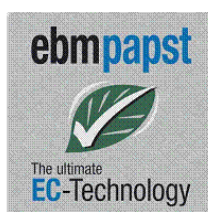


Installation, operation and maintenance guide for window models



Rev. 2014.06.25

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2.0.0 General information

Turbovex TX 350A and TX 75A are decentralized ventilation units with integrated heat recovery.

2.1.0 Preface

This installation and operation guide contains technical information and details of installation and maintenance of the unit.

2.2.0 Areas of use

Window models are designed for comfort ventilation for institutions, canteens, offices and conference rooms etc.

2.3.0 Incorrect use

The window models are not designed for local exhaust ventilation, and are therefore not suitable for this purpose.

2.4.0 Scope of delivery

TX window models are supplied with the following main components:

1. Turbovex TX window model
2. TX electronic controller

Figure 1 Deliverables



2.5.0 Main components:

- | | |
|-------------------------------|----------------------|
| 1. Intake Air | 7. Extract Air Fan |
| 2. Exhaust Air | 8. Bypass Damper |
| 3. Extract Air | 9. Electrical heater |
| 4. Supply Air | 10. Filter |
| 5. Counterflow heat exchanger | 11. Main PCB |
| 6. Supply Air Fan | 12. TX Controller |

Figure 2: Main components

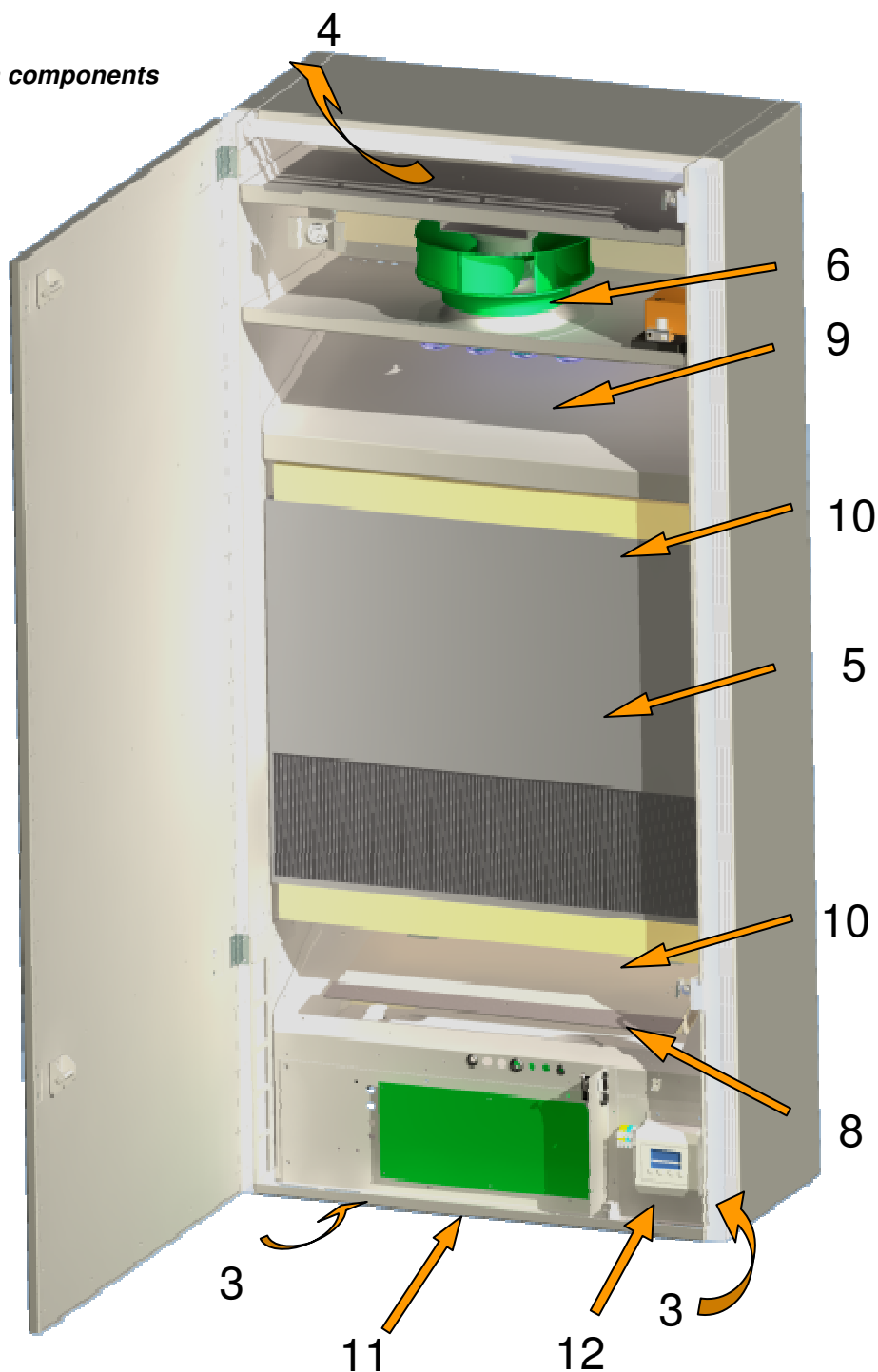
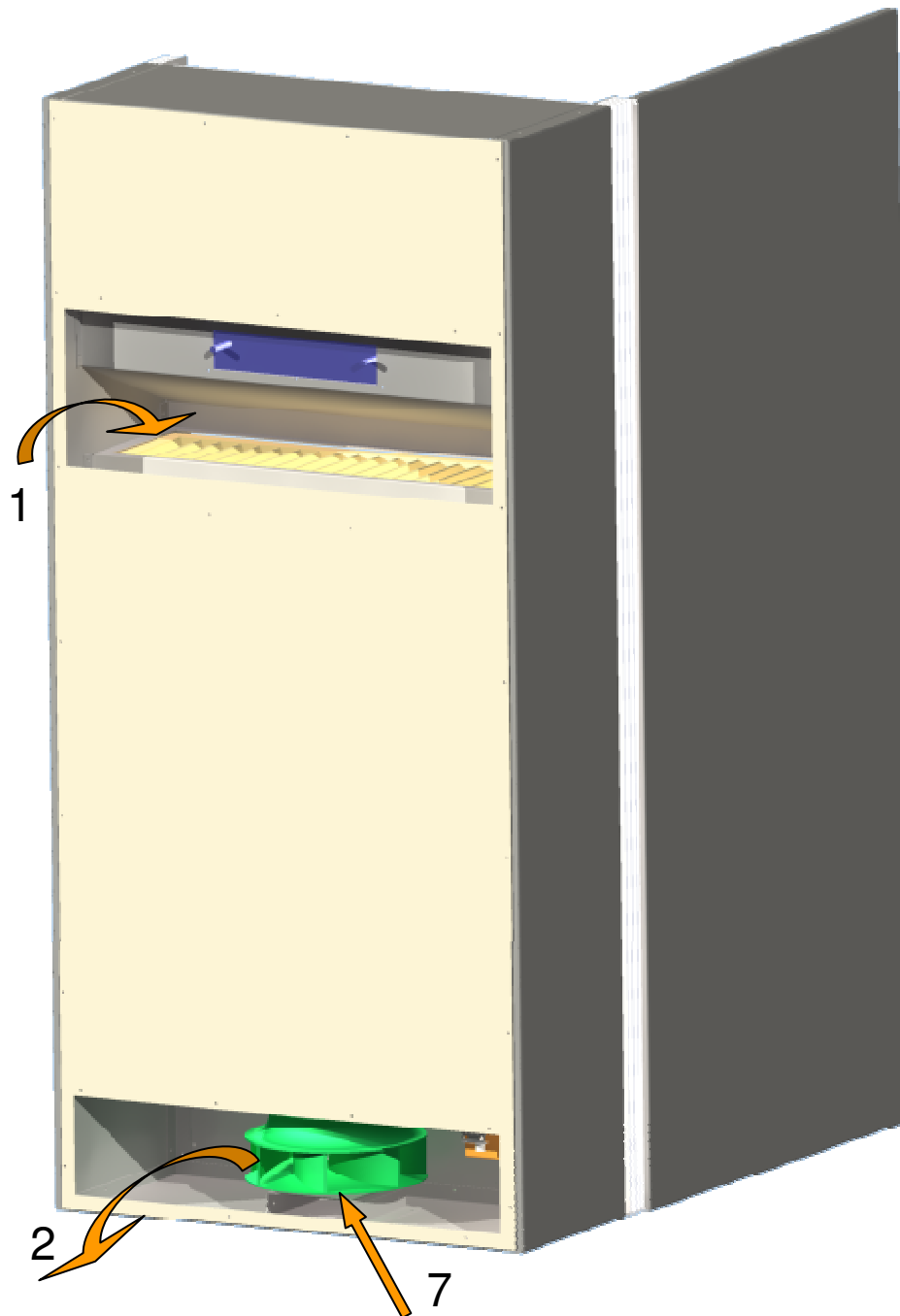
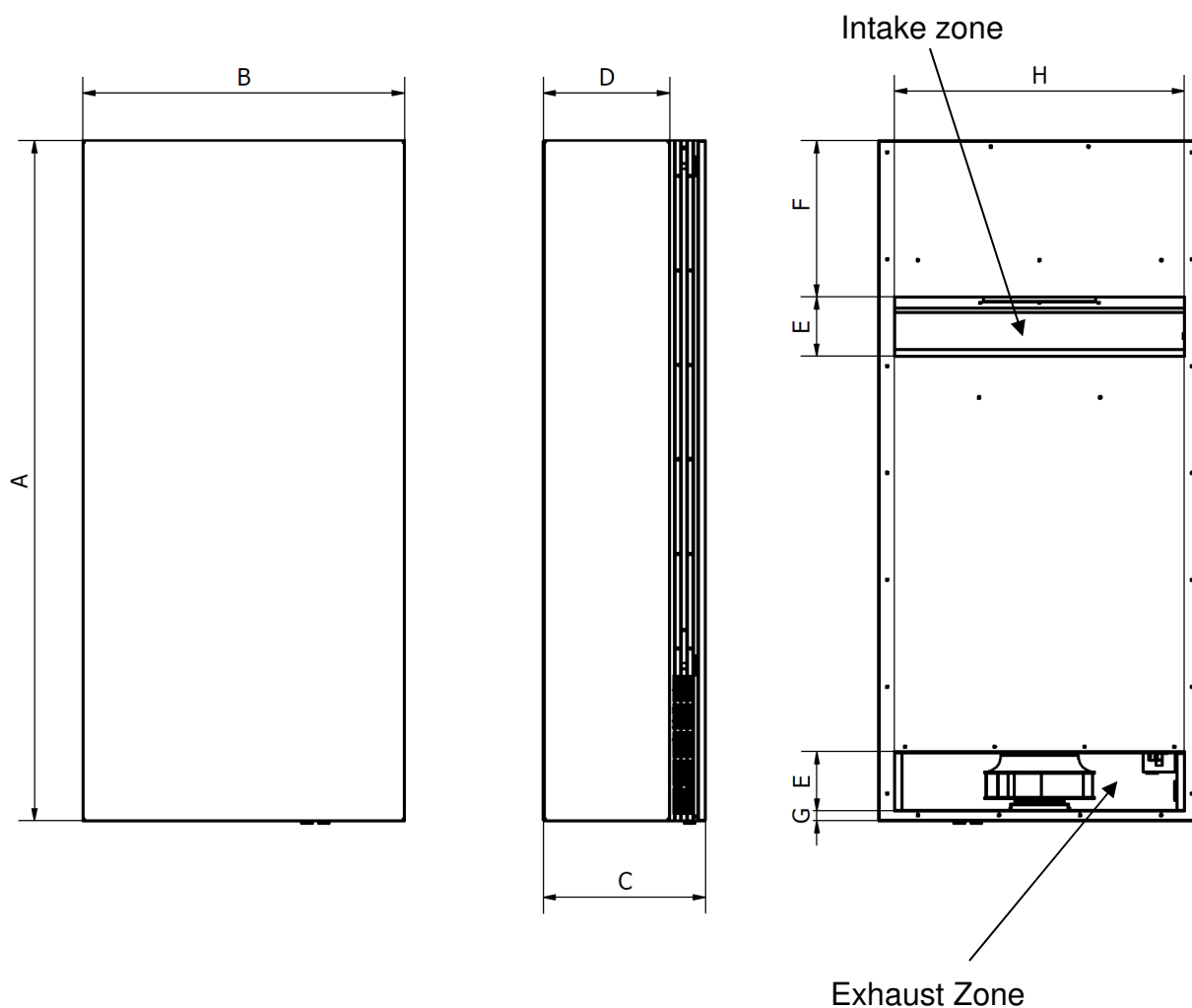


