

Minimize Risk of Implosion

Alfa Laval SB Anti Vacuum Valve

2.8

Concept

The Anti Vacuum Valve is used for minimizing the risk of implosion of tanks exposed to vacuum e.g. during emptying, cool-rinsing after hot-cleaning or caustic cleaning in a CO₂ atmosphere. The Anti Vacuum Valve can be applied on any closed tank.

Working principle

The Anti Vacuum Valve is delivered with counter weight set and locked for an individual opening vacuum to suit the tank design data. When a vacuum in the tank is lower than the preset opening value, the valve opens and lets in atmospheric air.



TECHNICAL DATA

Nominal size	Opening pressure Range (ΔP)	Allowable pressure PS
100 mm	50 - 500 mmH ₂ O	6 bar
150 mm	25 - 500 mmH ₂ O	6 bar
200 mm	25 - 500 mmH ₂ O	6 bar
250 mm	25 - 300 mmH ₂ O	4 bar
300 mm	25 - 500 mmH ₂ O	4 bar
400 mm	25 - 100 mmH ₂ O	4 bar

PHYSICAL DATA

Materials

Product wetted steel parts:	EN 1.4404 (AISI 316L) with 3.1 cert.
Product wetted steel surfaces:	Surface roughness Ra<0.8 μm
Product wetted seals:	EPDM
Product wetted polymers:	PEEK
Other steel parts:	EN 1.4307 (AISI 304L)

Standard design

The Anti Vacuum Valve is available in two versions:

- Integrated in a SCANDI BREW® tank top system
- Mounted on its own counter flange

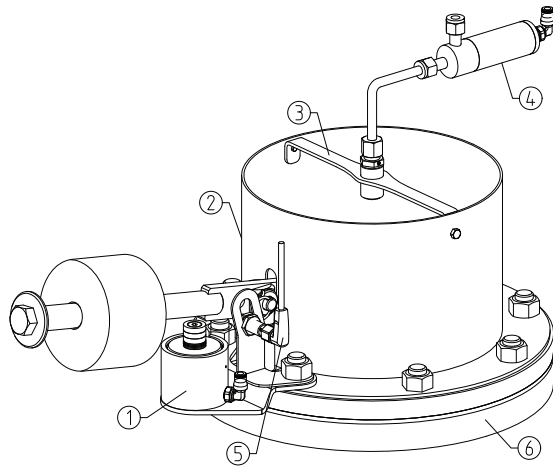
Compliance Pressure Equipment Directive 2014/68/EU of the European Community, Fluida Group II

The advantages of an integrated Anti Vacuum Valve are lower initial costs, superior hygiene and smaller area required for seat valve.

The size and setting of the Anti Vacuum Valve is based on the tank vacuum rating, maximum emptying speed, cleaning procedure and process requirements. The Anti Vacuum Valve is produced in a hygienic and robust design. Heating elements are available for valves exposed to sub-zero temperatures.

It is very important to note that if the cleaning procedure includes hot-cleaning, the valve should be dimensioned with the purpose of preventing implosion from the vacuum that appears when flushing with cold water.

The Anti Vacuum Valve should be seated horizontally. An inclination of max. 5° is acceptable but the lever arm must then point in to the center of the cylindro-conical tank top.

Options

- | | |
|----------------------------|--|
| Pos. 1: Force opener: | force-opening during valve seat cleaning |
| Pos. 2: Splash guard: | containing CIP liquid during valve seat cleaning |
| Pos. 3: CIP Nozzle: | for cleaning valve seat |
| Pos. 4: CIP closing valve: | applying CIP liquid |
| Pos. 5: Proximity sensor: | for operation detection |
| Pos. 6: Welding flange: | for installation |
| Heating elements: | for valves exposed to sub-zero temperatures |

Cleaning In Place (CIP)

The Anti Vacuum Valve is cleaned, when closed, by the tank cleaning head, but this will not include the valve seating.

To include the valve seating in the cleaning cycle, there are two options:

CIP Kit 1 - Force opener; splash guard

The valve is force-opened during tank CIP. The cleaning of valve seat is dependent on cleaning jets from the tank cleaning head. Any CIP liquid escaping the tank is contained by the splash guard and drains back in to the tank.

