



# Air terminal devices

## Slot diffusers, Type VSD...

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### Product overview

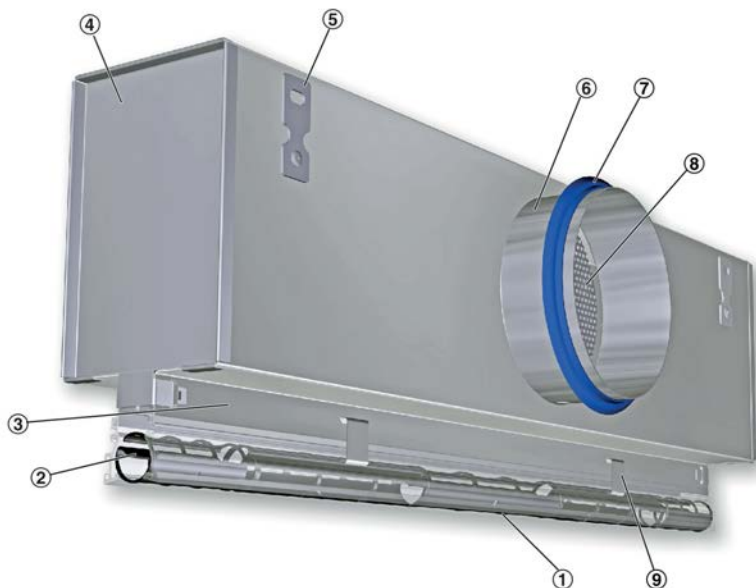


Fig. 1: Schematic illustration of VSD35-1-AK-M-L/000

- |       |                                |   |   |
|-------|--------------------------------|---|---|
| ①     | Diffuser face                  | ⑥ | Spigot                                      |
| ②     | Adjustable air control element | ⑦ | Lip seal                                    |
| ③     | Neck                           | ⑧ | Damper blade for volume flow rate balancing |
| ④     | Plenum box                     | ⑨ | Clamp fixing                                |
| ⑤     | Suspension lug                 |   |   |
| ⑦ – ⑨ | Optional equipment             |   |   |

This manual describes the following product types: - VSD15, VSD35, VSD50, VSD35-Varyset, VSD50-1-LT, VSD35-3-AZ

## Important notes

### Information on the installation manual

This manual enables operating or service personnel to correctly install the product described below and to use it safely and efficiently.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

### Qualified staff

#### Specialist personnel

Specialist personnel are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to carry out their assigned duties, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

#### Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The manufacturer does not accept any liability for damages resulting from:

- Non-compliance with this manual
- Incorrect use
- Operation or handling by untrained individuals
- Unauthorised modifications

The actual scope of delivery may differ from the information in this manual for special constructions, additional order options or as a result of recent technical changes.

### Personal protective equipment

Personal protective equipment must be worn for all work in order to reduce health or safety hazards to the minimum.

The appropriate protective equipment for a job must be worn for as long as the job takes.

### Industrial safety helmet



Industrial safety helmets protect the head from falling objects, suspended loads, and the effects of striking the head against stationary objects.

### Protective gloves



Protective gloves protect hands from friction, abrasions, punctures, deep cuts, and direct contact with hot surfaces.

### Safety shoes



Safety shoes protect the feet against crushing, falling parts, and slipping on slippery ground.

### Correct use

Air terminal devices are used for the ventilation of rooms in industrial and comfort areas. The air terminal devices are connected to a supply air or extract air system (by others), which is typically connected to an air handling unit.

Air terminal devices supply cold or warm air to rooms (within the stated supply air to room air temperature differences).

Installation, operation and maintenance may have to meet increased hygiene requirements for certain areas of application.

The installation of air terminal devices in humid rooms, areas with potentially explosive atmospheres or rooms with dust-laden or aggressive air has to be assessed for each individual case.

