

## Alfa Laval SB Anti Vacuum Valve

Minimize Risk of Implosion

### 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 CO<sub>2</sub> 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 ( $\Delta P$ )	Allowable pressure PS
100 mm	50 - 500 mmH <sub>2</sub> O	6 bar
150 mm	25 - 500 mmH <sub>2</sub> O	6 bar
200 mm	25 - 500 mmH <sub>2</sub> O	6 bar
250 mm	25 - 300 mmH <sub>2</sub> O	4 bar
300 mm	25 - 500 mmH <sub>2</sub> O	4 bar
400 mm	25 - 100 mmH <sub>2</sub> 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 $\mu$ m
Product wetted seals:	EPDM/NBR
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

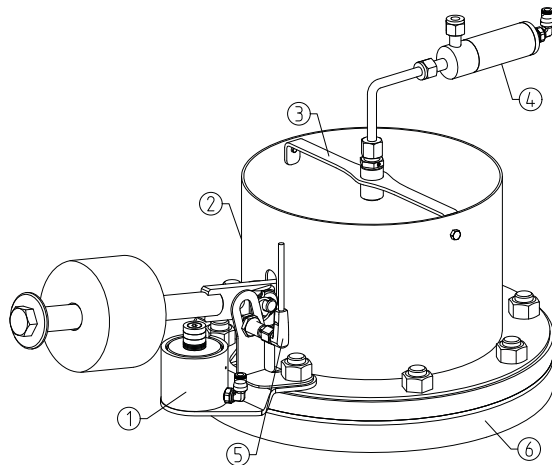
The advantages of an integrated Anti Vacuum Valve are lower initial costs, superior hygiene and smaller area required for seat valve.

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

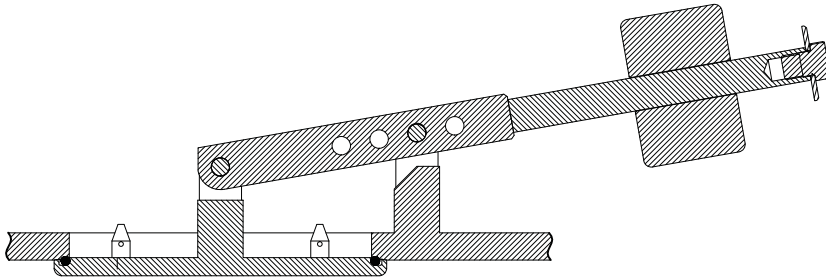
The valve is force-opened during tank CIP. The cleaning of valve seat is dependent on cleaning jets from the tank cleaning head. Any CIP liquid escaping the tank is contained by the splash guard and drains back in to the tank.

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

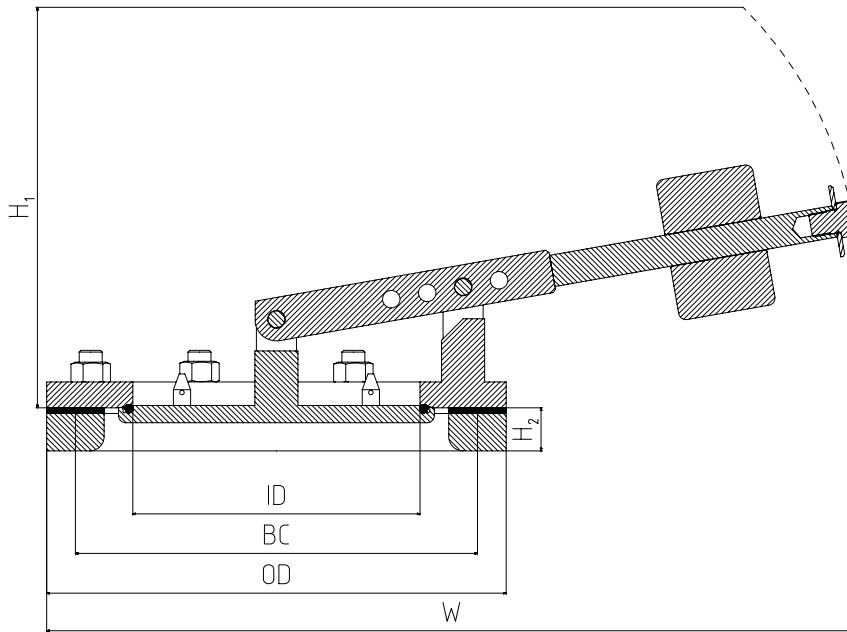
The valve is force-opened during tank CIP. The cleaning of valve seat is performed by the CIP nozzle. All CIP liquid from the CIP nozzle is contained by the splash guard and drains back in to the tank.