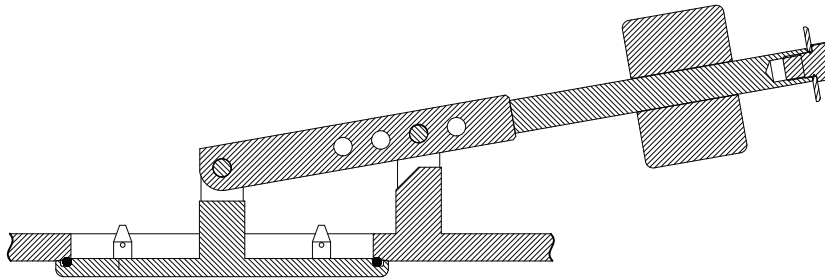
CIP Kit 2- Force opener; splash guard; CIP nozzle; CIP closing valve

The valve is force-opened during tank CIP. The cleaning of valve seat is performed by the CIP nozzle. All CIP liquid from the CIP nozzle is contained by the splash guard and drains back in to the tank.

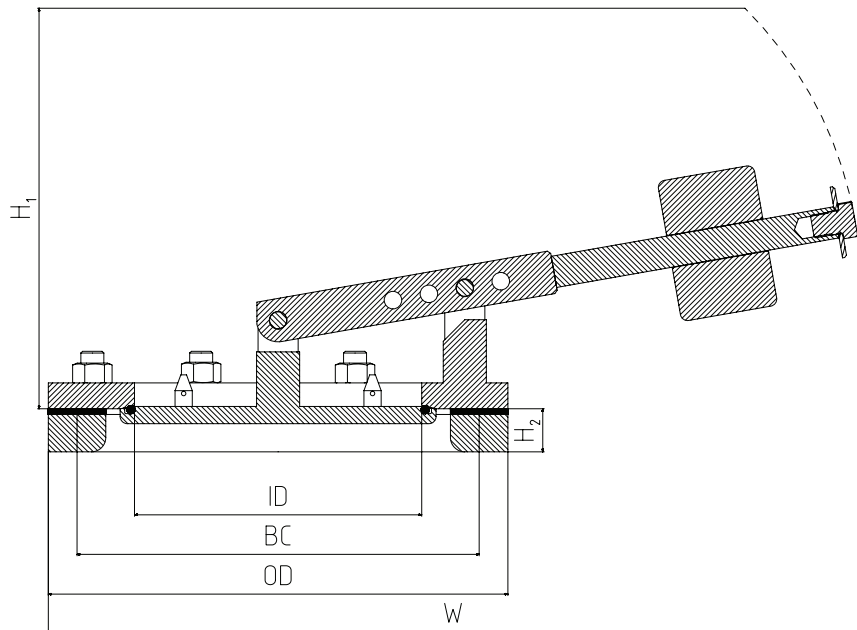
NOTE: Applying any of above CIP options provides that the tank is pressureless at the moment of force opening the Anti Vacuum Valve.

Integrated Valve

2.8



Flange Mounted Valve



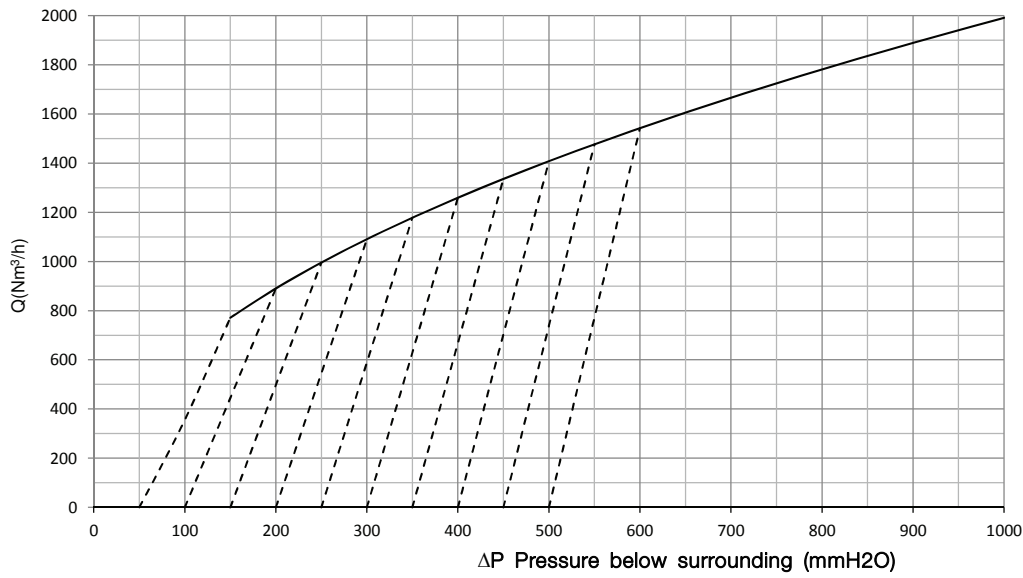
ID = Active diameter
 BC = Bolt circle
 OD = Outside diameter