Figure 3 Main components



3.0.0 Installation of unit

3.1.0. External dimensions

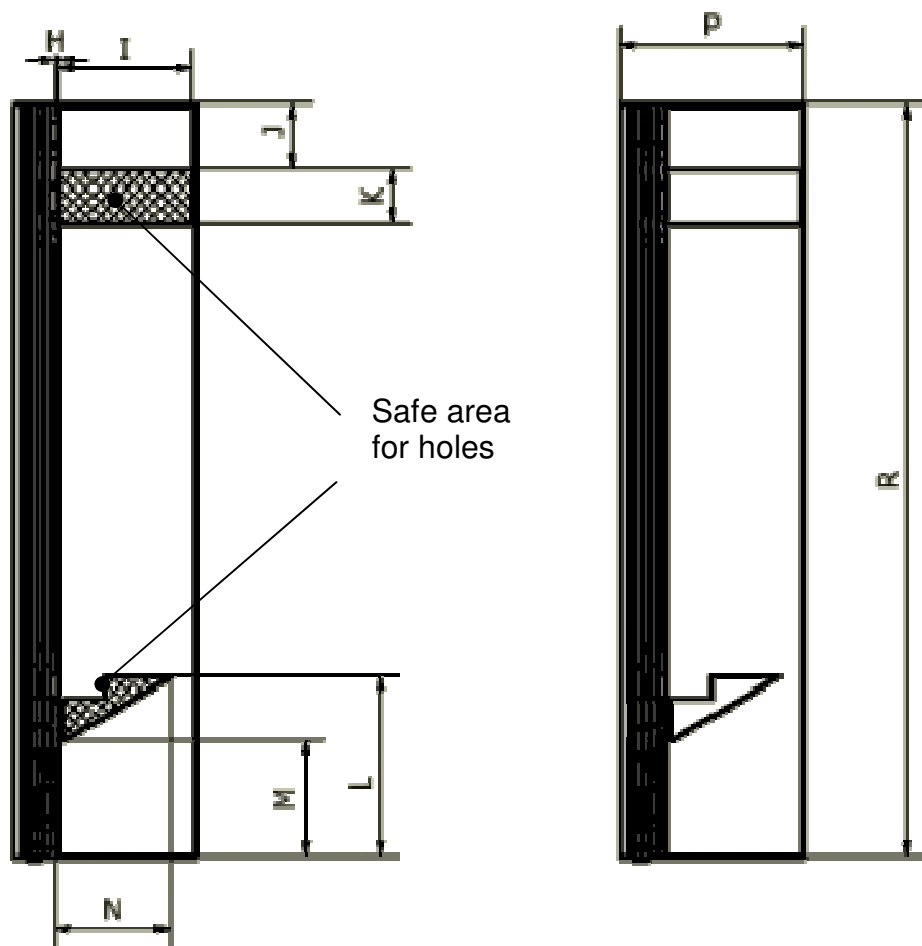


Dimensions (mm)	TX350A
A (Height)	1400
B (Width)	662
C (Depth)	334
D (Mounting Dimension)	260
E (Hole Height)	122
F (Hole Distance Upper)	322
G (Hole Distance Lower)	20
H (Hole Width)	597

Minimum required distance to walls, floor and ceiling is 70 mm.

