

Installation, Operation and Maintenance manual

TX 115A



Rev. 16. Dec. 2011

1.0.0 Table of contents

1.0.0 Table of contents	2
2.0.0 Illustrations	2
3.0.0 The unit	3
3.1.0 Operating principle	4
4.0.0 Technical specifications.....	5
5.0.0 Installation	6
5.1.0 Installation of wall-mounted model	9
5.2.0 Installation of ceiling-mounted model with 2 ducts	10
5.3.0 Power connection.....	11
6.0.0 Operation.....	13
6.1.0 Regulation of airflow (mini-control)	13
6.2.0 Heat regulation.....	13
6.3.0 Regulation of airflow (digital controller)	13
6.4.0 Heat regulation (digital controller)	13
7.0.0 Service	14
7.1.0 Service safety.....	14
7.2.0 Filter	14
7.3.0 Heat exchanger.....	14
7.4.0 Motor and ventilator	14
8.0.0 EU – Declaration of Conformity	15

2.0.0 Illustrations

Fig. 1 Main components	3
Fig. 2 Operating principle	4
Fig. 3 Diagram of sound level.....	5
Fig. 4 Diagram of air renewal	6
Fig. 5 Proposals of location	6
Fig. 6 Minimum distances.....	8
Fig. 7 Measures of the unit.....	9
Fig. 8 Mounting of brackets	9
Fig. 9 Power connection	11
Fig. 10 Wiring diagram "Standard Version"	12
Fig. 11 Wiring diagram "Version with digital controller"	12
Fig. 12 Type of filter: F5	14
Fig. 13 Exchanger support	14

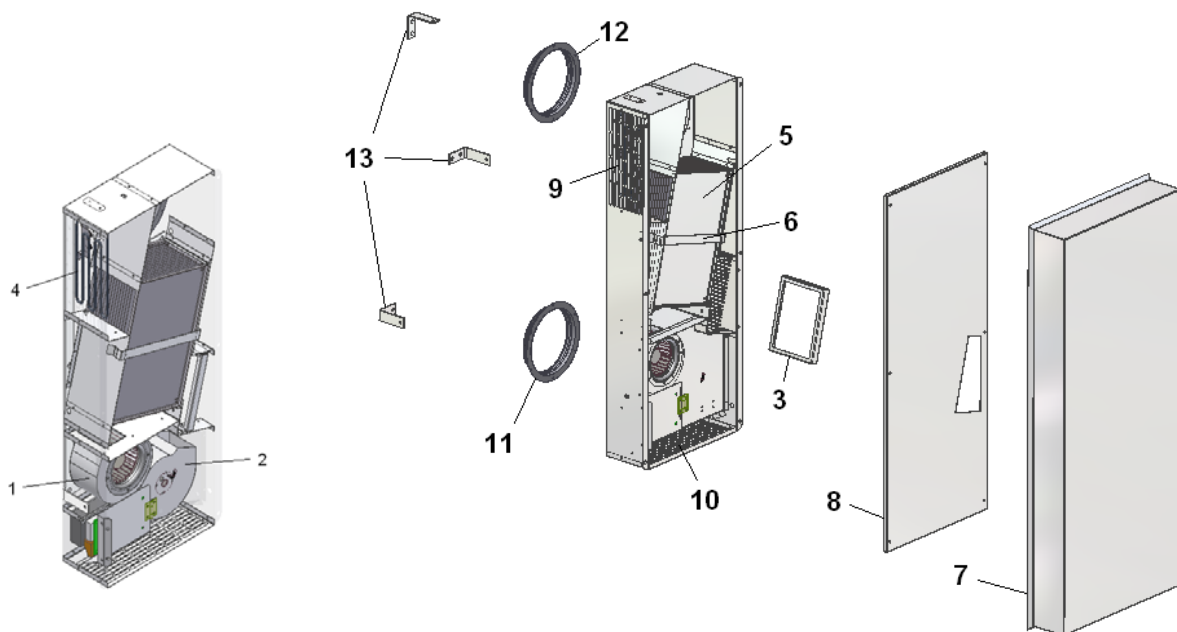
3.0.0 The unit

Turbovex TX 115A is a decentralized ventilation system with built-in heat recovery for ventilation in comfort rooms in particular.

Turbovex TX 115A consists of the following main components (Fig. 1 Main components).

1. Ventilator air exhaust
2. Ventilator air supply
3. Filter
4. Heating surface (option) & Heat control circuit board (only for systems with mini-control)
5. Heat exchanger (class A-B)
6. Heat exchanger support
7. Design front panel
8. Service front panel
9. Air supply grate
10. Air exhaust grate
11. Air supply ring
12. Air exhaust ring
13. Suspension brackets

Fig. 1 Main components



3.1.0 Operating principle

The air supply ventilator (2) lets the fresh outdoor air over the filter (3) and the heat exchanger (4) from where the air is blown further through the supplementary heating surface (5) (option) and out into the room.