Interface requirements (mm)

Nominal size	ID	BC	OD	Bolts	H1	H2	W
100	100	165	200	4xM16	310	30	510
150	150	230	270	8xM16	325	30	550
200	200	280	320	8xM16	310	30	570
250	250	330	370	8xM16	325	30	600
300	300	380	420	12xM16	500	30	940
400	400	515	560	12xM16	490	30	1010

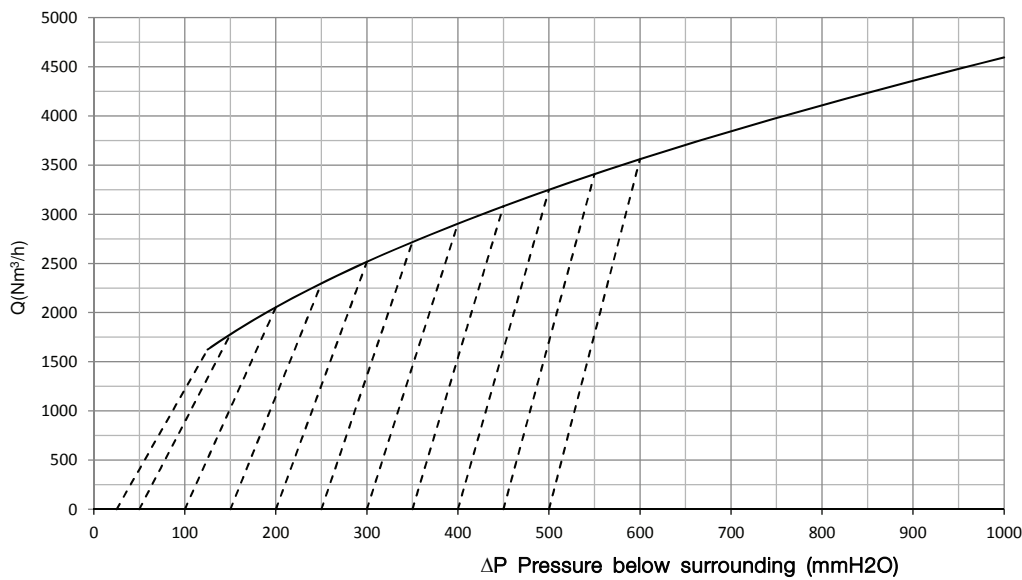
Nominal size : 100mm
 Volumetric Flow Capacity
 Medium: Air

