

Safety Valve

Full lift

AT 4543XXL, 4550XXL,
4580XXL

Dimension range	PN	Temperature range	Material
DN 200-250	25	-85°C to 450 °C	Steel
DN 300-400	16	-85°C to 450 °C	Steel
DN 200-250	25	-196°C to 550 °C	Stainless steel
DN 300-400	16	-196°C to 550 °C	Stainless steel

Range of Application

Safety valve for protection of pressure vessels and piping systems with liquids, air, gases and steam.

Quality Assurance

Approved by TÜV and several other classification authorities.

Fulfills 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.

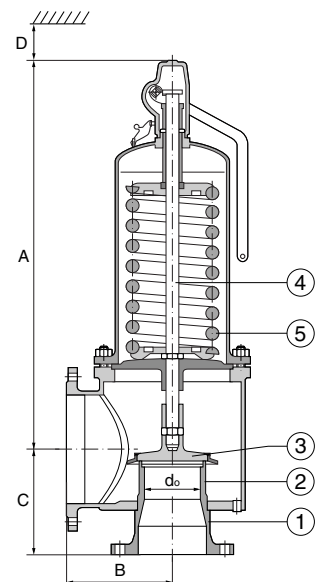
CE-marking

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



Material Specification

		AT 4543, 4550	AT 4580
1	Body	1.4060, 1.0425/carbon steel	1.4571/316Ti
2	Seat	1.0305 stellited, 1.0460 stellited/ stellited carbon steel	1.4571/316Ti
3	Disc	1.4404/316L	1.4571/316Ti
4	Spindle	1.4021/420	1.4404/316L
5	Spring	1.1200, 1.8159, 1.7102/carbon steel	1.4310/stainless steel
6a	Guide DN200-250	0.7040/nodular cast iron Gr. 60-40-18 or chrome steel	1.4404/316L
6b	Guide DN300-400	1.4404/316L	1.4404/316L
7	Bonnet	0.7043, 1.0254/nodular cast iron Gr. 60-40-18 or steel	1.4571/316L
8	Spring plate 2 pcs	1.0570, 1.4404/ steel or 316L	1.4404/316L
9	Adjusting screw	1.4104 PTFE/chrome steel PTFE	1.4404 PTFE/316L PTFE
10	Lever	0.7040/nodular cast iron Gr. 60-40-18	1.4404/316L



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Dimension and weight

DN inlet	200	250	300	400
DN outlet	300	350	400	500
Seat diameter	165	200	235	295
A***	1168	1178	1303	1553
B	300	325	394*	477*
C	305	340	330**	400
D	700	700	850	1200
Weight	285	335	384	588
Weight with bellows	289	340	390	595

Measurements in mm, weight in kg.

* Outlet flange acc. to PN 10. Deviant measurements at PN 16.

** Do not apply to inlet flange acc. to # 300.

***Measurements applies to valve with or without bellows.

Function and Design

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

For liquids, the safety valve has normal opening characteristics.

With lifting device for manual testing or with gas tight cap.

Technical Information

Overpressure

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

Max 10 % for liquids, when the valve has standard opening characteristics.

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/air/gases:	Max 10% at set pressure \geq 3,0 bar Max 0,3 bar at set pressure $<$ 3,0 bar
Vätskor:	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 4543, 4550		AT 4580	
	Set pressure max. bar	Temp.	Set pressure max. bar	Temp max °C
200	10	-85°C to +450°C	10	-196°C to +550°C
250	6	-85°C to +450°C	6	-196°C to +550°C
300	3,57	-85°C to +450°C	3,57	-196°C to +550°C
400	2,3	-85°C to +450°C	2,3	-196°C to +550°C

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

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.

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

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Additional information

Sizing based on submitted data can be performed on request.

Please state: Fluid, density (for liquids), capacity/power, maximum temperature and set pressure

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

Nm³/h implies "free" capacity air/gas (N=normal) and is equal with m³/h if other is not stated.

Coefficient of discharge steam/gases, ψ_d D/G

DN200: 0,75

DN250-400: 0,7

Coefficient of discharge liquids, ψ_d F

DN200: 0,56

DN250-400: 0,52

Flow diameter diameter D_o , see *Dimension and weight* .

Sizing DN200-250

DN Seat Pset bar	200 165 mm			250 200 mm		
	Steam	Air	Water	Steam	Air	Water
0,2	8622	9956	371111	11444	13556	505556
0,5	13000	16000	524444	17778	21778	715556
1	18889	23778	710000	25889	32444	967778
2	30111	38333	1003333	41333	52667	1366667
3	40667	52222	1233333	55667	71444	1666667
4	50667	65556	1422222	69444	89778	1933333
5	60667	78889	1588889	83111	108111	2155556
6	70667	92222	1733333	96778	125556	2366667
7	80667	105556	1877778	110444	144444	2555556
8	90556	118889	2011111	123333	162222	2733333
9	100444	132222	2133333	136667	181111	2900000
10	110333	145556	2244444	151111	198889	3055556
12	130000	172222	2455556	177778	235556	3344444
14	150000	198889	2655556	205556	276667	3622222
16	170000	225556	2844444	233333	313333	3877778
18	190000	252222	3011111	260000	351111	4111111
20	210000	278889	3177778	-	-	-
22	228889	305556	3333333	-	-	-
24	248889	332222	3477778	-	-	-

Pset = set pressure

According to applied standards the value above should be multiplied with the 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 an overpressure of 10% of set pressure.

Contact Armatec for sizing with other fluids etc.

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Sizing DN300-400

DN Seat Pset bar	300 235 mm			400 295 mm		
	Steam	Air	Water	Steam	Air	Water
0,2	15778	18778	697778	24889	29556	1100000
0,5	24556	30111	987778	38778	47556	1555556
1	35667	44889	1333333	56333	70778	2100000
2	57111	72667	1888889	90000	114444	2977778
3	76889	98778	2311111	121111	155556	3644444
4	95889	123333	2666667	151111	194444	4211111
5	114444	148889	2988889	180000	234444	4700000
6	133333	174444	3266667	211111	278889	5155556
7	152222	198889	3533333	-	-	-
8	171111	224444	3777778	-	-	-
9	190000	250000	4000000	-	-	-
10	208889	278889	4233333	-	-	-
12	246667	330000	4633333	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-

Pset = set pressure

According to applied standards the value above should be multiplied with the 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 an overpressure of 10% of set pressure.

Contact Armatec for sizing with other fluids etc.

Accessories and Options

Test Gag for blocking the safety valve

Lift stopper

Heating jacket.

Flanges drilled acc. to ANSI.

Stainless steel bellows.

Supplementary loading system, see AT4505

Installation

Connections	Flanges drilled acc. to Armaturflänsar borrhade enligt
Inlet	DIN EN 1092-1, PN25 (DN 200-250), DIN EN 1092-1, PN16 (DN 300-400)
Outlet	DIN EN 1092-1, PN10

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. 441 mounted on body.

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

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How to order

Metal seated safety valve

Example: AT 4543-4-5,0-200

AT4543	-4	-5,0	-200
Fig. no. AT 4543=steel, closed bonnet AT 4550=steel, open bonnet AT 4580=stainless steel, closed bonnet	Design -2=gas tight cap V2=gas tight cap and bellows -4=gas tight lifting device V4=gas tight lifting device and bellows -3=open lifting device V3=open lifting device and bellows	Set pressure (barg)	DN