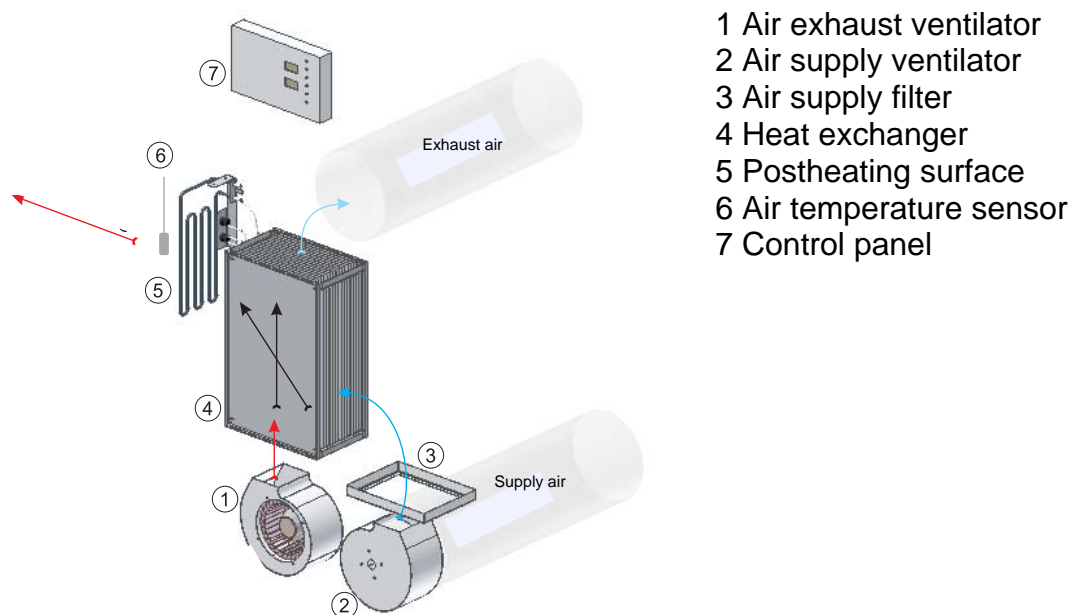
At the same time the air extract ventilator (1) extracts the air of the room and leads it through the heat exchanger (4) and the air exhaust pipe and into the open air through the outside grate/roof cap.

The heat exchanger (4) recovers up to 87% of the calories of the indoor air (the temperature of the air supply relative to the room temperature), which means that the heating surface only supplies the temperature difference up to the desired room temperature.

The desired temperature of the air supply can be regulated on the control panel (7) (option). (The temperature of the conventional unit with mini-control is set on the heat control circuit board inside the unit). The sensor (6) records the current temperature of the air supply. If this temperature is lower than the default value, the control switches on the heating surface and turns it off when the required air supply temperature has been reached.

At extremely cold outdoor temperatures (below -12°C), the air supply should be reduced. This will lead to a decrease of the energy supply from the heating surface and result in a significantly better operating economy.

