

Wall diffuser

CFS**TROX SE**

Heinrich-Trox-Platz
47506 Neukirchen-Vluyn
Germany
Phone: +49 (0) 2845 202-0
Fax: +49 (0) 2845 202-265
E-Mail: trox-de@troxgroup.com
<http://www.troxgroup.com>

Product overview

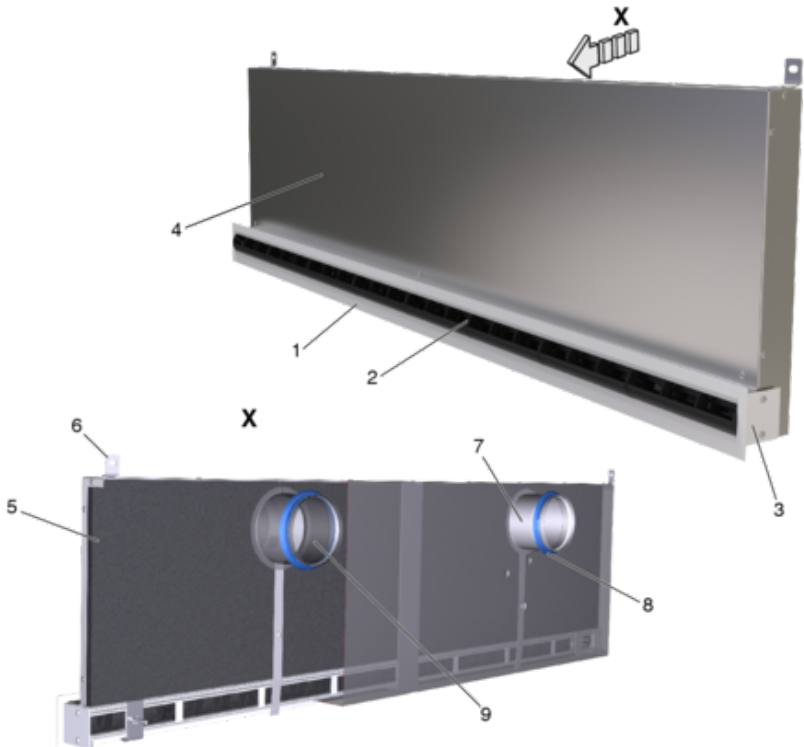


Fig. 1: Schematic illustration, example CFS-50

- | | | | |
|---|------------------------------|---|---|
| 1 | Front rail | 6 | Suspension lug |
| 2 | Adjustable air control blade | 7 | Spigot |
| 3 | End angle | 8 | Lip seal |
| 4 | Plenum box | 9 | Damper blade for volume flow rate balancing |
| 5 | Acoustic lining | | |

Important notes

Information on the installation manual

These instructions enable correct installation as well as safe and efficient handling.

Personnel must have read and understood these instructions carefully before starting any work. The basic prerequisite for safe working is to comply with all safety notes and instructions in this manual.

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

Other applicable documentation

In addition to this manual, the following documents must be observed:

- Product data sheets

Explanation of symbols

Safety notes

Symbols are used in this manual to alert readers to areas of potential hazard. Signal words express the degree of the hazard.

Comply with all safety instructions and proceed carefully to avoid accidents, injuries and damage to property.



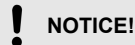
DANGER!
Imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING!
Potentially hazardous situation which, if not avoided, may result in death or serious injury.



CAUTION!
Potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



NOTICE!
Potentially hazardous situation which, if not avoided, may result in property damage.



ENVIRONMENT!
Environmental pollution hazard.

Limitation of liability

All information and instructions in this manual have been compiled taking into account the applicable standards and regulations, the state of the art and our many years of knowledge and experience.

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

- Non-compliance with this manual
- Unintended or improper use

- Operation or handling by untrained individuals
- Unauthorised modifications

The actual scope of delivery may differ from the explanations and illustrations provided in this manual for special versions, the use of additional order options or as a result of recent technical changes.

