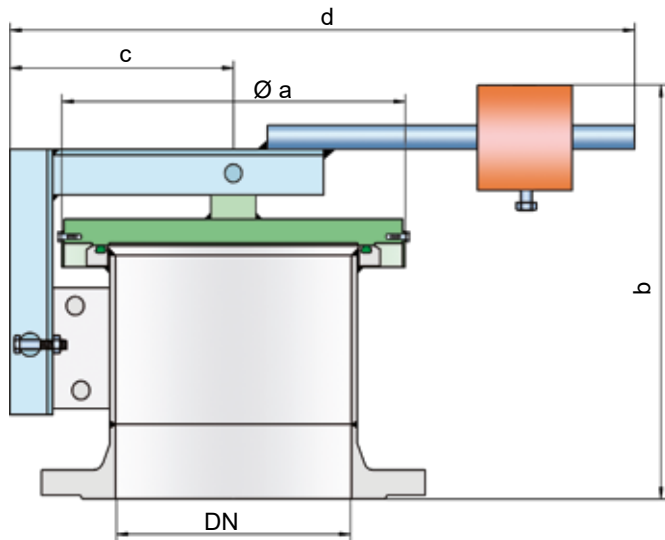


Pressure Relief Valve

PROTEGO® ER/VH



Pressure settings:

DN 200/8"	:>+35 mbar	up to +60 mbar
	>+14 inch W.C.	up to +24 inch W.C.
DN 250/10" to DN 350/14"	:>+30 mbar	up to +60 mbar
	>+12 inch W.C.	up to +24 inch W.C.
DN 400/16" to DN 700/28"	:>+25 mbar	up to +60 mbar
	>+10 inch W.C.	up to +24 inch W.C.

Higher and lower pressure settings upon request.

Function and Description

The ER/VH type PROTEGO® valve is a highly developed emergency pressure relief valve with high flow capacity. It is primarily used as a safety device for emergency pressure relief for storage tanks, containers, silos, and process engineering equipment. It offers reliable protection against overpressure and prevents excessive product vapor loss close to the set pressure. It is designed to release particularly large amounts to prevent the vessel from rupturing in an emergency case. Higher set pressures are achieved by a lever with a lockable weight load. The position of the weight is set at the factory. Starting at DN 500, the devices can also be used as manhole covers.

When the set pressure is reached, the valve starts to open and is fully open within 10% overpressure. This unique 10% "full lift type technology" enables a pressure setting that is only 10% below the maximum allowable working pressure or design pressure of the tank.

Even in the low pressure range, the vent has the opening characteristic comparable to a typical high pressure safety relief valve. The full lift type pallets are a result of many years of development. The valve pallet is mounted on one side.

Due to the highly developed manufacturing technology, the tank pressure is maintained up to the set pressure with a tightness that is far superior to the conventional standard. This feature is achieved by valve seats made of stainless steel with an inserted O-ring seal, a precisely lapped valve pallet, and a sturdy housing design. After the excess pressure 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
- excellent 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
- can be used in explosion hazardous areas
- sturdy housing design
- secured housing cover with lever and lockable weight load
- best technology for API tanks

Design Types and Specifications

The valve pallet is weight-loaded. Lower pressures are generally achieved without a lever design (see ER-V-LP, ER/V), and higher pressures are achieved with spring-loading (see ER/V-F).

Pressure valve in basic design

ER/VH

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	200 / 8"	250 / 10"	300 / 12"	350 / 14"	400 / 16"	450 / 18"	500 / 20"	600 / 24"	700 / 28"
a	305 / 12.01	375 / 14.76	425 / 16.73	445 / 17.52	495 / 19.49	545 / 21.46	615 / 24.21	715 / 28.15	795 / 31.30
b EN	350 / 13.78	375 / 14.76	395 / 15.56	380 / 14.96	400 / 15.375	410 / 16.314	430 / 16.93	400 / 15.75	425 / 16.73
b ASME	390 / 15.36	409 / 16.10	442 / 17.40	439 / 17.28	455 / 17.91	478 / 18.82	500 / 19.69	471 / 18.54	420 / 16.54
c	200 / 7.87	240 / 9.45	265 / 10.43	285 / 11.22	310 / 12.20	330 / 12.99	360 / 14.17	410 / 16.14	450 / 17.72
d	590 / 23.23	735 / 28.94	780 / 30.71	845 / 33.27	890 / 35.04	1070 / 42.13	1090 / 42.91	1140 / 44.88	1380 / 54.33

