Protective solutions

Applications

The PSV-150 blast valve is used as air intake and exhaust valve in Civil Defence and military shelters. The PSV-series blast valves are specially designed for applications requiring high blast resistance and large ventilation capacity with minimum wall space.

Specification

Manufacturer of PSV-150 blast valve is Temet, Helsinki Finland.

The PSV-150 blast valve comprises a spring balanced pressure disk moving on a spindle and closing the air passage against the valve seats in response to both positive and negative phase of the blast. The valve mechanism is mounted in a tubular wall sleeve made of structural steel to be cast in the concrete wall. The valve is completely corrosion resistant. The pressure disk is made of hardened aluminum alloy and coated with epoxy powder paint, and all other components of spindle mechanism are made of stainless steel. The valve body is of steel cast and the wall sleeve is made of structural steel. These components are available as hot dip galvanized or coated with epoxy powder paint.

Design Criteria

The PSV-150 blast valve is made in accordance with specific provisions issued by the Finnish Ministry of Interior. The PSV-150 blast valve is type tested and approved for use by the Technical Research Centre of Finland / VTT Building and Transport, an Independent Testing Authority mandated to perform type inspection for shelter equipment and systems by the Finnish Ministry of Interior. Type test reports as well as additional test data are available upon request.

Test and performance data

The valve is designed and tested to withstand multiple long duration (peak duration > 60 ms) blast loads having peak reflected overpressure of 20 bar and short duration (positive phase duration < 5.0 ms) blast load having peak reflected overpressure of 60 bar while retaining its full functional ability.

The valve is shock tested in horizontal and vertical directions with a mechanical shock of installation base having a rapid change in velocity of 2.0 m/s and an acceleration in excess of 20 g in both directions.

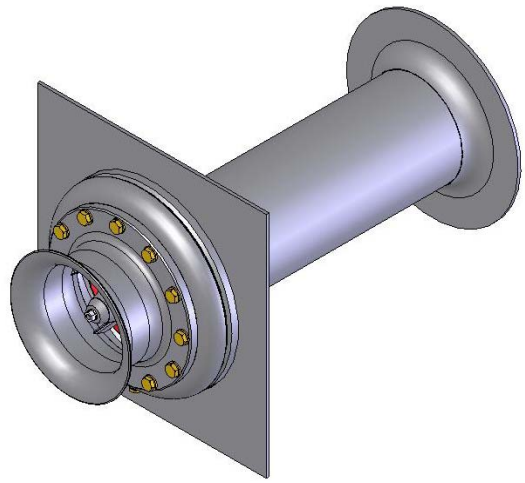
The valve is designed to function within operating temperature range of -20 … +80 ºC.

Type test report

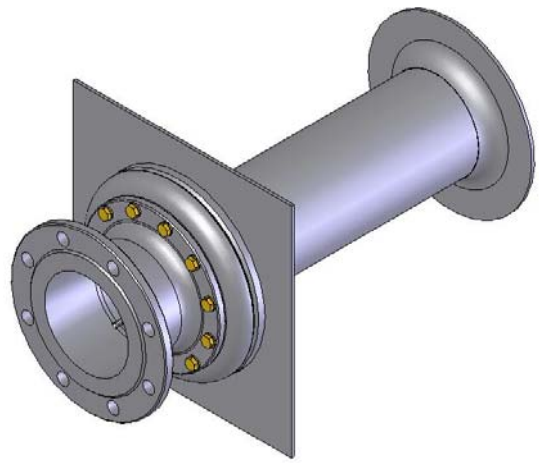
VTT type test report and additional test data is available upon request.

Other documents related to PSV-150 Blast Valve:

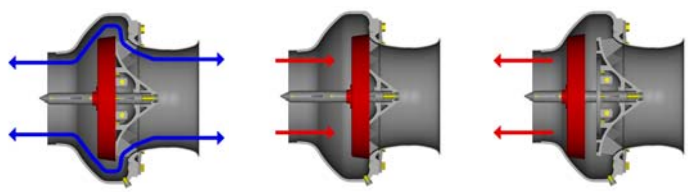
Installation Instructions
Operation & Maintenance Instructions



PSV-150 Blast Valve Type I for wall installation



PSV-150 Blast Valve Type II for duct installation



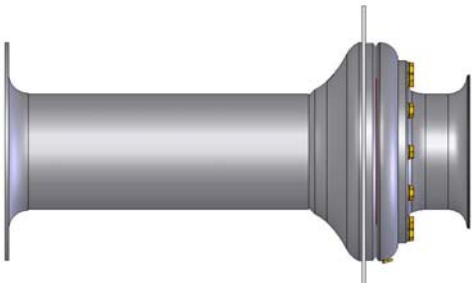
Normal ventilation position

Blast pressure from the outside
Valve closes

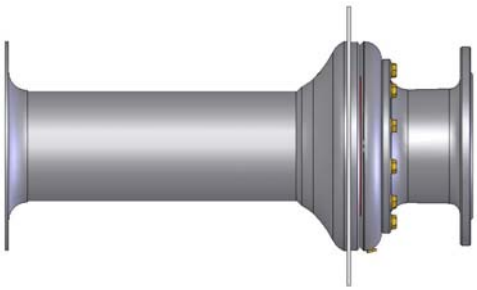
Negative pressure from the outside
Valve closes