Safety

Intended use

Wall diffusers are used to ventilate rooms in industrial and comfort zones. The air diffusers are connected to a supply air or exhaust air system (provided by the client), which is typically connected to a central air handling unit. Integrated sound insulation material reduces sound transmission through the wall diffuser into the on-site duct system.

Air diffusers are used to supply cooled or heated air to rooms (within the specified supply air to room air temperature differences).

Depending on the area of application, special hygiene requirements must be observed during installation, operation, and maintenance.

Possible installation in humid rooms, areas with potentially explosive atmospheres, or rooms with dust-laden or aggressive air must be assessed individually.

Personnel

Qualification

Trained personnel

Trained 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.

Personal protective equipment

Personal protective equipment must be worn for any 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 from crushing, falling parts and prevent slipping on a slippery floor.

Repair and replacement parts

Only qualified personnel may repair the products, and they have to use genuine replacement parts.

Transport and storage

Delivery check

After delivery, carefully remove the packaging and check the device for any transport damage and completeness. In case of transport damage or incomplete delivery, inform the forwarding agent and the supplier immediately. After inspection of the goods, put the product back into its packaging to protect it from dust and contamination.



Fixing and installation material

Unless otherwise specified, fixing and installation materials are not included in the delivery and must be provided by the client, in accordance with the respective installation situation.



Factory setting

The air control blades are factory-set to a certain position. Adjusting the air control blades leads to increased efforts during commissioning. Therefore, avoid moving the air control blades during on-site transport, unpacking and installation.

Transport on site



CAUTION!

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

Sharp edges, sharp corners and thin-walled sheet metal parts can cause abrasions and cuts to the skin.

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

Observe the following points during transport:

- Be careful when unloading or moving the product on site, and pay attention to the symbols and information on the packaging.
- If possible, take the product in its transport packaging up to the installation location.
- Use only lifting and transport gear designed for the required load.
- During transport, always secure the load against tipping and falling.
- Bulky equipment should be transported by at least two people to prevent injury and damage.

Storage

Observe the following points for storage:

- Store the product only in its original packaging
- Protect the product from the effects of weather
- Protect the product from humidity, dust and contamination
- Storage temperature: -10 °C to 90 °C
- Relative humidity: 80 % maximum, no condensation

Packaging

After unpacking, properly dispose of packaging material.

Installation

General installation information

Observe during installation:

- For room heights up to 4 m (lower edge of ceiling)
- Wall installation in lightweight partition wall
- For cleaning purposes, the air diffusers must be easily accessible after installation.
- Fixing material provided by the manufacturer and additional material for sound insulation.
- The devices must be installed with sound insulation. Sealing tapes for sound insulation must be provided by the client to suit the installation situation.
- Suitable fixing material must be provided by the client depending on the local conditions.



Protect the device from contamination

Before installation, ensure that the air-ducting components cannot be contaminated by construction activities (VDI 6022). If this is not possible, at least cover the devices or take other precautions to protect them from contamination. In this case, make sure the device is not in operation. Ensure that all components are clean before you install them. Clean thoroughly if necessary. When interrupting the installation procedure, protect all device openings from the ingress of dust or humidity.

Installation in lightweight partition walls

Installation in lightweight partition walls

Installation of slot diffuser for lightweight partition walls

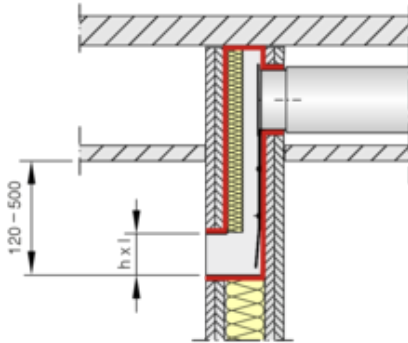


Fig. 2: Installation in lightweight partition walls, incl. on-site sound insulation, to be provided by the client (thick, red lines)

Height of installation opening h: $P - 12$
 Length of installation opening l: $L1 + 9$

Installing the slot diffuser

Personnel:

- Trained personnel

Protective equipment:

- Industrial safety helmet
- Protective gloves
- Safety shoes

Wall installation in lightweight partition wall.

