

# PRODUCT DATA SHEET

## Engelsberg vacuum valve type VAC 100



**Ramén Valves**

We know the flow

DN 50-150 | Stainless steel | Flanged connection



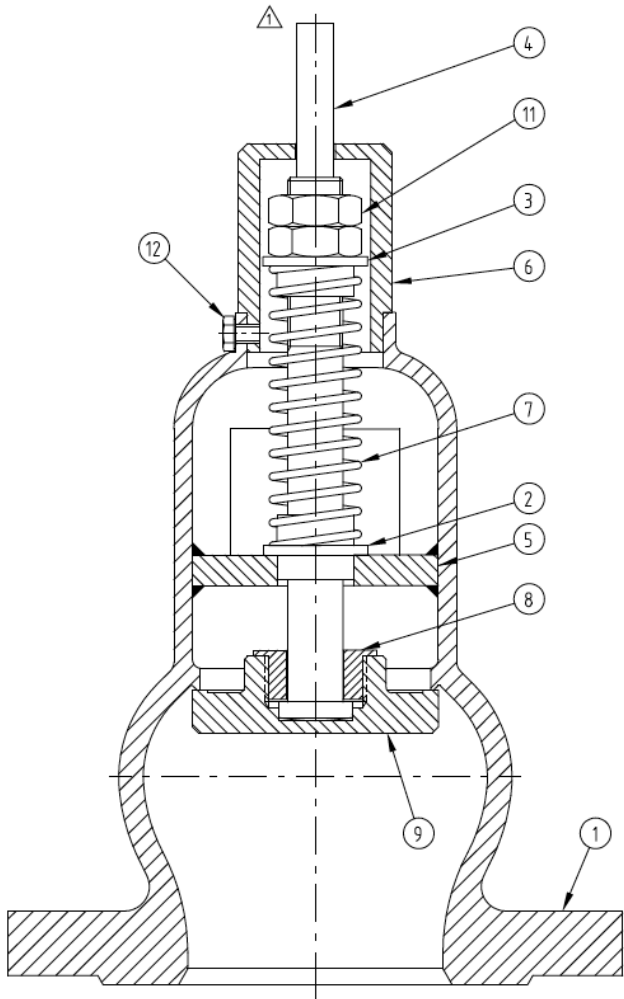
Engelsberg type VAC100 is a vacuum valve for protection of pressure vessels, tanks, containers, silos, hoppers, piping and other designs that may be exposed to under pressure (by media, cleaning processes, thermal variations, etc). The VAC100 will open automatically when the pressure of gases or vapors goes below 0,85-0,9 bar(a) (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 DN 50-100: PN25, DN150: PN16
Nominal sizes		DN 50 - 150
Material		EN 1.4408
Nominal pressure		PN 25
Temperature range		-50°C up to 200°C
Set pressure		0,85-0,9 bar(a)
Options	Material body	Duplex (EN 1.4470), Super Duplex (EN 1.4469), 254 SMO (EN 1.4547), 904 L (1.4458)
	Connection	ANSI/ASME B 16.5 150 lbs or 300 lbs

Dimensions and weight (mm and kg)					
DN	PN	A [mm]	B [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	300	580	35

<sup>(1)</sup>Q = capacity in Nm<sup>3</sup>/min



Parts and material of construction		
No	Part	Material <sup>(1)</sup>
1	Body + integrated seat	EN 1.4408
2	Lower bushing	EN 1.4404
3	Upper bushing	EN 1.4404
4	Stem	EN 1.4404
5	Bridge	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

