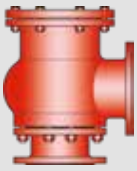
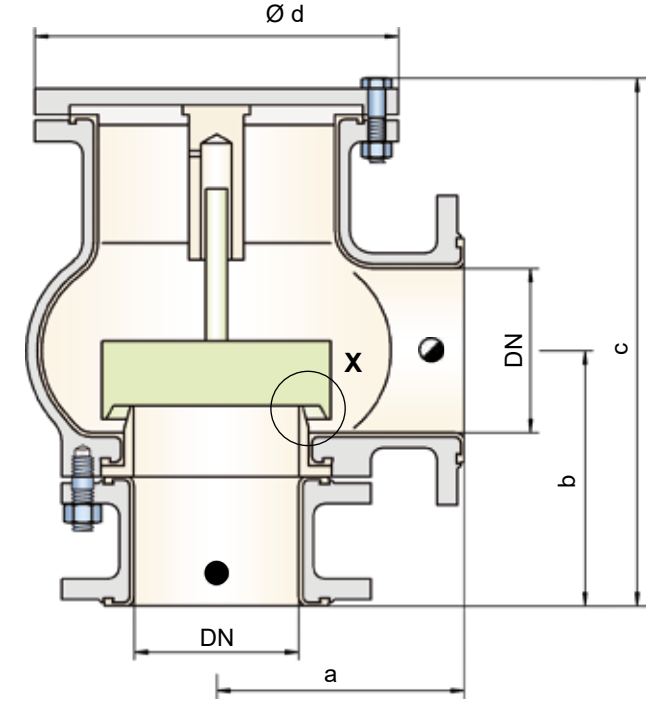


Pressure or Vacuum Relief Valve, In-Line

with ETFE Lining

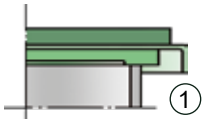
PROTEGO® DZ/EA



● = Tank connection for pressure relief function

◒ = Tank connection for vacuum relief function

Detail **X**



Flow direction marked at the housing by →

Pressure or vacuum settings:

±5.0 mbar up to ±50 mbar
±2.0 inch W.C. up to ±20 inch W.C.

For higher set pressure or vacuum, refer to type DZ/EA-F.

Function and Description

The lined PROTEGO® in-line valve DZ/EA is a state-of-the-art pressure or vacuum relief valve in a right angle design. The lining makes this model a perfect solution for corrosive, polymerizing, or sticky substances. All internal parts are manufactured from PTFE or other highly corrosion resistant materials. Typically, the valve is installed in the in-breathing or out-breathing lines of tanks, vessels, and process equipment to protect against unallowable overpressure or underpressure. The valve prevents emission losses almost up to the set pressure and prevents unacceptable product entry.

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 the set pressure with a tightness that is far above to the conventional standard. This feature is ensured by specially finished PTFE valve seats, or by the use of Hastelloy valve seats, and with individually lapped valve pallets (1). After the overpressure is released or the vacuum is balances, 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 stable operation of the valve pallet, optimized performance, and reduced product losses.

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
- based on 10% technology, set pressure is close to opening pressure for optimum pressure maintenance in the system as compared to conventional 40% or 100% technology
- inner lining and material selection makes this type suitable for highly corrosive, polymerizing, or sticky substances
- high flow capacity reduces costs through the use of smaller valves
- can be used as pressure or vacuum relief valve
- compact, space-saving right-angle design
- sturdy housing design (PN 10)
- maintenance-friendly design

Design and Specification

The valve pallet is weight-loaded. **Higher set pressures for pressure and vacuum are achieved by using spring-loaded type DZ/EA-F.**

In-line pressure or vacuum relief valve, standard design	**DZ/EA**

Additional special devices available upon request.

Within piping systems, the influence of backpressure has to be considered when deciding the set pressure and opening characteristics. For special design solutions (e.g., partial load operation), the valve can be supplied with standard valve pallets (with proportional opening function).

