



Active chilled beams

Type DID632

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Product overview

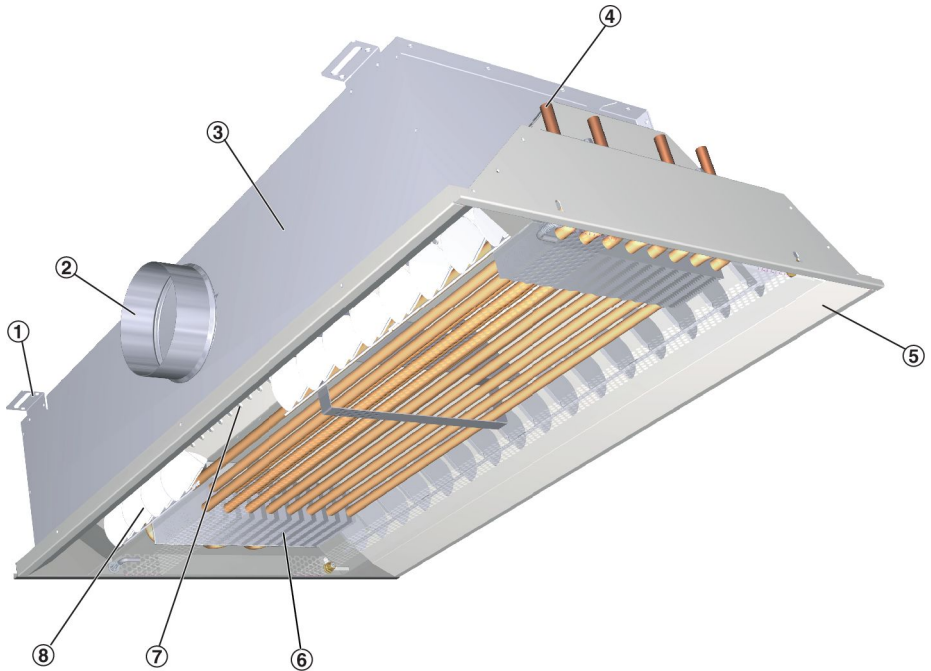


Fig. 1: Schematic illustration of DID632

- | | | | |
|---|--------------------|---|-------------------------------|
| ① | Hanging brackets | ⑤ | Front frame |
| ② | Primary air spigot | ⑥ | Heat exchanger |
| ③ | Casing | ⑦ | Nozzles |
| ④ | Water connections | ⑧ | Air control blades (optional) |

General information

About this manual

This manual is intended for use by fitting and installation companies, in-house technicians, technical staff, instructed persons, and qualified electricians or air conditioning technicians.

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 the general safety regulations for the area of application of the ventilation unit also apply.

This manual must be given to the system owner when handing over the system. The system owner must include the manual with the system documentation. The manual must be kept in a place that is accessible at all times.

Illustrations in this manual are mainly for information and may differ from the actual design.

Other applicable documentation

- Project-specific documents (if any)

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.

Tips and recommendations



Useful tips and recommendations as well as information for efficient and fault-free operation.

Safety notes as part of instructions

Safety notes may refer to individual instructions. In this case, safety notes will be included in the instructions and hence facilitate following the instructions. The above listed signal words will be used.

Example:

1. ▶ Loosen the screw.
2. ▶







CAUTION!
Danger of finger entrapment when closing the lid.

Be careful when closing the lid.

3. ▶ Tighten the screw.

Additional markers

In order to highlight instructions, results, lists, references and other elements, the following markers are used in this manual:

Marker	Explanation
	Step-by-step instructions
1., 2., 3. ...	
	Results of actions
	References to sections in this manual and to other applicable documents
	Lists without a defined sequence
[Switch]	Operating elements (e.g. push buttons, switches), display elements (e.g. LEDs)
'Display'	Screen elements (e.g. buttons or menus)

TROX Technical Service

To ensure that your request is processed as quickly as possible, please keep the following information ready:

- Product name
- TROX order number
- Delivery date
- Brief description of the fault

Online	www.troxtechnik.com
Phone	+49 2845 202-400

Warranty claims

The general delivery terms apply to warranty claims. For purchase orders placed with TROX GmbH, see "Section VI, Warranty Claims", of the Delivery and Payment Terms of TROX GmbH, www.trox.de/en/.

