

### Protective solutions

#### Applications

The PSV-250 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-250 blast valve is Temet, Helsinki Finland.

The PSV-250 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-250 blast valve is made in accordance with specific provisions issued by the Finnish Ministry of Interior. The PSV-250 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.

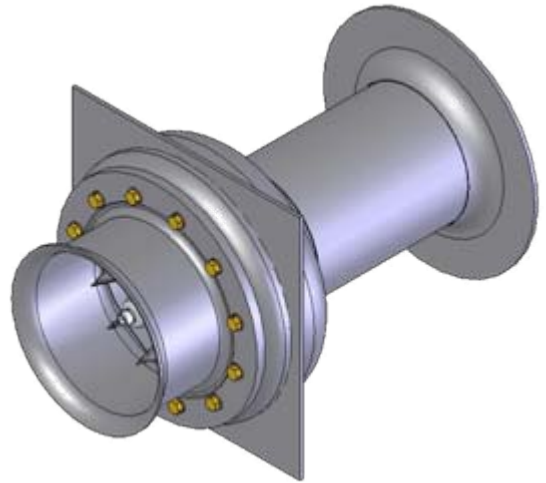
The valve is designed to function within operating temperature range of -20 ... +80 °C.

#### Type test report

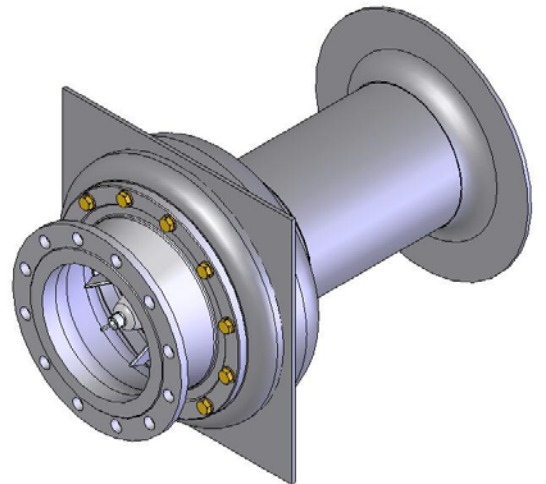
VTT type test report and additional test data is available upon request.

Other documents related to PSV-250 Blast Valve:

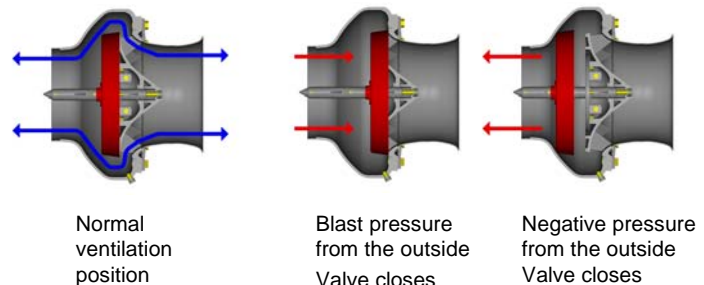
- Installation Instructions
- Operation & Maintenance Instructions



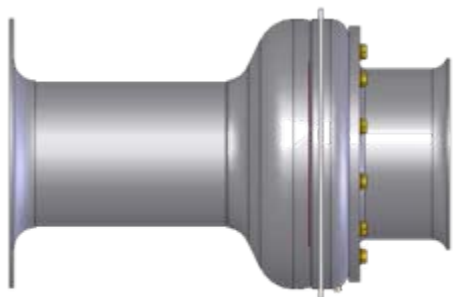
PSV-250 Blast Valve Type I for wall installation



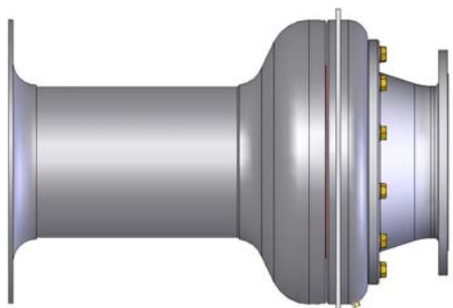
PSV-250 Blast Valve Type II for duct installation



