



# User manual – Installation guide

## TX 3100A



Rev. 2017.02.03

<b>TURBOVEX®</b>		<b>Type TX 3100A</b>	
MASTER <input type="checkbox"/>	LON <input type="checkbox"/>	WEEK	YEAR
SLAVE <input type="checkbox"/>	MODBUS <input type="checkbox"/>	- 20	
Power consumption: max. 1136 W 1.2 kJ/m³		Fabr. Nr. _____	
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## 3.0.0 General information

### 3.1.0 Foreword

This user's manual contains technical information regarding the installation and maintenance of the ventilation unit **Turbovex TX 3100A**.

### 3.2.0 Field of application

**Turbovex TX 3100A** is designed for comfort ventilation in industrial buildings, garages and sports halls.

### 3.3.0 List of parts

**Turbovex TX 3100A** is delivered with the following key components.

1. TX 3100A unit
2. Top cone
3. Filter holder
4. Inlet ring
5. Standard mounting brackets
6. Special mounting brackets (optional)
7. TX electronic control
8. Silicone rubber + various screws and bolts. Wire and wire tensioners.



### 3.4.0 Function of the unit

The principle of the heat recovery in the Turbovex TX3100A is based on the rotating heat exchanger (B). The exhaust fan (A) extracts the warm room air from the funnel (D) through half of the heat exchanger (B), and send it through the exhaust cap (F).

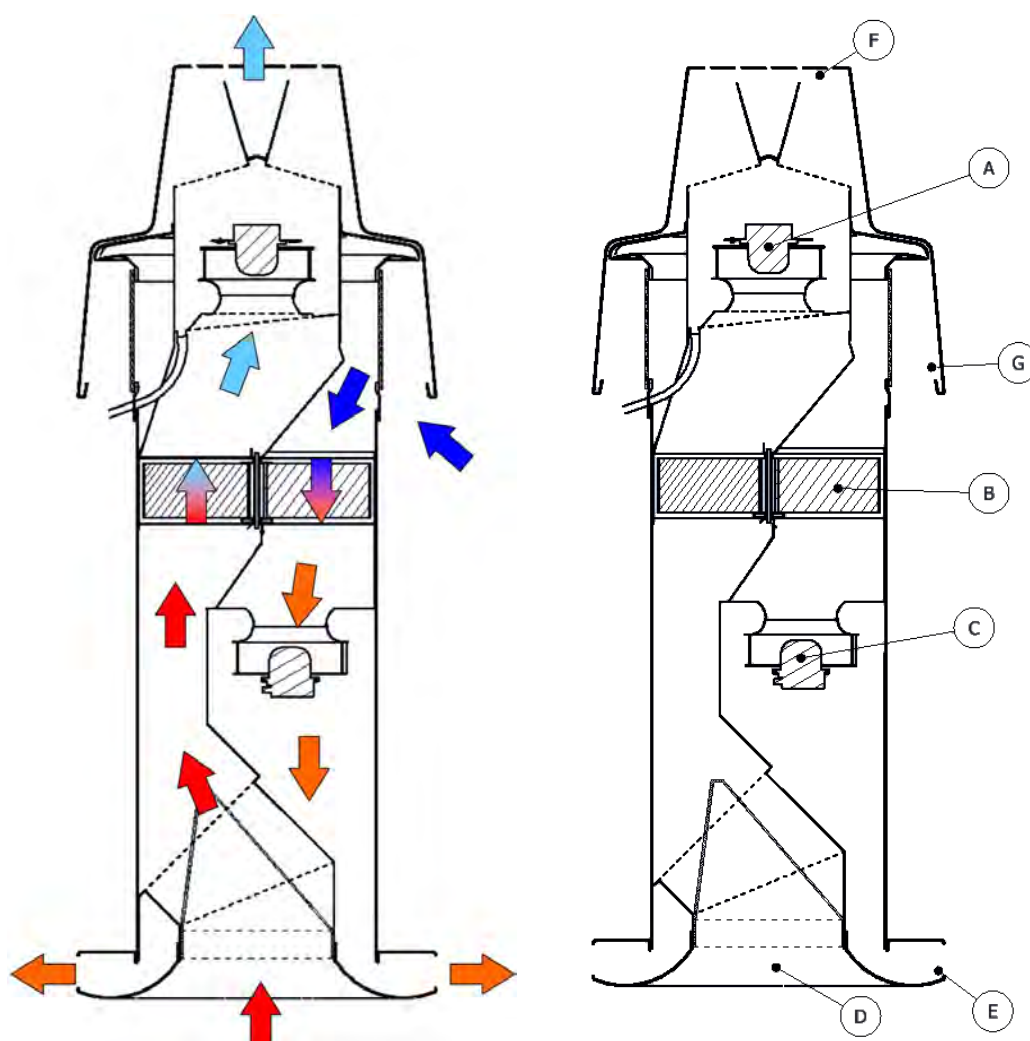
Simultaneously the inlet fan will (C) sucks air from the inlet cap (G) and send it through the other half of the heat exchanger.

The heated fresh air is sent to (E), and diffused in the room.

One half of the rotating heat exchanger will heat up in the warm flow of the exhaust air. When the heated material in the heat exchanger is in the cool flow of the inlet air, it will deliver heat from the material to the fresh air.