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- Publishing content
- Copying content
- Translating content
- Saving content to electronic systems and editing it

Safety

Correct use

Active chilled beams provide centrally conditioned primary air (outdoor air) to rooms. Heat exchangers are used for additional cooling and/or heating.

Incorrect use



WARNING!
Danger due to incorrect use!
 Incorrect use of the unit can lead to dangerous situations.
 Never use the unit:

- in areas with potentially explosive atmospheres (EX);
- in humid rooms;
- in rooms with aggressive or dust-laden air.

Personnel

Qualification

The work described in this manual has to be carried out by individuals with the qualification, training, knowledge and experience described below:

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.

Technical data

Description	Value
Primary air volume flow rate	6 – 85 l/s, 22 – 306 m³/h
Cooling capacity	up to 2450 W
Heating capacity	up to 2970 W
Max. operating pressure, water side	6 bar
Max. operating temperature	75 °C
Minimum operating temperature	6 °C
	(55 °C, when using flexible connecting hoses)

Dimensions

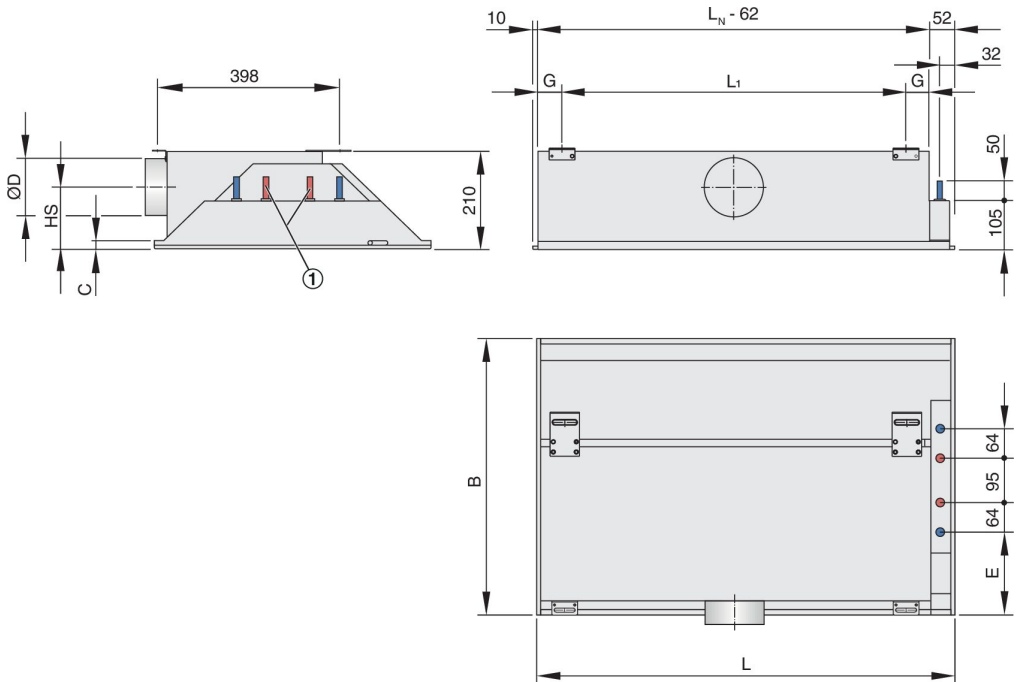


Fig. 2: Dimensional drawing of DID632

Dimensions [mm]		
B	C	E
593	18	177
598	8	179

B = Width of front frame

Dimensions [mm]		
B	C	E
618	18	189
623	8	192

B = Width of front frame

Dimensions [mm]					
L _N	L	L ₁	ØD	HS	G
900	893 – 1500	735	123	134	51.5
1200	1193 – 1800	1035	123	134	51.5
1500	1493 – 2100	1335	123	134	51.5
1800	1793 – 2400	1035	123	134	351.5
2100	2093 – 2700	1315	158	116	361.5
2400	2393 – 3000	1435	158	116	451.5
2700	2693 – 3000	1515	158	116	561.5
3000	2993 – 3000	1635	158	116	651.5

L_N = Nominal length L = Total length (diffuser face)

Variant	Weights [kg]							
	L _N [mm]							
	900	1200	1500	1800	2100	2400	2700	3000
DID632-LR	18	22	27	32	39	47	54	61
DID632-LQ	17	21	26	31	38	46	53	60
DID632-GL	20	25	31	36	43	52	59	67
DID632-GQ	20	25	31	36	43	52	59	67
Contained water (max.)	1.8	2.4	3	3.6	4.2	4.8	5.4	6

Transport and storage

Transport

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.