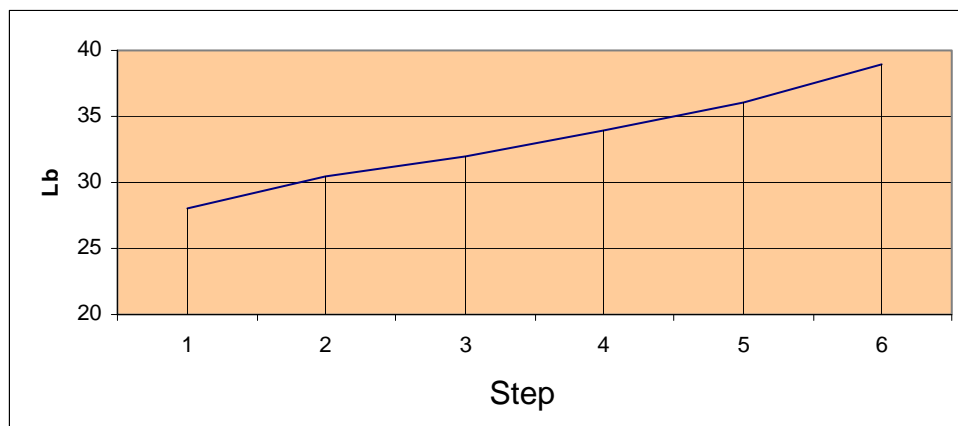
Fig. 2 Operating principle



4.0.0 Technical specifications

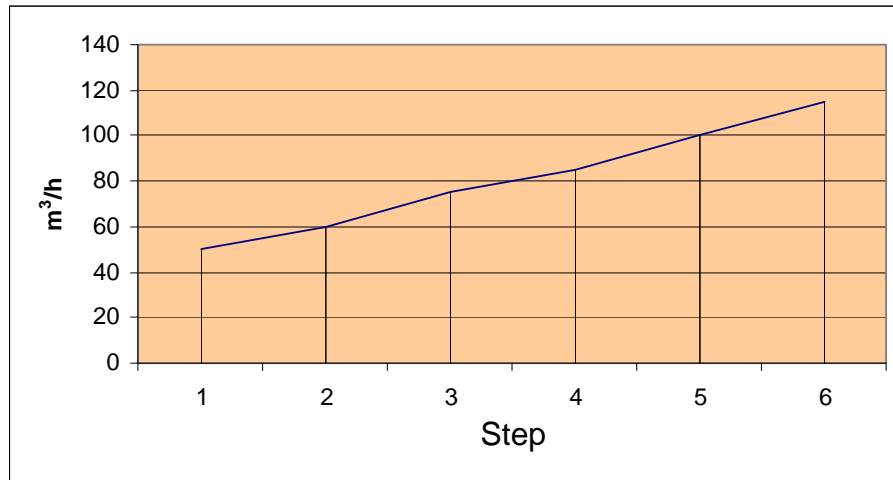
Type of unit:	Turbovex TX 115A
Capacity:	50 – 115 m ³ /h
Power supply:	1 x 230V/50Hz
Power (motor):	45 Watts
Energy consumption (motor):	1.41 kJ/ m ³
Heating element (option):	0.4 kW
Rotations:	1050 rotations/min.
Filter:	F5 Cassette filter
Temperature efficiency:	82%
Degree of recovery:	87 %

Fig. 3 Diagram of sound level



The above measurements have been made in a testing room with reverberation time $T_s=0.9$ in the octave band 125Hz measured directly in front of the unit at a distance of 1.0 m under and 1.0 m from the air supply shaft.

Fig. 4 Diagram of air renewal

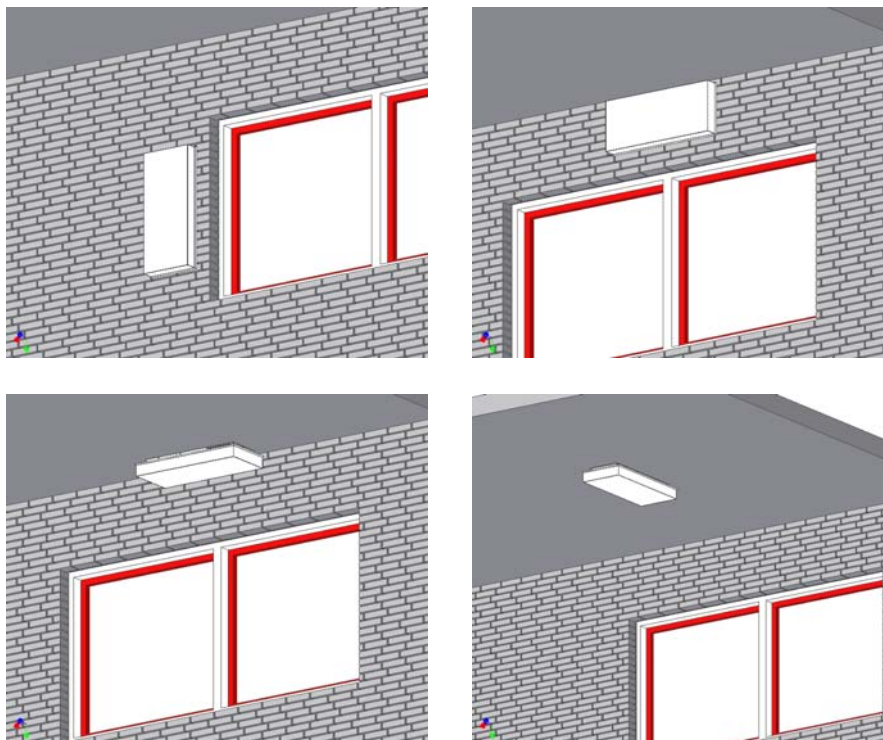


*The mini-control (standard) can change among the setting levels 1-3-5.
The TX controller (option) can change between the setting levels 1-5. Level 6 is optional for forced operation.*

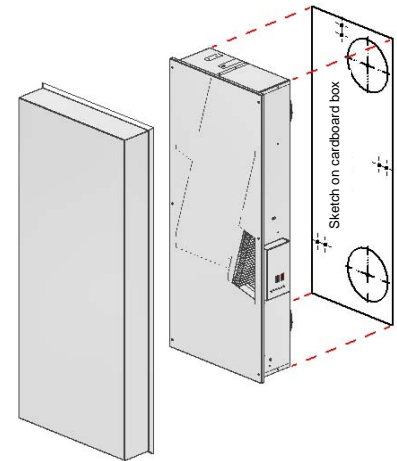
5.0.0 Installation

See below different proposals for location of the unit.