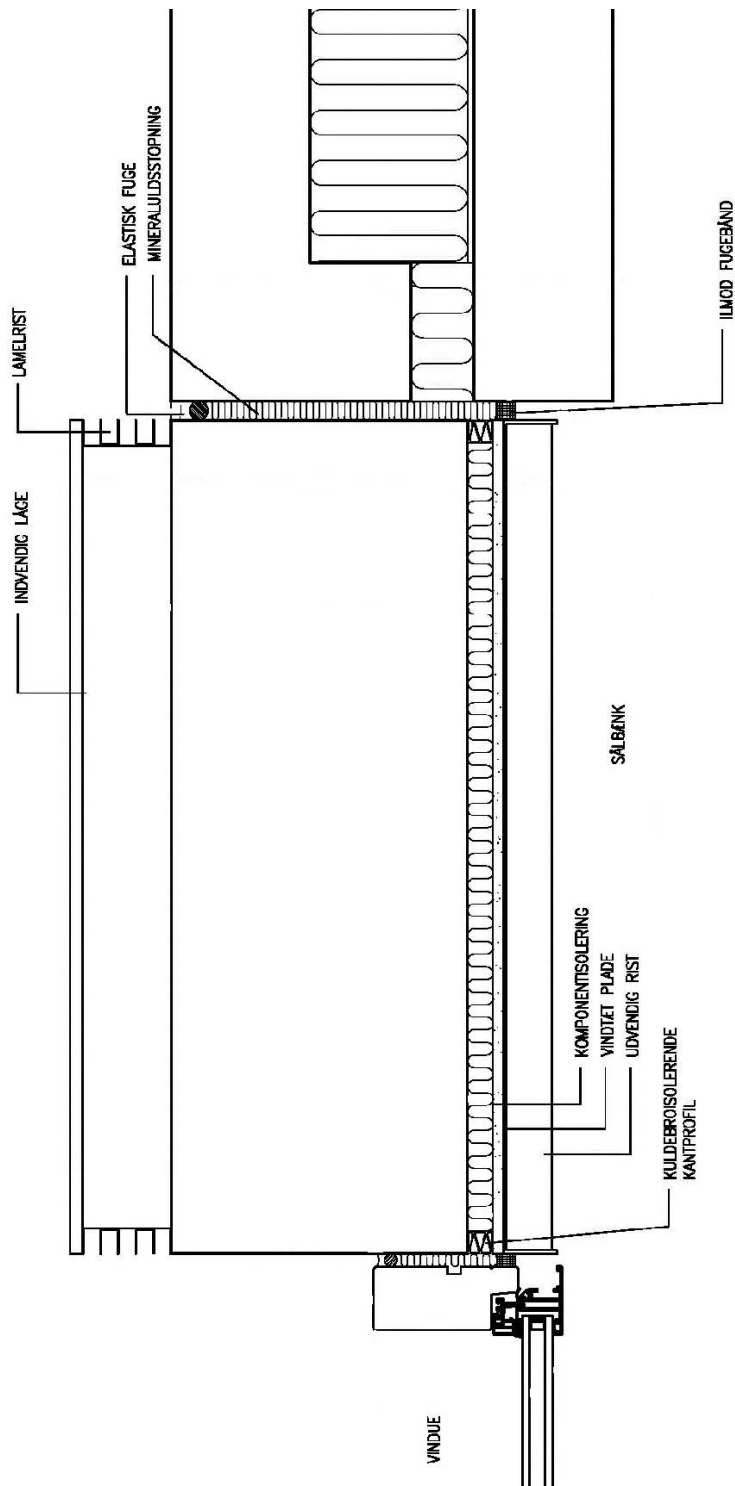
3.2.0 Wall/window installation

Internal reinforcement is built into the sides within the marked areas. Holes can be drilled in these areas as required for installation.