NOTICE!

Carry the unit in pairs in order to prevent any 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

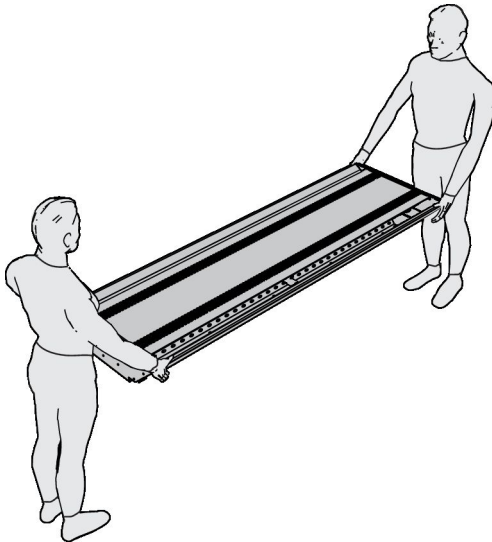


Fig. 3: Carrying the unit in pairs

Use only lifting and transport gear designed for the required load. Always secure the load against tipping and falling.

Upon delivery, carefully remove the packaging and check the unit for transport damage and completeness.

Installation

Ceiling installation

Active chilled beams are typically installed in suspended ceilings. Installation in the most common ceiling systems is shown below.

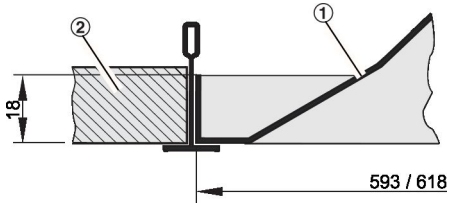


Fig. 4: Ceiling installation, T-bar

- ① DID632
- ② Ceiling tile

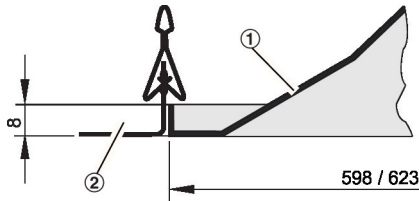


Fig. 5: Ceiling installation, clamping profile

- ① DID632
- ② Ceiling tile

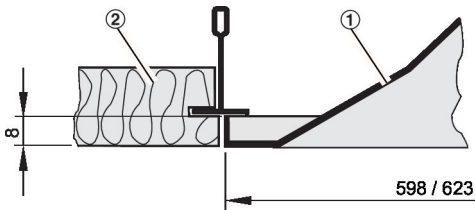


Fig. 6: Ceiling installation, concealed T-bar

- ① DID632
- ② Ceiling tile

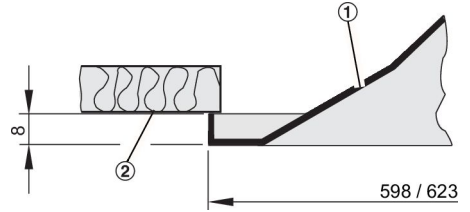


Fig. 7: Ceiling installation, plasterboard ceiling

- ① DID632
- ② Plasterboard ceiling

Installing the unit

Personnel:

- Trained personnel

Protective equipment:

- Industrial safety helmet
- Safety shoes
- Protective gloves

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

Only work in pairs; preferably use a lift!



DANGER!

Danger of death from the fall of suspended loads!

- Only use fixing materials designed for the required load.
- Use all hanging brackets supplied.
- Stand clear of suspended loads, unless properly secured.
- Check secure fixing after installation.