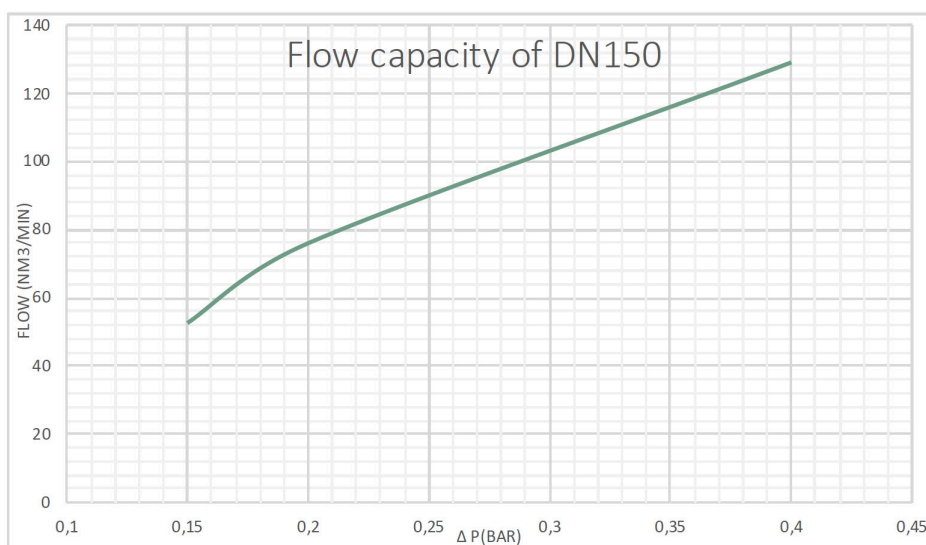
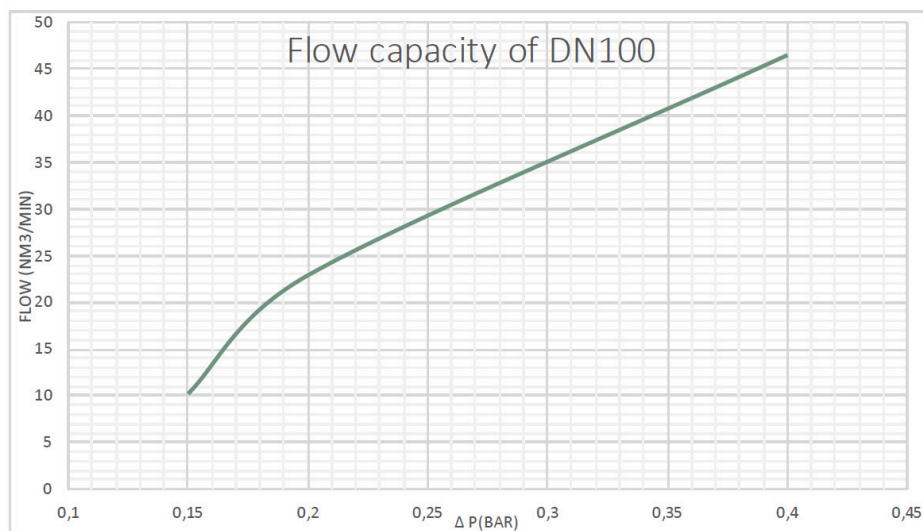
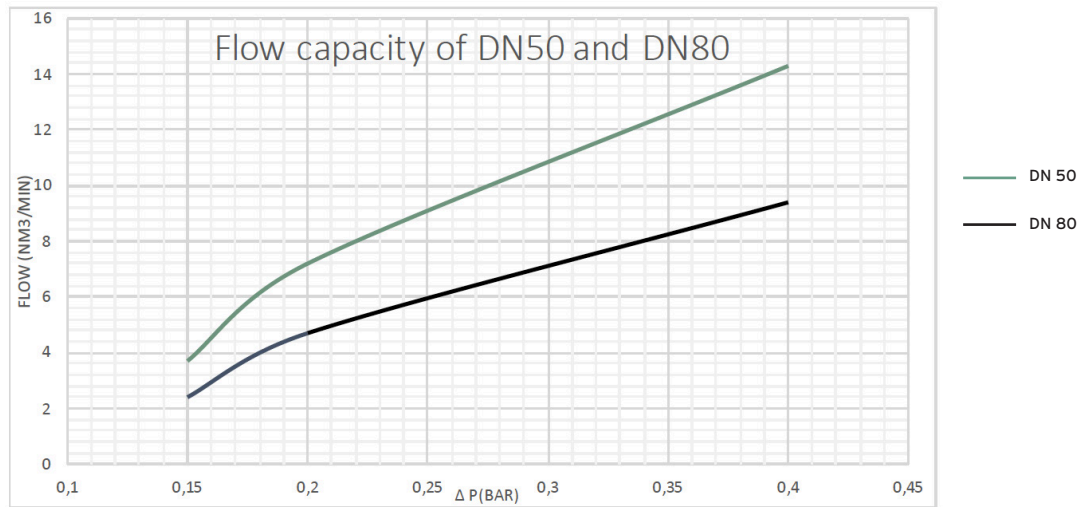
<sup>(1)</sup> Acc. to standard configuration. For high alloy materials please contact Ramén Valves.