Fig. 5 Proposals of location



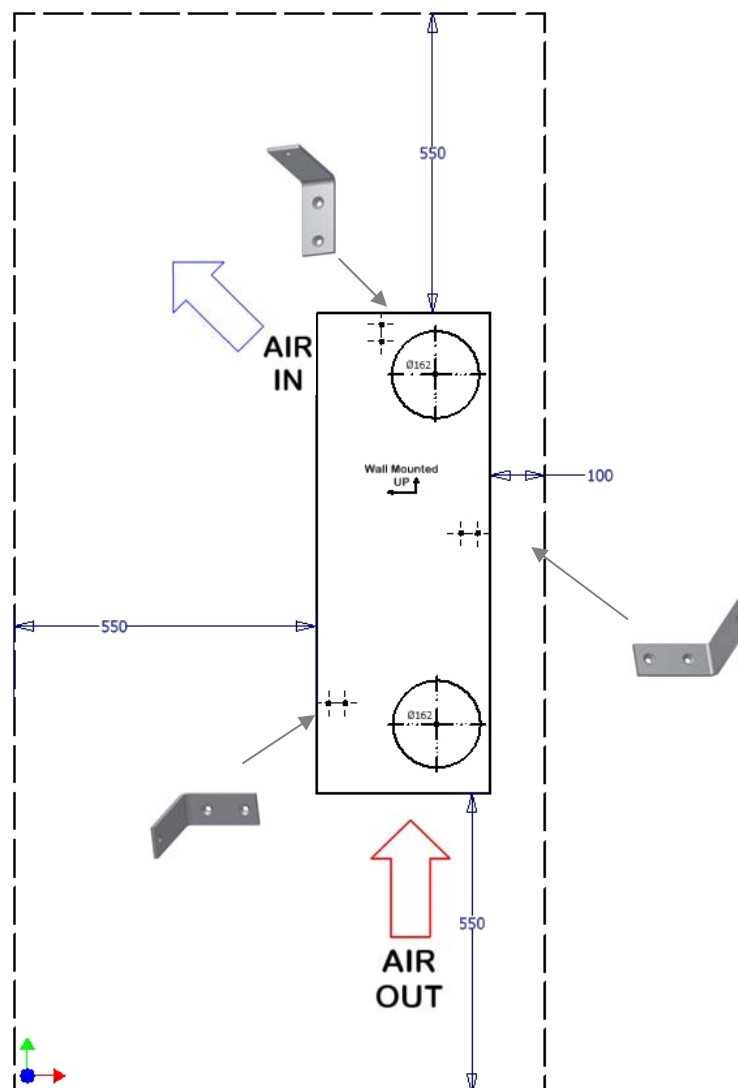
The illustration on the lid of the cardboard box shows the marking of holes for the air supply and air exhaust and for the suspension brackets. Cut off the lid.



The holes for mounting are set out from the long side marked with a minimum distance (see fig. 8) and the 2 ends that indicate the total height of the unit.