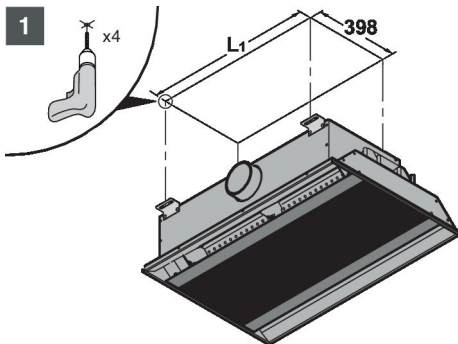


Fig. 8: Drilling the holes

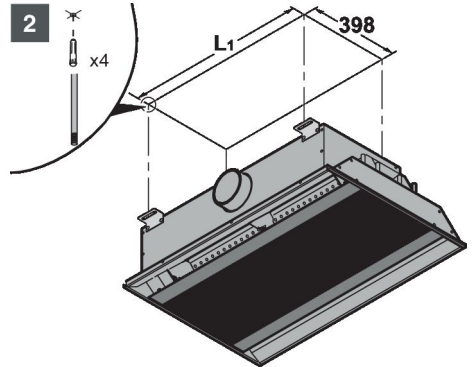


Fig. 9: Installing the dowels and threaded rods

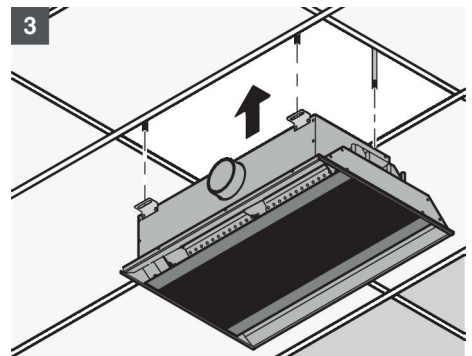


Fig. 10: Inserting the device into the ceiling

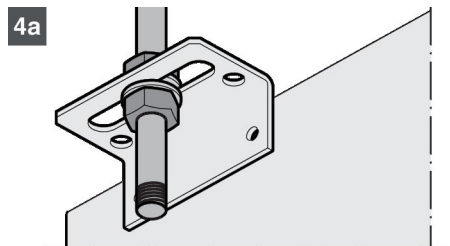


Fig. 11: Fastening the device with threaded rods

4b

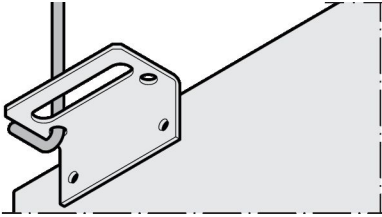


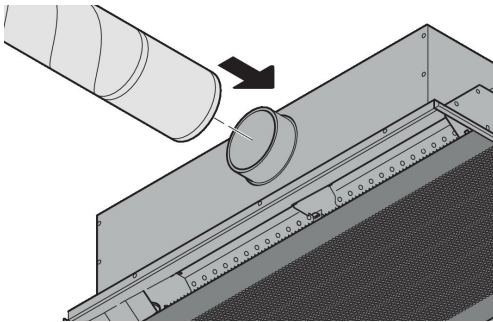
Fig. 12: Fixing the device with vernier

Connecting the ductwork

Active chilled beams are fitted with a primary air (outdoor air) spigot. A connection for exhaust air extraction is optionally integrated.

Spigots are suitable for circular ducts according to EN 1506 or EN 13180.

The optional extract air spigot (diameter 123 mm) is fitted to one end of the active chilled beam at a 45° angle. The extract air spigot may be on the same side as the primary air spigot or on the opposite side.



Adjusting the air control blades

The air discharge pattern can be changed by adjusting the optional air control blades in 15° increments up to 45° to the left or right.

Three different air distribution patterns can be set.

! NOTICE!

Incorrect handling will damage the air control blades!

To avoid any damage, always use both hands to adjust the air control blades.

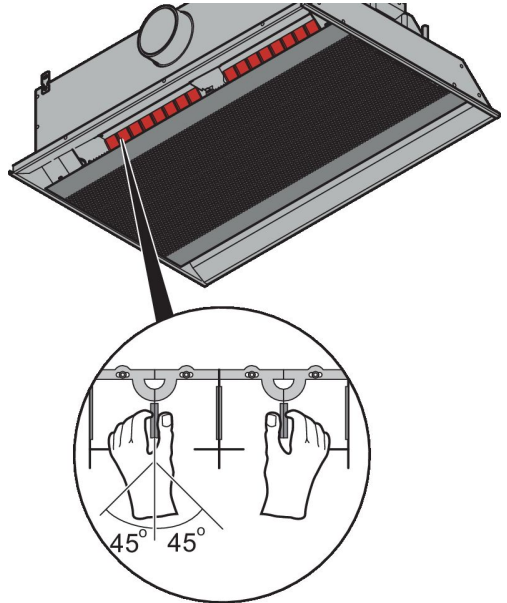


Fig. 13: Changing the air discharge pattern

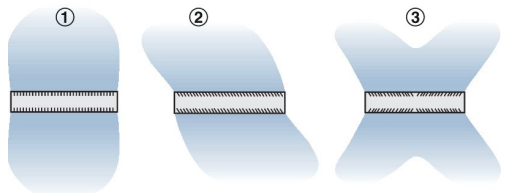


Fig. 14: Setting examples

- ① Straight air discharge
- ② Angled air discharge
- ③ Divergent air discharge

Connecting the water pipes

CAUTION!