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Vents - 10% Technology (Flyer pdf)

Leak Rate/10% Technology (Flyer pdf)

Coated Devices (Flyer pdf)

The optimized valve pallet (Flyer pdf)

Table 1: Dimensions Dimensions in mm / inches

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

DN	50 / 2"	80 / 3"	100 / 4"	150 / 6"
a	168 / 6.61	180 / 7.09	200 / 7.87	228 / 8.98
b	167 / 6.57	177 / 6.97	200 / 7.87	232 / 9.13
c	330 / 12.99	390 / 15.35	445 / 17.52	485 / 19.09
d	200 / 7.87	240 / 9.45	280 / 11.02	335 / 13.19

Table 2: Material selection for housing

Design	C	D
Housing	Steel	Steel
Lining	ETFE	ETFE
Cover	Steel	Steel
Valve seat	PTFE	Hastelloy
Valve pallet	A	A, B

Semi-conductive material and special material (e.g., PFA) upon request.

Special materials upon request.

Table 3: Material selection for valve pallet

Design	A	B
Pressure range (mbar) (inch W.C.)	±5 up to ±50 ±2 up to ±20	±5 up to ±50 ±2 up to ±20
Valve pallet	PTFE	Hastelloy
Sealing	PTFE	Metal to Metal

Special materials upon request.

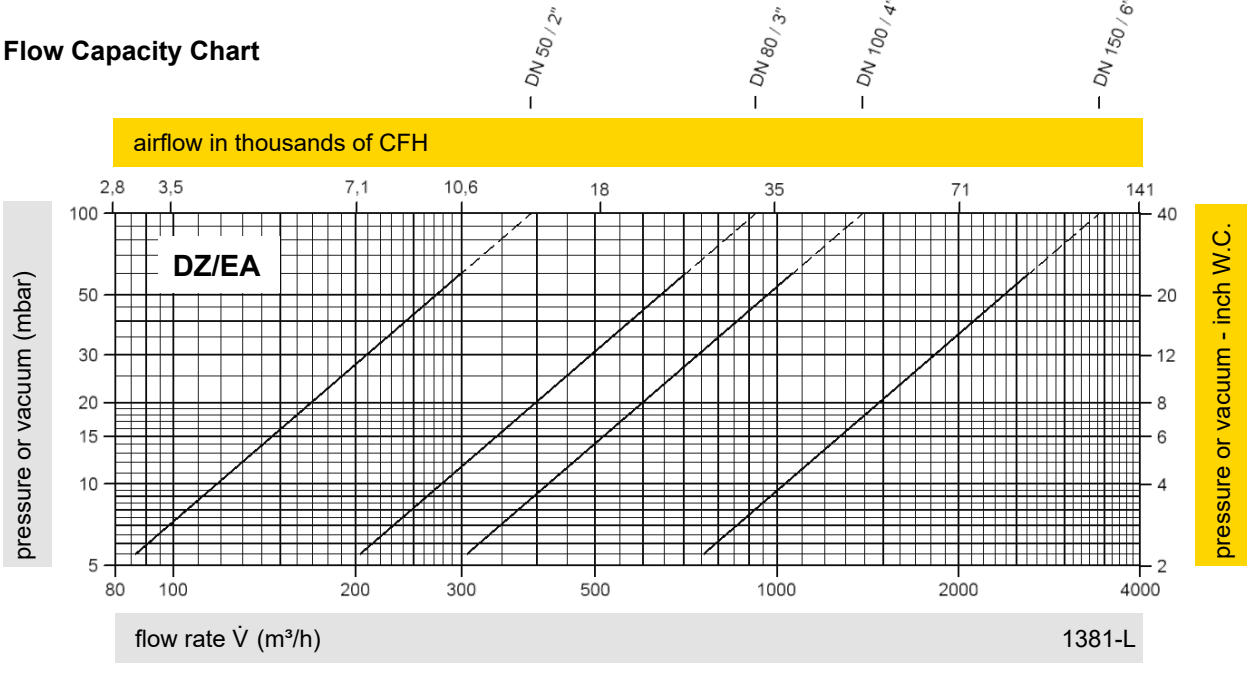
For higher set pressure or vacuum, refer to type DZ/EA-F.

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