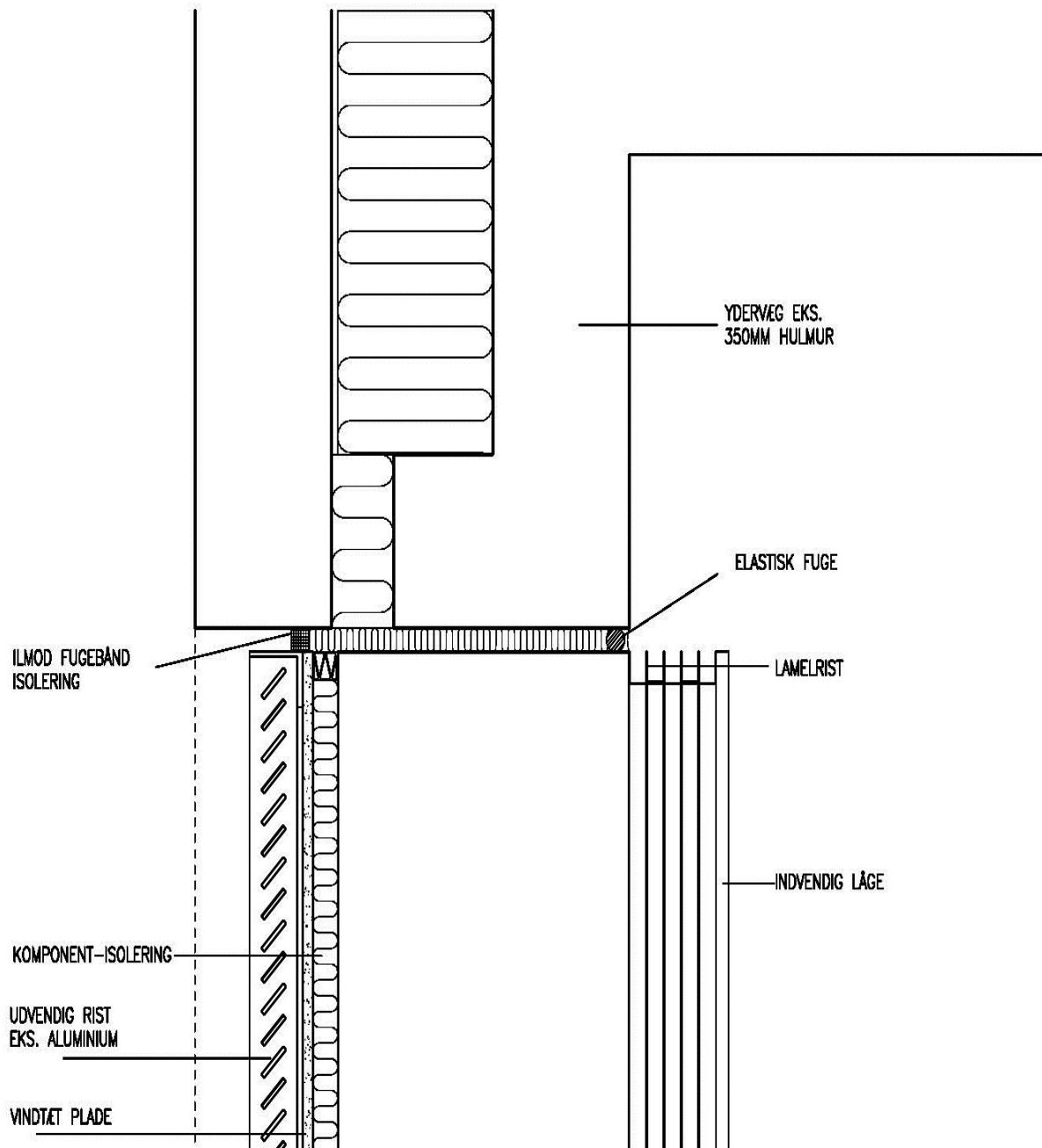


Dimensions:	TX350A
H	10
I	235
J	105
K	90
L	335
M	220
N	205
P	336
R	1400

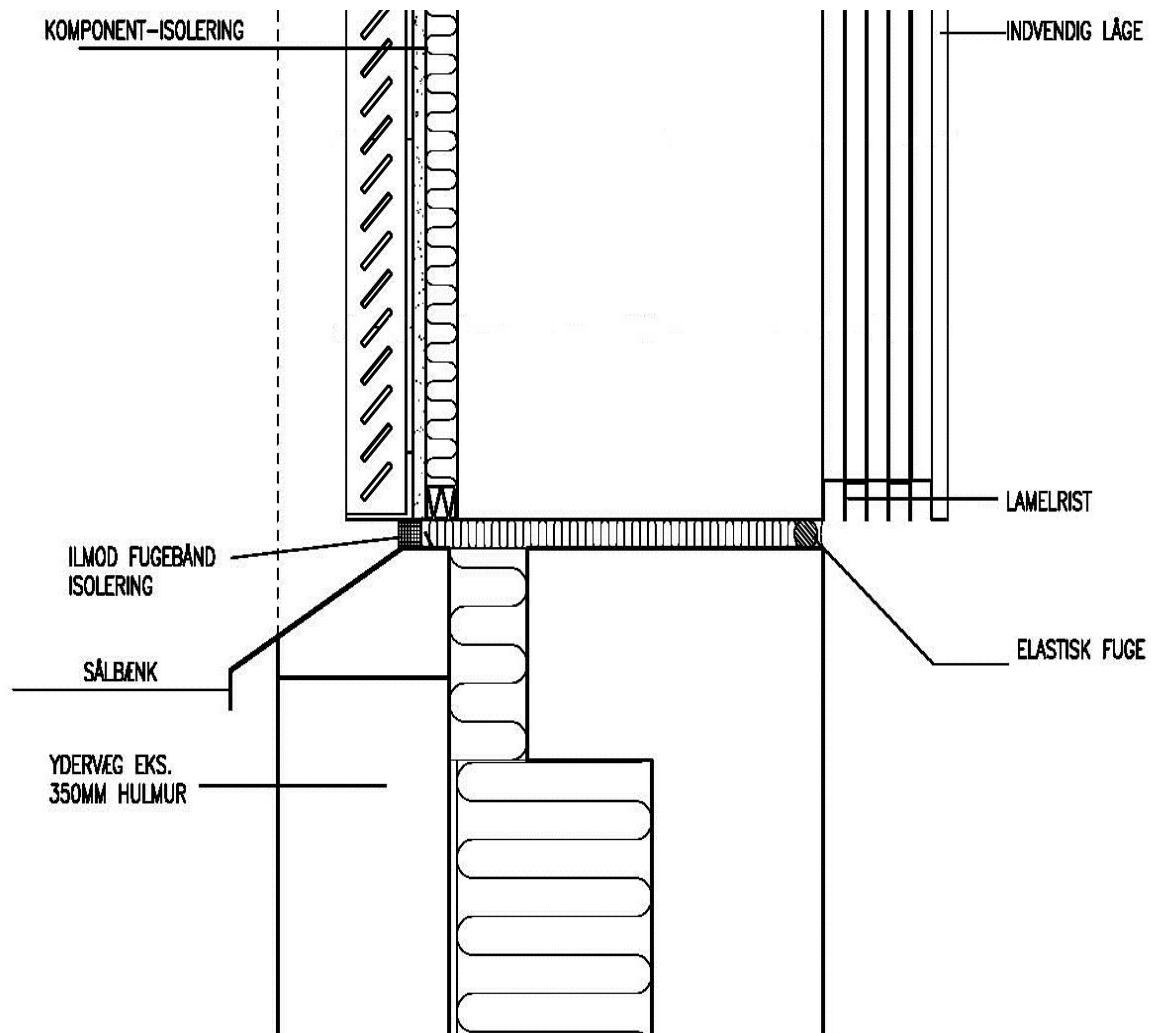
Plane cross-section for window/wall



Vertical cross-section, upper part

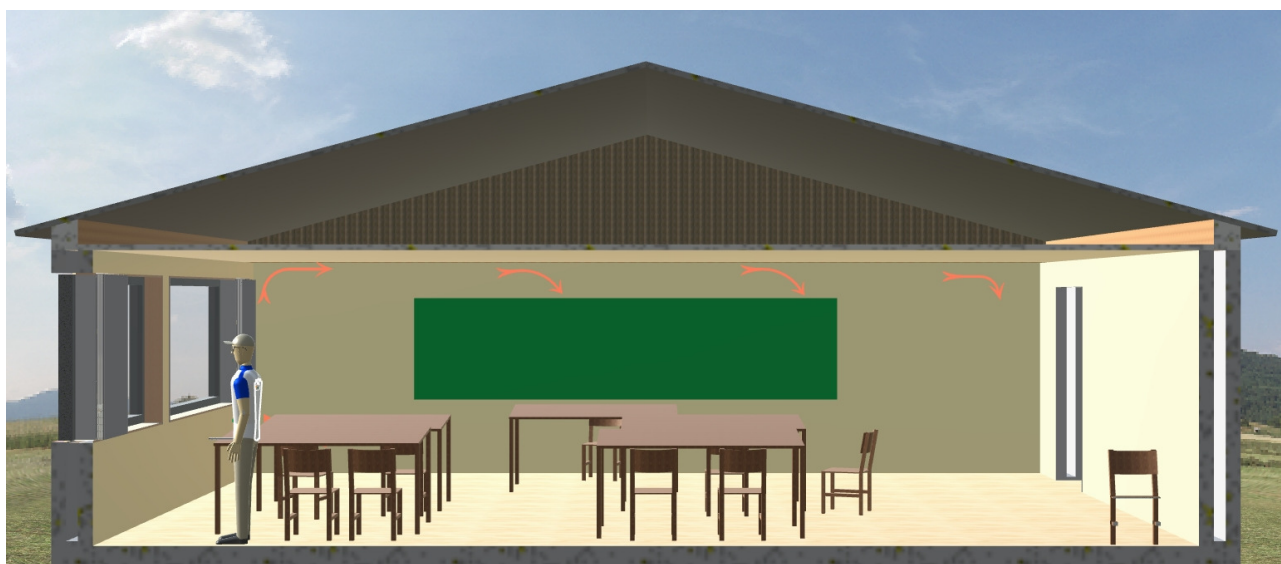
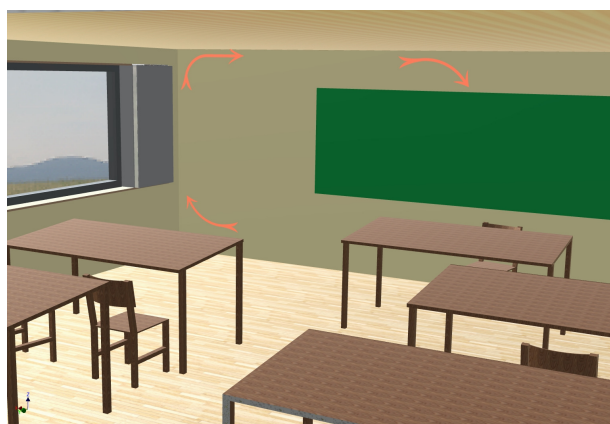
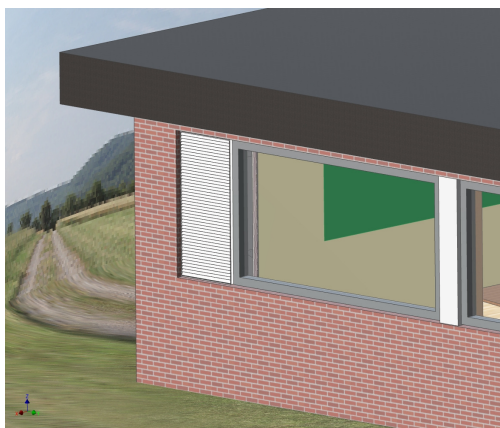


Vertical cross-section, lower part



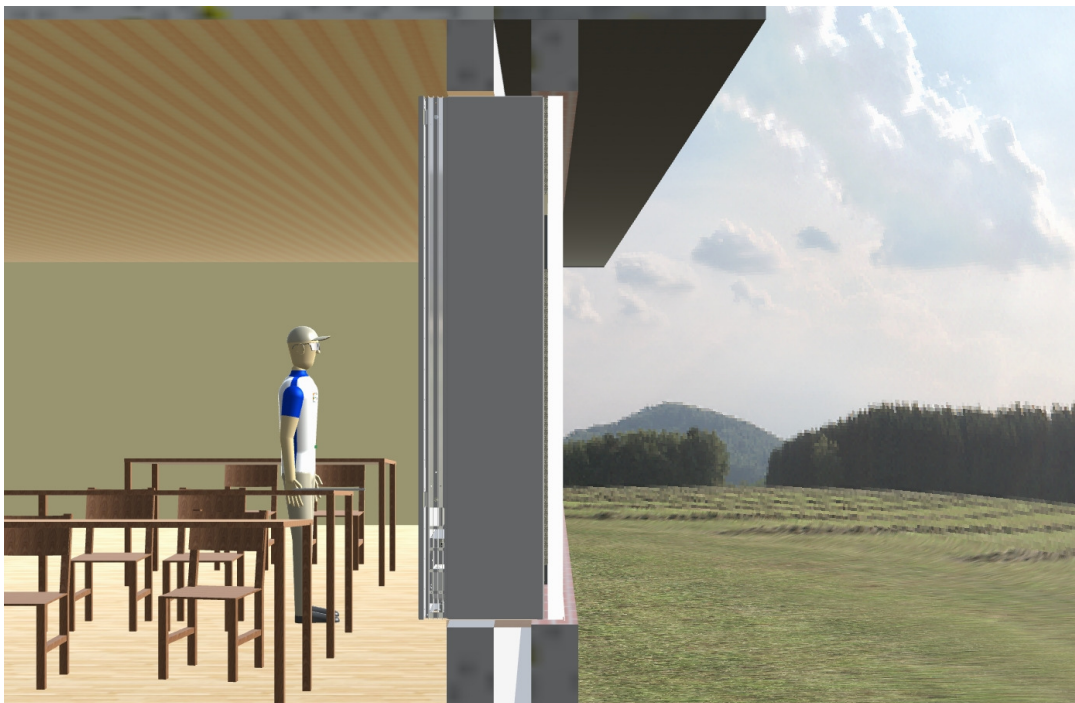
4.0.0 Placing the unit

The unit is usually placed in the wall by a window. This position makes the most of the coanda effect, which circulates fresh air well into the room. This gives the air longer to mix with the existing air in the room, avoiding drafts. The location of the supply grille and extraction provide optimum circulation in the room.

