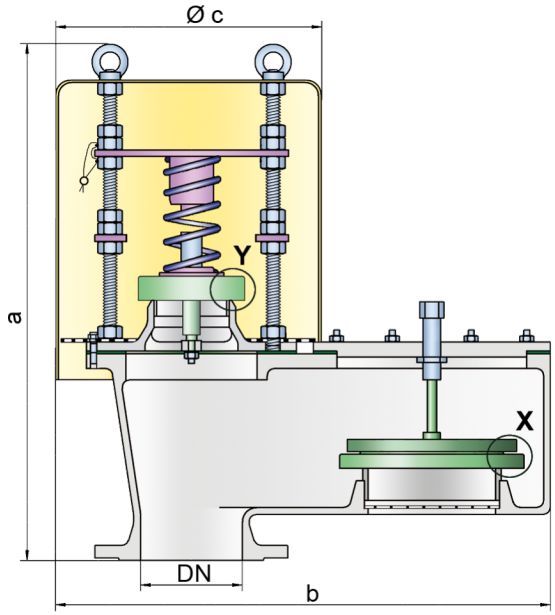
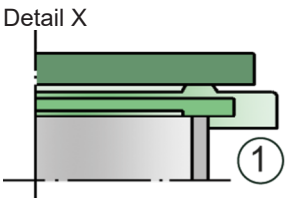
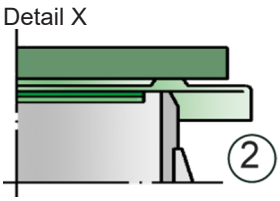
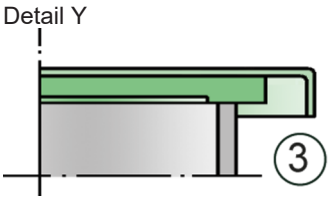
Pressure and Vacuum Relief Valve

PROTEGO® VD/SV-PF









Settings

Pressure:	+60 mbar	up to	+500 mbar
	+0.8 inch W.C.	up to	+24 inch W.C.
Vacuum:	-14 mbar	up to	-60 mbar
	-5.6 inch W.C.	up to	-24 inch W.C.
Vacuum: by set pressure up to +150 mbar / +60 inch W.C.	-2.0 mbar	up to	-14 mbar
	-0.8 inch W.C.	up to	-5.6 inch W.C.

Higher or lower settings 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	490 / 19.29	660 / 25.98	755 / 29.72	1020 / 40.16	1210 / 47.64	1210 / 47.64	1275 / 50.20
a				1110 / 43.70 (adjusted set pressure >+400 mbar)	1300 / 51.18 (adjusted set pressure >+300 mbar)	1300 / 51.18 (adjusted set pressure >+200 mbar)	
b	355 / 13.98	450 / 17.72	550 / 21.65	790 / 31.10	900 / 35.43	1030 / 40.55	1030 / 40.55
c	200 / 7.87	295 / 11.61	295 / 11.61	475 / 18.70	560 / 22.05	660 / 25.98	660 / 25.98

Dimensions of pressure and vacuum relief valves with heating jacket upon request

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Pressure and Vacuum Relief Valve

PROTEGO® VD/SV-PF

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
- very high flow capacity
- spring-loaded on overpressure side for higher set pressures
- valve pallet is guided inside the housing to protect against harsh weather conditions
- can be used in explosion hazardous areas
- automatic condensate drain
- maintenance-friendly design
- best technology for API tanks

Function and Description

The VD/SV-PF type PROTEGO® valve is a highly developed pressure and vacuum relief valve with excellent flow performance. Typically, the valve is installed in the in-breathing and out-breathing lines of tanks, vessels, and process equipment to protect against unallowable overpressure and underpressure. The valve prevents emission losses almost up to the set pressure and prevents air intake almost up to the set vacuum.

The device will start to open as soon as the set pressure is reached and only requires 10% overpressure to 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 characteristic 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 or vacuum (MAWP or MAWV) of the tank and still safely vent the required mass flow. The opening characteristic is the same for pressure and vacuum relief.

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), (3) or with an air cushion seal (2) in conjunction with high quality FEP diaphragm. After the over-pressure is released or the vacuum is balanced, the valve re-seats and provides a tight seal.

The optimized fluid dynamic design of the valve body and valve pallet is a result of many years of research, resulting in a stable operation of the valve pallet, optimized performance, and reduced product losses.

Design and Specifications

The pressure valve pallet is spring loaded, the vacuum valve pallet weight loaded. Lower set pressures for the pressure side are achieved through weight loaded type VD/SV.

Two different designs are available:

Pressure/vacuum relief valve in basic design	**VD/SV-PF-**
Pressure/vacuum relief valve with heating jacket	**VD/SV-PF-H**

Additional special devices available upon request

With these valves, it is generally important to consider the back pressure.