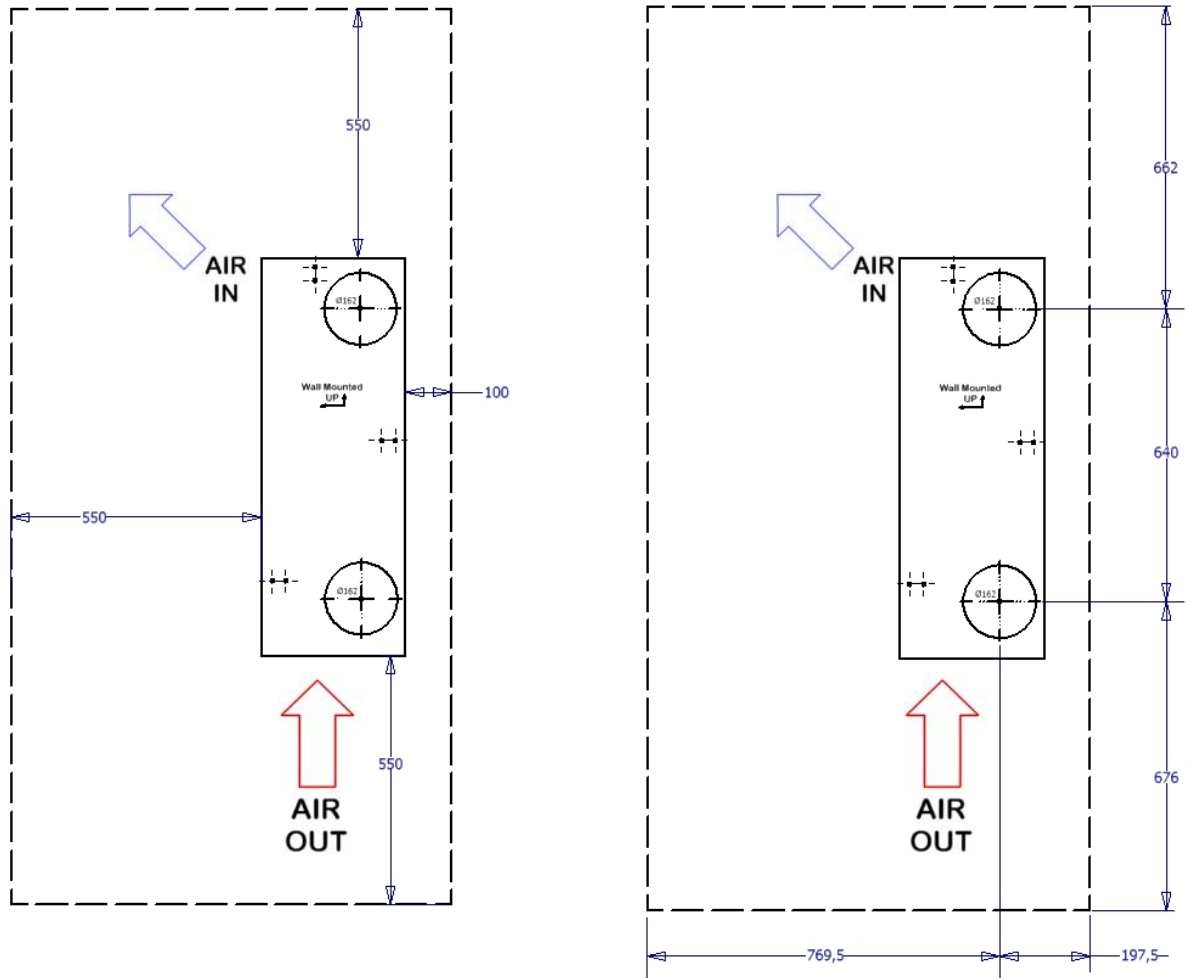
The direction of the air supply (IN) and the air exhaust (OUT) is indicated on the panel.

Place the panel against the wall so that the text is visible. Remember to check all minimum distances, as the illustration only includes the shown distance.



Check that the minimum distances indicated below are observed before drilling holes in the wall or roof.

Fig. 6 Minimum distances



The illustrations show the unit seen from the room towards the suspension surface (wall or ceiling). The grey zone shows the minimum distance between the unit and the wall/ceiling or the furniture placed against the wall.

Note!

The distance from the end of the unit's air exhaust (marked with red arrows) must be minimum 50 cm (see fig. 6). If the end of the air exhaust faces glass walls, the distance must be minimum 100 cm due to the increased sound level.

When the above distances have been checked, mount the unit according to the instructions below for wall- and ceiling-mounted models.

5.1.0 Installation of wall-mounted model

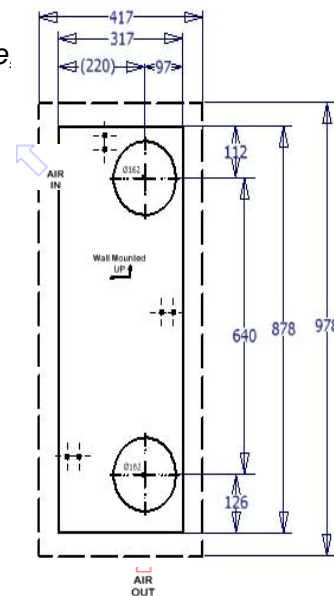
1. Drill holes in the wall

The illustration (fig. 7) shows the location in relation to the unit. **Remember** to observe the minimum distance, see fig. 6.

All measures are tape measures. Add clearance to the measures.

