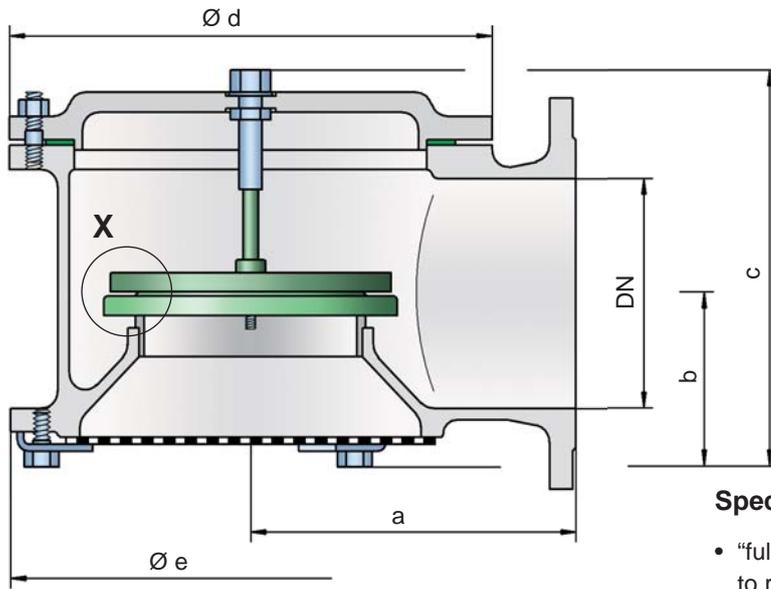


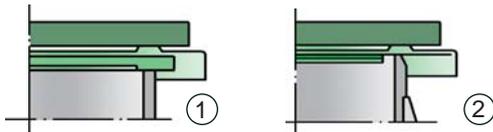
Vacuum Relief Valve



PROTEGO® SV/E-1-0



Detail X



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 seats made of high quality stainless steel and with precisely lapped valve pallets (1) or with an air cushion seal (2) in conjunction with high quality FEP diaphragm. The valve pallets are also available with a PTFE seal to prevent the valve pallets from sticking when sticky products are used, and they enable the use of corrosive media. After the vacuum is relieved, the valve reseats and provides a tight seal again.

Special Features and Advantages

- “full lift type” technology valve utilizes only 10% overpressure to reach full lift
- extreme tightness and hence least possible product losses and reduced environmental pollution
- the set pressure is close to the opening pressure which results in best possible pressure management of the system
- high flow capacity
- the valve pallet is guided within the housing to protect against harsh weather conditions
- can be used in areas subject to an explosion hazard
- self-actuated condensate drain
- best technology for API-tanks

Design Types and Specifications

The valve pallet is weight-loaded. Higher vacuum can be achieved upon request with a special spring-loaded design.

There are two different designs:

Vacuum valve in basic design SV/E-1-0 -

Vacuum valve with heating jacket SV/E-1-0 -

Additional special devices available upon request.

Vacuum settings:

-2.0 mbar up to -60 mbar
 -0.8 inch W.C. up to -24 inch W.C.
 Higher vacuum settings upon request.

Function and Description

The SV/E-1-0 type PROTEGO® valve is a highly developed vacuum relief valve with excellent flow performance. It is primarily used as a safety device for relieving vacuum in tanks, containers and process engineering equipment. The valve offers reliable protection against vacuum, and prevents inbreathing 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 full lift. Continuous investments into research and development have allowed PROTEGO® to develop a low pressure valve which has the same opening characteristic as a high pressure safety relief valve. This “full lift type” technology allows the valve to be set

Table 1: Dimensions

Dimensions in mm / inches

To select the nominal size (DN) use the flow capacity chart on the following page

DN	50 / 2"	80 / 3"	100 / 4"	150 / 6"	200 / 8"	250 / 10"	300 / 12"
a	140 / 5.51	170 / 6.69	190 / 7.48	230 / 9.06	300 / 11.81	325 / 12.80	425 / 16.73
b	75 / 2.95	85 / 3.35	95 / 3.74	120 / 4.72	140 / 5.51	165 / 6.50	205 / 8.07
c	205 / 8.07	205 / 8.07	285 / 11.22	360 / 14.17	405 / 15.94	460 / 18.11	500 / 19.69
d	170 / 6.69	235 / 9.25	280 / 11.02	335 / 13.19	445 / 17.52	505 / 19.88	505 / 19.88
e	215 / 8.46	215 / 8.46	255 / 10.04	335 / 13.19	425 / 16.73	460 / 18.11	625 / 24.61

Dimensions for vacuum relief valve with heating jacket upon request



Vents - 10% Technology
(Flyer pdf)



Leak Rate/10% Technology
(Flyer pdf)



The optimised valve pallet
(Flyer pdf)

