

PRODUCT DATA SHEET

Ramén vacuum valve VAC100



RaménValves

We know the flow

DN50-150 | PN16/25 | Stainless steel | Flanged connection



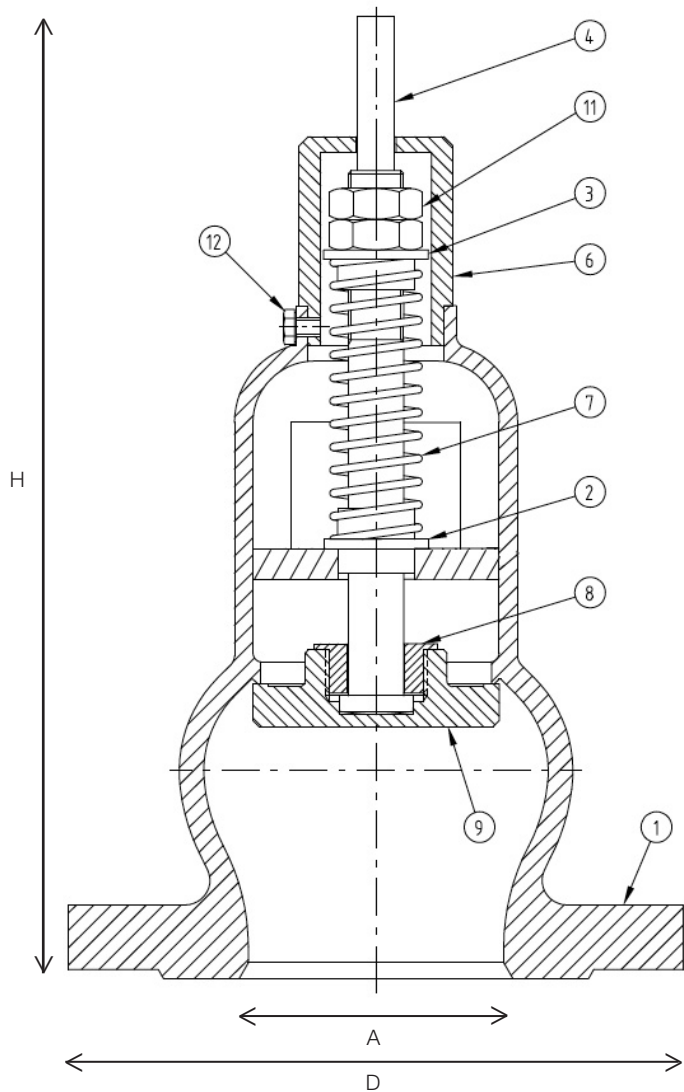
Ramén vacuum valve VAC100 is a vacuum valve for safety protection of pressure vessels, tanks, containers, silos, hoppers, piping and other designs that may be exposed to under pressure (by media, cleaning processes, thermal variations, etc).

The VAC100 will open automatically when the pressure of gases or vapors goes below -0,1 to -0,15 barg (can be ordered with other set pressure on request) giving the construction a robust and trusted protection against vacuum that can cause unreparable damage to any system.

VAC100 is as standard made out of stainless steel but can as an option be supplied in exotic alloys. The construction is based on a spring-loaded metal-seated plug that opens to atmosphere when the set pressure is reached. Opening pressure is set, verified and sealed at factory before delivery.

Technical information	
Design	Spring loaded
Connection	Flanged according to EN 1092-1 DN50-100: PN25, DN150: PN16
Nominal sizes	DN50-150
Material	EN 1.4408
Nominal pressure	DN50-100: PN25, DN150: PN16
Leakage class	Rate A acc. to EN12266-1
Temperature range	-50°C up to 200°C
Set pressure	-0,1 to -0,15 barg (other set pressure on request)
Material options	Duplex (EN 1.4470), Super Duplex (EN 1.4469), 254 SMO (EN 1.4547), 904 L (1.4458) Alu/Ni/Brz (CC332G)
Connection	ANSI/ASME B16.5 150lbs: DN50/80/100/150 ANSI/ASME B16.5 300lbs: DN50/80/100
Approvals	CE-marked acc. to PED 2014/68/EU, Category IV, module B+D

Address: Ramén Valves, Fredsforstigen 22A, SE-168 67 Bromma, Sweden
Office: +46 8 598 931 00 | www.ramenvaives.com | info@ramenvaives.com