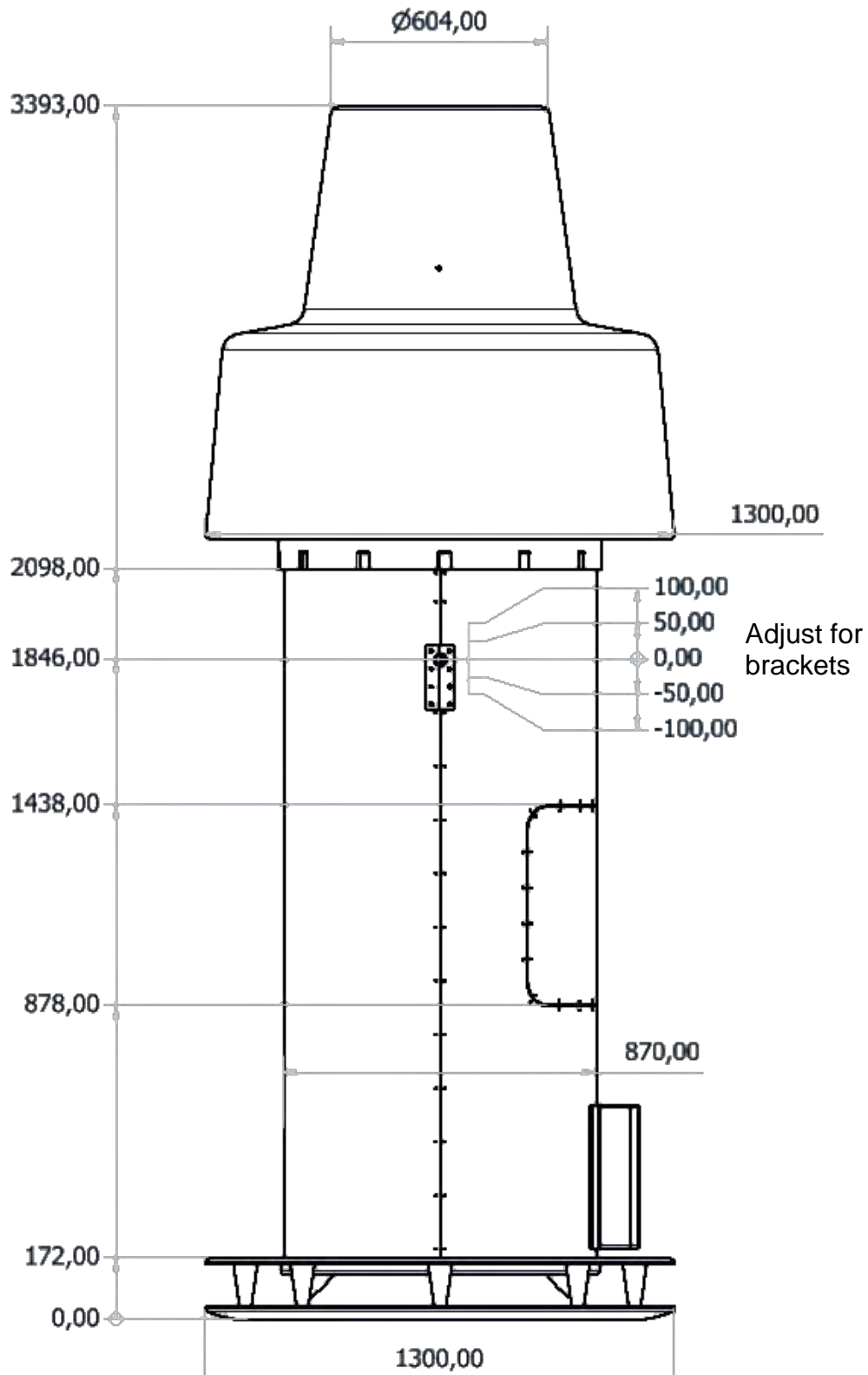
The process is regenerative as the heat exchanger rotates at low rpm.

The heat exchanger is equipped with a cleaning sector creating a low pressure to eliminate the possibility of undesirable leaks.



## 4.0.0 Installation

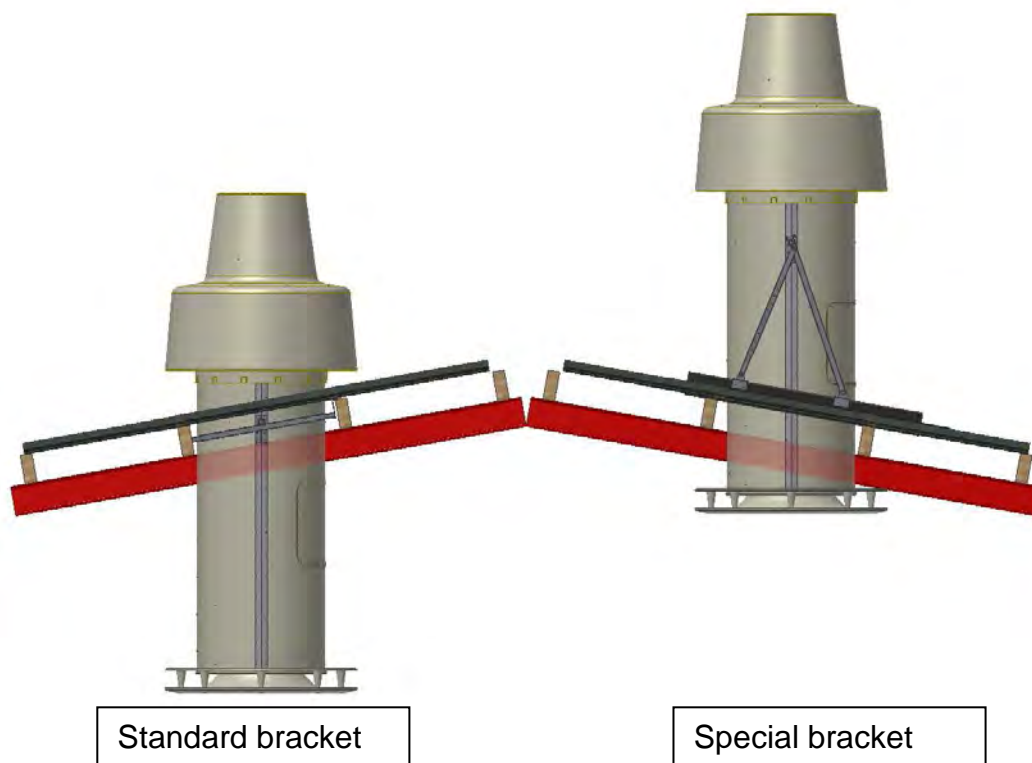
### 4.1.0 Dimensions



## 4.2.0 Placement

Turbovex TX 3100A is intended for installation through the roof. The unit can be placed in roofs with inclines ranging from 0 to 45 degrees. Turbovex TX3100A is available with two types of mounting brackets.

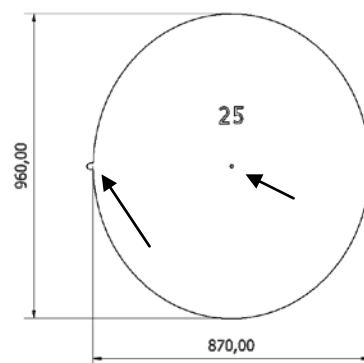
The standard mounting bracket places the inspection hatch inside the building. The special mounting bracket is intended for use if you want the hatch placed outside the building.



## 4.3. Template

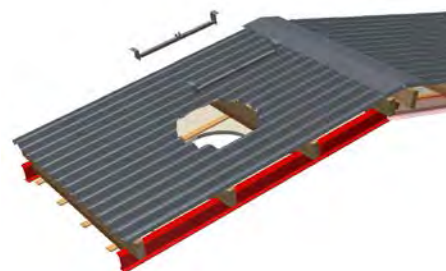
It is a good idea to create a template according to the incline of the roof. Remember to mark 2 notches and a center hole. The notches are for placing the unit horizontally.

∠ 0	=	Ø870 mm
∠ 5	=	870 x 880 mm
∠ 10	=	870 x 890 mm
∠ 15	=	870 x 900 mm
∠ 20	=	870 x 930 mm
∠ 25	=	870 x 970 mm
∠ 30	=	870 x 1010 mm
∠ 35	=	870 x 1070 mm
∠ 40	=	870 x 1140 mm
∠ 45	=	870 x 1240 mm

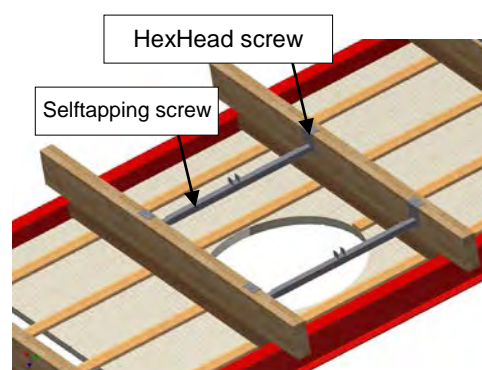


#### **4.4.0 Installing the unit (standard mounting brackets)**

Perform measurements and determine the placement of the unit and drill a small center hole vertically through the roof. Use the aforementioned template to make the rest of the hole for the unit according to the incline of the roof.