Construction lengths suitable for the usual distances of the metal stud frame, some changes might be required for the CW sections.

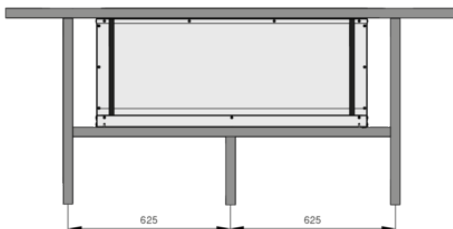


Fig. 3: Change CW sections

Use suitable fixing material and additional material for sound insulation (not included in scope of supply). Consider weights ↗ *Chapter 7.1 'Dimensions and weights' on page 10.*

For larger dimensions, we recommend that two people carry out the installation.

- 1 ▶ Mounting on C-profile.

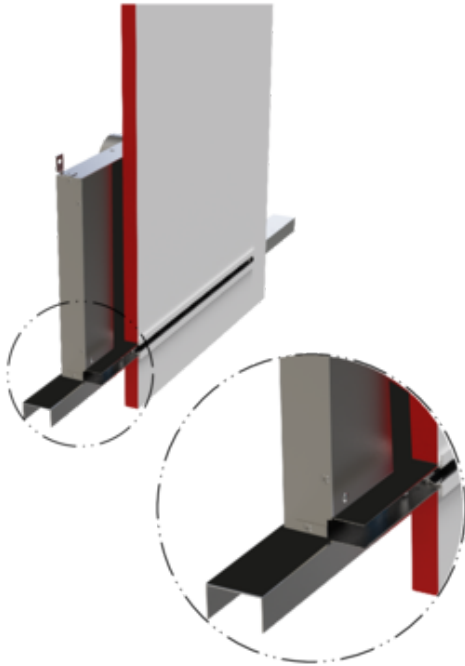


Fig. 4: The plenum box must be acoustically decoupled on site

- 2a. To ensure sound decoupling between the dry-wall panels and the wall diffuser, we recommend that the client apply sealing tape to the outside of the slot diffusers

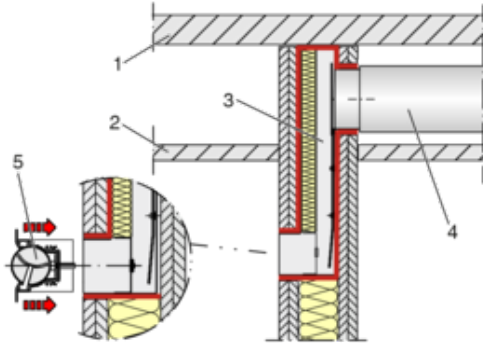


Fig. 5: Installation in lightweight partition wall

- 1 Ceiling slab
- 2 Suspended ceiling
- 3 Slot diffuser for wall installation
- 4 Air duct
- 5 Front rail
- 6 On-site sound insulation