Hot surface!

Danger of burn or scald injuries when working on the hot water system.

Before working on the water-side connections, shut down the system, depressurise it and let it cool down.

The heat exchanger is fitted with water flow and water return connections:

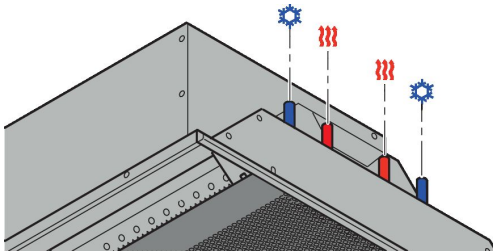


Fig. 15: Example DID632 with 4-pipe system

- 2-pipe system: 2 water connections
- 4-pipe system: 4 water connections

Make sure that the water temperature does not fall below the dew point.

Water connection on the device	Width across flats	Connection types
Copper tube 12 × 1 mm	–	Solder joint (rigid) Flexible hoses (accessory)
External thread G 1/2" (flat seal)	SW21	Screw connection (rigid) Flexible hoses (accessory)
Union nut G 1/2" (flat seal)	SW24	Screw connection (rigid) Flexible hoses (accessory)

Connect device with screw connection

Personnel:

- Trained personnel

Protective equipment:

- Industrial safety helmet
- Safety shoes
- Protective gloves

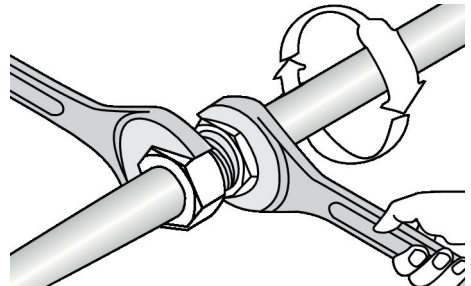
Ensure that the surfaces for seals are clean

1. ▶ Insert seal and tighten screw connection by hand.

NOTICE!

Incorrect assembly will damage the heat exchanger!

Always use a suitable tool to counter the tightening force in order to prevent any damage.



2. ▶ Tighten threaded connections with a wrench.

NOTICE!

Damage to the heat exchanger due to frost!

Only fill the heat exchanger if there is no danger of freezing.

Initial commissioning

Before you start commissioning:

- Check active chilled beams for correct position
- Remove protective film, if any
- Ensure that all active chilled beams are clean and free from residues and foreign matter

NOTICE!

Hygienic requirements for ventilation and air conditioning systems must be carried out in accordance with VDI 6022, Sheet 1.

- Check water connections for correct installation (connection hoses with oxygen diffusion barrier)

NOTICE!

The commissioning procedure is described in detail in BTGA rule 3.002

- Carry out leak and pressure tests
- Flushing the system
- Filling and venting the water-bearing system
- Carry out hydraulic balancing of the control zones.
- Actual/target comparison of the water parameters of the filling water

NOTICE!

Parallel consideration of the requirements for preventing damage in water circuits in accordance with VDI/BTGA 6044 (cold water and cooling circuits) and VDI 2035 Sheet 1 (for hot water - heating systems) is the responsibility of the competent person. The water-bearing system must be assessed as a whole so that it complies with the applicable regulations in both cooling and heating mode. Filling and supplemental water must be filled into the system with the appropriate water quality in order to ensure the long-term operation of the system.

Pressure testing

A pressure test must be carried out pneumatically or hydraulically in closed water-based heating and cold or cooling water circuits in accordance with the general rules of technology or BTGA 3.002, and recorded. The hydraulic test should be carried out with the appropriate filling water quality. A pneumatic test is carried out with air or inert gas.

Rinsing/Flushing

Rinsing removes unwanted dirt particles from the water circuit. We recommend flushing with the appropriate filling water quality and taking a water sample at the end of the flushing process. Make sure that the system is completely emptied after the flushing process and then filled with suitable filling water.