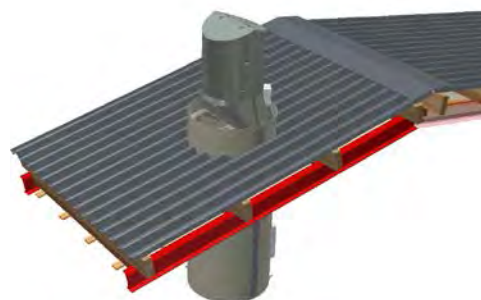


The mounting brackets are mounted between the purlins at a distance of 1000 mm between the two brackets. The mounting brackets are secured using mounting screws top and bottom.



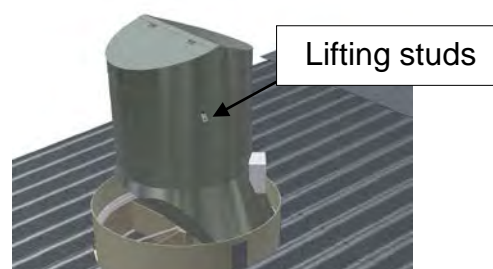
The forks on the bracket are adjusted so they are directly opposite and locked in place using self-tapping screws through in the telescopic tubes.

The unit, weighing about 200 kg. is mounted in the brackets so the studs fall into place in the saddle brackets.



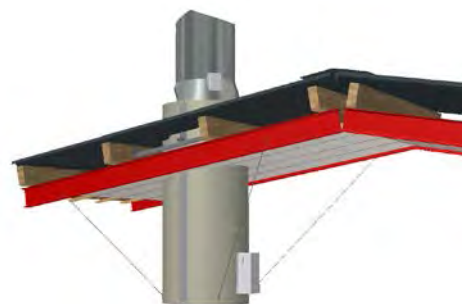
When installing on a slanted roof, please place the unit so the service hatch is facing the ridge of the roof to allow for easy access to the hatch.

The unit can be lifted using the two lifting studs mounted near the top of the unit.





Wire and wire tensioners are fitted in the four brackets on the side of the unit. Tension is applied to the wires between the supplied bracket mounted on purlins and battens. The purpose of the wires is to adjust and keep the unit in a vertical position.



The inlet ring is pushed onto the unit and secured using self-tapping screws from both inside and outside. Now proceed to complete the roofing.

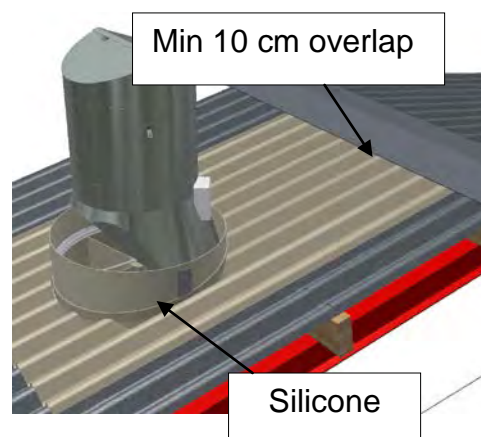


The soft cover is pulled over the unit. Seal the edge using silicone rubber. Use silicone rubber under the vertical part of the cover and on the top of the edge to secure a watertight joint.

When the cover is cut, please note you will need a 10 cm overlap with the overlying roof tile or ridge. The hole in the cover is cut using the same template used for cutting the hole in the roof.

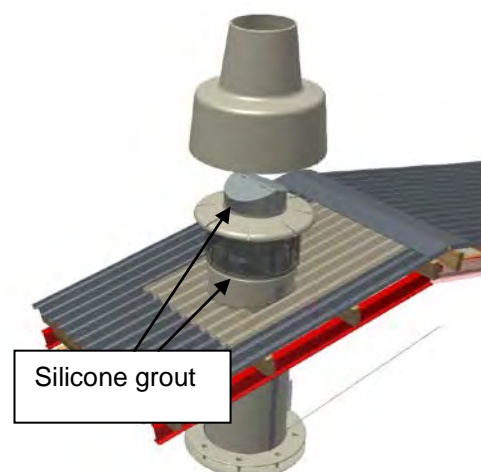
**The hole in the cover must be cut in a diameter about 5 cm smaller than that of the template to ensure a tight fit.**

The soft cover is fastened using self-tapping screws and needs to be no more than 15 mm inside the unit to ensure ample space for the rotating parts in the unit.



The filter holders are sealed with silicone rubber and secured using self-tapping screws.

The top cone is screwed in place using M8 bolts.





#### 4.5.0 Installing the unit using special brackets

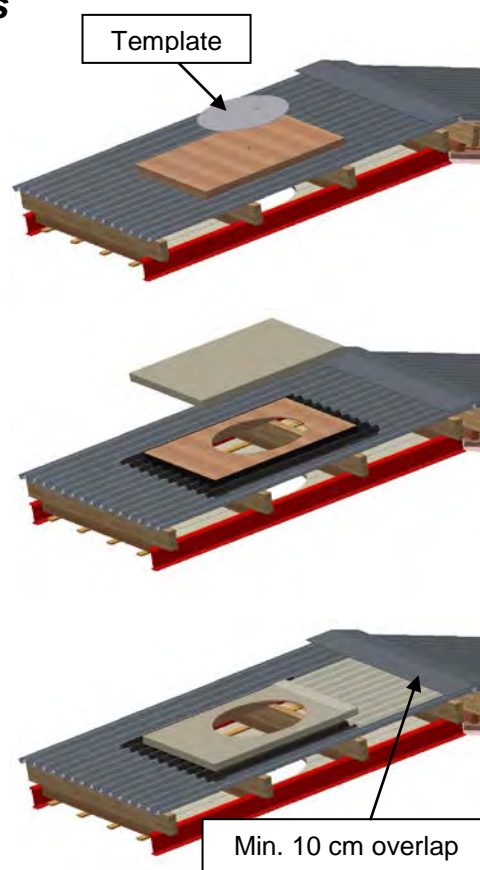
Perform measurements and determine the placement of the unit and drill a small center hole vertically through the roof. The wooden frame is aligned with the center hole. Now cut a square hole and secure the frame to the rafters

Use a template (see 4.3.0 template) and cut a hole in the wooden frame and the rest of the roof.