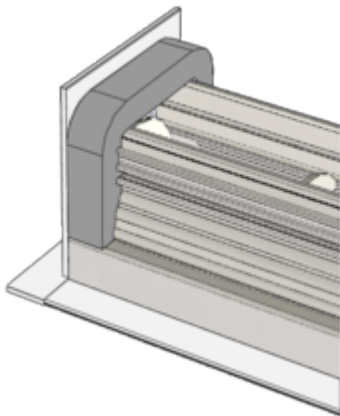
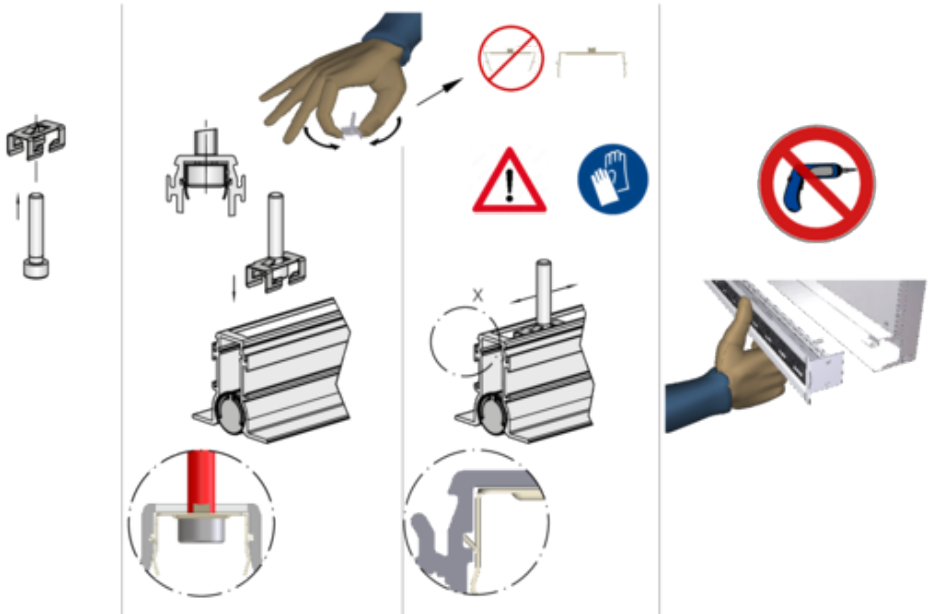


Fig. 6: Fitting the insulation

- 2 ▶ The device with protective foil is inserted into the drywall.

Sound insulation between C-profile and wall slot diffuser.

The wall is completed with panels etc. and sanded. The protective foil remains on the unit until the final coating of the wall to prevent soiling.



3 ▶ Installation of front rail

The protective film must be removed before the front rail can be fitted. Ensure that there is no further soiling due to construction activities.

- Mount the loose fixing material as shown.
- Insert into front rail.
- Caution, do not squeeze the clamp too tightly!
- Ensure correct fit!
- Position it lengthwise.
- Insert the front rail together with the screws into the fixing holes on the plenum box.

Note:

Using an Allen key (SW4) simplifies the fixing procedure.