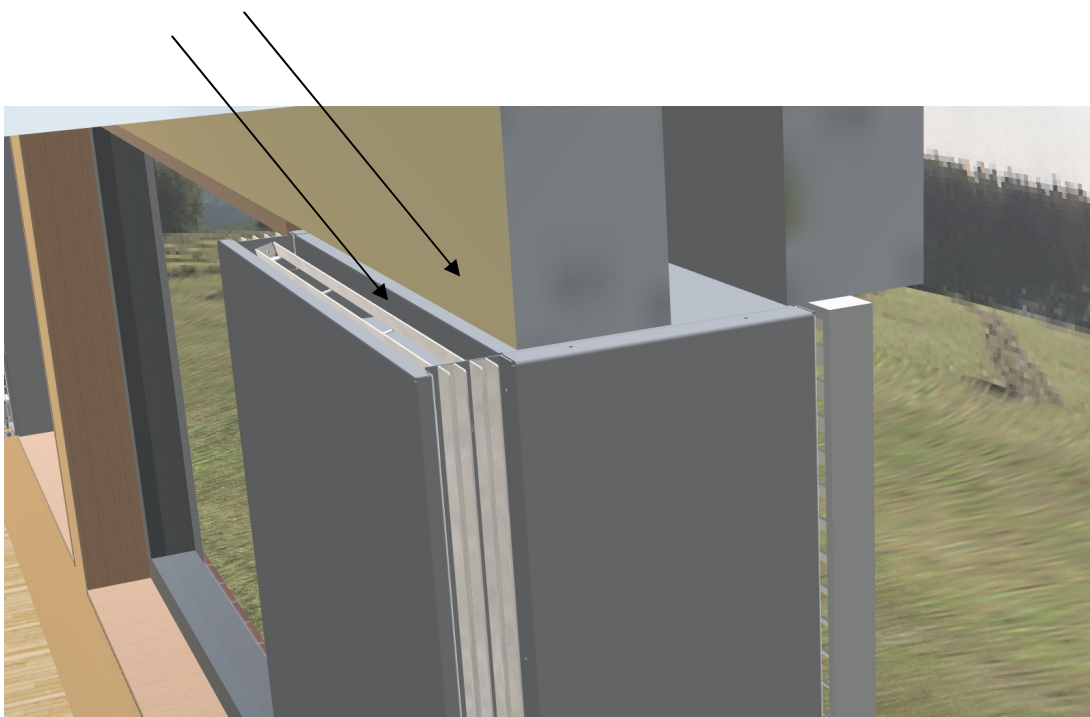


Placing the unit (cont.)

Place the unit with the edge of the cabinet flush with the inside of the wall in the room.
Ensure free air passage in both directions