- - - Preset opening pressure to fully open valve



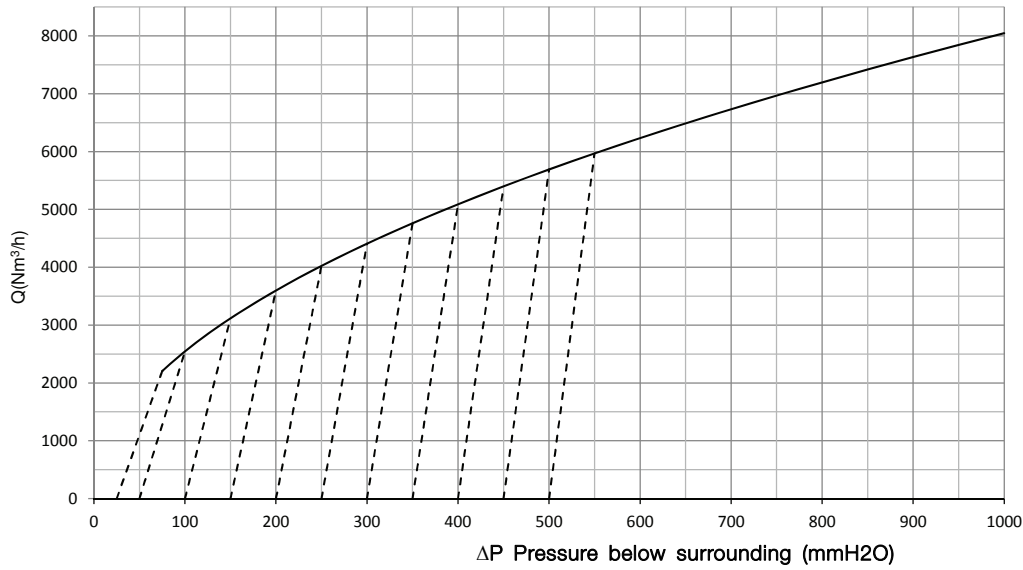
Nominal size : 150mm
 Volumetric Flow Capacity
 Medium: Air

- - - Preset opening pressure to fully open valve

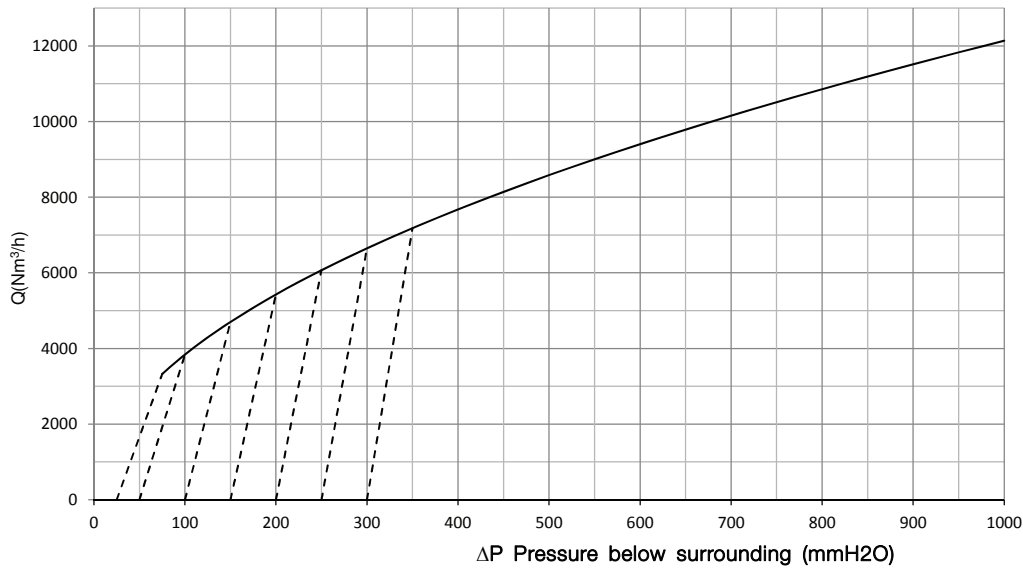


2.8

Nominal size : 200mm
 Volumetric Flow Capacity
 Medium: Air
 - - - - Preset opening pressure to fully open valve