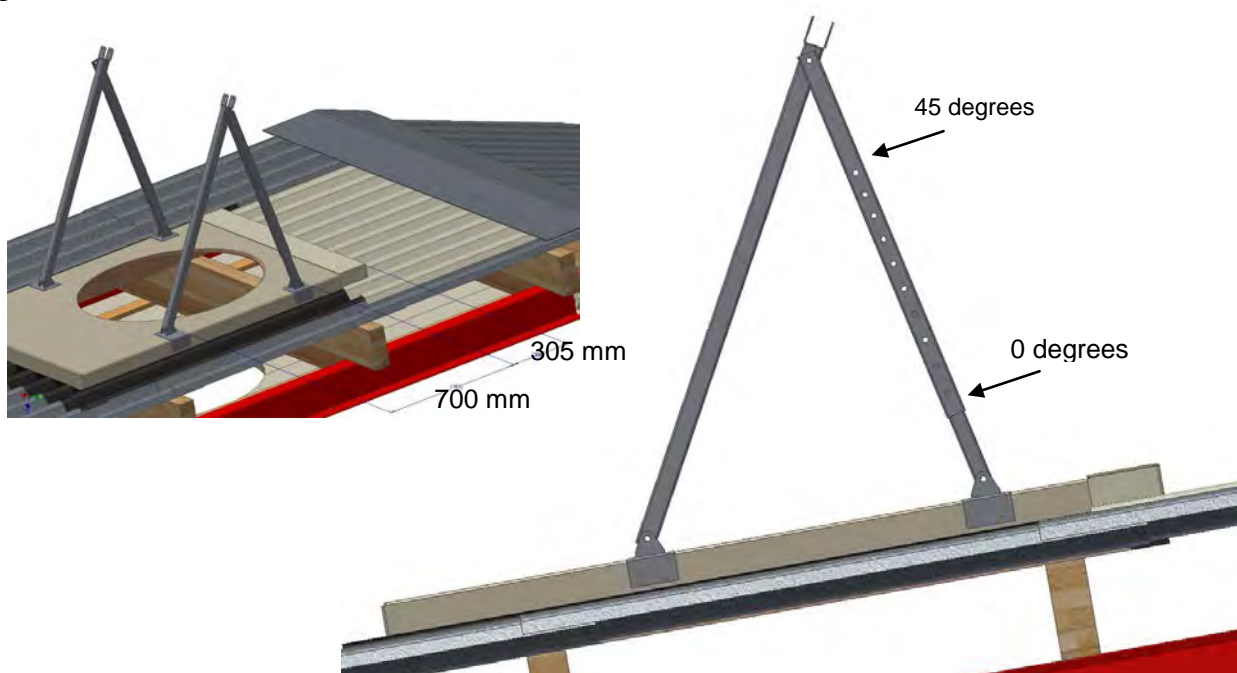
Apply Fast flash seal between the wooden frame and the roof.

One part of the soft cover is mounted on the frame and the hole is cut out.

The other cover is fastened so it covers the top of the roof and goes min. 10 cm under the rooftop or the next roof tile.



The two special brackets are mounted and the angle is adjusted according to the incline of the roof. The rods are placed as shown on the figure so the saddles of the brackets are nearer to the ventilation unit. The holes are placed in intervals of 5 degrees, from 0 to 45 degrees.



The unit, weighing about 200 kg is mounted in the brackets so the studs fall into place in the saddle brackets.

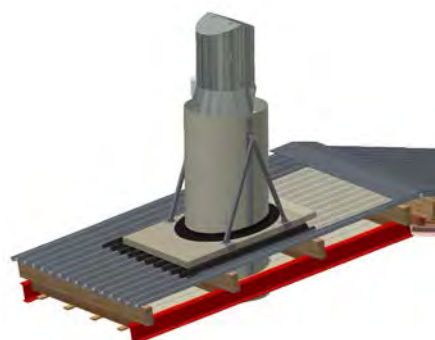
Place a bolt in the saddle brackets securing the studs in place.

When installing the unit on a slant roof using special brackets, ensure that the service hatch is faced away from the ridge of the roof for better access.



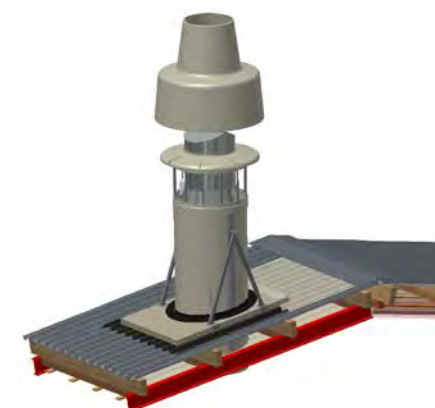
Apply Fast Flash seal between the soft cover on the wooden frame and the unit to make a watertight seal.

The large electric control unit can be moved to a different location if needed.



The filter holders are sealed using silicone rubber seal and secured in place using self-tapping screws.

The top cone is secured with M8 bolts. **To place the holes correct, make sure that the arrows on the filterholder and the top cone are aligned.**



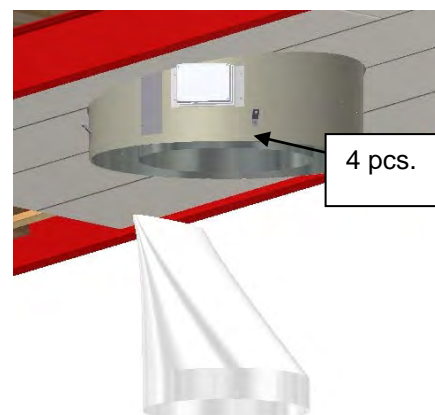
Now you can mount the inlet ring or a bottom extension. (see 4.6.0)

The intake ring is pushed over the two tubes in the unit and secured with self-tapping screws from both the inside and outside. Now finish the roofing.

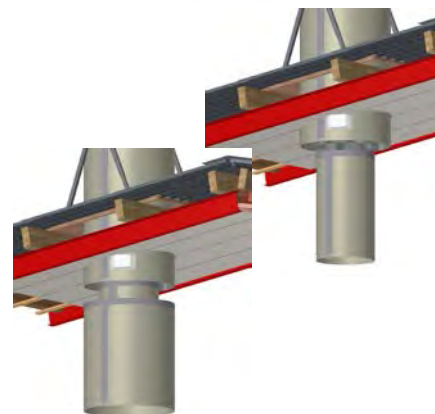


#### **4.6.0 Installing bottom extension**

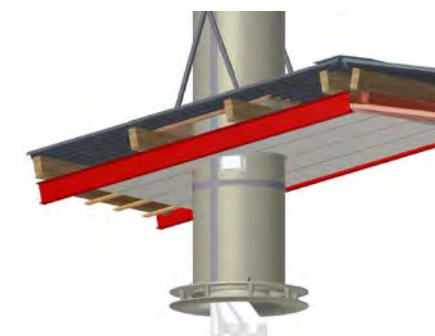
Dismantle the bottom filter and the 4 angle brackets for the wires. The screws must remain in the unit so the unit won't be leaky.



