

Safety Valve

Full lift

AT 4550

Dimension range	PN	Temperature range	Material
DN 25-100	40	-60°C to +350 °C	Nodular iron
DN 200	25	-60°C to +350 °C	Nodular iron
DN 20-150	40	-85°C to +450 °C	Steel
DN 200	25	-85°C to +450 °C	Steel

Range of Application

Safety valve for steam.

Not suitable as an over-flow valve.

DN 125 and 150 are not available in nodular iron. Please choose AT 4541 with closed bonnet (see separate leaflet).

Quality Assurance

Approved by TÜV and several other classification authorities.

Fulfils the requirements according 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

Meets the requirements in AFS 2016:1 and 2014/68/EU (Pressure Equipment Directive) according to category IV, fluids group 1 and 2.



AT 4550

Material Specification

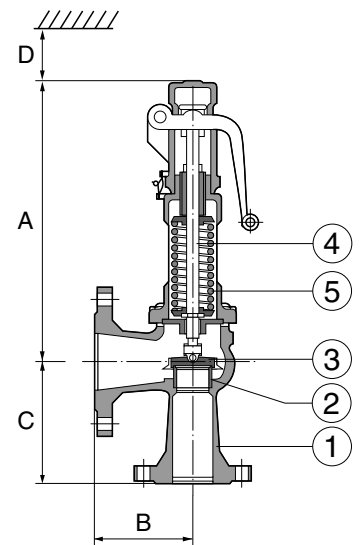
1	Body	0.7043/nodular iron Gr.60-40-18 resp. 1.0619/SA 216 WCB/steel
2	Seat	1.4404/316L
3	Disc	1.4122/hardened stainless steel
4	Spindle	1.4021/420
5	Spring	1.1200, 1.8159, 1.7102/carbon steel
5	Spring (for temp>200°C)	1.4310/stainless steel
6	Guide	1.4104 tenifer/chrome steel tenifer
7	Bonnet	0.7040, 0.7043, 1.0619/nodular iron Gr.60-40-18, SA 216 WCB/steel
8	Spring plate 2 pcs	1.0718/steel
9	Adjusting screw	1.4104 PTFE/chrome steel PTFE
10	Ball	1.3541/hardened stainless steel
11	Lifting device (3)	1.0718, 0.7043/12L13 or Gr.60-40-18

Dimension and Weight

DN Inlet	20	25	32	40	50	65	80	100	125	150	200
DN Outlet	40	40	50	65	80	100	125	150	200	250	300
Flow diameter	18	23	29	37	46	60	74	92	98	125	165
A	219	234	331	372	419	529	606	663	663	798	1090
*A with bellows	252	273	373	410	465	599	665	719	719	856	1090
B	95	100	110	115	120	140	160	180	200	225	300
C	85	105	115	140	150	170	195	220	250	285	290
D	150	150	200	250	300	350	400	450	450	450	700
Weight	9	9	12	16	22	32	56	75	85	131	285
*Weight with bellows	9,4	10	13	17	24	36	60	83	93	142	289

Dimensions in mm, weights in kg.

* For valves with bellows and gas tight bonnets see separate sheet AT4547, 4548



Function and Design

Spring loaded and directly acting safety valve for steam, with full lift opening characteristics.

Not suitable for liquids and gases due to the open bonnet. The function of the open bonnet is to ventilate and cool the spring from the hot steam.

With open lifting device for manual testing.
Metallic seated disc.

Technical Information

Pressure increase

The safety valve is fully open at an overpressure exceeding the set pressure with a maximum of 5 %.

For set pressure lower than 1,0 bar, the overpressure is set pressure + 0,1 bar.
If lower overpressure is requested please contact Armatec.

Blowdown

Steam:	Max 10% at set pressure > 3,0 barg Max 0,3 bar at set pressure ≤ 3,0 bar
--------	-----------------------------------------------------------------------------

If lower blowdown pressures are required please contact Armatec.

Pressure and temperature

DN	AT 4550GGG (nodular iron)		AT 4550 (steel)	
	Set pressure max. bar	Temp. -60°C to +350°C	Set pressure max. bar	Temp. -85°C to +450°C
20	29		32	
25	29		32	
32	29		32	
40	29		32	
50	29		32	
65	29		32	
80	29		32	
100	29		32	
125	16		28	
150	16		17(25)	
200	20(25)		20(25)	

Pressure and temperatures according to applied standards for each valve material.

Set pressure in paranthesis for valves with a special spring. At temperatures above 200°C the temperature has to be specified in the order, so that a high temperature spring is used.

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

Soft sealing

AT 4550 is a metallic seated valve.

If a soft-sealed valve is requested please see separate leaflet, AT 4542/4545/4581.

Additional information

Sizing based on submitted data can be performed on request.

Please state: Capacity/power, maximum temperature (for superheated temperature) and set pressure.

For fluids other than steam, see separate leaflet series AT 4541.

Bar implies bar gauge: bar(ö), bar(g), bar(e), atö or kg/cm2 if nothing else is stated.

