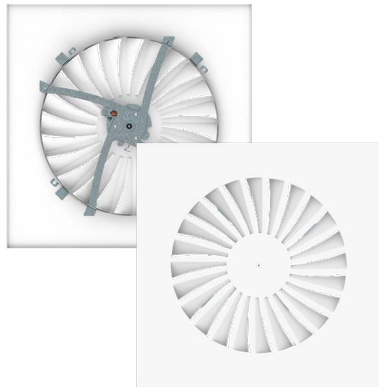


VVT

Swirl Ceiling Diffuser with Thermostatic Regulation and Fixed Blades



Description

The VVT swirl ceiling diffuser with thermostatic regulation and fixed blades is a well-appointed distribution element for air supply. The front panel is equipped with radially aligned blades of different shapes, which ensure an even distribution of swirl supply air into the working vents. The thermal regulation element on the internal side of the diffuser supply air discharge pattern based on its temperature. The cold air flows into the area horizontally, the heated air flows vertically downwards. The range of temperatures between these extremal positions is 20 °C to 30 °C. The regulation is automatic, without a need for additional energy supply. It is possible to use the diffuser in areas with clearance height up to 4 m. The VVT swirl diffuser connection to an air distribution system is possible via a plenum box with a horizontal or vertical connection using circular flexible or rigid piping. VVT is used for air supply.

Ordering Codes

Type	VVT-	A	B
Dimensions ¹		300	400
		500	600
		625	600/300
			600/400
			600/500
			625/300
			625/400
			625/500
Surface (and material) finish ²		signal white RAL9003	SW
		other RAL colour	RALxxxx

Important!

The thermal change between extremal positions for vertical and horizontal air flow pattern requires app. 5 to 10 minutes.

Information about the accessories available for VVT diffusers can be found from page 3.

- PB-VVK - Plenum box

Ordering codes – example:

VVT-A-400-SW

Product with the type A front panel. The front panel is size 400 and is powder-painted in signal white RAL9003.

1. The sizes 600/xxx and 625/xxx have the outer dimension to fit into the T-bar suspended ceilings of the raster size 600 or 625. The vent size of these diffusers corresponds to the sizes 300, 400 or 500.
2. If no color is defined, the product is delivered in signal white RAL9003 gloss 30.



Fig. 1: Warm air supply (> 22°C)



Fig. 2: Cold air supply (< 18°C)

Design

The diffuser is manufactured with a square front panel made of galvanized steel. The surface is powder-painted with a signal white RAL9003 by default, other RAL types can be applied upon request. In the diffuser's center there is an opening for mounting the diffuser front panel using a screw. Every VVT front panel includes a screw with a decorative white cap for its mounting onto a plenum box as well as a self-adhering seal, which needs to be placed onto the diffuser front panel during the installation.

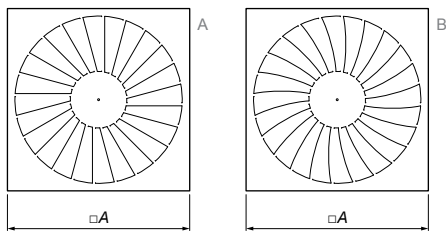
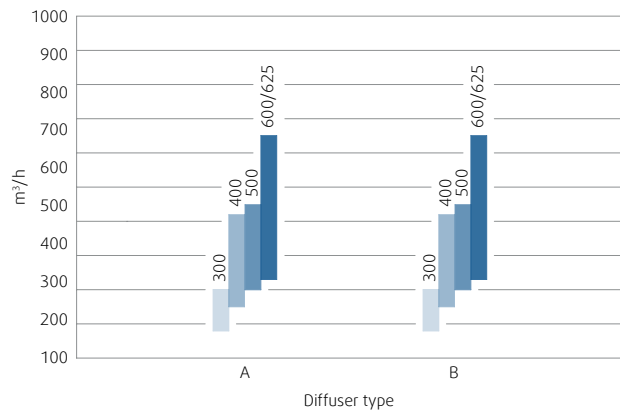


Fig. 3: Diffuser types and shapes

Quick selection



Tab. 2: Table for quick selection

Dimensions

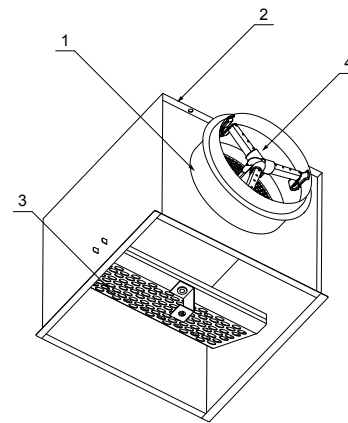
Size	□A	m
	(mm)	(kg)
300	296	2,10
400	396	2,60
500	496	3,25
600	596	4,05
600/300	596	4,05
600/400	596	4,05
600/500	596	4,05
625	621	4,27
625/300	621	4,27
625/400	621	4,27
625/500	621	4,27

Tab. 1: Diffuser dimensions and weight

Accessories

PB-VVK

Plenum Box



The PB-VVK product is supplied with horizontal or vertical connection option and with internal or external insulation. The plenum box is by default manufactured from a galvanized sheet. It is standardly delivered with a mesh screen.

There are 2 types of connection:

- D1: a simple spigot without a seal, with a damper
- D2: a pressed spigot with gasket including the Zeus damper (damper information available on page 4)

Product parts description:

1. Spigot
2. Casing
3. Mesh screen with a rivet nut for connection
4. Damper

Fig. 4: The PB-VVK product

Ordering Codes

	PB-VVK-S-					
Dimensions	300 - 625					
Mesh screen	S					
Horizontal connection (from the side)	H					
Vertical connection (from the top)	V					
Untight spigot with a damper ¹	D1					
Pressed tight spigot with the Zeus damper ¹	D2					
With internal insulation, 14 mm ²	I2					
With external insulation ²	J					

Ordering codes - example:

PB-VVK-S - 300 - S - H - I2

Plenum box for the VVT diffuser, size 300 mm, mesh screen included, with a horizontal supply and 14 mm internal insulation.