The connection is $\varnothing 160$ mm

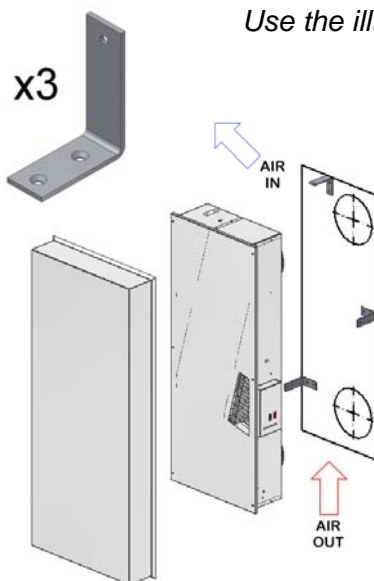
Fig. 7 Measures of the unit



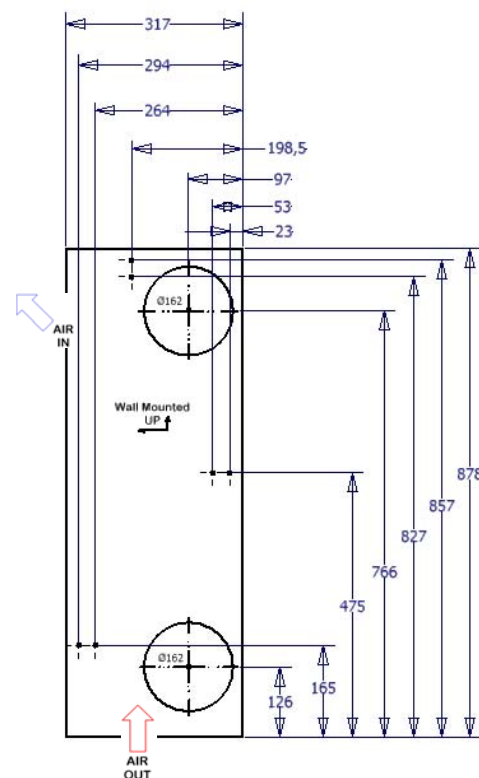
2. Mount the brackets (Fig 8) on the wall.

Fig. 8 Mounting of brackets

Use the illustration on the lid of the cardboard box, if necessary.



Location of the brackets in relation to the unit. The illustration is viewed from the room towards the wall/ceiling.



3. Remove the design front panel (see fig. 1)

Remove the front panel by pulling one of the 2 long sides to loosen it. Remove the panel and place it in a safe place.

4. Place the unit on the frame and mount it with the 3 enclosed bolts.

5. Mount the ducts with a descending gradient of 1-2% on the outside to avoid penetration of heavy shower into the unit.

Note!

It is important to seal the ducts 100% at the spigot of the unit; otherwise false air will penetrate the unit.

The ducts must on no account be wrung or pressed against the installation collars of the unit, as it will cause an increased noise level of up to +6dB. Be sure that the duct holes leave enough room for insulation with rockwool or insulation foam.

6. Mount the outside facade grates. Mount the grate of the air exhaust grate with the lamellas facing sideways. The sideways direction should be oriented in the direction away from the air supply. Mount the grate of the air supply with the lamellas facing downwards.

7. Remove the service front panel (see Fig. 1)

Screw off the 6 screws and remove the front panel.

8. Connect the power supply according to the enclosed wiring diagram (see fig. 10 or 11).

Note!

The power connection must be performed by a registered electrician.

9. Remount the service front panel and the design front panel.

5.2.0 Installation of ceiling-mounted model with 2 ducts

1. Bore holes according to the illustration Fig. 7

*The illustration (fig. 7) shows the location of the holes in relation to the unit. **Remember** to observe the minimum distance, see fig. 6.*

All measures are tape measures. Add clearance to the measures.

The clearance is $\varnothing 160$ mm

2. Mount the mounting brackets (Fig. 8) on the ceiling.

3. Remove the design front panel (see fig. 1)

Remove the front panel by pulling one of the 2 long sides to loosen it. Place it in a safe place.

4. Place the unit on the frame and mount it with the 3 enclosed bolts.

5. Mount the ducts on the roof.

Note!

It is important to seal the ducts 100% at the spigot of the unit; otherwise false air will penetrate the unit.

The ducts must on no account be wrung or pressed against the installation collars of the unit, as it will cause an increased noise level of up to +6dB. Be sure that the duct holes leave enough room for insulation with rockwool or insulation foam.

6. Mount and insulate the duct on the roof incl. flashing and hoods.

7. Remove the service front panel (see Fig. 1)
Screw off the 6 screws and remove the front panel.

8. Connect the power supply according to the enclosed wiring diagram (see Fig. 10 or 11).

Note!

The power connection must be performed by a registered electrician.

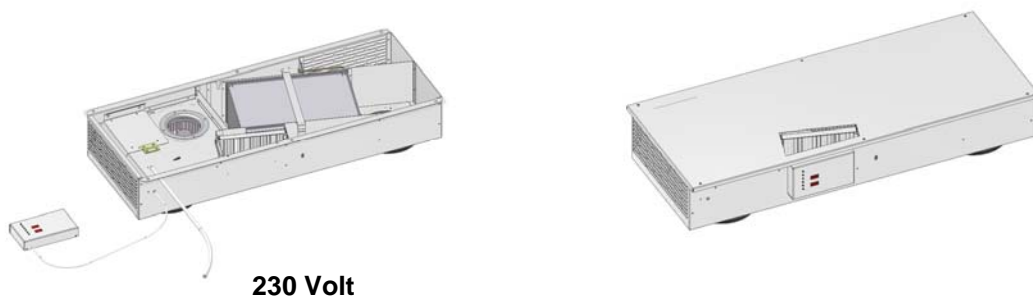
9. Remount the service front panel and the design front panel.