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



## Flange Mounted Valve



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

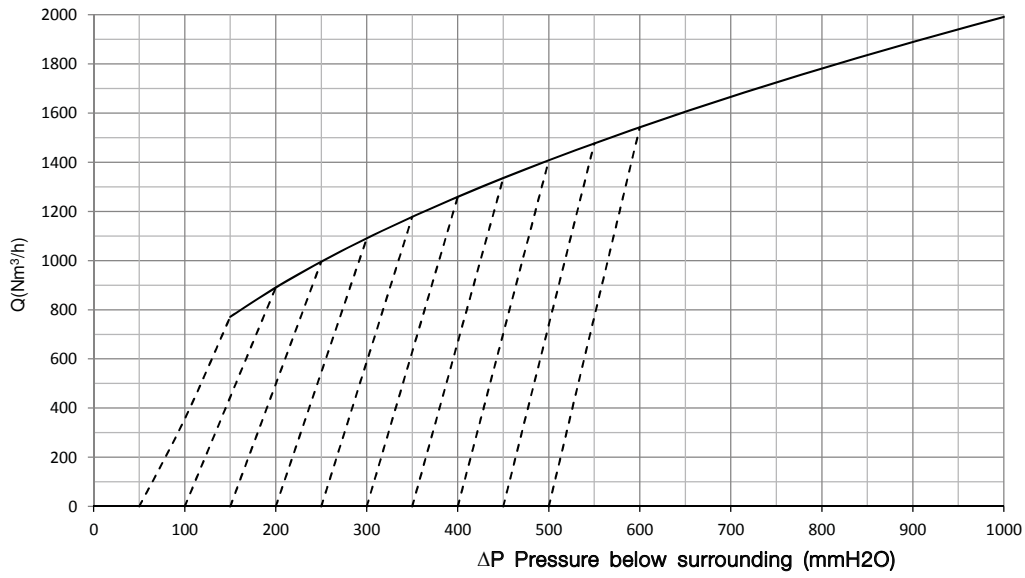
### Interface requirements (mm)

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



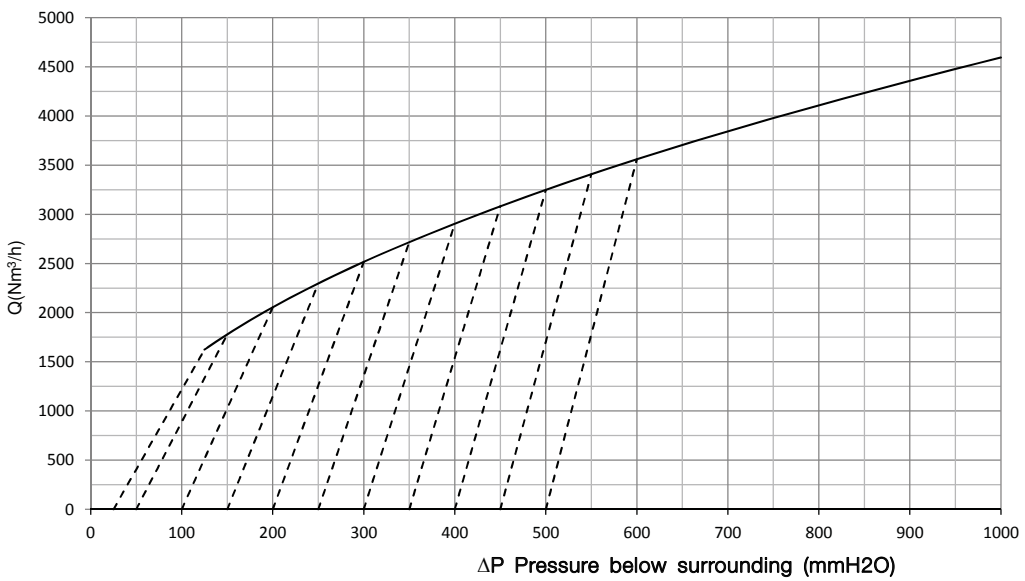
Nominal size : 100mm  
Volumetric Flow Capacity  
Medium: Air