## Transport and storage

### Delivery check

Upon delivery, carefully remove the packaging and check the unit for transport damage and completeness. In case of any damage or an incomplete shipment, contact the shipping company and your supplier immediately. Put the product back into its packaging after the delivery check to protect it from dust and contamination.



### **Fixing and installation material**

*Fixing and installation material is not part of the supply package (unless stated otherwise), but has to be provided by others; it has to be suitable for the installation situation.*

## Transport on site



### **CAUTION!**

**Danger of injury from sharp edges, sharp corners and thin sheet metal parts!**

Sharp edges, sharp corners and thin sheet metal parts may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

If the device has to be moved:

- Be careful when unloading or moving the product, and pay attention to the symbols and information on the packaging.
- If possible, take the device in its transport packaging up to the installation location.
- Use only lifting and transport gear designed for the required load.

- Always secure the load against tipping and falling.
- Do not move bulky items just by yourself. Get help to prevent injuries and damage.

### Storage

Please note:

- Store the unit only in its original packaging
- Protect the unit from the effects of weather
- Protect the unit from humidity, dust and contamination
- Storage temperature: –10 to 50 °C
- Relative humidity: 95 % max., non-condensing

### Packaging

Properly dispose of packaging material.

## Installation

### General information

#### Personnel:

- Specialist personnel

#### Protective equipment:

- Industrial safety helmet
- Protective gloves
- Safety shoes

#### Installation notes:

- Fix the device only to load-bearing structural elements.
- Load suspension systems only with the weight of the device. Adjacent components and connecting ducts must be supported separately.
- Use only approved and adequately sized fixing material (fixing material is not included in the supply package).
- Refer to the technical leaflets for product weights and dimensions.
- The diffusers must remain accessible for cleaning even after installation.
- Installation and sealing material which the manufacturer provides is usually supplied in an extra bag.

Before you install the device, take suitable precautions to protect air distribution components from contamination during installation (VDI 6022). If this is not possible, at least cover the devices or take other precautions to protect them from contamination. In this case you have to ensure that the devices cannot be activated. Ensure that the components are clean before you install them. If necessary, thoroughly clean them. If you have to interrupt the installation procedure, protect all openings from the ingress of dust or moisture.

### Ceiling installation

If possible, install the unit before fixing the ceiling tiles; if this is not possible, remove the adjacent ceiling tiles.

Use only approved and adequately sized suspension systems (fixing material is not included in the supply package). Dimensions and weights are given in the technical leaflets.

Only work in pairs; preferably use a lift.

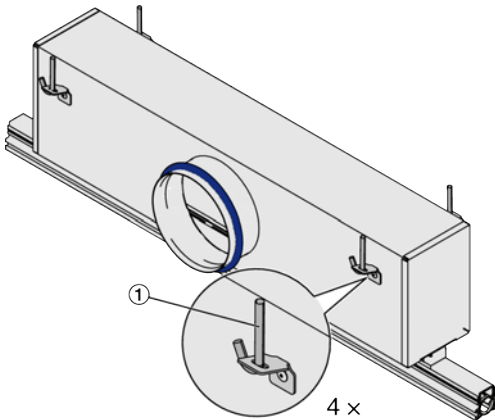


Fig. 2: Plenum box

1. ▶ Fix the suspension parts such as ropes, cables or metal hangers (Fig. 2/1) to the ceiling.
2. ▶ Use all of the available suspension points on the plenum box.

### Slot diffusers, linear run

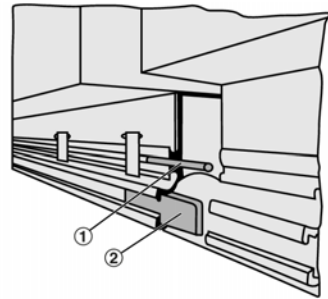


Fig. 3: Linking slot diffusers

3. ▶ The supplied connecting pins (Fig. 3/1) or alignment plates (Fig. 3/2) (only connecting pins for VSD15) help to align slot diffusers for a continuous linear arrangement.