4 ▶ Install the front rail in the plenum box

Technical data

Dimensions and weights

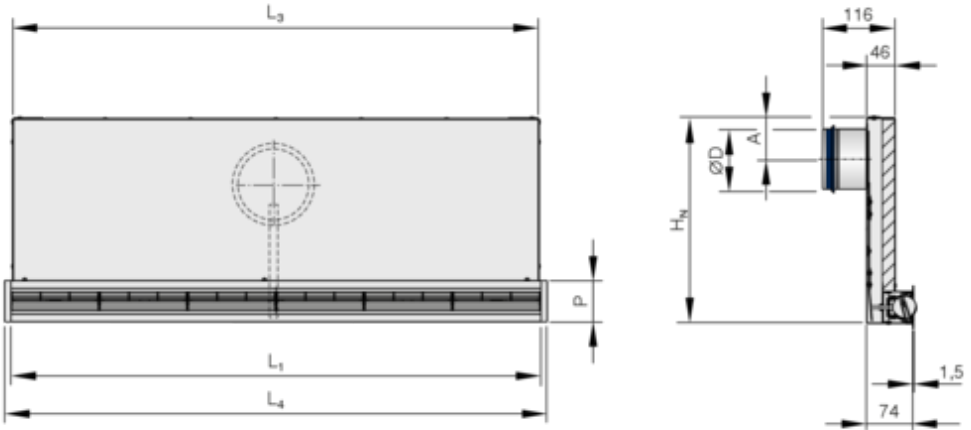


Fig. 7: CFS - variant with one spigot

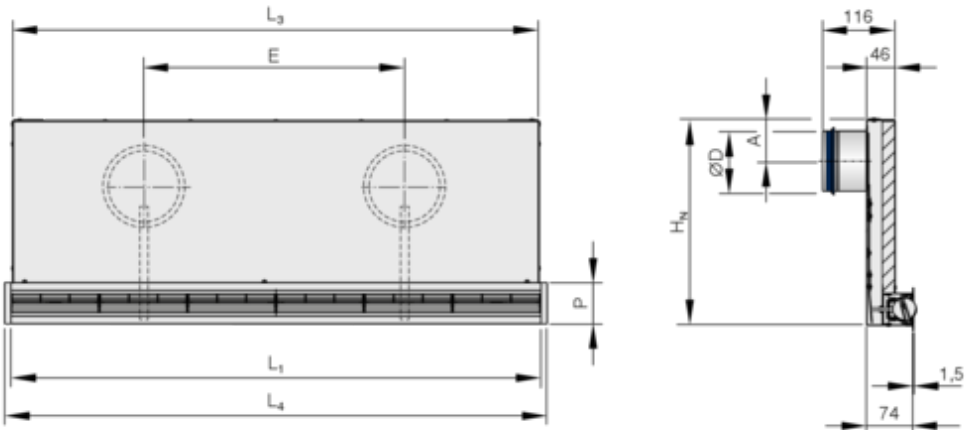


Fig. 8: CFS - variant with 2 spigots

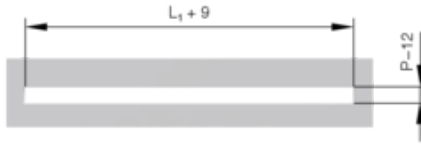


Fig. 9: Installation opening in lightweight partition walls

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L _N	L ₁	L ₃	L ₄	E	No. of spigots
500	500	495	522		1
600	600	595	622		1
700	700	695	722		1
800	800	795	822		1
900	900	895	922	446	1/2*
1000	1000	995	1022	496	1/2*
1100	1100	1095	1122	546	1/2*
1200	1200	1195	1222	596	1/2*

* System SE: always with 2 spigots

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L _N	L ₁	L ₃	L ₄	E	No. of spigots
450	450	445	472		1
600	600	595	622		1
750	750	745	772		1
900	900	895	922	446	1/2*
1050	1050	1045	1072	521	1/2*
1200	1200	1195	1222	596	1/2*

* System SE: always with 2 spigots

ØD	A
98	70
123	82
138	90
158	100

Weights CFS-18

L _N	1 slot				2 slots			
	Front rail	Plenum box			Front rail	Plenum box		
		H _N =290	H _N =340	H _N =440		H _N =290	H _N =340	H _N =440
500	0.3	2.8	3.2	3.9	0.4	2.7	3.1	3.8
600	0.3	3.2	3.7	4.6	0.5	3.1	3.6	4.5
700	0.4	3.7	4.2	5.2	0.6	3.6	4.1	5.1
800	0.4	4.2	4.8	5.8	0.6	4.1	4.7	5.7
900	0.5	4.6	5.3	6.5	0.7	4.5	5.2	6.4
1000	0.5	5.1	5.8	7.1	0.8	5.0	5.7	7.0
1100	0.6	5.5	6.3	7.7	0.9	5.4	6.2	7.6
1200	0.6	6.0	6.8	8.3	1.0	5.9	6.7	8.2