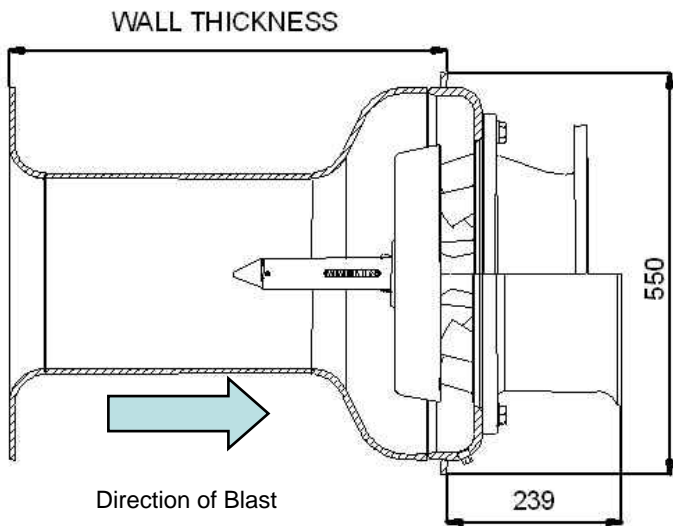
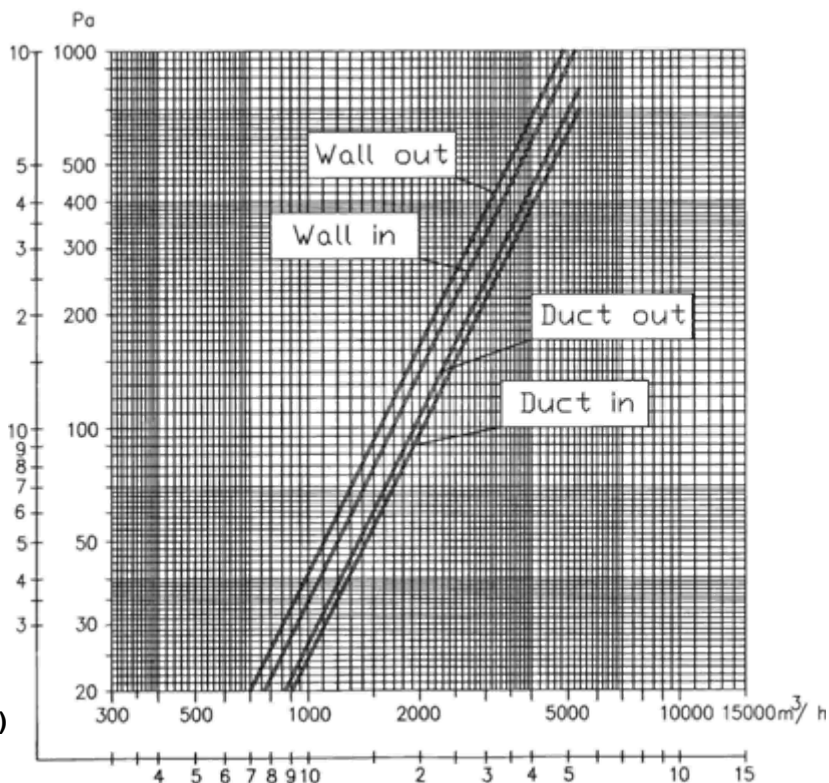
PVS-250 Blast Valve Operation Principle



PSV-250-I Blast Valve (wall installation)



PSV-250-II Blast Valve (duct installation)



Blast Valve PSV-250 dimensions

Air flow characteristics measured at 20 °C corresponding to air density of 1.2 kg/m<sup>3</sup>. Maximum pass through pressure & impulse, 1.50 bar and 1.50 bar ms.

Example for valve selection:

The intake airflow into a cooling tunnel is 100000 m<sup>3</sup>/h at pressure drop of 300 Pa. The required number of valves is 35 pcs (2900 m<sup>3</sup>/h/valve).

Valve	Type	Min wall thickness (mm)	Total weight (kg)	Air Flow at 100 Pa (m <sup>3</sup> /h) inward / outward	Air Flow at 200 Pa (m <sup>3</sup> /h) inward / outward	Air Flow at 300 Pa (m <sup>3</sup> /h) inward / outward
PSV-250	I (wall installation)	500	150	1700/1550	2375/2200	2900/2650
PSV-250	II (duct installation)	500	180	2050/1900	2875/2700	3525/3300

Design - Production – Installation – Maintenance - Consultation