Filling the system

After flushing, the system must be filled with suitable filling and supplemental water. Manufacturers' information for all installed components must be observed. Particular attention must be paid to compliance with the quality of the filling and supplemental water. During the water filling of the system, as well as during the necessary pressing or draining processes, it is recommended that these are permanently monitored.

Venting

Ensure complete venting to avoid problems in the system and to ensure full performance of the water-bearing systems. Since a continuously rising conduit to a venting point is usually impossible, thorough flushing is recommended until the system is air-free. Upstream installations must also be air-free so that no air is introduced into the ceiling system via supply lines.

Maintenance and cleaning

Maintenance

The water quality may change during operation. The water quality must be monitored and documented at regular intervals to prevent corrosion.

Cleaning

During cleaning, the following points must be observed:

- 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.
- The cleaning intervals given in the VDI 6022 standard apply.

Cleaning the heat exchanger

Personnel:

- Trained personnel

Protective equipment:

- Industrial safety helmet
- Safety shoes
- Protective gloves

 **CAUTION!****Hot surface!**

Danger of burn or scald injuries when working on the hot water system.

Before working on the unit, shut down the system, depressurise it and let it cool down.

 **CAUTION!****Danger of cutting your fingers on the fins of the heat exchanger**

The heat exchanger has thin fins, which are very sharp; when you touch them, there is a danger of your cutting your fingers.

To avoid injuries, proceed carefully and wear protective gloves when you work on the heat exchanger.

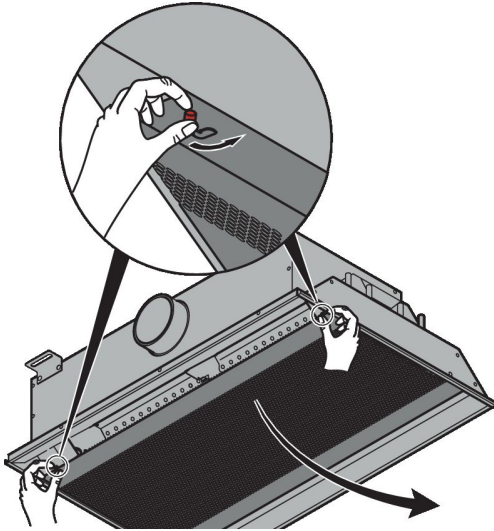


Fig. 16: Opening the induced air grille

1. ▶ To open the induced air grille, release the interlock and swivel the grille downwards. To completely remove the grille, loosen the bolts with an SW3 Allen key.

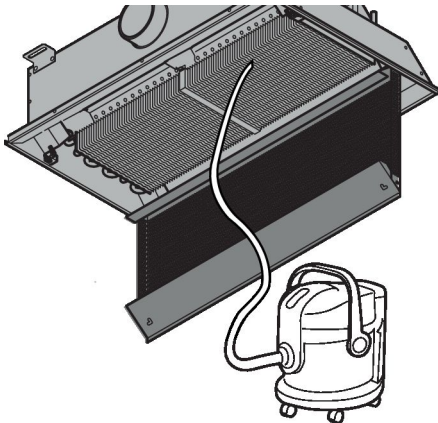


Fig. 17: Cleaning the heat exchanger

2. ▶ Carefully clean the heat exchanger with an industrial vacuum cleaner. Be careful so as not to bend any blades. We recommend using a soft brush attachment for cleaning.

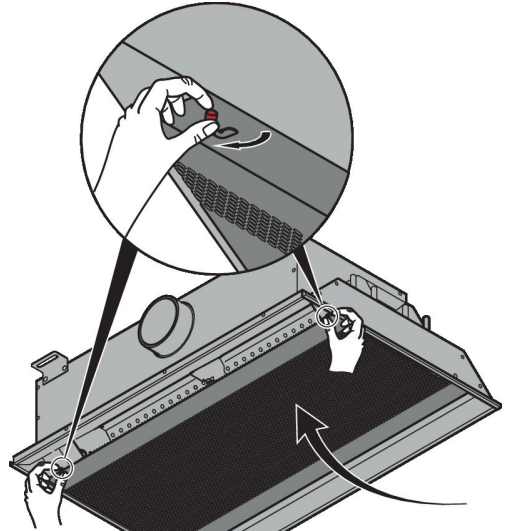


Fig. 18: Closing the induced air grille

3. ▶ After cleaning, screw-fix and close the grille.

⚠ CAUTION!

Danger of head injuries from the fall of the induced air grille!

Check that the induced air grille is securely fixed.