Total weight = front rail + plenum box

Weights CFS-35

L _N	1 slot				2 slots				3 slots			
	Front rail	Plenum box			Front rail	Plenum box			Front rail	Plenum box		
		H _N =290	H _N =340	H _N =440		H _N =290	H _N =340	H _N =440		H _N =290	H _N =340	H _N =440
450	0.4	2.7	3.0	3.6	0.5	2.6	2.9	3.5	0.7	2.5	2.8	3.4
600	0.5	3.4	3.8	4.6	0.7	3.3	3.7	4.5	1.0	3.2	3.6	4.4
750	0.6	4.1	4.5	5.6	0.9	4.0	4.4	5.4	1.2	3.8	4.3	5.3
900	0.7	4.7	5.3	6.6	1.1	4.6	5.1	6.4	1.4	4.4	5.0	6.2
1050	0.8	5.4	6.1	7.5	1.3	5.3	5.9	7.3	1.7	5.0	5.7	7.1
1200	1.0	6.1	6.9	8.5	1.4	6.0	6.7	8.3	2.0	5.7	6.4	8.1

Total weight = front rail + plenum box

Weights CFS-50

L _N	1 slot				2 slots			
	Front rail	Plenum box			Front rail	Plenum box		
		H _N =290	H _N =340	H _N =440		H _N =290	H _N =340	H _N =440
450	0.5	2.6	2.9	3.5	0.7	2.5	2.8	3.4
600	0.6	3.2	3.6	4.4	1.0	3.1	3.5	4.3
750	0.8	3.9	4.4	5.3	1.2	3.7	4.2	5.1
900	0.9	4.5	5.1	6.3	1.4	4.3	4.9	6.0
1050	1.1	5.2	5.9	7.2	1.7	4.9	5.6	6.9
1200	1.2	5.8	6.6	8.1	1.9	5.5	6.3	7.8

Total weight = front rail + plenum box

Variant	P
Front rail 18-1	38
Front rail 18-2	55
Front rail 35-1	55
Front rail 35-2	82
Front rail 35-3	109
Front rail 50-1	70
Front rail 50-2	115

Setting the airflow direction

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

The air control blades have notches on the mullions which are used for adjustment. If necessary, we recommend that you use both hands to adjust the air control blades on the notches.

Airflow

Airflow direction	Setting the air control blades
Airflow with ceiling effect	
Direct airflow into the room	

Volume flow balancing

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

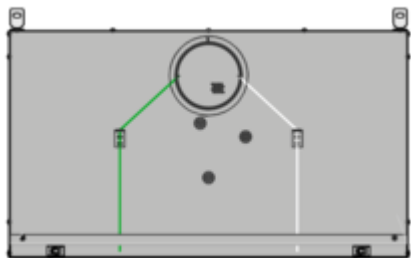


Fig. 10: Volume flow balancing CFS-18

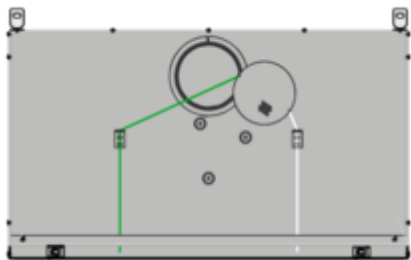


Fig. 11: Volume flow balancing CFS-18

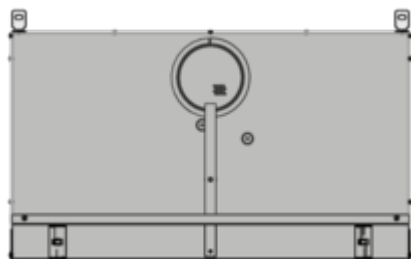


Fig. 12: Volume flow balancing CFS-35/50

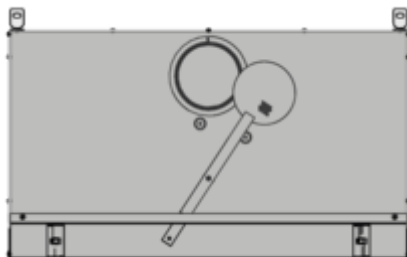


Fig. 13: Volume flow balancing CFS-35/50

! NOTICE!

The green ribbon closes the flow adjustment damper, while the white ribbon opens it.