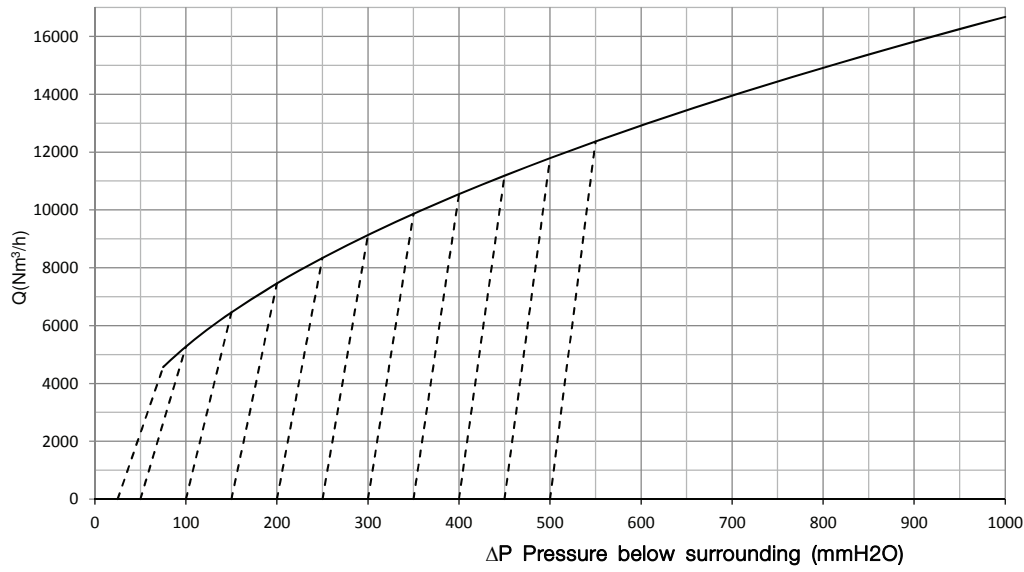


Nominal size : 250mm
 Volumetric Flow Capacity
 Medium: Air
 - - - - Preset opening pressure to fully open valve



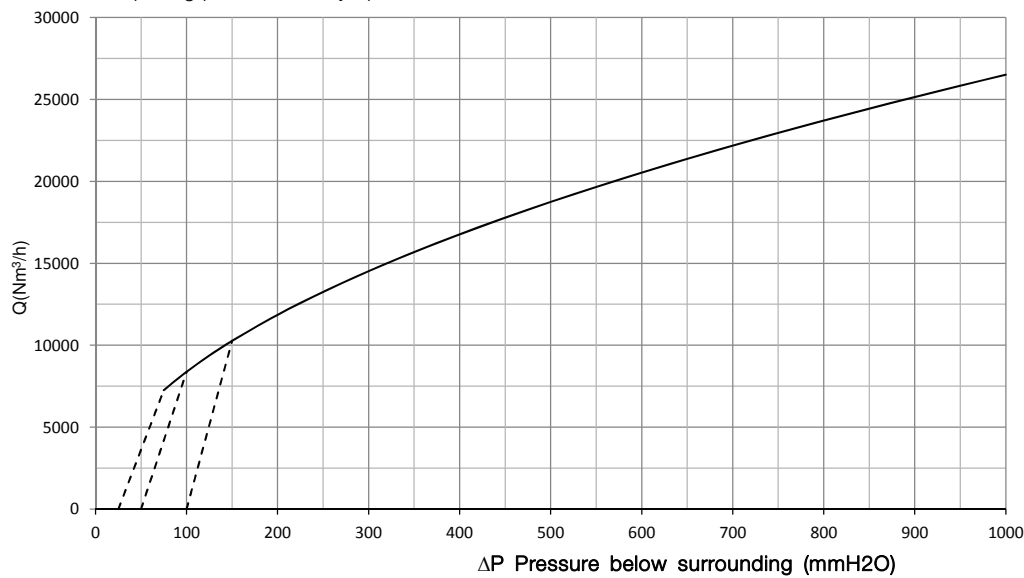
Nominal size : 300mm
 Volumetric Flow Capacity
 Medium: Air

- - - Preset opening pressure to fully open valve



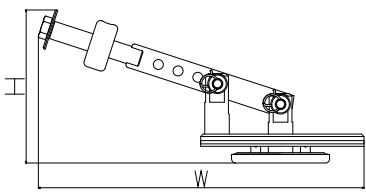
Nominal size : 400mm
 Volumetric Flow Capacity
 Medium: Air

- - - Preset opening pressure to fully open valve



Safety Valve
Product code: 5916

Material: 1.4404
Seals: EPDM
Inside surface finish: Ra ≤ 0.8 µm
Outside surface finish: Ra ≤ 1.6 µm

