48000
26	1133	1511	16444	-	1433	16111	1233	1644	14667	1622	2156	19222	2644	3533	31444	4211	5611	49889
28	1222	1622	17000	-	1544	16667	1322	1767	15111	1744	2322	20000	2844	3789	32556	4522	6033	51778
30	1300	1744	17667	-	1656	17333	1422	1889	15667	1867	2478	20667	3044	4056	33667	4844	6456	53556
32	1389	1856	18222	-	1767	17889	1511	2011	16222	1989	2644	21333	3244	4322	34778	5156	6867	55333
34	-	1967	18778	-	1867	18444	-	2133	16667	-	2800	22000	-	4578	35889	-	7289	57111
36	-	2078	19333	-	1978	19000	-	2267	17222	-	2967	22667	-	4844	36889	-	7700	58778
38	-	2189	19889	-	2078	19444	-	2389	17667	-	3122	23222	-	5111	38000	-	8122	60333
40	-	2300	20333	-	2189	19889	-	2511	18111	-	3289	23889	-	5367	38889	-	8544	61889

Pö = set pressure

Acc. to applied standards (RN78 §5.1.2) the value above shall be multiplied by safety factor 0,9.

Saturated steam in kg/h. Air in Nm³/h (free air) at 0°C and atmospheric pressure 1013 mbar(a). Water in kg/h at 20°C.

Capacities are given for 10% pressure increasing of set pressure.

Contact Armatec to dimensioning of other fluids etc.

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Dimensioning DN65-150

DN Seat P ₀ bar	65 37mm			80 46mm			100 60mm			125 74mm			150 92mm		
	steam	air	water	steam	air	water	steam	air	water	steam	air	water	steam	air	water
0,2	137	162	8322	211	250	12889	359	425	21889	547	647	33333	844	1001	51444
0,5	288	353	11778	446	546	18222	758	928	30889	1144	1411	47111	1778	2178	72778
1	450	564	15889	694	873	24667	1178	1477	41889	1789	2256	63778	2778	3489	98556
2	751	957	22556	1156	1478	34778	1967	2511	59222	3000	3822	90111	4644	5911	13888
3	1016	1300	27556	1567	2011	42667	2667	3422	72556	4056	5211	11033	6278	8067	17111
4	1289	1667	31889	1989	2578	49222	3389	4388	83778	5156	6667	12777	7978	10311	19666
5	1544	2000	35667	2389	3100	55111	4056	5277	93667	6178	8033	14222	9556	12333	22000
6	1800	2344	39000	2778	3622	60333	4733	6177	10266	7200	9389	15555	11111	14444	24111
7	2044	2689	42111	3167	4156	65111	5400	7066	11088	8211	10756	16888	12667	16556	26111
8	2300	3022	45111	3556	4678	69667	6056	7966	11888	9222	12111	18000	14222	18667	27888
9	2556	3367	47778	3944	5200	73889	6722	8855	12555	610233	13444	19111	15778	20778	29555
10	2811	3700	50333	4344	5733	77889	7389	9744	13222	211222	14778	20111	17333	22889	31111
12	3311	4389	55222	5122	6778	85333	8711	11444	14555	613222	17556	22111	20444	27111	34111
14	4322	5067	59667	5900	7833	92111	10044	13222	15666	715222	20222	23888	23556	31333	36888
16	4822	5744	63778	6678	8878	98556	11333	15111	16777	817222	23000	25444	26667	35444	39444
18	5333	6422	67556	7456	9933	10444	12667	16888	17777	819222	25667	27000	29889	40222	41777
20	5844	7100	71222	8244	10989	11011	14000	18666	18777	821333	28333	28555	-	-	-
22	6344	7789	74778	9033	12000	11555	15333	20444	19666	723333	31111	29888	-	-	-
24	6856	8467	78000	9811	13000	12111	16667	22222	20555	625333	33778	31222	-	-	-
26	7367	9144	81222	10600	14111	12555	18000	23999	21333	321333	-	-	-	-	-
28	7889	9822	84333	11333	15111	13000	19333	25777	22222	222222	-	-	-	-	-
30	8400	10500	87222	12111	16222	13444	20667	27555	23000	0	-	-	-	-	-
32	-	11111	90111	12889	17222	13888	22000	29333	23666	7	-	-	-	-	-
34	-	11778	92889	-	18333	14333	-	31666	24444	4	-	-	-	-	-
36	-	-	-	-	19667	14777	-	33444	25111	8	-	-	-	-	-
38	-	-	-	-	20667	15222	-	-	-	2	-	-	-	-	-
40	-	-	-	-	21778	15555	-	-	-	6	-	-	-	-	-

P₀ = set pressure

Acc. to applied standards (RN78 §5.1.2) the value above shall be multiplied by safety factor 0,9.

Saturated steam in kg/h. Air in Nm³/h (free air) at 0°C and atmospheric pressure 1013 mbar(a). Water in kg/h at 20°C.

Capacities are given for 10% pressure increasing of set pressure.

Contact Armatec to dimensioning of other fluids etc.

Accessories and Options

Test Gag for blocking the lift.

Lift restriction.

Soft sealing O-ring of Kalrez (FFKM) C for temperature range 0-250°C.

Series AT 4575 is available of G-X6CrNi18.10.

Heating jacket.

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Proportional opening characteristic series AT 4512-4574.
With stainless bellows series AT 4522-4578.

Installation

Conn.	Flanges drilled acc. to	
	AT 4510/AT 4511	AT 4519/AT 4520/AT 4575/AT 4576
Inlet	SS 335-PN16	SS 335-PN 40
Outlet	SS 335-PN16	SS 335-PN 40

See separate installation instruction. The valve shall be mounted with bonnet in vertical position and straight upwards.

Maintenance and Spare parts

See separate installation and maintenance instruction.

Marking

Manufacturer, Armatec article number, DN, PN, CE, material and flow arrow.
TÜV approval label with manufacturer fig. no. 433 mounted on body.
Set pressure is punched on outlet flange and TÜV label.

How to order

Metal to metal sealed safety relief valves			
Example: AT 4510-4-5,0-25			
AT 4510	-4	-5,0	-25
Fig. no. AT 4510=cast iron AT 4519=steel AT 4576=stainless steel	Design -2=gas tight cap -4=gas tight lever	Set pressure (bar)	DN

How to order

Soft sealing safety relief valve				
Example: AT 4511D4-5,0-25				
AT 4511	D	4	-5,0	-25
Fig. no. AT 4511=cast iron AT 4520=steel AT 4576=stainless steel	O-ring D=EPDM L=Viton® K=Neoprene N=Nitrile	Design 2=gas tight cap 4=gas tight lever	Set pressure (bar)	DN

Rätten till ändringar utan föregående meddelande förbehålls.
Armatec ansvarar inte för eventuella tryckfel eller missförstånd.
Dokumentet får kopieras endast i sin helhet.