Dimensions and weight (mm and kg)					
DN	PN	A [mm]	D [mm]	H [mm]	kg
50	25	50	165	220	5,4
80		80	200	310	9,4
100		100	235	360	14,8
150	16	150	285	580	35

Parts and material of construction		
No	Part	Material ⁽¹⁾
1	Body + integrated seat	EN 1.4408
2	Lower bushing	EN 1.4404
3	Upper bushing	EN 1.4404
4	Stem	EN 1.4404
6	Cap	EN 1.4404
7	Spring	EN 1.4404
8	Disc nut	EN 1.4404
9	Disc	EN 1.4404
11	Nut	A4
12	Screw	A4

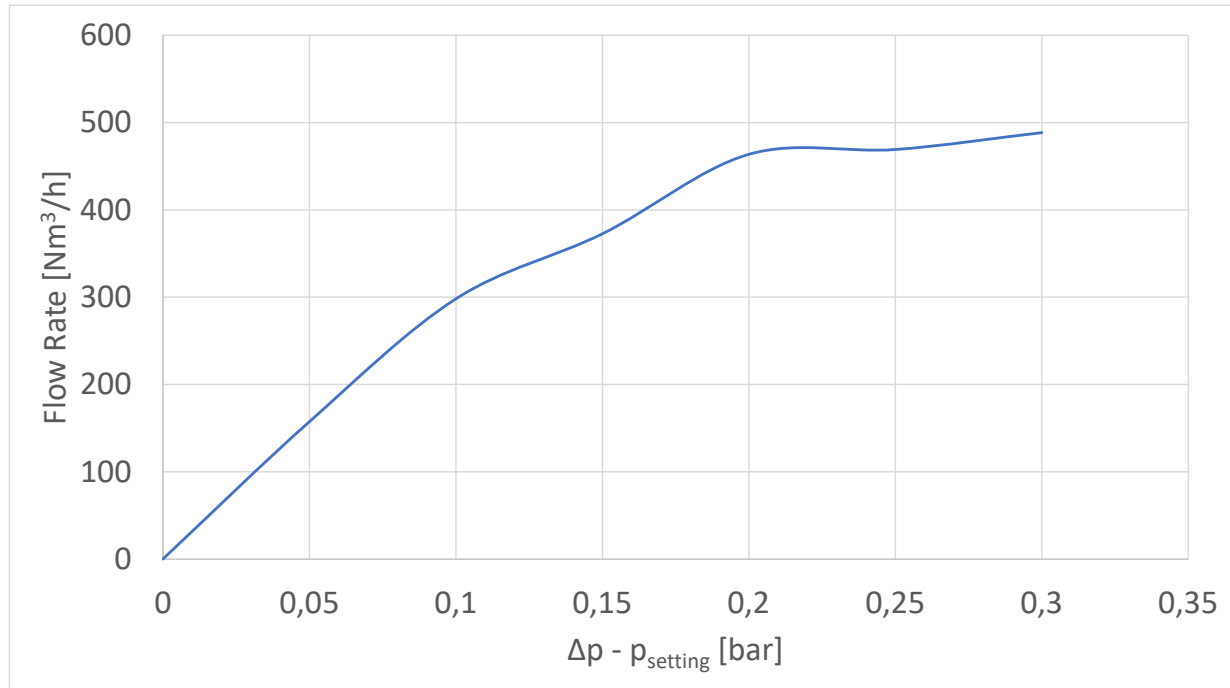
⁽¹⁾ Acc. to standard configuration.

Ordering code						
EB	Valve series (3-5)	Body & disc material (6-7)		End connection (8-9)	Size ⁽¹⁾ (10-12)	
EB	100	12	Stainless steel 316 (EN 1.4408)	62	DN50-100: Flanged PN25	50
		16	254 SMO	61	DN150: Flanged PN16	80
		17	904L (EN 1.4458)	65	ANSI 150	100
		19	Duplex (EN 1.4470)			150
		20	Super Duplex (EN 1.4469)			
		22	Alu/Ni/Brz (CC332G)			