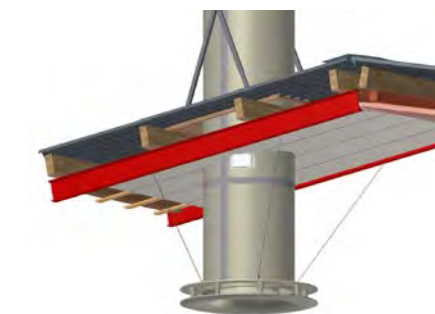
First mount the inner tube and then the outer tube on the unit.



The intake ring is mounted on the extension tubes.



The filter and the angle brackets are reattached. The brackets are fastened using the supplied screws in the extension tubes.



Wire and wire tensioners are fitted. Tension is applied to the wires between the supplied bracket mounted on purlins and battens. The purpose of the wires is to adjust and keep the unit steady in a vertical position.

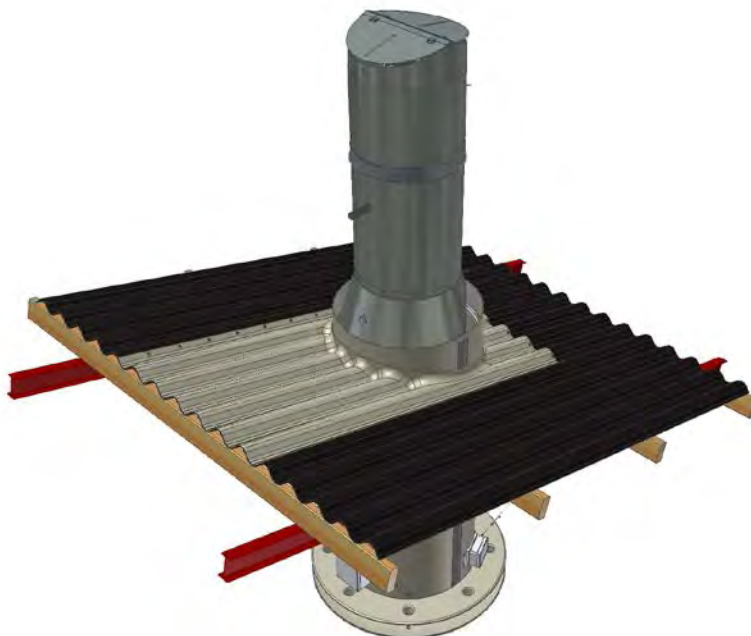
#### **4.7.0 Installing top extension**

Mount the inner part of the top extension:

The spiral duct goes out around the collar and secured with the supplied screws. The attachment points are marked with yellow marks.

Make sure the drain hole is located above the blinded hole on the unit!

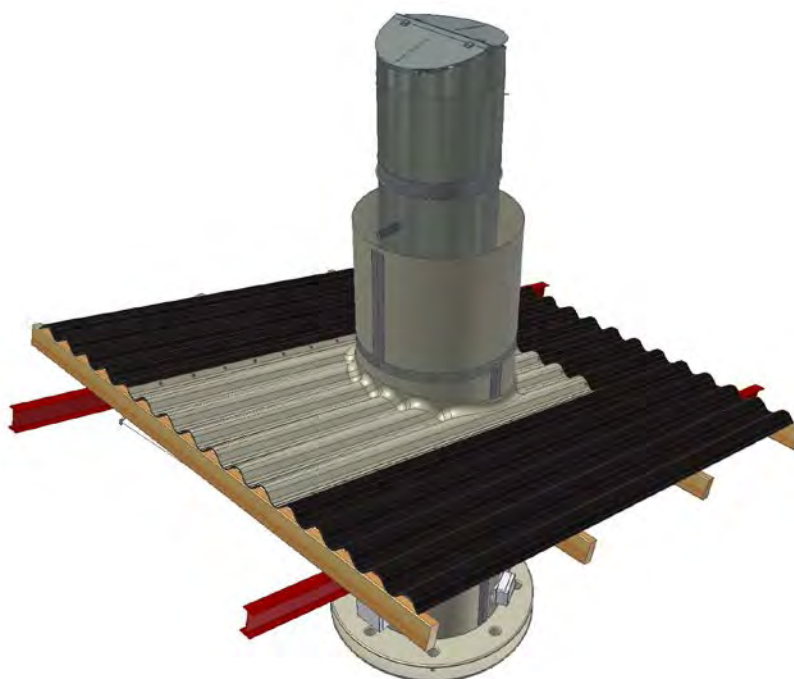
The electrical cubicle is screwed onto the spiral duct and wiring installed in accordance with the wiring diagram in section 6.0.0.



Mount the outer part of the top extension:

The top-extension's plastic cover is mounted on top of the unit's plastic cover and is fastened with the supplied screws through the bottom holes in the metal collar.

The filter holder and jet hood are installed in accordance with section 4.4.0.