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Table 2: Material selection for housing			
Design	A	B	C
Housing	Aluminium	Steel	Stainless Steel
Heating jacket (VD/SV-PF-H-...)	–	Steel	Stainless Steel
Valve seat	Stainless Steel	Stainless Steel	Stainless Steel
Sealing	PTFE	PTFE	PTFE
Weather hood	Stainless Steel	Stainless Steel	Stainless Steel

Option: Housing with ECTFE-lining
Special materials upon request

Table 3: Material selection for pressure valve pallet	
Design	A
Pressure range [mbar] [inch W.C.]	>+60 up to +500 >+24 up to +200
Valve pallet	Stainless Steel
Sealing	Metal to Metal
Spring	Stainless Steel

Special material as well as higher set pressure upon request

Table 4: Material selection for vacuum valve pallet				
Design	A	B	C	D
Pressure 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
Valve pallet	Aluminium	Stainless Steel	Stainless Steel	Stainless Steel
Sealing	FEP	FEP	Metal to Metal	Metal to Metal

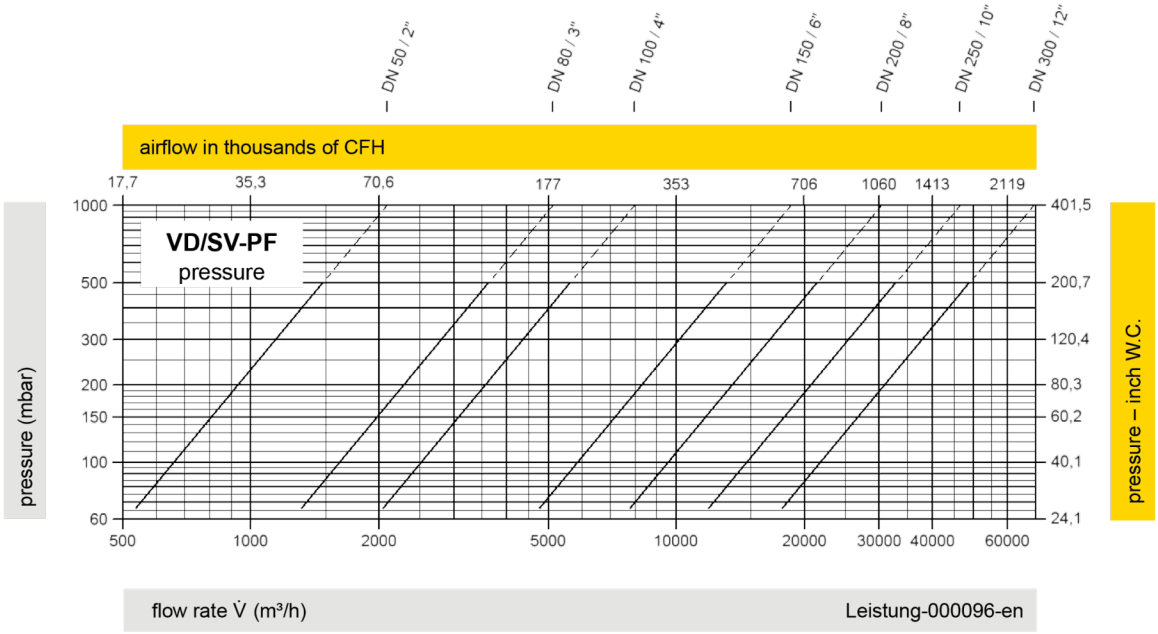
Special material as well as higher vacuum upon request

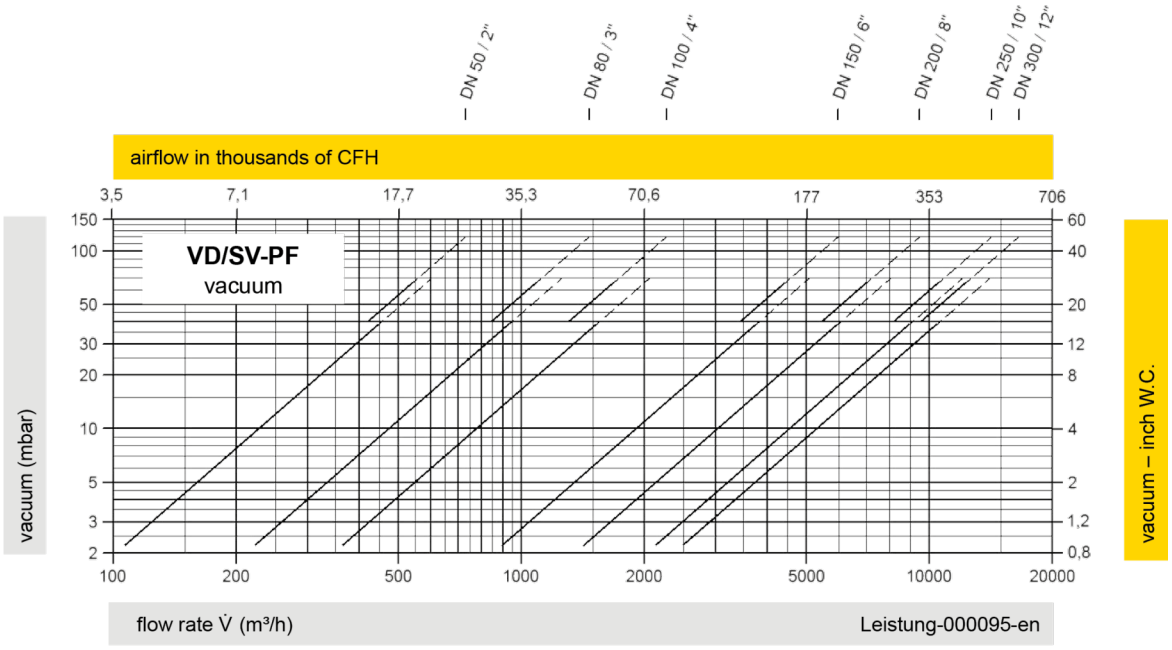
Table 5: Flange connection type
EN 1092-1; Form B1
ASME B16.5 CL 150 R.F.

other types upon request

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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”.

PROTEGO
for safety and environment

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