Insert a connecting pin or fix an alignment plate (2 each per diffuser) on one side, then connect the next diffuser to it.

### Installation in continuous ceilings

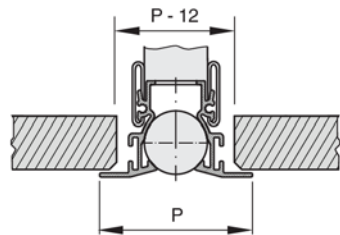
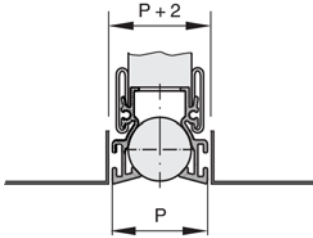


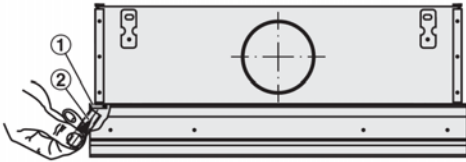
Fig. 4: Slot diffuser with extended border

**Installation in panelled ceilings**



*Fig. 5: Slot diffuser without extended border*

**End seal (for VSD15 only)**



*Fig. 6: Fitting an end seal*

- ① Intermediate seal
- ② End seal (tubular)

- Continuous linear runs require an end seal on each end to ensure that no air leaks
- End seals can be either factory fitted or fitted by others
- Single diffusers require end seals on both ends
- End seals are suitable only for slot diffusers without extended border

### Slot diffusers with concealed screw fixing

The face of slot diffusers with concealed screw fixing (variant AS or DS) can be fixed to the plenum box after the false ceiling has been completed.