5.3.0 Power connection

Connect the power supply in the air exhaust chamber, see fig. 9, according to the wiring diagram fig. 10 or 11.

Remove the design front panel and the service front panel (see fig.1)

Fig. 9 Power connection

**Note!**

An interrupter must be installed in front of the ventilation system.

Fig. 10 Wiring diagram "Standard Version"

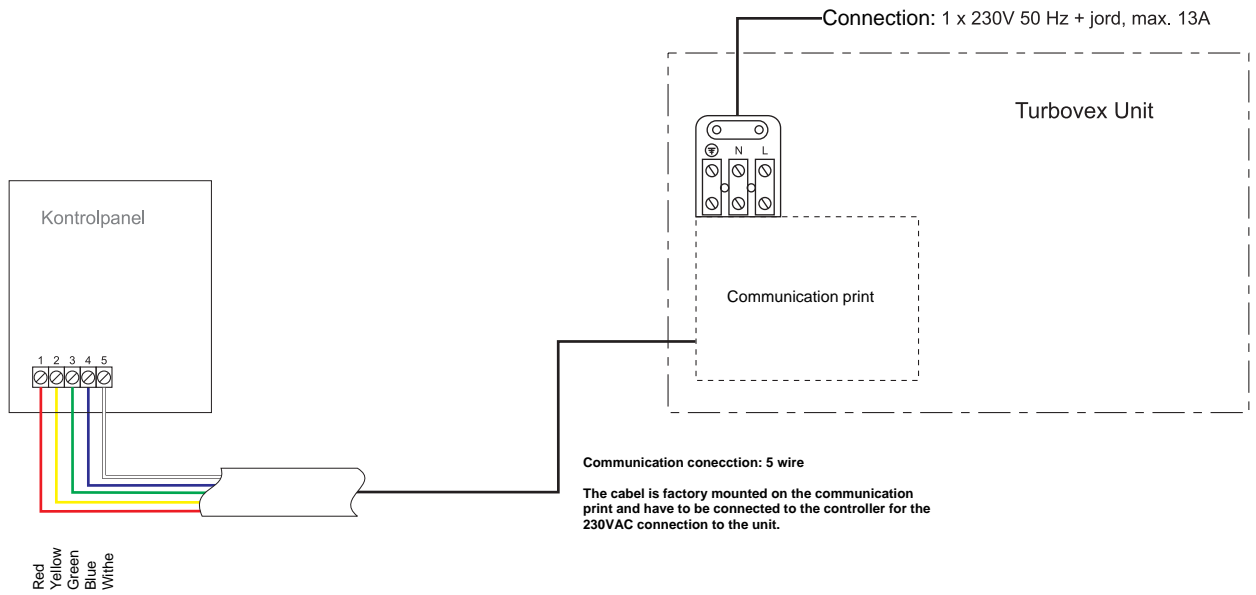
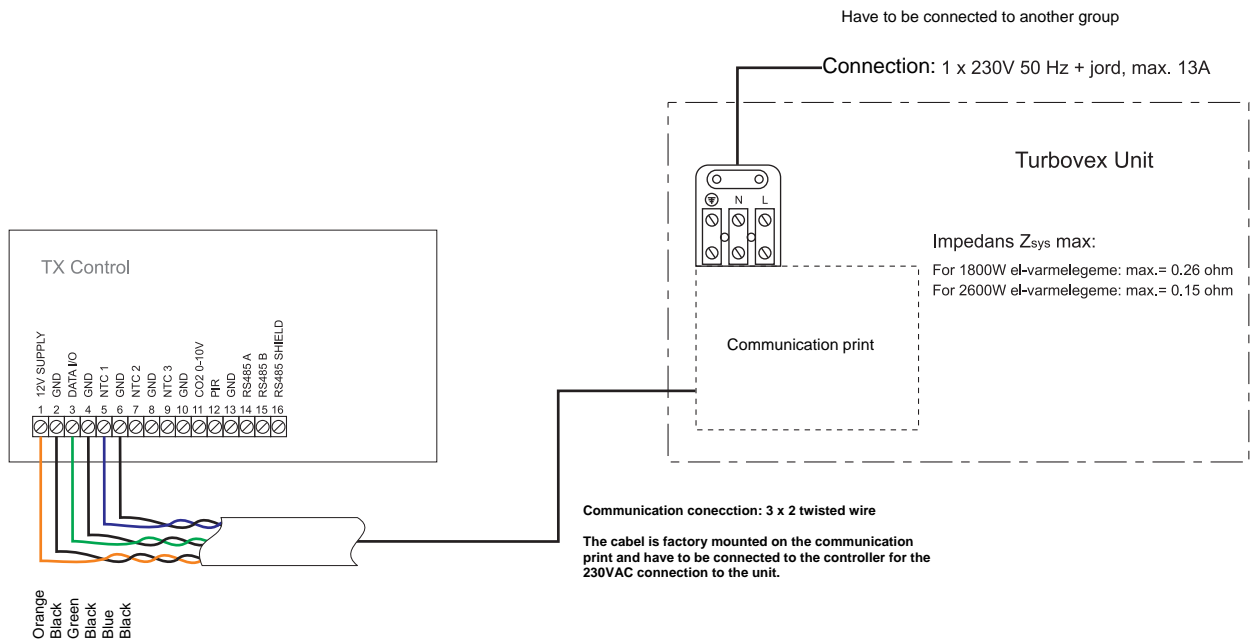