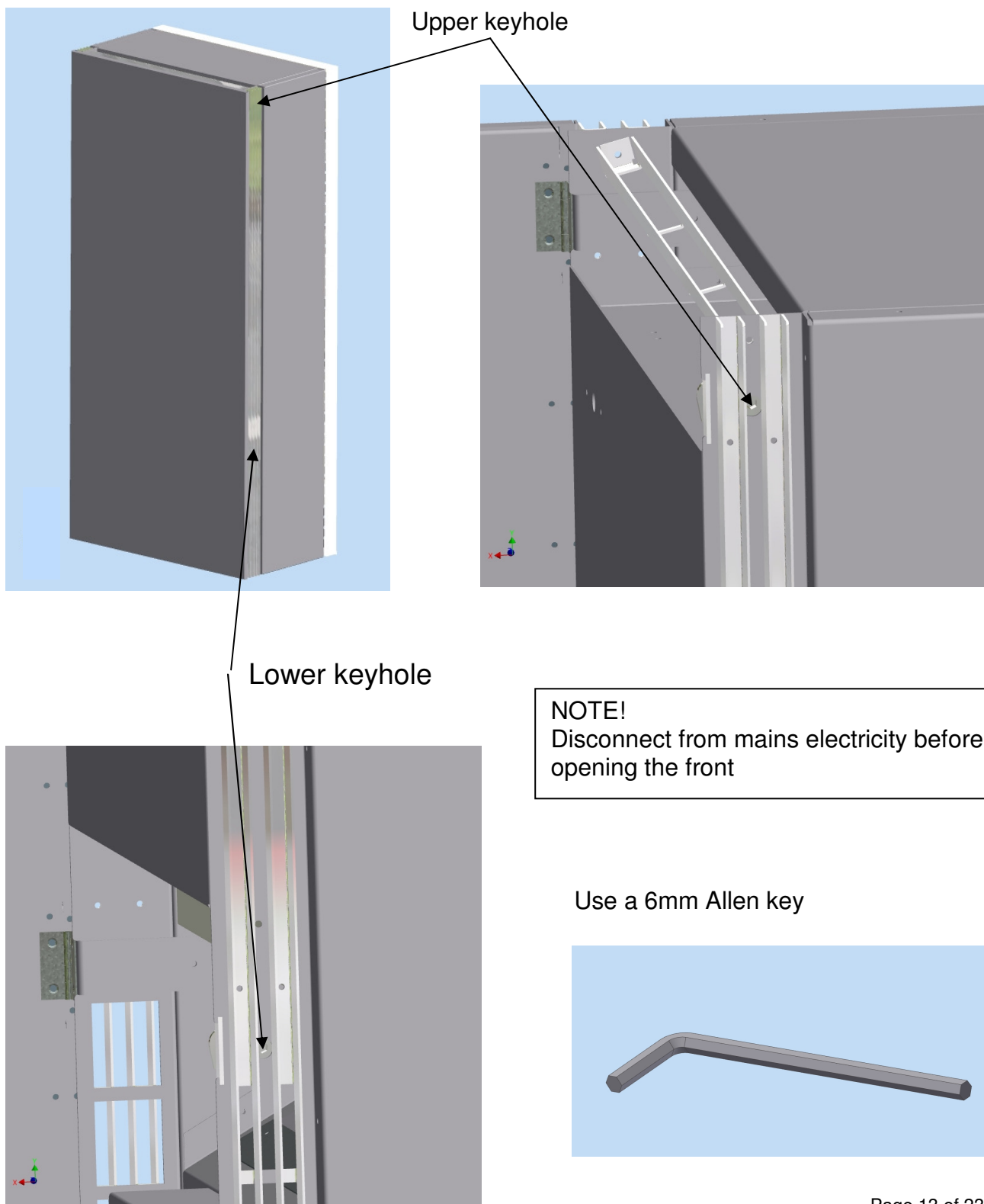
These surfaces should be flush



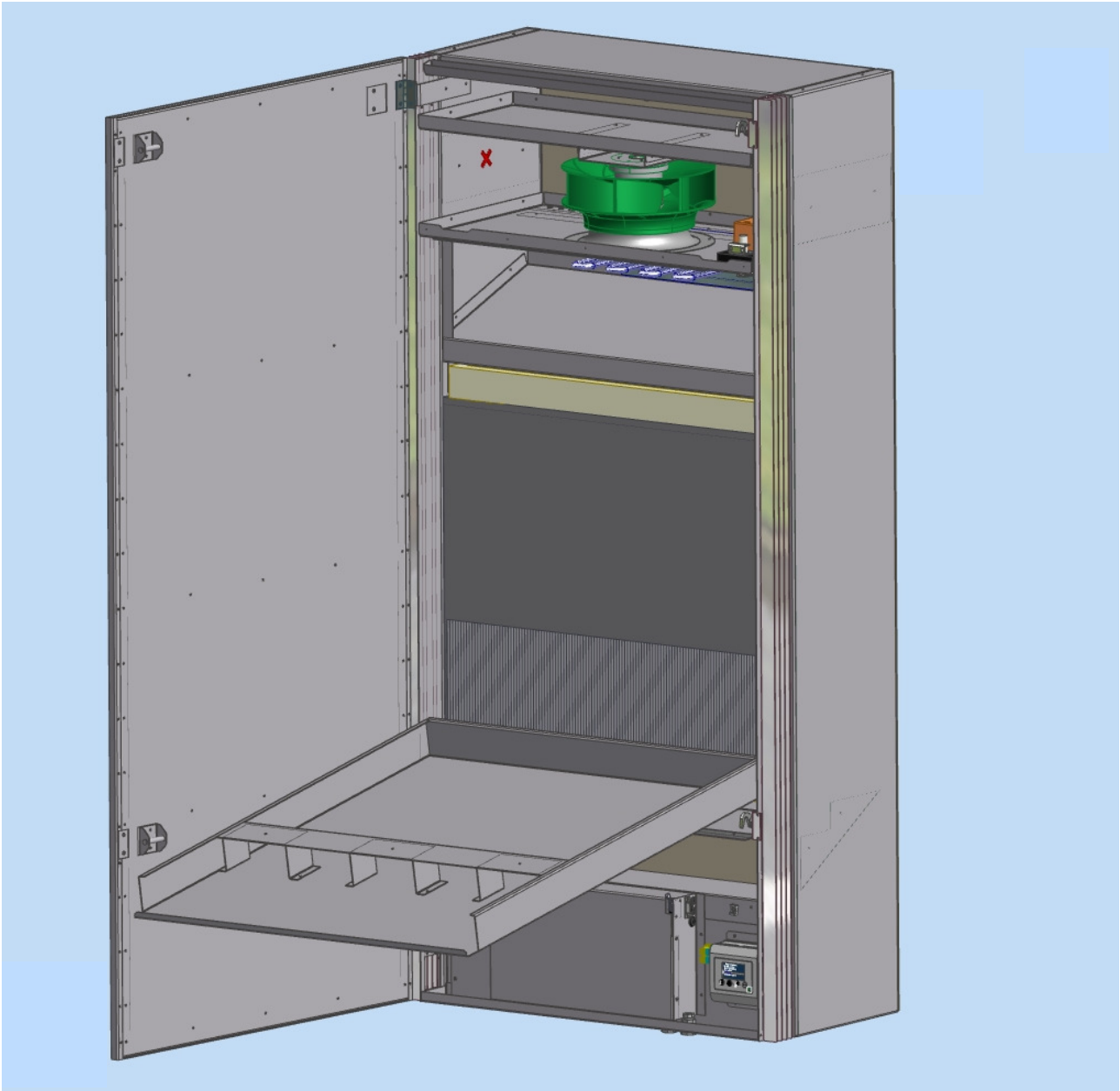
5.0.0 Service

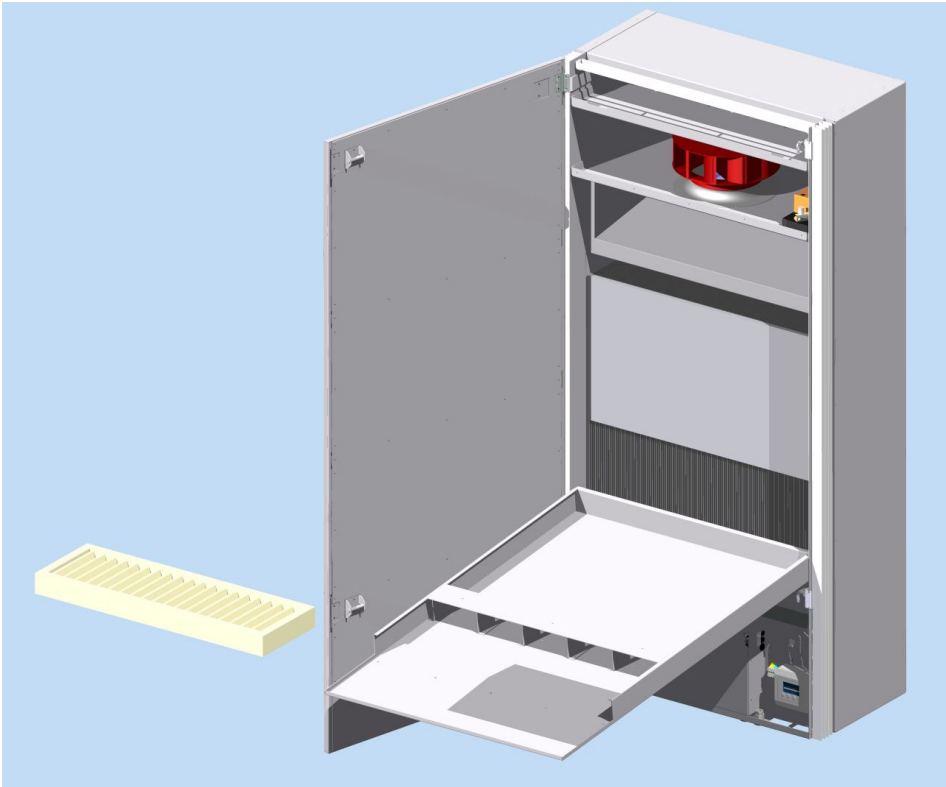
5.1.0 Filter change

We recommend changing the filters and carefully cleaning the exchanger 2- 4 times a year.

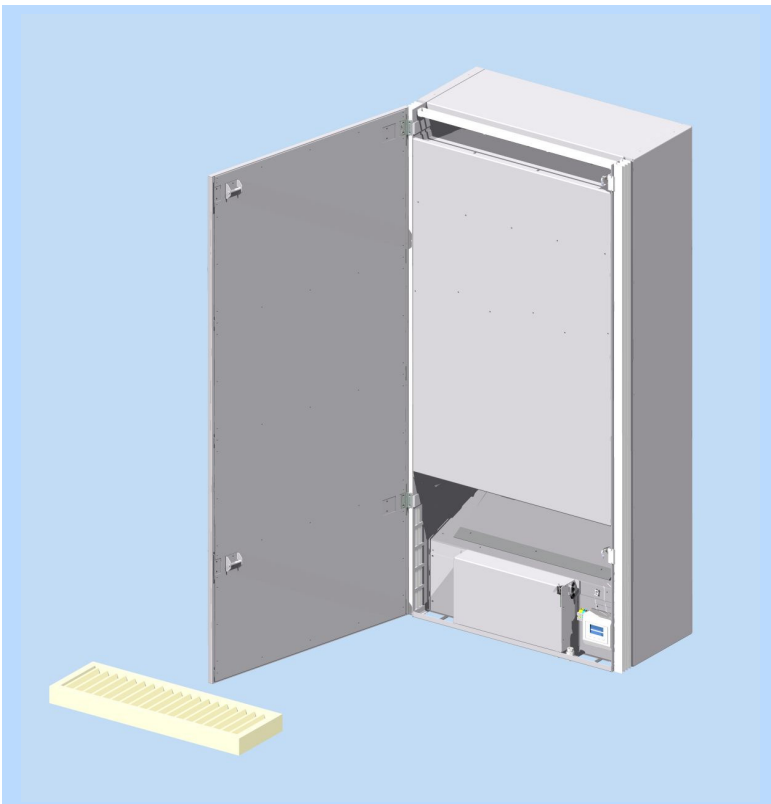


5.2.0 Removing filters and exchanger

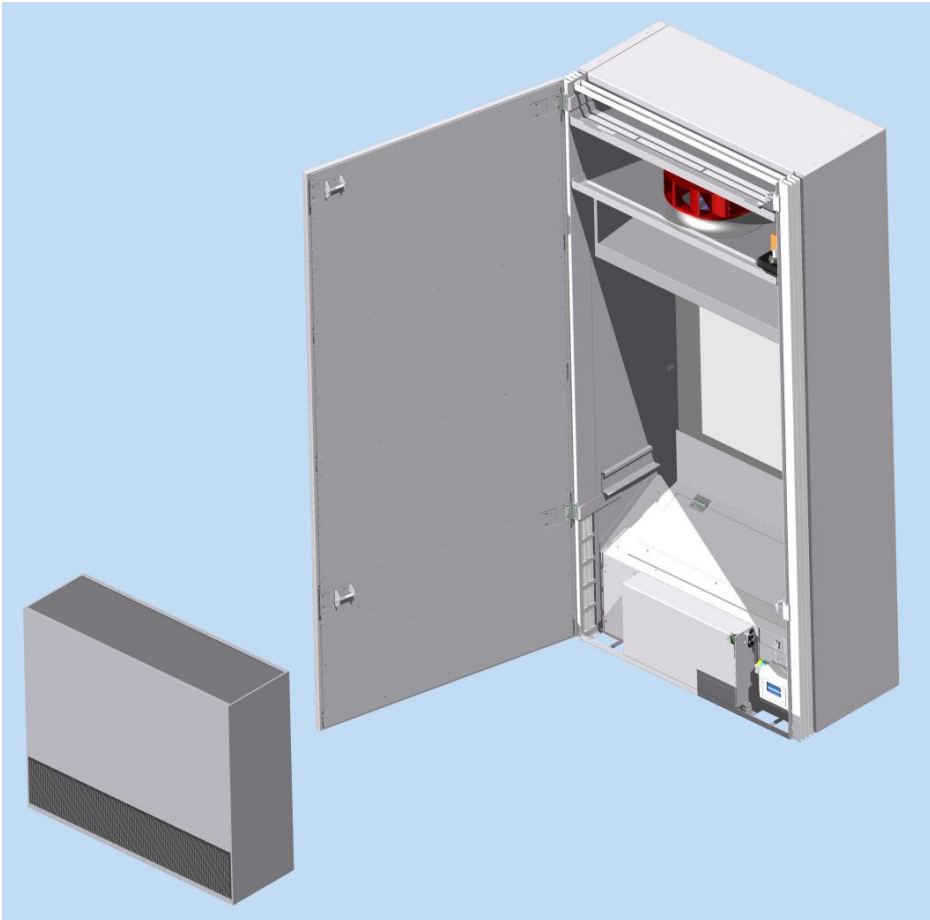




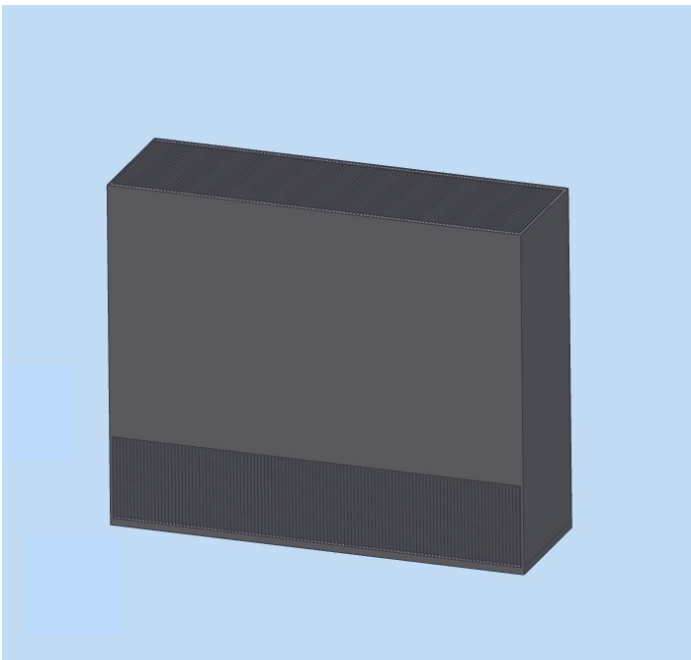
Change upper filter with inner door open.