Table 2: Material selection

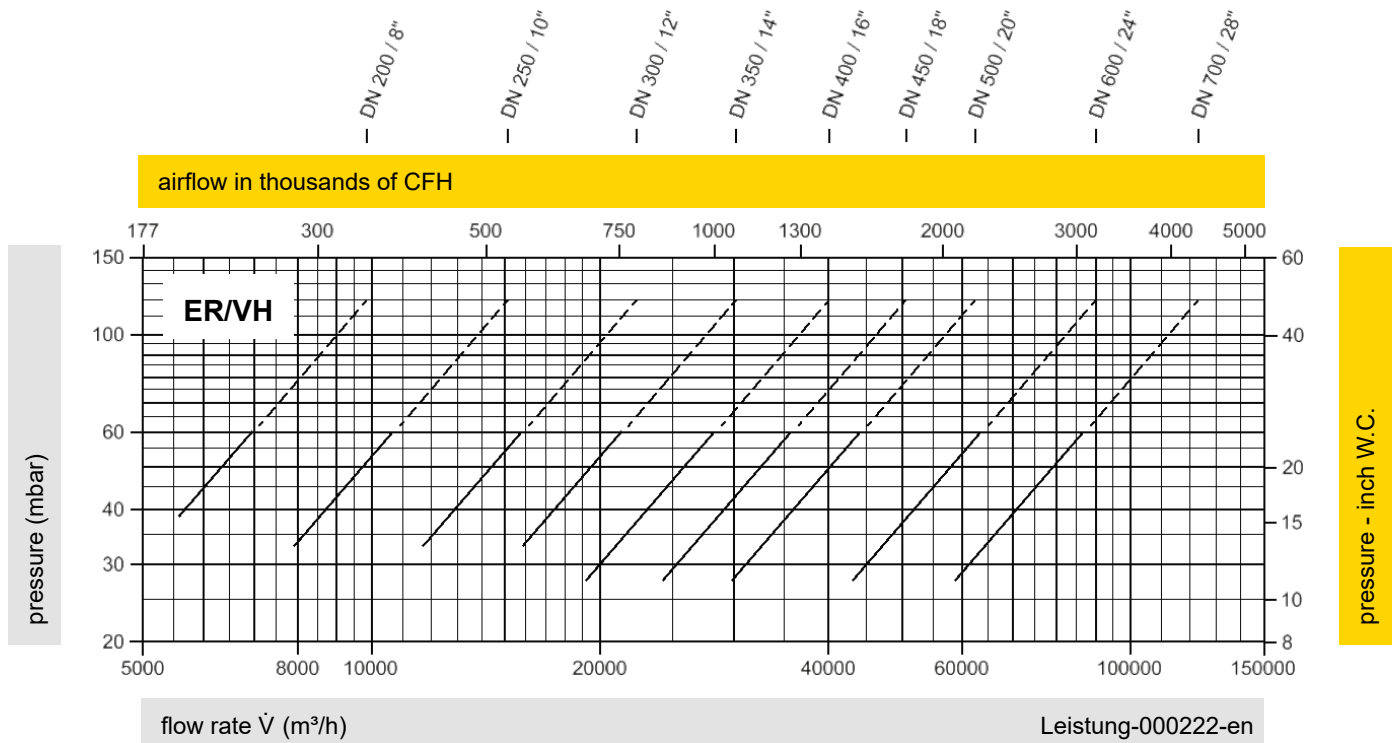
Design	A	B
Housing	Steel	Stainless Steel
Valve seat	Stainless Steel	Stainless Steel
Valve pallet	Stainless Steel or Steel-Stainless Steel	Stainless Steel
Sealing	FPM	FPM
Weight	Steel	Stainless Steel

Table 3: Flange connection type

EN 1092-1; Form B1	Other types upon request.
ASME B16.5 CL 150 R.F.	

Special materials upon request.

Flow Capacity Chart



The flow capacity charts have 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 in ISO 6358 (20°C, 1bar). For conversion to other densities and temperatures, refer to Sec. 1: "Technical Fundamentals."



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