Ordering code		
Model	Size <sup>(1)</sup>	Article no.
VAC100	DN 50	EB100-1262-050
	DN 80	EB100-1262-080
	DN 100	EB100-1262-100
	DN 150	EB100-1261-150

<sup>(1)</sup> For VAC112 (DN 25) please see separate data sheet.

# Sizing and selection of vacuum valves

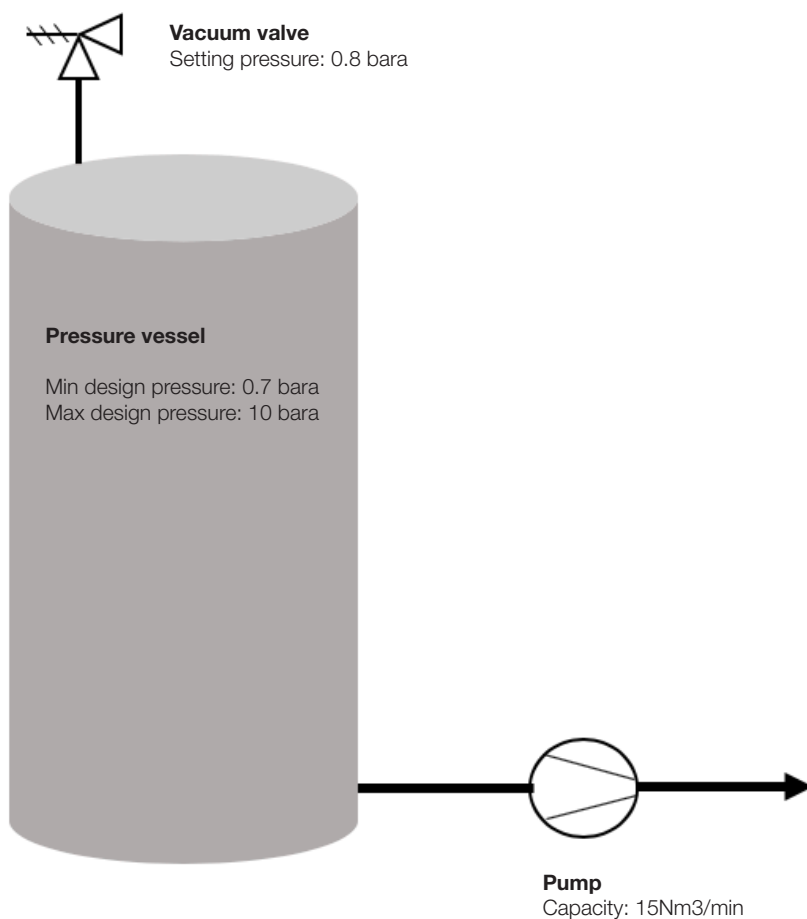
The below diagrams show the flow capacity of different sizes depending on  $\Delta P$  across the valve.



## Example of sizing

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In this example, a fluid is contained in a pressure vessel for which the minimum design pressure is 0.7 bara. A pump is installed to empty the pressure vessel, with a flow capacity of 15Nm<sup>3</sup>/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 0.8 bara. Considering an atmospheric pressure around 1 bara, this means that the  $\Delta P$  across the valve will be 0.2 bar. Then, looking at the sizing chart in this document, we see that DN80 and DN100 have respectively a capacity of 7.2Nm<sup>3</sup>/hr and 23 Nm<sup>3</sup>/hr for 0.2 bar  $\Delta P$ . Thus a VAC100 DN100 shall be selected for his process.



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