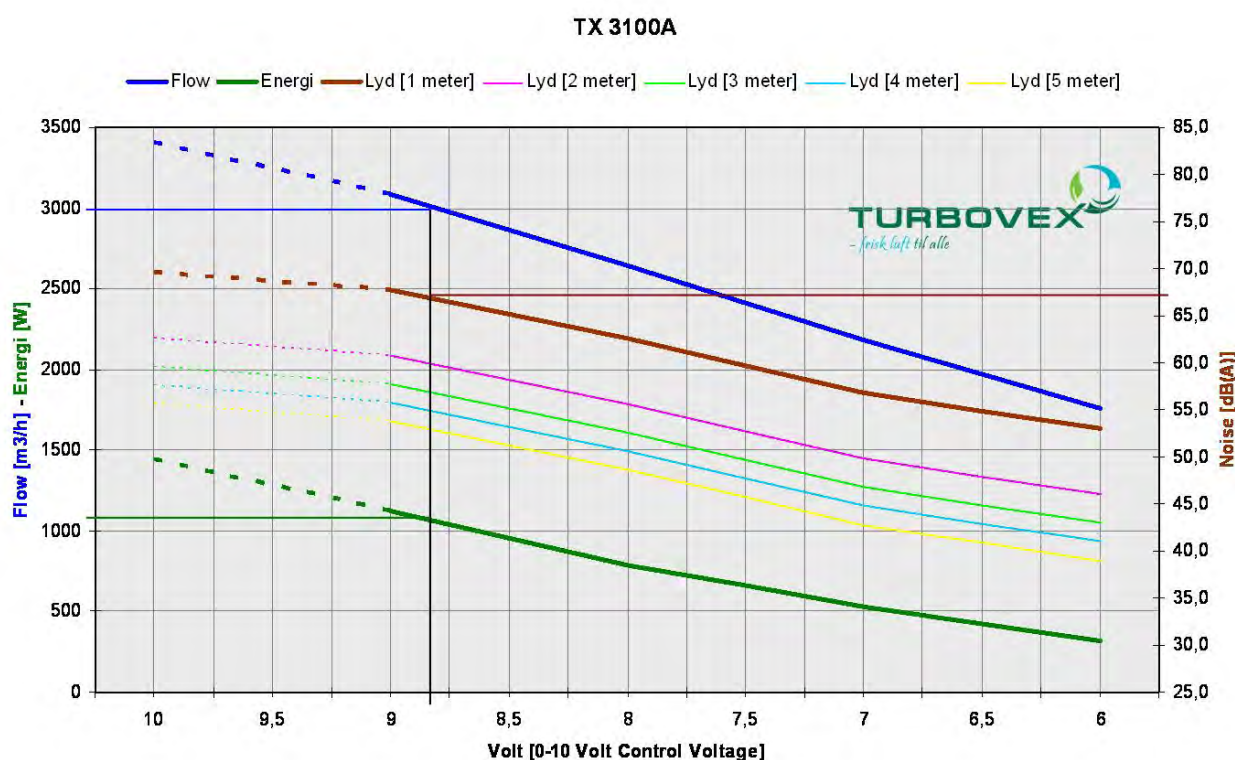




## 5.0.0 Technical specifications

### 5.1.0 Unit

Type	: Turbovex TX 3100A
Capacity	: 1400 – 3000 m <sup>3</sup> /h
Forced operation	: 3400 m <sup>3</sup> /h
Power	: 1 x 230V / 50 Hz
Output (Motor)	: Max. 2x750 Watt
Energy consumption (3000 m <sup>3</sup> /h)	: 1044 W - 1,25 KJ/m <sup>3</sup>
Heat recovery (3000 m <sup>3</sup> /h)	: 75 %

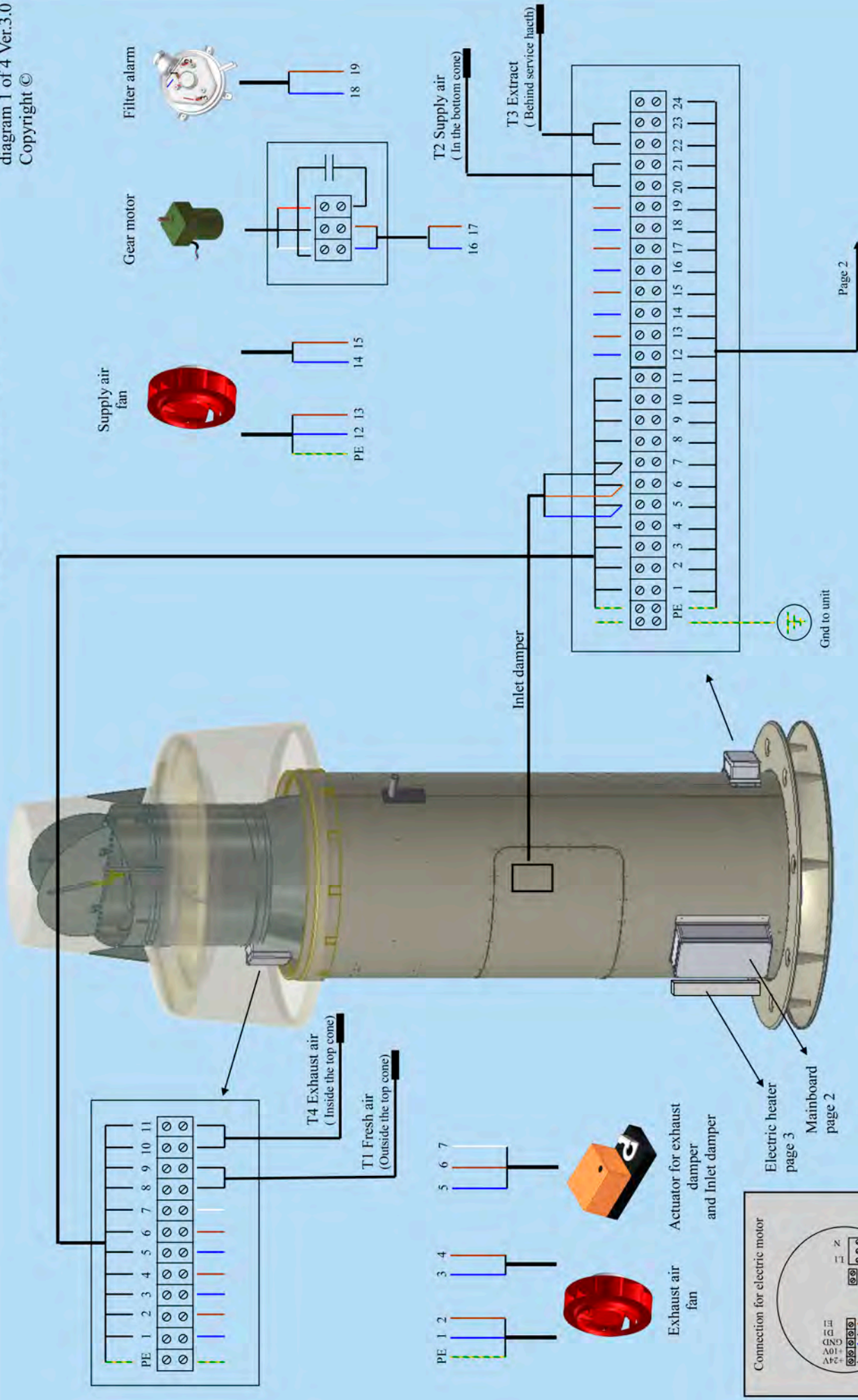


Turbovex TX 3100A is tested in cooperation with Ziehl-abegg – [www.ziehl-abegg.com](http://www.ziehl-abegg.com)