Safety Valve

Full lift

AT 4550

Coefficient of performance steam/gas, η_d D/G

0,7

Coefficient of performance liquids, η_d F

0,45

Flow diameter (Do), see table Dimension and Weight.

Sizing DN20-100

DN	20	25	32	40	50	65	80	100
Seat	18 mm	23 mm	29 mm	37 mm	46 mm	60 mm	74 mm	92 mm
Pset								
bar	Steam	Steam	Steam	Steam	Steam	Steam	Steam	Steam
0,2	93	152	241	393	608	1033	1567	2422
0,5	144	236	374	610	943	1600	2433	3767
1	210	342	544	887	1367	2322	3544	5478
2	336	548	870	1411	2189	3722	5667	8756
3	451	737	1167	1900	2944	5011	7622	11778
4	563	919	1456	2378	3667	6244	9511	14667
5	674	1100	1744	2844	4400	7489	11333	17556
6	784	1278	2033	3311	5122	8711	13222	20444
7	896	1456	2322	3778	5844	9944	15111	23333
8	1006	1633	2600	4244	6567	11111	16889	26222
9	1111	1811	2889	4711	7278	12333	18778	29111
10	1222	2000	3178	5178	8000	13556	20667	32000
12	1440	2356	3744	6100	9433	16000	24333	37667
14	1656	2711	4322	7033	10867	18444	28111	43444
16	1878	3078	4889	7967	12222	20889	31778	49222
18	2100	3433	5456	8889	13667	23333	35556	55000
20	2322	3789	6033	9822	15111	25778	39222	60667
22	2544	4156	6611	10756	16556	28222	43000	66556
24	2767	4522	7189	11667	18000	30778	46778	72333
26	2989	4878	7767	12556	19444	33222	50556	78222
28	3211	5244	8344	13556	21000	35667	54333	84000
30	3433	5611	8922	14444	22444	38222	58111	89889
32	3656	5978	9511	15444	23889	40667	61889	95778

Pset = set pressure

According to applied standards the value above should be multiplied with the safety factor 0,9.

Saturated steam in kg/h.

Capacities are given for an overpressure of 10% of set pressure.

Contact Armatec for sizing with other fluids etc.

Sizing DN125-200

DN	125	150	200
Seat	98 mm	125 mm	165 mm
Pset			
bar	Steam	Steam	Steam
0,2	2756	4478	7811
0,5	4278	6956	12111
1	6211	10111	17555
2	9933	16111	28111
3	13333	21667	37889
4	16667	27111	47222
5	19889	32444	56555
6	23222	37778	65889
7	26444	43111	75222
8	29778	48444	84444
9	33000	53778	93667
10	36222	59000	102889
12	42778	69667	121111
14	49333	80222	138889
16	55889	90889	157778
18	62333	101556	176667
20	68889	111111	195555
22	75444	123333	214444
24	82111	133333	232222

Pset = set pressure

According to applied standards the value above should be multiplied with the safety factor 0,9.

Saturated steam in kg/h.

Capacities are given for an overpressure of 10% of set pressure.

Contact Armatec for sizing with other fluids etc.

For larger DN and/or higher capacities see separate product data sheet AT 4543-4580, DN 200-400.

Accessories and Options

Test Gag for blocking the safety valve

Lift stopper

Flanges drilled acc. to ANSI.

Back pressure compensating bellows, see separate leaflet AT 4547.

Safety valve with closed bonnet, soft sealed disc or in stainless steel please see separate leaflet series AT 4541.

Supplementary loading system, see AT4505.

Installation

Connections	Flanges drilled acc. to
AT 4550GGG (nodular iron)	
Inlet/outlet	DN25-80: DIN EN 1092-1, PN40/DIN EN 1092-1, PN16 DN 100-150: DIN EN 1092-1, PN16/DIN EN 1092-1, PN16 DN 200: DIN EN 1092-1, PN25/DIN EN 1092-1, PN10

See separate installation and maintenance instruction. See separate installation and maintenance instruction.

Safety Valve

Full lift

AT 4550

Connections	Flanges drilled acc. to
AT 4550 (steel)	
Inlet/outlet	DN20-130: DIN EN 1092-1, PN40/DIN EN 1092-1, PN16 DN200: DIN EN 1092-1, PN25/DIN EN 1092-1, PN16

See separate installation instruction. The valve should be mounted with the bonnet in vertical position.

Maintenance and Spare parts

See separate installation and maintenance instruction.

Marking

Manufacturer, Armatec article number, DN, PN, CE-marking, material and arrow showing the flow direction.

TÜV approval label with manufacturer fig. no. 442 mounted on body.

Set pressure is punched on the outlet flange and on the TÜV approval label.

How to order

Metal seated safety valve with open bonnet			
Example: AT 4550-3-18,0-25			
AT 4550	-3	-18,0	-25
Fig. nr. AT 4550GGG=nodular iron AT 4550=stål	Design -3=open lifting device V3=open lifting device and bellows -2=cap (no lifting device) V2=cap (no lifting device) and bellows	Set pressure (barg)	DN