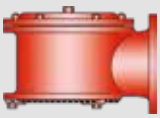
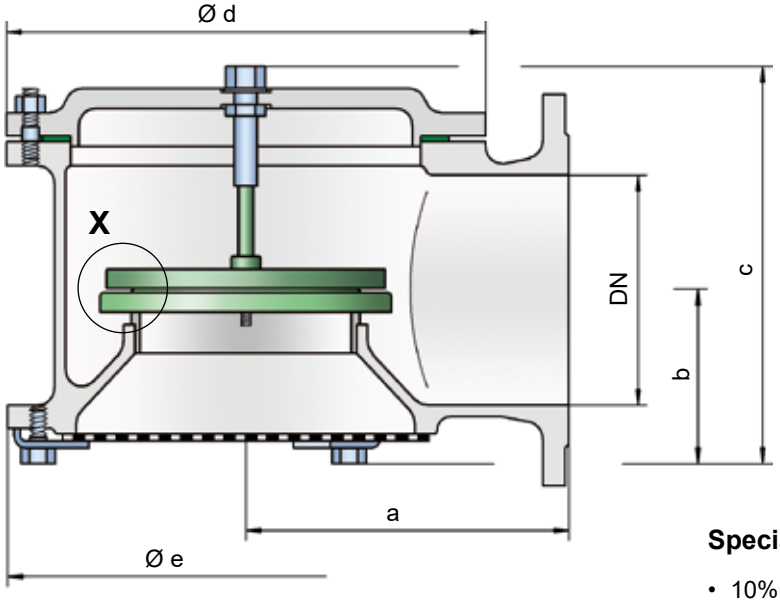
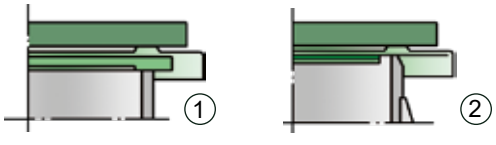


Vacuum Relief Valve

PROTEGO® SV/E-1-0



Detail **X**



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 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 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 substances. After the vacuum is released, the valve re-seats and provides a tight seal again.

Special 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
- 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

Design Types and Specifications

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

There are two different designs:

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

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

Additional special devices available upon request.

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 optimized valve pallet (Flyer pdf)

Table 2: Material selection for housing

Design	B	C	D*
Housing Heating jacket (SV/E-1-0-H-...)	Steel Steel	Stainless Steel Stainless Steel	Aluminum –
Valve seat	Stainless Steel	Stainless Steel	Stainless Steel
Sealing	PTFE	PTFE	PTFE

The housings are also available with an ECTFE-coating.

Special materials upon request.

*Design D upon request.

Table 3: Material selection for vacuum valve pallet

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

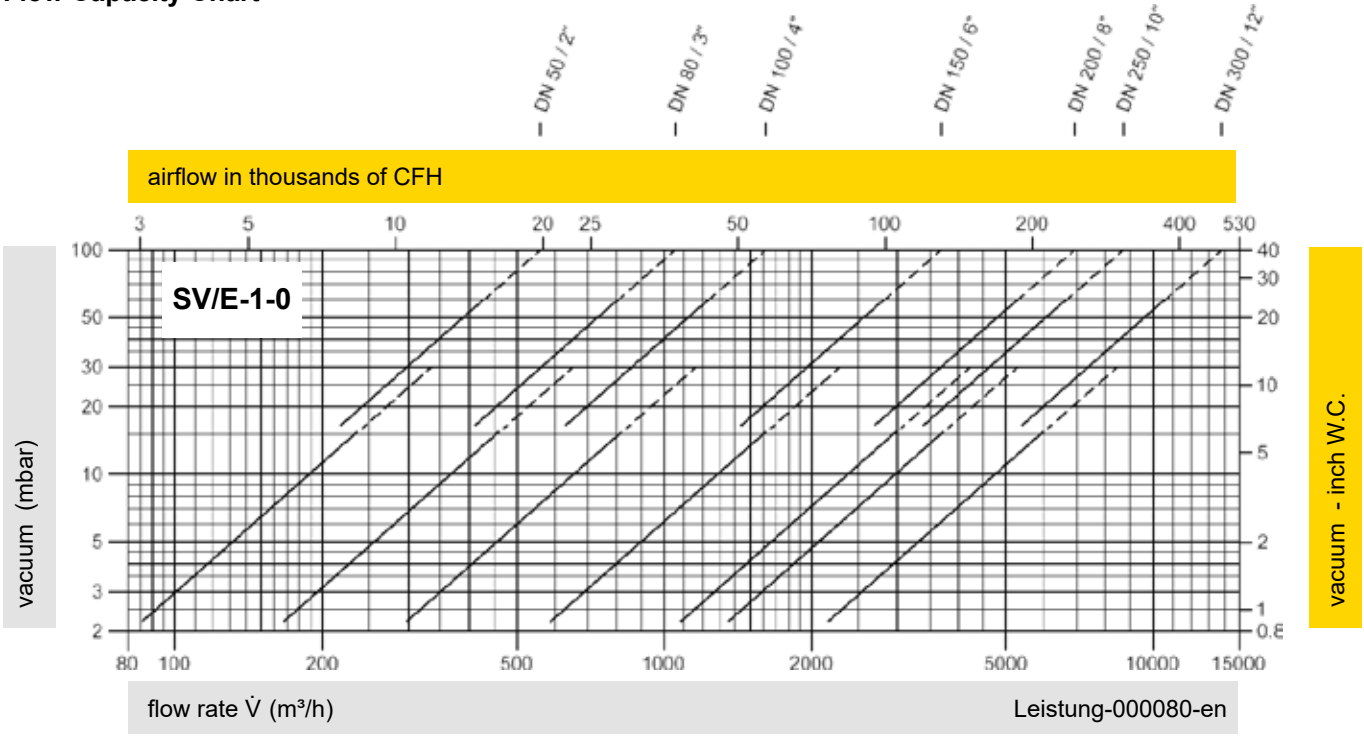
Special materials (Alu-coated, Titanium, Hastelloy) and higher vacuum settings are available upon request.

Table 4: Flange connection type

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

Other types upon request.

Flow Capacity Chart



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

PROTEGO
for safety and environment