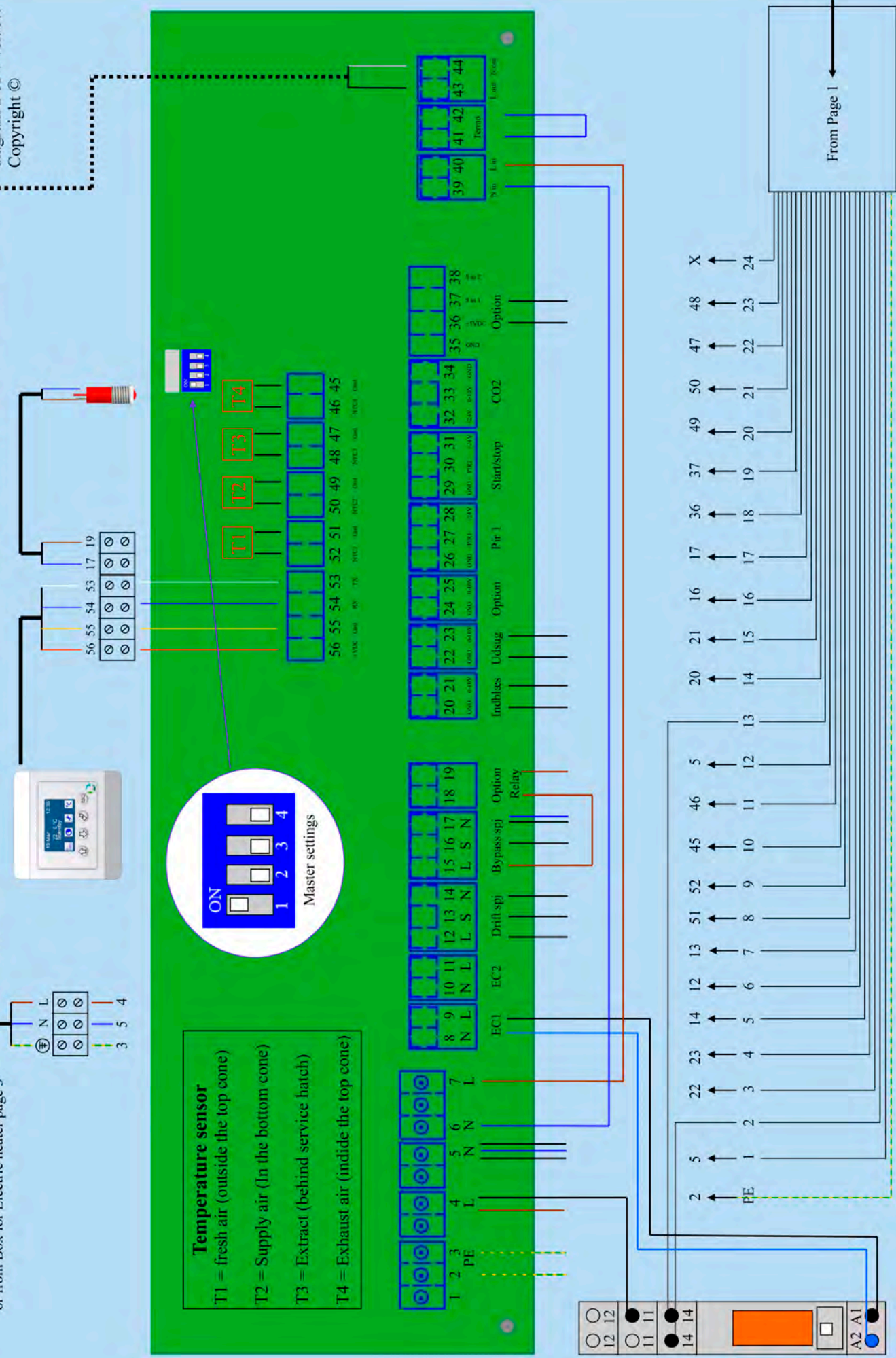
The airflow indicates the balanced air exchange in relation to the control voltage. (0-10 volt) and is shown in m<sup>3</sup>/h. The unit can be adjusted manually to suit your required air exchange.

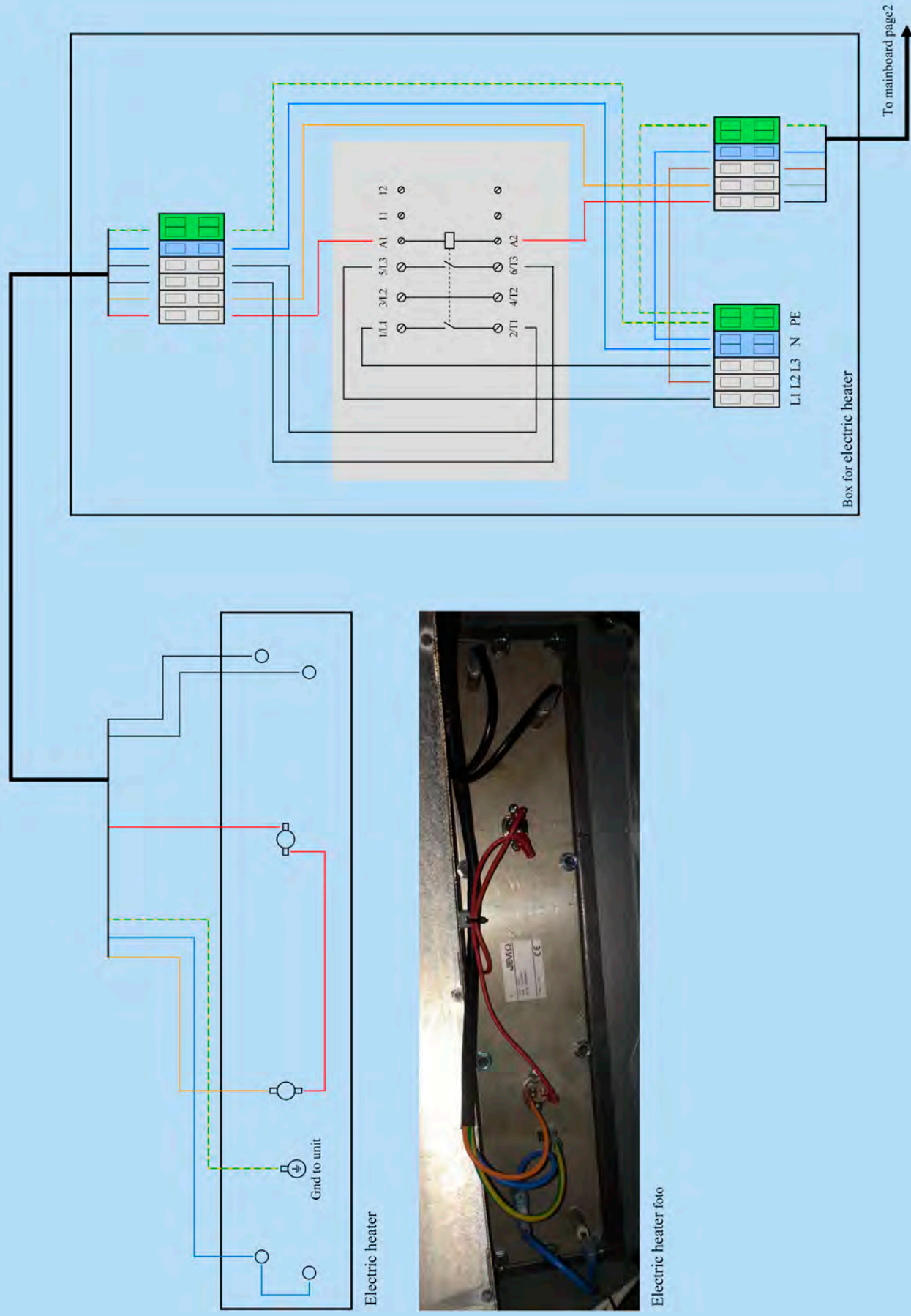
The sound level is shown in decibel – dB (A) in relation to air exchange.