Item No.	PPL EUR	Size	Opening Pressure mm H2O	Fully open at mm H2O	Flow (Nm ³ /h) fully open	Dimension (mm)		SCANDI BREW
						H	W	
9615053901	1251	100	50	150	771	310	510	
9615053902	1251	100	100	200	890	310	510	
9615053903	1251	100	150	250	995	310	510	
9615053904	1251	100	200	300	1090	310	510	
9615053905	1464	100	250	350	1177	310	510	
9615053906	1464	100	300	400	1259	310	510	
9615053907	1464	100	350	450	1335	310	510	
9615053908	1464	100	400	500	1407	310	510	
9615053909	1464	100	450	550	1476	310	510	
9615053910	1464	100	500	600	1542	310	510	
9615055001	1701	150	25	125	1624	325	550	
9615055002	1701	150	50	150	1779	325	540	
9615055003	1701	150	100	200	2054	325	540	
9615055004	1701	150	150	250	2297	325	540	
9615055005	1701	150	200	300	2516	325	540	
9615055006	1913	150	250	350	2718	325	540	
9615055007	1913	150	300	400	2905	325	540	
9615055008	1913	150	350	450	3082	325	540	
9615055009	1913	150	400	500	3248	325	540	
9615055010	1913	150	450	550	3407	325	540	
9615055011	1913	150	500	600	3558	325	540	

For specific flow (Nm³/h) please see the PD leaflet in Anytime

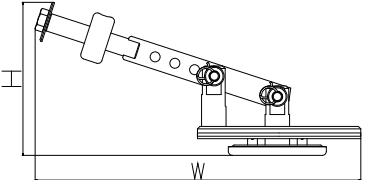
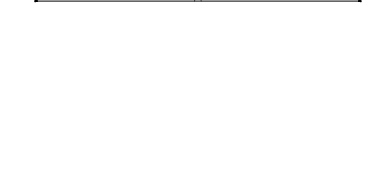
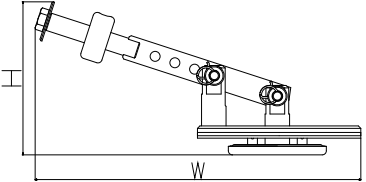

SB Anti Vacuum Valve

Safety valves

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Item No.	PPL EUR	Size	Opening Pressure mm H2O	Fully open at mm H2O	Flow (Nm ³ /h) fully open	Dimension (mm)		SCANDI BREW
						H	W	
9615064301	1912	200	25	75	2203	310	570	
9615064302	1912	200	50	100	2544	310	570	
9615064303	1912	200	100	150	3116	310	570	
9615064304	1912	200	150	200	3598	310	570	
9615064305	1912	200	200	250	4023	310	570	
9615064306	2124	200	250	300	4407	310	570	
9615064307	2124	200	300	350	4760	310	570	
9615064308	2124	200	350	400	5088	310	570	
9615064309	2124	200	400	450	5397	310	570	
9615064310	2124	200	450	500	5689	310	570	
9615064311	2124	200	500	550	5967	310	570	
9615064501	2334	250	25	75	3323	325	600	
9615064502	2334	250	50	100	3838	325	600	
9615064503	2334	250	100	150	4700	325	600	
9615064504	2334	250	150	200	5427	325	600	
9615064505	2334	250	200	250	6068	325	600	
9615064506	2334	250	250	300	6647	325	600	
9615064507	2334	250	300	350	7180	325	600	
9615064701	2755	300	25	75	4566	500	940	
9615064702	2755	300	50	100	5272	500	940	
9615064703	2755	300	100	150	6457	500	940	
9615064704	2755	300	150	200	7456	500	940	
9615064705	2755	300	200	250	8336	500	940	
9615064706	2967	300	250	300	9132	500	940	
9615064707	2967	300	300	350	9864	500	940	
9615064708	2967	300	350	400	10545	500	940	
9615064709	2967	300	400	450	11184	500	940	
9615064710	2967	300	450	500	11789	500	940	
9615064711	2967	300	500	550	12365	500	940	
9615064901	3936	400	25	75	7259	490	1010	
9615064902	3936	400	50	100	8382	490	1010	
9615064903	3936	400	100	150	10266	490	1010	

For specific flow (Nm³/h) please see the PD leaflet in Anytime