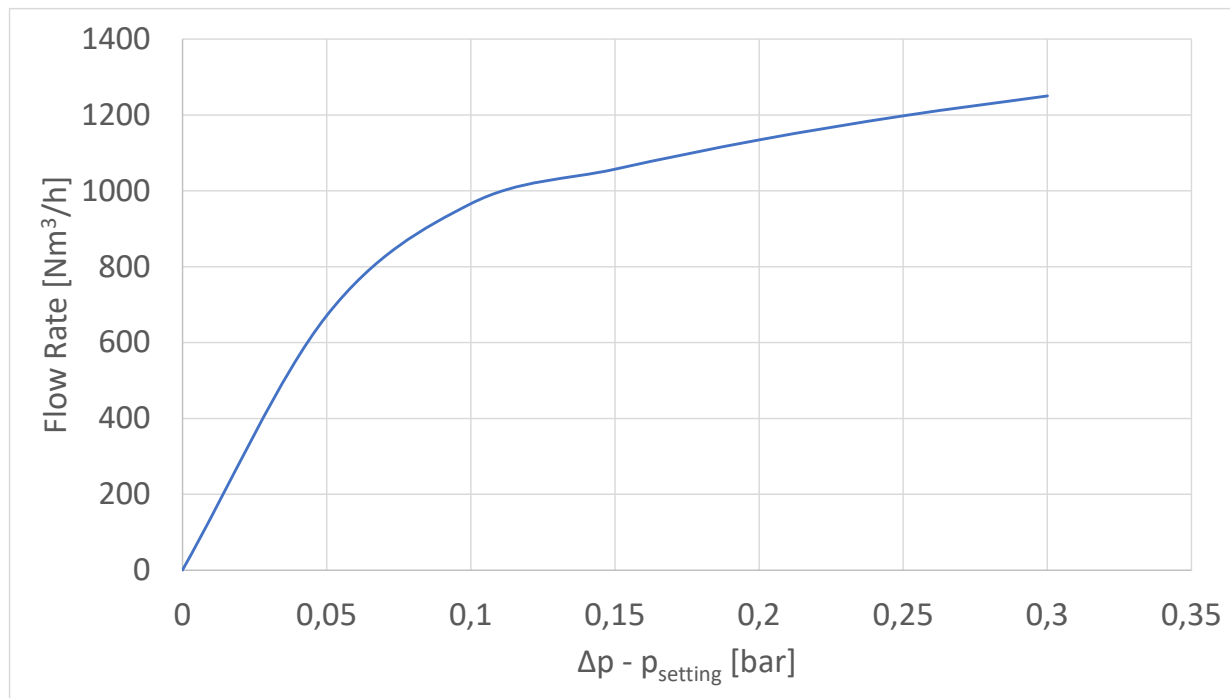
Address: Ramén Valves, Fredsforstigen 22A, SE-168 67 Bromma, Sweden
Office: +46 8 598 931 00 | www.ramenvallves.com | info@ramenvallves.com

Sizing and selection of vacuum valves

The below diagrams show the flow capacity of different sizes depending on ΔP across the valve.