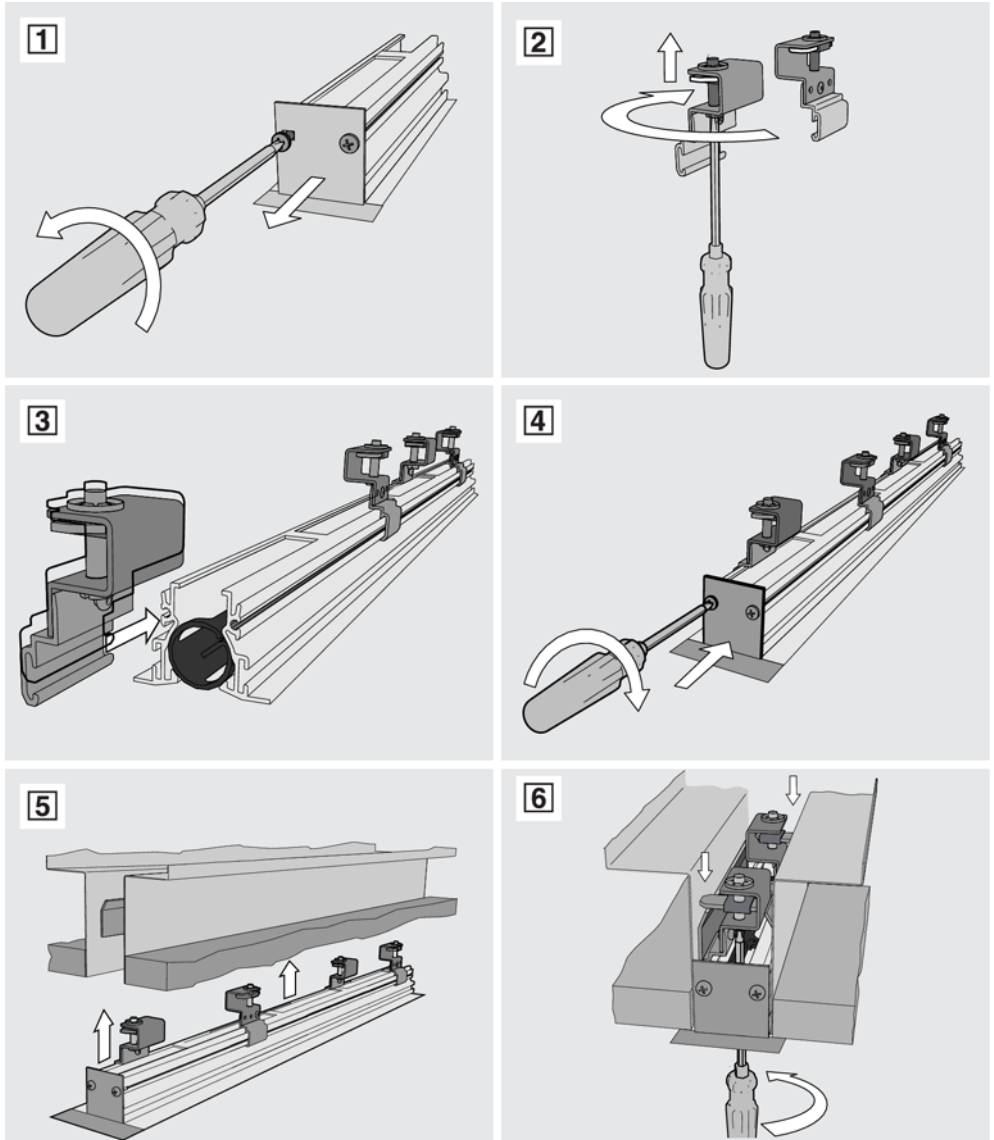


Fig. 7: Diffuser face with concealed screw fixing

**Installation into a wall opening**

**VSD50-1-LT**

- Installation in lightweight partition walls with metal support structure
- Preferably for rooms with a clear height up to 4.0 m
- Wall installation below the ceiling
- Horizontal duct connection
- Installation together with drywalling

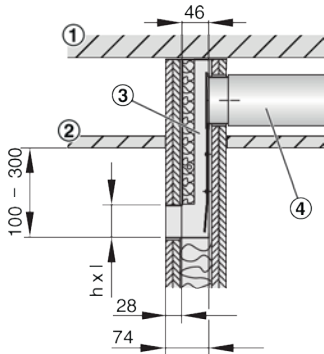


Fig. 8: Installation example

- ① Ceiling
- ② Suspended ceiling
- ③ VSD50-1-LT
- ④ Duct

**Installation opening**

Nominal length	l [mm]	h [mm]
550	560	58
1175	1185	

**VSD35-3-AZ**

- For wall and bulkhead installation
- Preferably for rooms with a clear height up to 4.0 m
- Horizontal duct connection
- Installation with the supplied fixing brackets (optional)

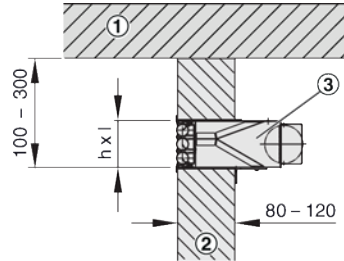


Fig. 9: Installation example

- ① Ceiling
- ② Wall
- ③ VSD35-3-AZ

**Installation opening**

Nominal length	l [mm]	h [mm]
600	612	98
750	762	
900	912	
1050	1062	
1200	1212	



### Air connection

The diffuser has a spigot to connect it to the ducting. Variants with a double lip seal allow for a sufficiently tight connection; additional sealing is not required.

### Commissioning, maintenance and cleaning

#### Initial commissioning

Before you start commissioning:

- Check that the air terminal devices are correctly seated.
- Remove protective films, if any.
- Ensure that all air terminal devices are clean and free from residues and foreign matter.
- Check that electrical connections (if any) have been correctly made.
- Ensure that the device has been correctly fixed and connected to the ducting.

For commissioning see also VDI 6022, part 1 – 'Hygiene requirements for ventilation and air-conditioning systems and units'.