- - - - Preset opening pressure to fully open valve



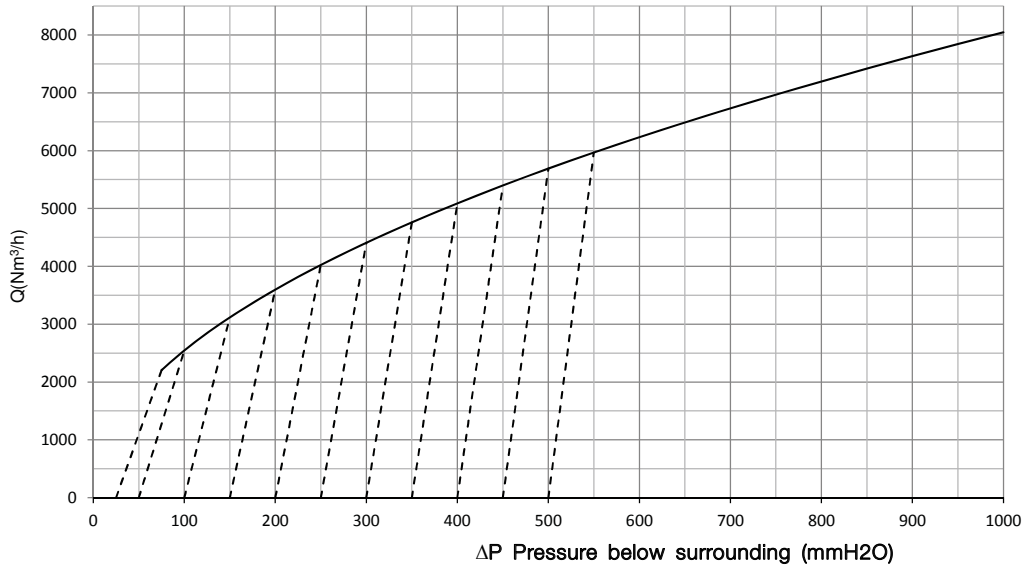
Nominal size : 150mm  
Volumetric Flow Capacity  
Medium: Air

- - - - Preset opening pressure to fully open valve



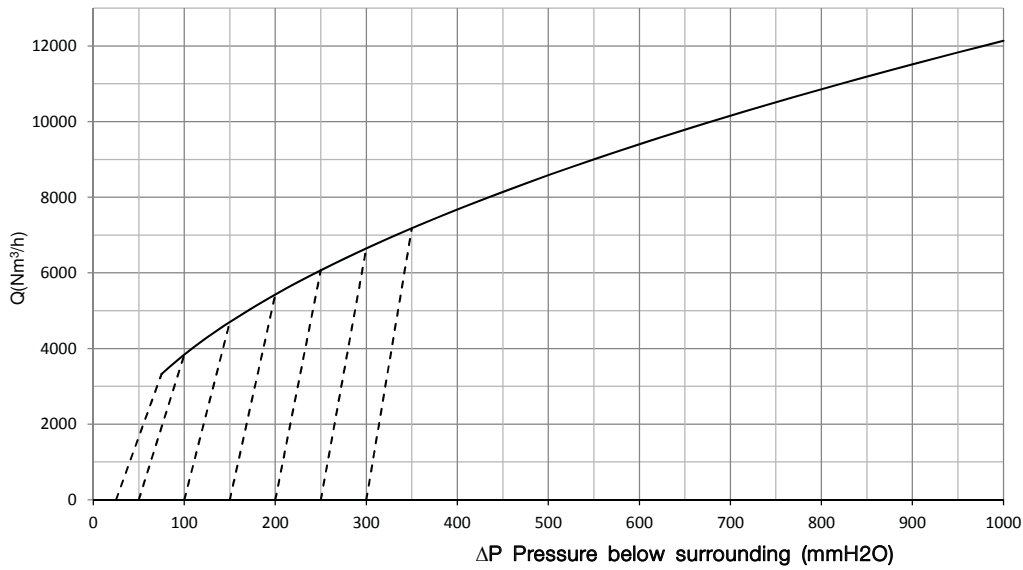
Nominal size : 200mm  
Volumetric Flow Capacity  
Medium: Air