DN 50

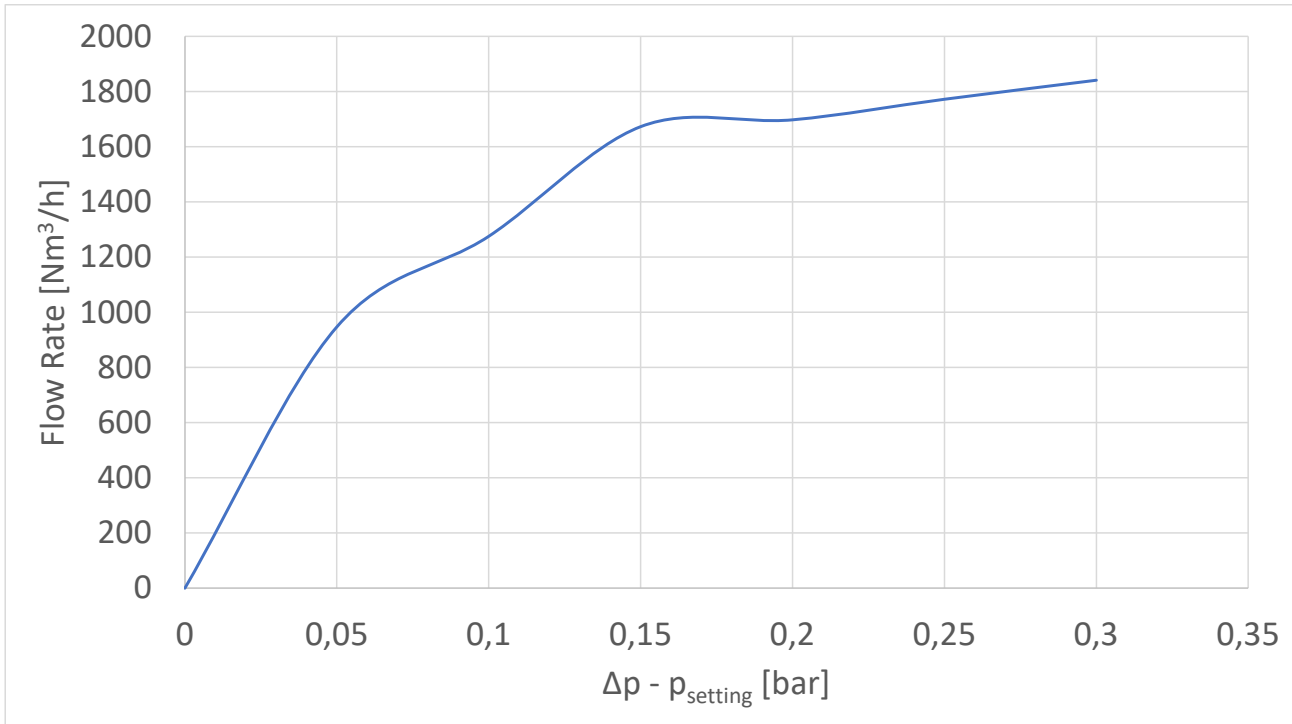


DN 80

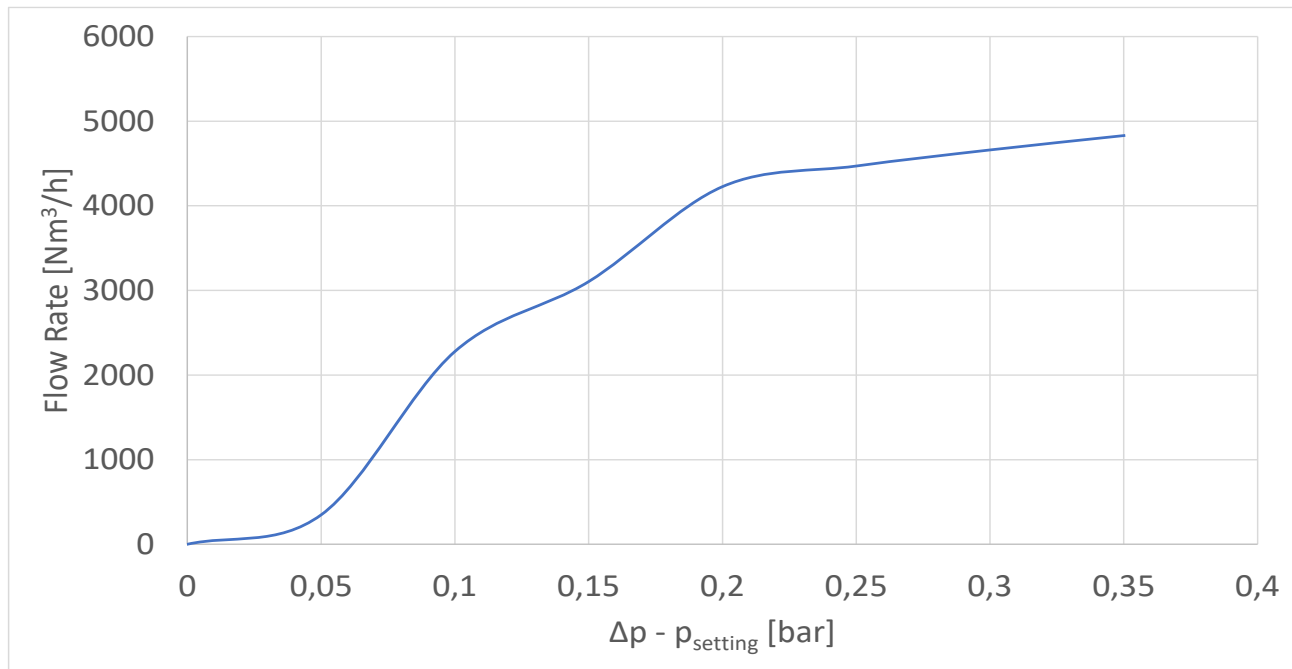
Address: Ramén Valves, Fredsforstigen 22A, SE-168 67 Bromma, Sweden
Office: +46 8 598 931 00 | www.ramenvaives.com | info@ramenvaives.com

Sizing and selection of vacuum valves

The below diagrams show the flow capacity of different sizes depending on ΔP across the valve.