Change lower filter with inner door closed.



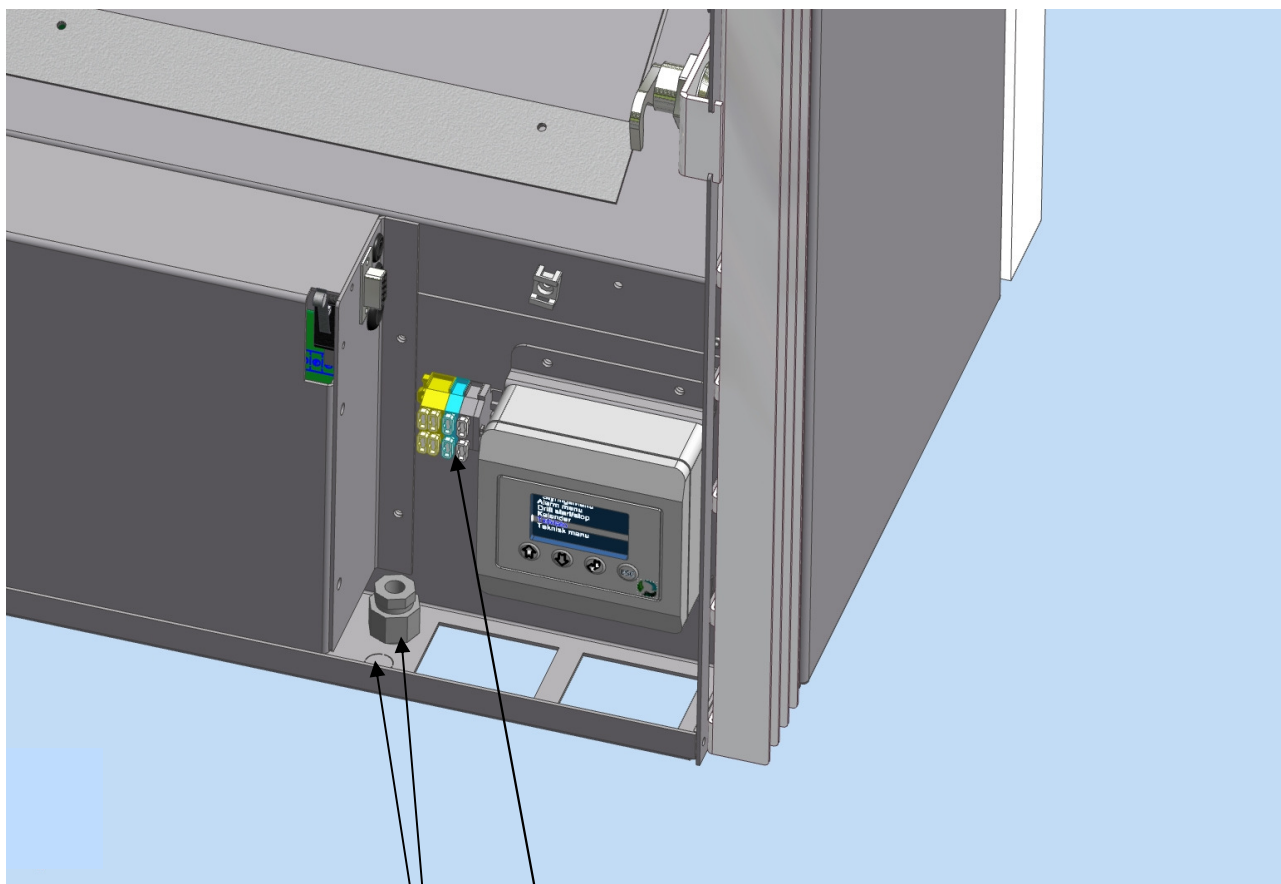
Remove inner door and filters to be able to lift out the heat exchanger.



Clean heat exchanger carefully using a vacuum cleaner with a soft brush head.

6.0.0 Connecting mains electricity

6.1.0 Connection



Cable grommet holes

Terminal clamps for connecting mains electricity

Note!

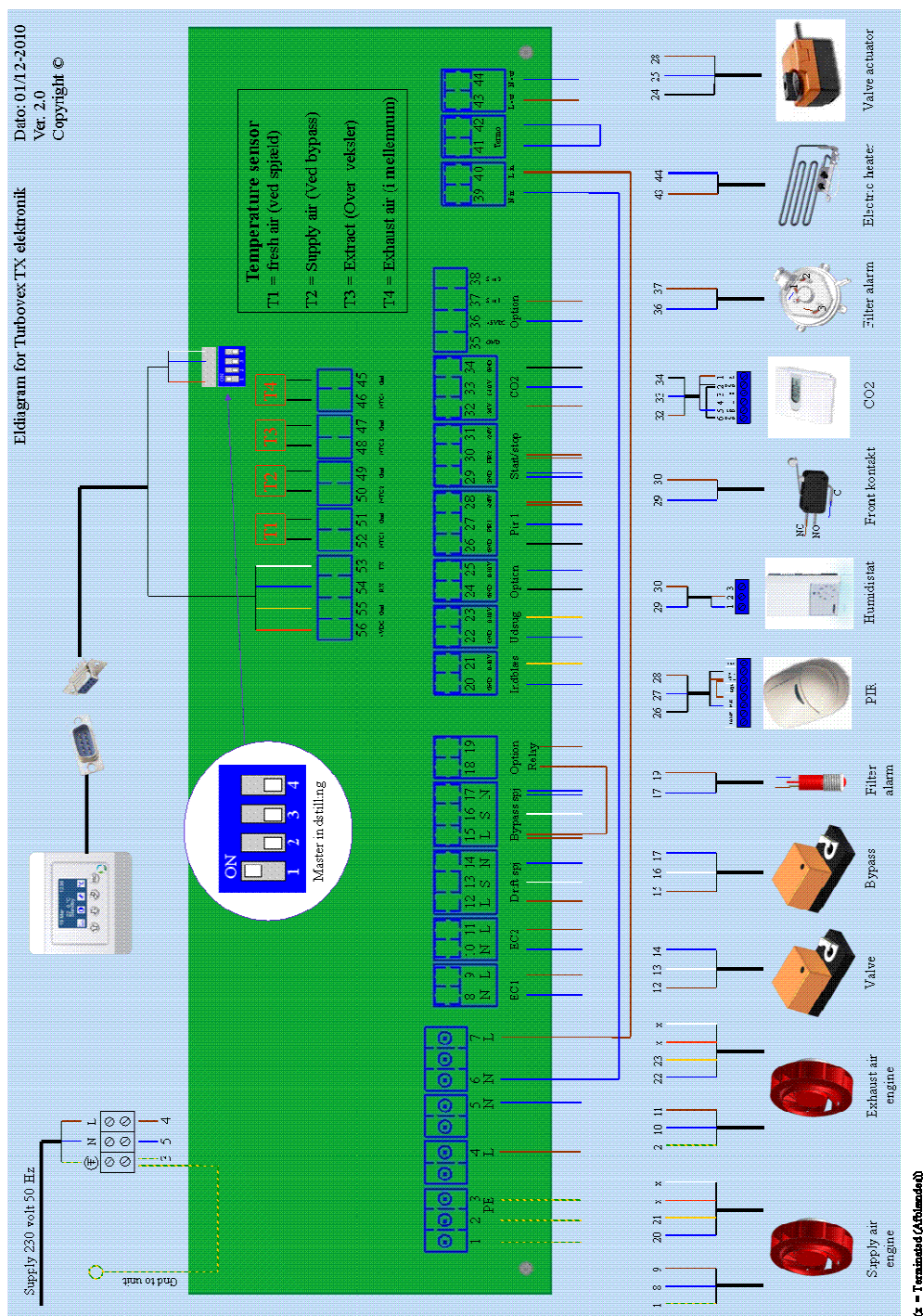
Connection of mains electricity must be performed by an authorised electrician

Note!

A circuit breaker must be mounted prior to the ventilation unit

6.2.0 Wiring diagram

Connect Turbovex unit according to wiring diagram



7.0.0 Technical specifications

	TX 350A	Unit
Dimensions:		
Height	1400	mm
Width	662	mm
Depth (without insulation and grille)	336	mm
Weight:	47	Kg
Capacity:		
Min.	170	m ³ /h
Max	330	m ³ /h
Forced	730	m ³ /h
Noise level:		
Min.	26	dB(A)
Max.	35	dB(A)
Forced	55	dB(A)
Filter:	M5	Filter class
Energy consumption (unit):		
	13.8	W
Min.	311	J/m ³
	28.6	Watt
Max.	315	J/m ³
	167	Watt
Forced	826	J/m ³
Output (motor):	2 x 82	W
Electricity supply	1 ~ 230 / 50	V / Hz
Temperature efficiency:	90,5	%
Electric heater	650	Watt

The airflow indicates the balanced air change in relation to motor voltage stated in m³/h. The standard unit setting is max. (see table above). If forced operation is required, please contact the dealer.