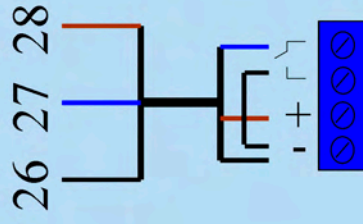
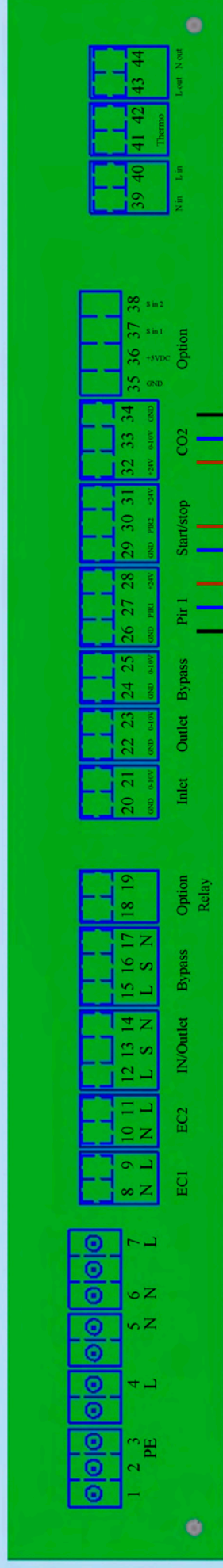
The sound is measured in 1 to 5 meters from the unit under normal conditions.



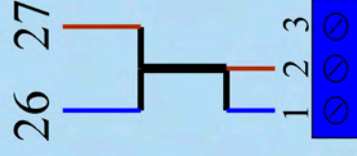




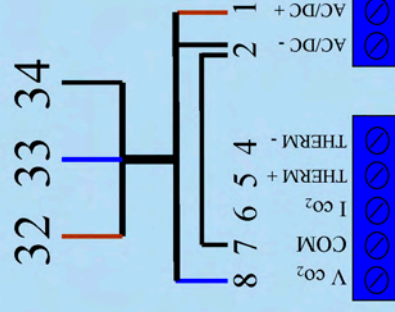




PIR



Hygrostat



CO2

#### PIR / Hygrostat

##### **Setup and operation of sensor**

To operate with the sensor, system must be started as a PIR-operation

##### **Setup und Betrieb des Sensors**

Um mit dem Sensor-System ausgeführt werden muss als PIR-Operation gestartet werden.



## 7.0.0 Service

### 7.1.0 Service report

**Servicereport for model** \_\_\_\_\_

Unit nr. \_\_\_\_\_

Installation address \_\_\_\_\_

Customer's name \_\_\_\_\_

Road and number \_\_\_\_\_

Postcode and location \_\_\_\_\_

Telephone \_\_\_\_\_

Contact person \_\_\_\_\_

Phone number \_\_\_\_\_

Date \_\_\_\_\_ / \_\_\_\_\_ - 20\_\_\_\_



Status	Not applicable	Poor	Medium	Good	Replaced
Replacement of inlet filter					
Replacement of exhaust filter					
Cleaning of heat exchanger					
Overall inside cleaning of unit					
Damper exhaust motor					
Hinges on the damper flap					
Fan motor inlet					
Fan motor exhaust					
Rot. heat exchanger's bearings					
Rot. heat exchanger's brushes					
Rot. heat exchanger's motor					
Wires and penetrations					
Temperature gauge					
Control unit - motor					
Motor mount / rubber mount					
Pressure guard adjustment					
Time set and date					
CO2 sensor function					
Pir sensor function					

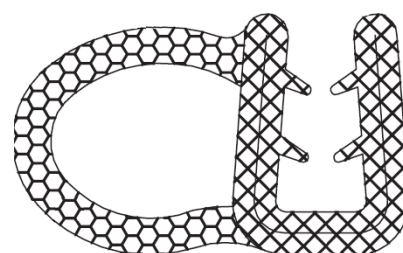
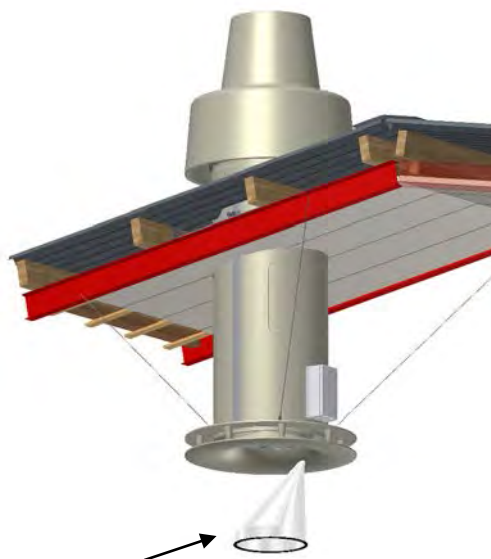
Service Technician: \_\_\_\_\_

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## 7.2.0 Filter change

There is two filters in the TX 3100A there need to be changed. The filters have to be changed about 2-4 times a year. Maintenance of the filters is necessary or else you will damage the heat exchanger and the unit will not work

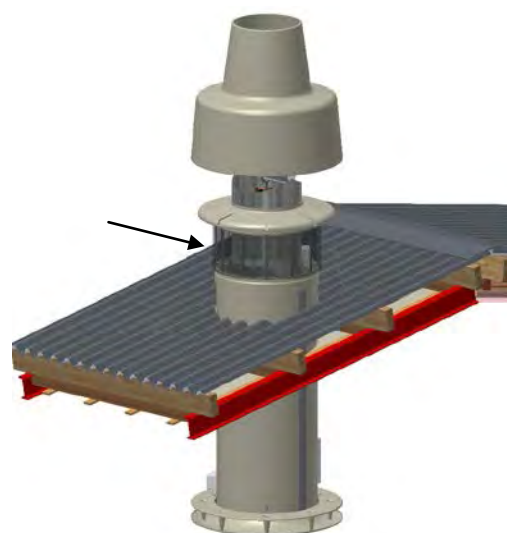
The exhaust air filter is placed in the bottom of the unit and is easy to remove and replace a new one. The only thing there is holding the filter is a rubber on the edge of the filter.



The rubber seal must be placed so the circular part is facing outwards. Otherwise air leakage will occur and there will be a fall hazard of the filter.

The supply air filter is placed at the outside under the top cone, who's projecting against wind and weather. The filter stuck with Velcro and is therefore easy to remove and replace a new one.

If you have some space problems when changing the filter, it's possible to remove the top cone.



## 8.0.0 Declaration of conformity



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### DECLARATION OF CONFORMITY

The undersigned, representing  
**Turbovex A/S**

at production site  
**Industrivej 45  
DK-9600 Aars**

hereby declares that the products  
**TX HomeVex, TX 75A, TX 250A, TX 350A, TX 500A, TX 750A, TX 1000A, TX3100A**

Is in conformity with  
**Machinery Directive 2006/42/EC of 17 May 2006  
Low Voltage Directive 2014/35/EU of 26 February 2014  
EMC Directive 2014/30/EU of 26 February 2014**

And the following standards and specifications have been used:  
**DS 447:2013**  
(Ventilation for buildings - Mechanical, natural and hybrid ventilation systems)  
**DS 428:2011**  
(Code of practice for technical measures for fire protection of ventilation systems)  
**DS 452:2013**  
(Thermal insulation of technical service and supply systems)

This declaration is only valid provided that no changes are made to the unit.

Aars, 2014.10.01



Erik Toelberg, Product Manager, Turbovex A/S