#### Volume flow rate balancing

When several diffusers are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

Slot diffusers with plenum box and damper blade (variant -M): The damper blade can be adjusted even after the diffuser face has been installed.

### VSD15, VSD35, VSD50, VSD35-Varyset

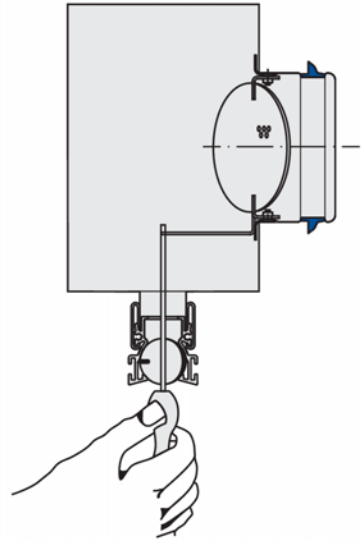


Fig. 10: Setting the damper blade, e.g. with a screwdriver

Move the air control element near the spigot in such a way that it is possible to insert a screw driver.

### VSD50-1-LT

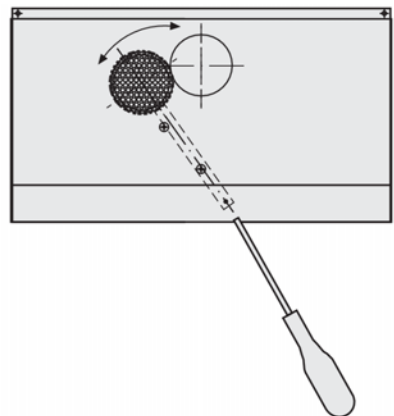

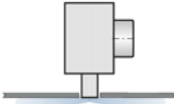
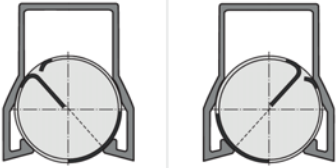

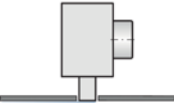
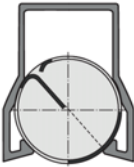

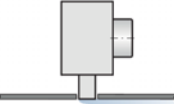
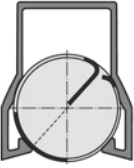

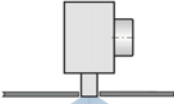
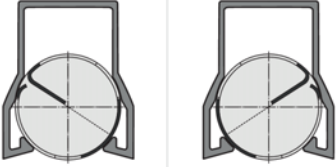


Fig. 11: Setting the damper blade, e.g. with a screwdriver


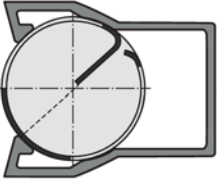

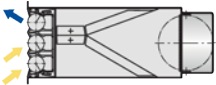
**Setting the air discharge direction**

These are only schematic diagrams to illustrate the setting of the air control elements.

**Slot diffusers for ceiling installation**

Airflow direction	Setting of the air control elements		
Alternating horizontal air discharge			 <p data-bbox="650 600 1034 643">Alternating air control elements (every second element different)</p>
One-way horizontal air discharge to the left			
One-way horizontal air discharge to the right			
Alternating angled air discharge			 <p data-bbox="665 1409 1020 1452">Alternating air control elements (every element different from the previous one)</p>

## Slot diffusers for wall installation

Airflow direction	Setting of the air control elements	
<b>VSD50-1-LT</b> Angled one-way air discharge		
<b>VSD35-3-AZ</b> Angled one-way air discharge and extract air		

## Maintenance and cleaning

Please note:

- The cleaning intervals given in the VDI 6022 standard apply.
- Clean surfaces with a damp cloth.
- Use only common household cleaners, do not use any aggressive cleaning agents.
- Cleaning agents that contain chlorine must not be used.
- Equipment for removing stubborn contamination, e.g. scrubbing sponges or scouring cream, may damage the surfaces and must not be used.