PVS-150 Blast Valve Operation Principle

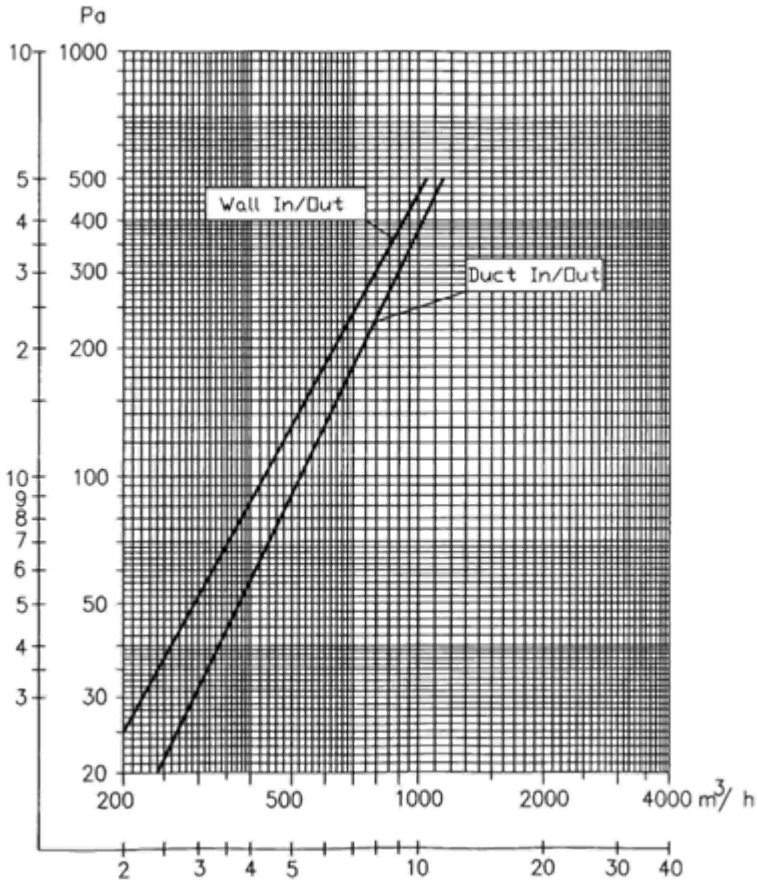
TEMET BLAST VALVE PSV-150



PSV-150-I Blast Valve (wall installation)

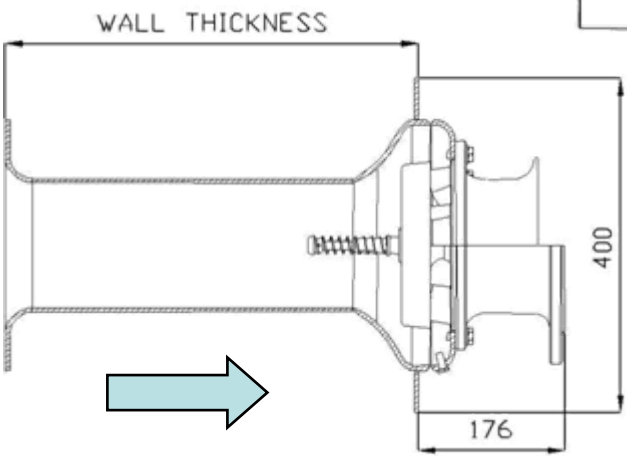


PSV-150-II Blast Valve (duct installation)



Air flow characteristics measured at 20 °C corresponding to air density of 1.2 kg/m³. Maximum pass through pressure & impulse, 1.50 bar and 1.50 bar ms.

Example for valve selection:
The exhaust airflow through a blast protected airlock is 3000 m³/h at pressure drop of 300 Pa. The required number of valves is 4 pcs (800 m³/h/valve).



Direction of Blast

Blast Valve PSV-150 dimensions

Valve	Type	Min wall thickness (mm)	Total weight (kg)	Air Flow at 100 Pa (m^3/h)	Air Flow at 200 Pa (m^3/h)	Air Flow at 300 Pa (m^3/h)
PSV-150	**I (wall installation)**	500	30	425	625	800
PSV-150	**II (duct installation)**	500	35	525	750	900

Design - Production – Installation – Maintenance - Consultation

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