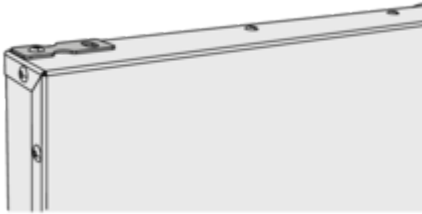
Delivery condition

Fig. 14: Delivery condition

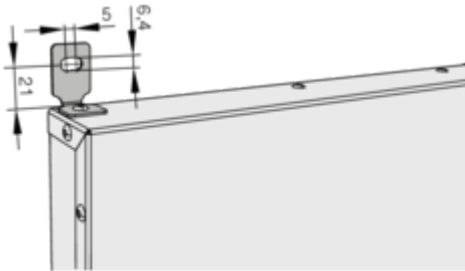


Fig. 15: Suspension lug upwards and turned sideways; For wall mounting

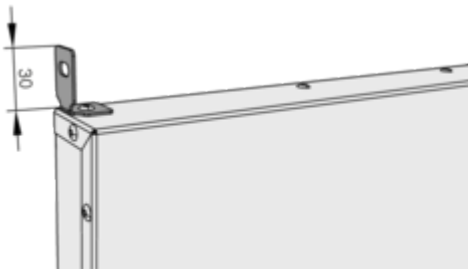


Fig. 16: Suspension lug upwards and turned sideways; For suspending from the ceiling

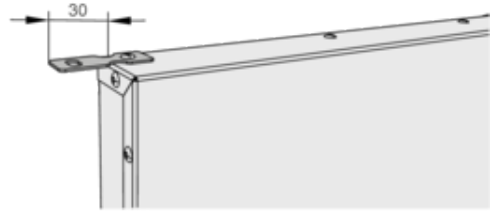


Fig. 17: Suspension lug turned sideways; For ceiling installation

Initial commissioning**General information**

Before you start commissioning, check the following points:

- Check that the air diffusers are fitted correctly.
- Remove protective foils, if any.
- Ensure that all air diffusers are clean and free from residues and foreign matter.

For commissioning, see also VDI 6022, Sheet 1 - Hygienic requirements for ventilation and air conditioning systems.

Maintenance

System owner's responsibility



WARNING!

Only authorised specialist personnel may perform the described maintenance measures.

The system owner is responsible for maintenance. With their maintenance management, the system owner is responsible for creating a maintenance plan, for defining the maintenance goals, and for the functional reliability of the equipment.

The legal regulations must be observed during maintenance, e.g. the system owner is responsible for hygienic operation in accordance with VDI 6022.

Maintenance and cleaning

During cleaning, the following points must be observed:

- 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.
- Do not use cleaning agents that contain chlorine.
- Do not use equipment for removing stubborn contamination, e.g., scrubbing sponges or scouring cream, as it may damage the surfaces.

Inspection measures

- 1 ▶ Remove contamination that affects the function of the wall diffuser.
- 2 ▶ Check all screw connections for tightness and retighten them, if necessary.
- 3 ▶ Document the maintenance work.

Repair work

Repair work is only allowed to be carried out by specialist personnel or by the manufacturer. Only genuine replacement parts may be used.

Disposal



ENVIRONMENT!

Risk of harm to the environment due to incorrect disposal!

Incorrect disposal may harm the environment.

- Be sure to comply with the relevant national guidelines and regulations.
- In case of doubt, contact your local authorities or a specialist disposal company.

Note: The wall diffuser must be dismantled for disposal.

If no disposal or return agreements with TROX SE are in place, we recommend disposing of the materials as follows:

Pos.	Component	Material/ waste code	Type of disposal
1	Front rail, end angle	Aluminium EWC 170402	Scrap metal recycling
2	Plenum box, spigot	Galvanised steel EWC 170404	Scrap metal recycling
3	Air control blades	Plastic EWC 170203	according to the EWC
5	Insulating mat	Mineral wool EAK 170603	according to the EWC

EWC European Waste Catalogue