1. If the spigot type is not entered in the ordering code, type "D1" will be supplied by default. Plenum boxes with a vertical spigot D2 are delivered without the mesh screen.
2. In case the insulation types are not entered in the ordering code, the product PB-VVK will be supplied without insulation.

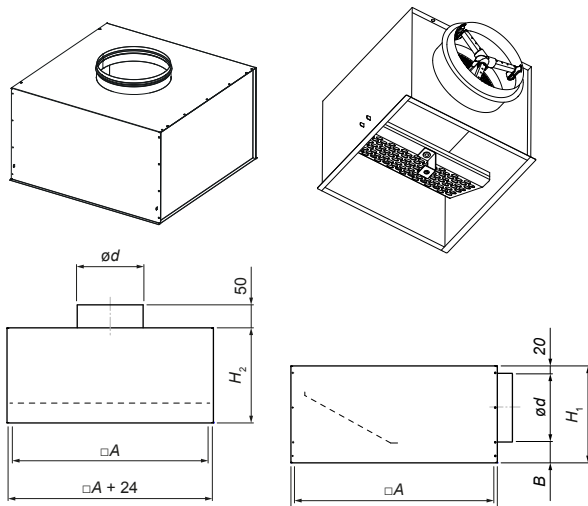


Fig. 5: Main dimensions of the PB-VVK product

Size	□A	H ₁ / horizontal	H ₂ / vertical	ød
300-160	266 × 266	240	200	158
400-160	366 × 366	240	200	158
400-200	366 × 366	280	200	198
500-200	466 × 466	280	200	198
600-250	566 × 566	330	300	248
625-250	566 × 566	330	300	248

Tab. 3: Main dimensions of the PB-VVK product

The Zeus Damper

The control Zeus damper contains plastic tubes for measuring differential pressure using a portable measuring device. It can be adjusted manually using a cable gearing.

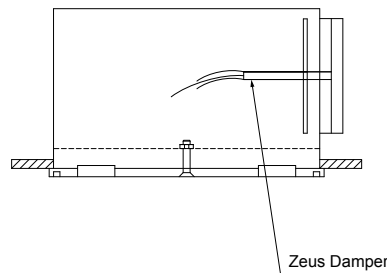
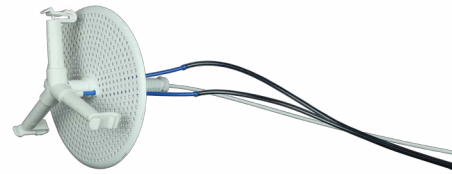
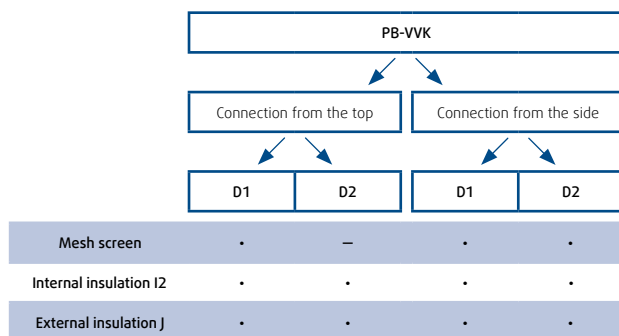


Fig. 6: Air volume control – the Zeus damper

Plenum box selection diagram



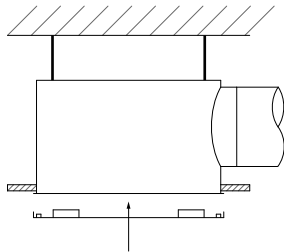
Legend

- D1 - Untight spigot with a sheet-metal control damper
- D2 - Tight spigot with the Zeus damper
- XXXX - The determined selection option
- - Option to add a position to the selection of others
- - It is not possible to add the position to the selection

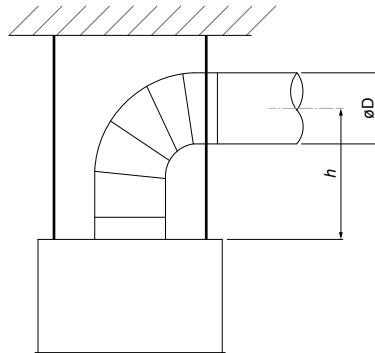
Mounting

The VVT swirl diffuser is most commonly installed onto a ventilation duct as illustrated on Fig. 7. The mounting consists of installing the plenum box to the ceiling using draw-bars and mounting the diffuser front panel onto the plenum box by a centric screw which is included in the delivery.

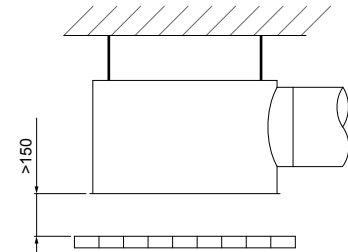
Fig. 7 depicts various methods of installing the VVT onto the ceiling. When mounted into a suspended grid ceiling the supply air swirl is expected to be partially reduced. It is therefore needed to respect the minimum distance of the diffuser - at least 150 mm from the grid ceiling.



1. Installation into a false ceiling



2. Installation into a free area under the ceiling
 $h_{\min} > (3 \sim 5) D$



3. Installation between a ceiling and a suspended grid ceiling

Fig. 7: Mounting methods