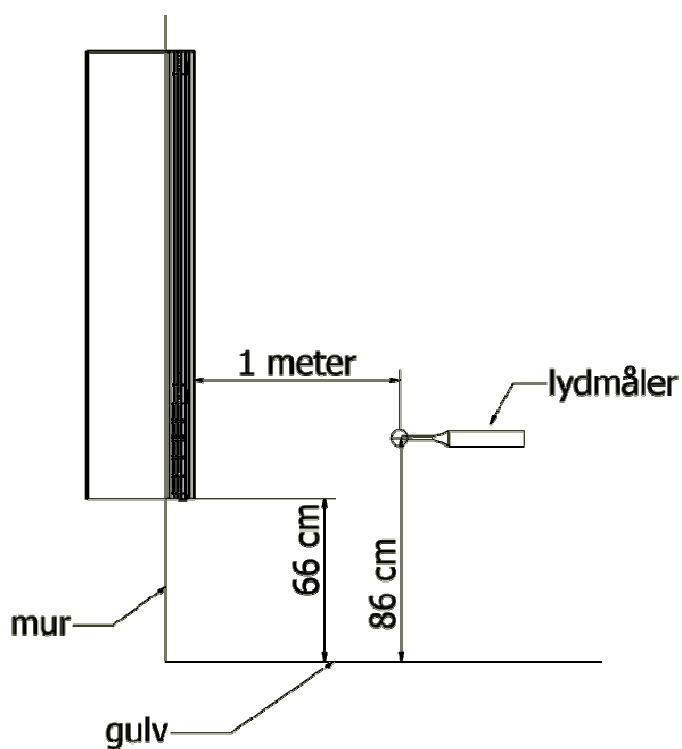
Noise level is stated in dB(A) in relation to air change, measured at a distance of 1 metre from and 1,2 m below the supply air grille. For comparison, a whisper is equivalent to 30 dB(A), ordinary speech 60 dB(A) and urban traffic approx. 90 dB(A).

Temperature efficiency degree at the heat exchanger is stated in % and is the relationship between the temperature differences achieved and the maximum achievable temperature difference, i.e. the outdoor temperature minus supply temperature divided by the outdoor temperature minus room temperature, converted to percent.

7.1.0 Sound test

Sound test performed in our laboratory on 12-10-11

Principle Sketch



Result:

30 dB $\approx$ 290m³/h consumption 23,4W (290 J/m³)
35 dB $\approx$ 345m³/h consumption 30W (313 J/m³)

8.0.0 Principle of operation

8.1.0 Description

The unit contains a counterflow heat exchanger and two fans, which enable the extraction of warm air from a room and concurrent supply of cold fresh air from outdoors. Heat exchange occurs by using the warmth from the extracted air to heat the cold fresh air.

Airflow:

Supply air fan (1) draws in fresh air, passes it through the filter (3), the heat exchanger (2), up through the fan blade, out through the louvres in the top and in to the room.

The extract air fan (4) draws air from the room through the louvres in the bottom and sides, up through the filter (5), through the heat exchanger (2), down through the fan blades, which blows it out at the bottom of the back.

Bypass:

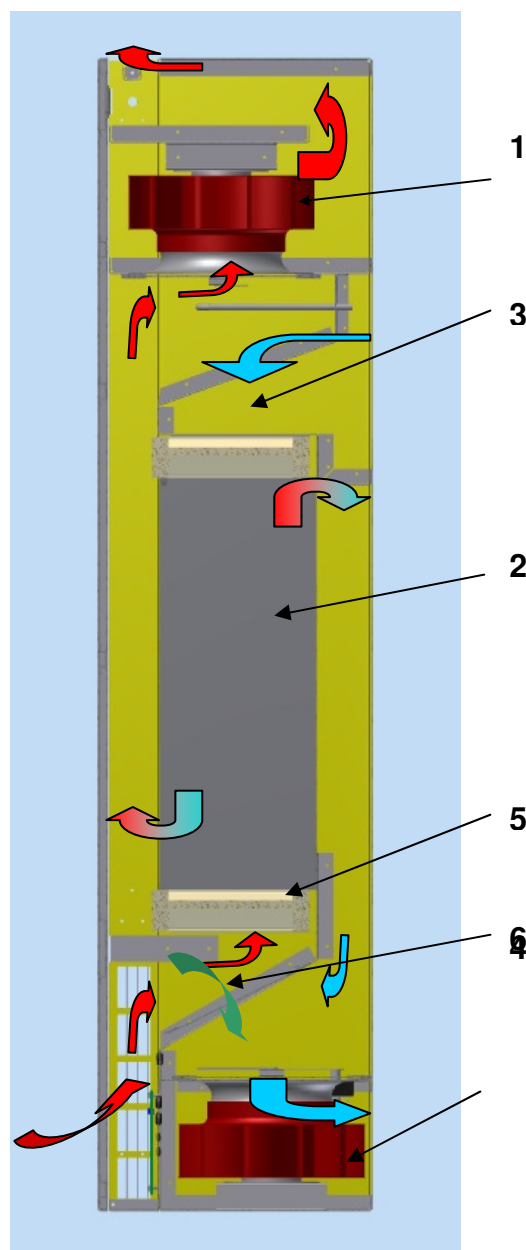
When the bypass damper (6) opens, the air is drawn through the unit, bypassing the heat exchanger and direct into the room.

Regulation:

The temperature desired is set on the control panel for the supply air.

A sensor registers the actual temperature of the supply air, and if it is lower than the set value, the control system will turn down the supply air volume.

The air will thus be warmer as it passes through the heat exchanger.



9.0.0 Operation

9.1.0 Regulating air volume

See also the user guide enclosed for the TX electronic controller.

The unit has 2 operating settings. One for daytime, which gives the dimensioned air volume the unit is set for by the factory, and one night time operation, which runs slower, to save energy at night.

NB! If air volume is regulated by a CO2 sensor, the unit will adjust its speed according to conditions in the room.

NOTE!

Units with electrical comfort heaters always have a run-on time of approx. 80 seconds.

9.2.0 Regulating temperature

See also the user guide enclosed for the TX electronic controller.

The temperature required is set on the control panel. We recommend that the temperature should not be set higher than the room temperature. Fresh air temperature should be 2-3 degrees below room temperature to achieve the best circulation in the room.

When the unit is stopped, the last temperature setting is automatically saved, and the unit will start using that setting.

The unit has a fully-automatic by-pass system, which directs the air past the exchanger when the temperature permits.

9.3.0 Master/slave

To use this function, a PCB board is required. Contact your dealer.

5 slaves can be connected to one master. This means that one unit can be used to control 5 other units, so that all 6 units run uniformly.

See the user guide for correct master/slave setup.

The unit is programmed as a master as standard.

10.0.0 Declaration of compliance

Manufacturer:

Name: Turbovex A/S
Address: Industrivej 45
DK-9600 Aars
Country: Denmark
Tel: +45 96 98 14 62

Dealer:

Name: Turbovex A/S
Address: Industrivej 45
DK-9600 Aars
Country: Denmark
Tel: +45 96 98 14 62

hereby declares that

Product:

Name: TX 350A
Serial no.: 300-000-000

Name: TX 150A
Serial no.: 150-000-000

complies with

Council Directive of 17 May 2006 on harmonisation of member state legislation on electrical materiel intended for use within certain voltage ranges (2006/42/EC)

has been manufactured in accordance with the following national standards. which implement a harmonised standard:

DS/EN 12100-1/A1:2009

Safety of Machines - Basic concepts, general principles for design - Part 1:
Basic terminology and methodology (ISO 12100-1:2003)

DS/EN 12100-2/A1:2009

Safety of Machines - Basic concepts, general principles for design - Part 2: Technical principles (ISO 12100-2:2003)

DS/EN 60269-1/A1:2009

Low voltage fuses – Part 1: General requirements (IEC 60269-1:1998) supplement A1:2005 to

DS/EN ISO 13857:2008

Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs

DS/EN 61000-6-1:2007

Electromagnetic compatibility (EMC) Part 6-1: Generic standards, Immunity for residential, commercial and light-industrial environments

DS/EN 61000-6-3:2007

Electromagnetic compatibility (EMC) Part 6-3: Generic standards, Emissions standards for residential, commercial and light-industrial environments

DS/EN 61000-6-4:2007

Electromagnetic compatibility (EMC) Part 6-4: Generic standards, Emission standard for industrial environments

Aars 5/7-2011 Arne Christensen

Date: Production Technologist: Arne Christensen