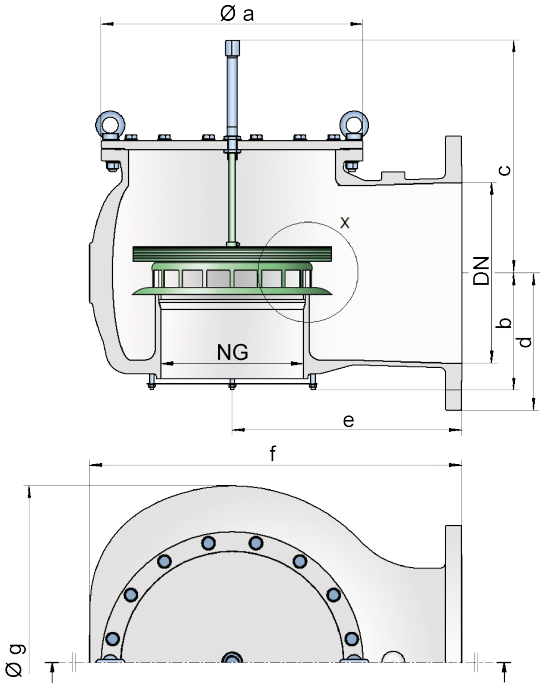
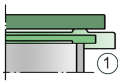
Vacuum Relief Valve

PROTEGO® VN-VL-L



Detail X



Settings

Vacuum:	-2.7 mbar	up to	-70 mbar
	-1.08 inch W.C.	up to	-28 inch W.C.

Higher vacuum settings upon request.

Table 1: Dimensions Dimensions in mm / inches

NG	300 / 12"	300 / 12"	300 / 12"
DN	300 /12"	350 / 14"	400 /16"
a	570 / 22.44	570 / 22.44	570 / 22.44
b	215 / 8.46	235 / 9.25	255 / 10.94
c	467 / 18.17	487 / 19.17	507 / 19.96
d	243 / 9.57	268 / 10.55	298 / 11.73
e	500 / 19.69	500 / 19.69	500 / 19.69
f	810 / 31.89	810 / 31.89	810 / 31.89
g	770 / 30.31	770 / 30.31	770 / 30.31

Dimensions for vacuum relief valve with heating jacket upon request

Features and Advantages

- 10% technology for minimum pressure increase up to full lift
- extreme tightness, resulting in lowest possible product losses and reduced environmental pollution
- set pressure close to opening pressure for optimum pressure maintenance in the system

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- very high flow capacity
- valve pallet is guided inside the housing to protect against harsh weather conditions
- can be used in explosion hazardous areas
- automatic condensate drain
- best technology for API tanks

Function and Description

The VN-VL-L type PROTEGO® valve is a highly developed vacuum relief valve with excellent flow performance. It is primarily used as a device for relieving vacuum in tanks, containers, and process engineering equipment. The valve offers reliable protection against vacuum and prevents in-breathing of air close to the set pressure.

The device will start to open as soon as the set pressure is reached and only requires 10% overpressure to reach full lift. Continuous investments in and a commitment to research and development have allowed PROTEGO® to develop a low pressure valve which has the same opening characteristics as a high pressure safety relief valve.

This “full lift type” technology allows the valve to be set at just 10% below the maximum allowable working pressure of the tank and still safely vent the required mass flow.

Due to our highly developed manufacturing technology, the tank pressure is maintained up to set pressure with a tightness that is far superior to the conventional standard. This feature is achieved by valve seat made of high quality stainless steel and with precisely lapped valve pallets (1). After the vacuum is released, the valve reseats and provides a tight seal again.

Design and Specifications

The valve pallet is weight-loaded.

Vacuum valve in basic design **VN-VL-L**

Additional special devices available upon request.