- - - - Preset opening pressure to fully open valve



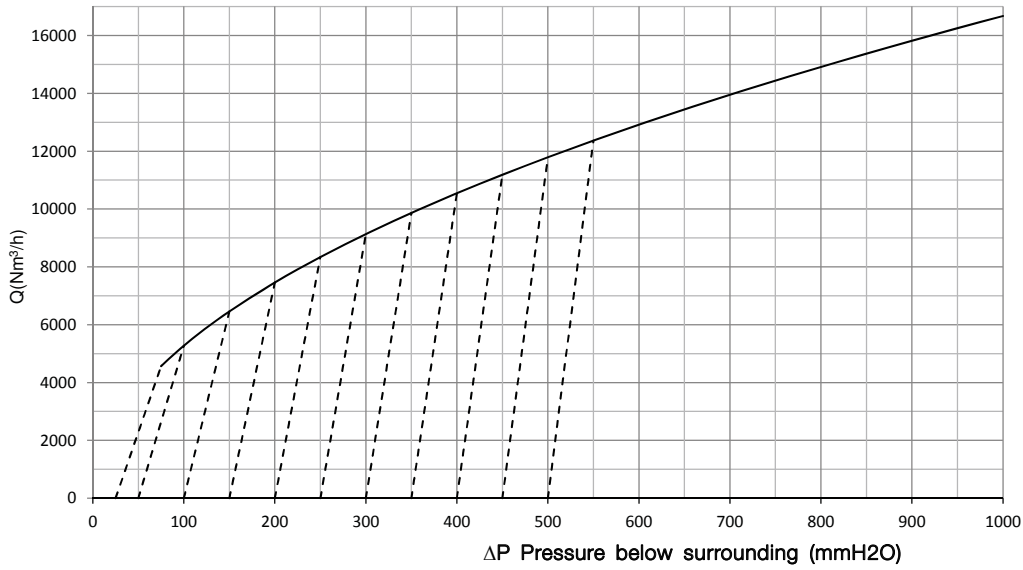
Nominal size : 250mm  
Volumetric Flow Capacity  
Medium: Air

- - - - Preset opening pressure to fully open valve



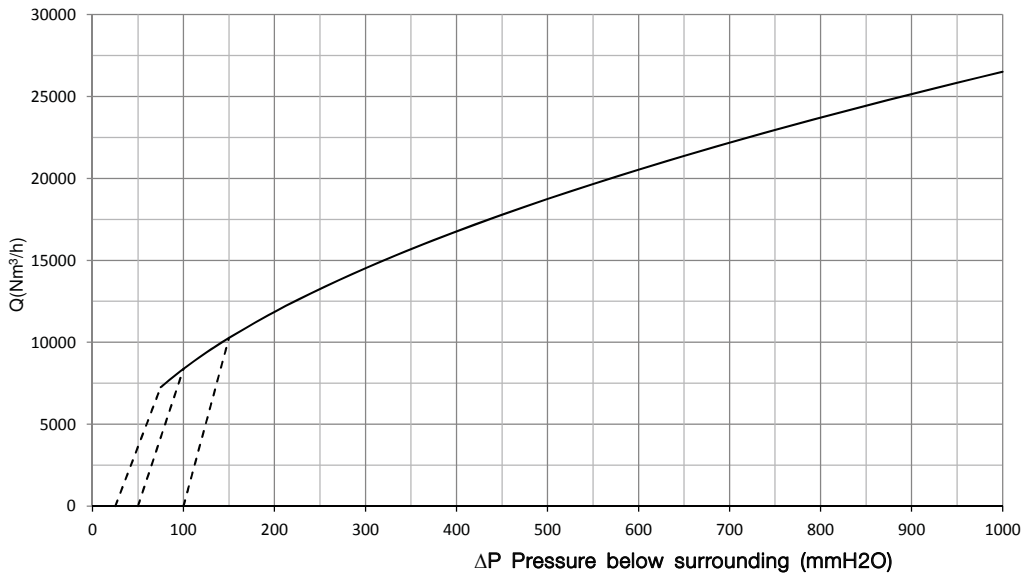
Nominal size : 300mm  
Volumetric Flow Capacity  
Medium: Air

- - - Preset opening pressure to fully open valve



Nominal size : 400mm  
Volumetric Flow Capacity  
Medium: Air

- - - Preset opening pressure to fully open valve



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Alfa Laval reserves the right to change specifications without prior notification.

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**How to contact Alfa Laval**

Contact details for all countries are continually updated on our website. Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information direct.



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