DN 100



DN 150

Address: Ramén Valves, Fredsforstigen 22A, SE-168 67 Bromma, Sweden
Office: +46 8 598 931 00 | www.ramenvaives.com | info@ramenvaives.com

Example of sizing

In this example, a fluid is contained in a pressure vessel for which the minimum design pressure is 0.5 bara. A pump is installed to empty the pressure vessel, with a flow capacity of 200Nm³/min. When the pump starts to pump the fluid from the pressure vessel, pressure will decrease and thus a vacuum valve shall be installed to avoid the pressure going below the minimum design pressure.

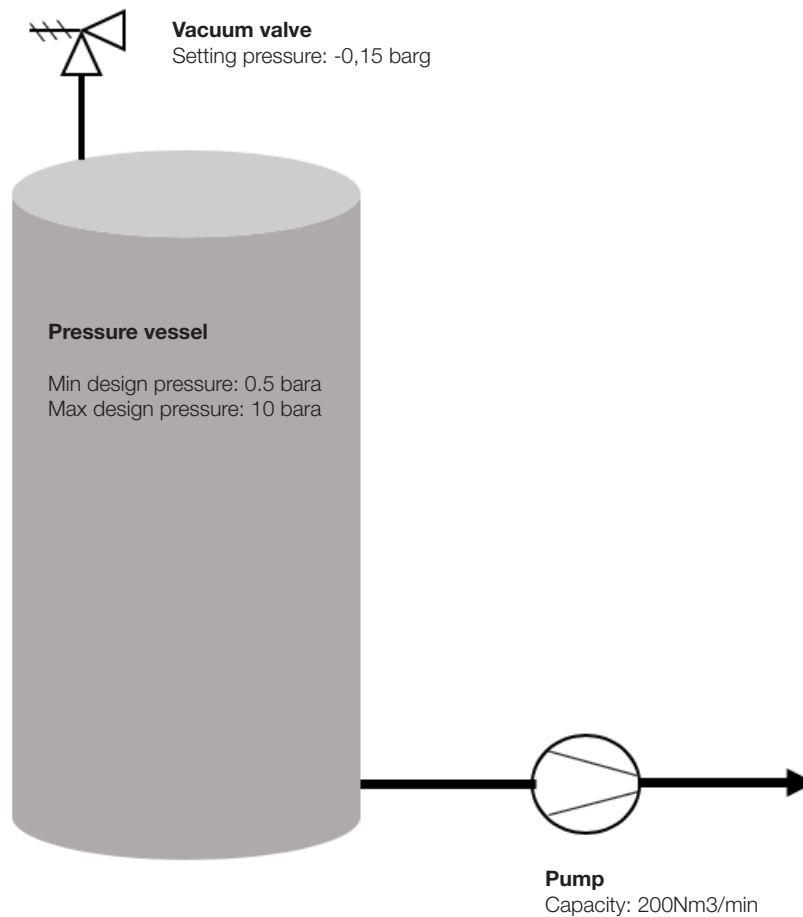
In this example, the vacuum valve is a model VAC100 with a setting pressure of 0,15 bar under atmosphere.

Then, looking at the flow chart in this document, we see that a DN50 has a capacity of 300 Nm³/hr when a ΔP has reached 0,25 bar across the valve.

Indeed, in the graph: ΔP -Psetting at 0,1bar is 300Nm³/h, so $\Delta P = 0,1 + 0,15 = 0,25$ bar.

Since the valve is connected to the atmosphere, 300Nm³/h will be reached when the system achieved 1bara-0,25=0,75bara which is above the minimum design pressure of the pressure vessel.

Therefore, a VAC100 DN50 can be selected for this process conditions.



Address: Fredsforstigen 22A, SE-168 67 Bromma, Sweden
Office: +46 8 598 931 00 | www.ramervalves.com