Table 2: Material selection for housing

Design	A	B	C	E	F
Design Data	2 bar/60°C	2 bar/200°C	2 bar/200°C	16 bar/60°C or 10 bar/200°C	16 bar/60°C or 10 bar/200°C
Housing	Aluminium	Steel	Stainless Steel	Steel	Stainless Steel
Valve seat	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Protective grating	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Sealing	PTFE	PTFE	PTFE	PTFE	PTFE

Option: Housing with ECTFE-lining

Table 3: Material selection for vacuum valve pallet

Design	C	D	E	F
vacuum range [mbar] [inch W.C.]	-2.7 up to -4.6 -1.08 up to -1.84	-4.6 up to -7.9 -1.84 up to 3.16	-7.9 up to -13.5 -3.16 up to -5.4	-13.5 up to -70 -5.4 up to -28
Max. Back pressure (up to 60°C) [mbar] [inch W.C.]	390 156	2700 1080	930 372	6400 2560
Valve pallet	Aluminium, thin	Aluminium, thick	Stainless Steel, thin	Stainless Steel, thick
Sealing	Metal to Metal	Metal to Metal	Metal to Metal	Metal to Metal

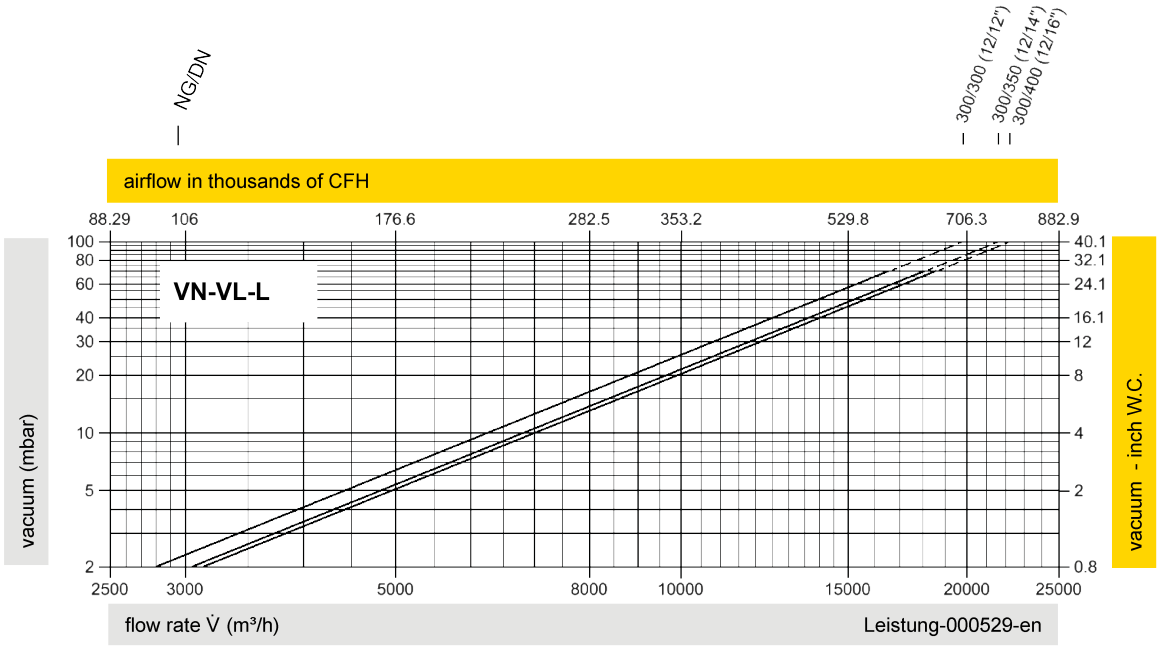
Special materials and higher vacuum settings upon request

Table 4: Flange connection type

EN 1092-1; Form B1
ASME B16.5 CL 150 R.F.

other types upon request

Flow Capacity Charts



The flow capacity charts have been determined with a calibrated and TÜV certified flow capacity test rig. Volume flow V in (m³/h) and CFH refer to the standard reference conditions of air ISO 6358 (20°C, 1bar). For conversion to other densities and temperatures refer to Sec. 1: “Technical Fundamentals”.