Table 2: Material selection for housing

Design	B	C	D*	
Housing	Steel	Stainless Steel	Aluminium	The housings is also available with an ECTFE-Coating
Heating jacket (SV/E-1-0-H-...)	Steel	Stainless Steel	–	
Valve seat	Stainless Steel	Stainless Steel	Stainless Steel	Special materials upon request
Sealing	PTFE	PTFE	PTFE	

*Design D upon request

Table 3: Material selection for vacuum valve pallet

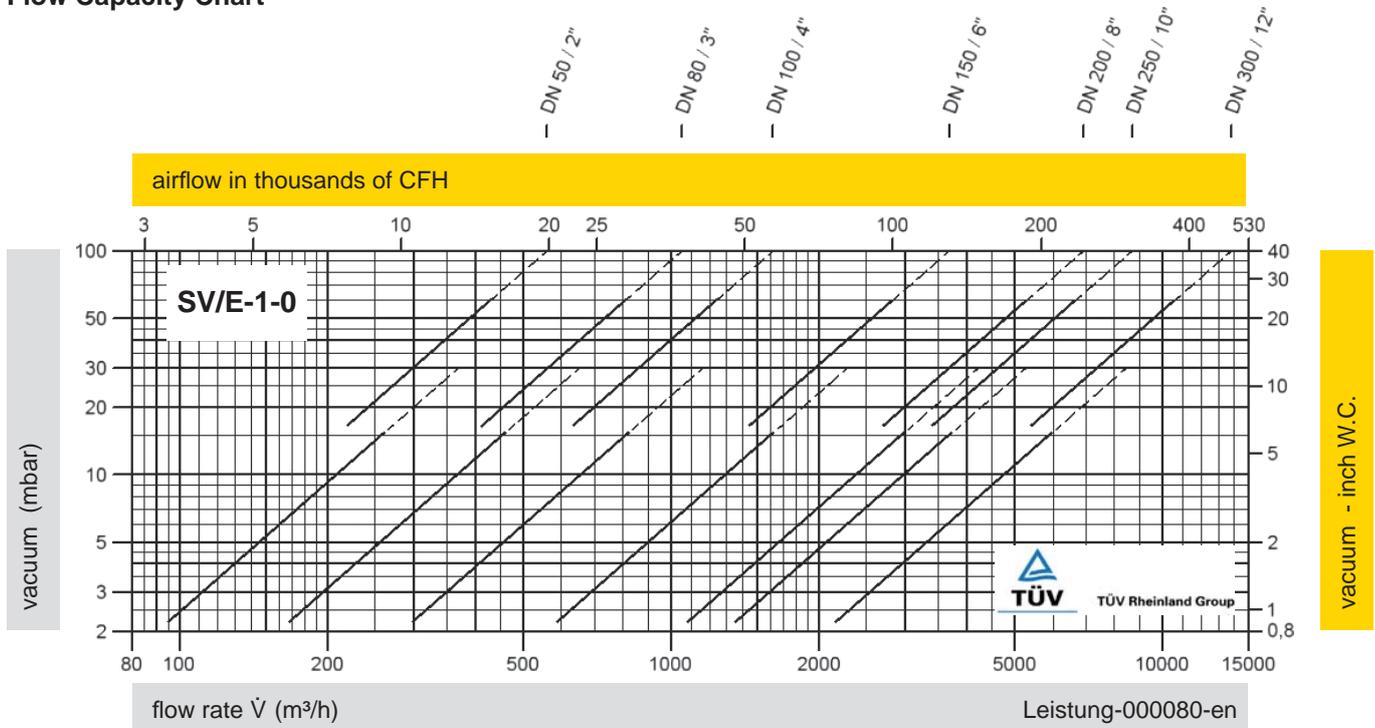
Design	A	B	C	D	E	F
vacuum range (mbar)	-2.0 up to -3.5	<-3.5 up to -14	<-14 up to -35	<-35 up to -60	<-14 up to -35	<-35 up to -60
(inch W.C.)	-0.8 up to -1.4	<-1.4 up to 5.6	<-5.6 up to -14	<-14 up to -24	<-5.6 up to -14	<-14 up to -24
Valve pallet	Aluminium	Stainless Steel				
Sealing	FEP	FEP	Metal to Metal	Metal to Metal	PTFE	PTFE

Special materials (Alu-coated, Titanium, Hastelloy) and higher vacuum settings are available upon request

Table 4: Flange connection type

EN 1092-1; Form B1	other types upon request
ASME B16.5; 150 lbs RF5F	

Flow Capacity Chart



The flow capacity chart has been determined with a calibrated and TÜV certified flow capacity test rig.

Volume flow \dot{V} in (m³/h) and CFH refer to the standard reference conditions of air ISO 6358 (20°C, 1bar).

Conversion to other densities and temperatures refer to Vol. 1: "Technical Fundamentals".