Fig. 11 Wiring diagram "Version with digital controller"



6.0.0 Operation

6.1.0 Regulation of airflow (mini-control)

The unit can run at 3 preset flow levels.

Start the unit by activating the button on the control panel.

The first time the button is activated from stand-by, the unit automatically starts up at the velocity level set the last time the button was activated. When the button is activated the next time, the unit changes to the next flow level and ends at stand-by.

Note! The after-run period of a ventilation system with an electric preheating surface is approximately 2 minutes.

Approximately 10 seconds after activation of the button, the light-emitting diode of the active flow level flashes to indicate that the current flow velocity has been saved for the next start-up.

6.2.0 Heat regulation (mini-control)

The air supply temperature of ventilation systems with an electric postheating surface can be adjusted on the heat control circuit board in the air supply chamber near the electric postheating surface inside the unit.

The air supply temperature can be adjusted from 15°C to 25°C.

6.3.0 Regulation of airflow (digital controller)

See enclosed operating manual for digital CPU control.

When shipped from the factory, the integrated level transformer in the unit's air supply chamber for outdoor air is connected to the control panel on 5 preset flow levels.

When the unit shuts down, it will automatically save the last setting of air volume when it is started again at a later time.

Note! The after-run period of a ventilation system with an electric heating surface is approximately 2 minutes.

6.4.0 Heat regulation (digital controller)

See enclosed operating manual for digital CPU control.

Set the desired temperature on the control panel. The temperature should not be set higher than the room temperature. The temperature of the fresh air should be 2-3° below the room temperature.

When the system shuts down, it will automatically save the last temperature setting when it is started again at a later time.

In the summer and especially at times when a flow of cool air in the room would be appreciated, the temperature can be adjusted manually on the automated panel.

7.0.0 Service

7.1.0 Service safety

It is recommended to check and clean the components of the unit at least once a year.

7.2.0 Filter:

It is recommended to change the air exhaust filter of the unit 2-4 times a year, as required.

Remove the design front panel (see fig. 1).

The filter and the filter frame can be detached from the unit when the filter needs to be replaced.

Insert the filter and remount the front panel.

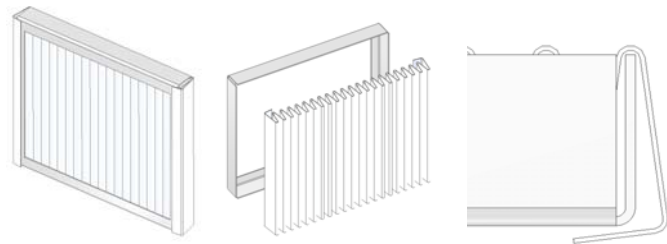


Fig. 12 Filter type: F5

7.3.0 Heat exchanger:

It is recommended to clean the heat exchanger at least once a year to maintain the efficiency of the heat exchanger.

Start by removing the design front panel.

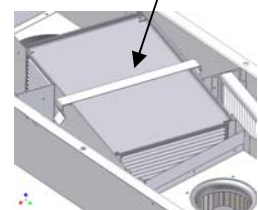
NB!

Shut off the supply voltage before opening the front panel (see Fig. 1).

Remove the service front panel and the exchanger support (see fig. 13).

Clean the heat exchanger with a vacuum cleaner.

Fig. 13 Exchanger support



7.4.0 Motor and ventilator:

Once the heat exchanger has been removed from the unit, see section 7.3.0, the air exhaust ventilator can be cleaned.

It is recommended to clean the ventilator with a vacuum cleaner and a brush to avoid unbalance of the fan wheel. Be careful not to damage the lamellas.

The motor has pre-greased, sealed, special maintenance-free ball bearings.

The motor and the motor casing should only be replaced under the dealer's guidance.

9.0.0 EU - Overensstemmelseserklæring:

Fabrikant:

Navn: Turbovex A/S
Adresse: Industrivej 45
DK-9600 Aars
Land: Danmark
Telefon: + 45 96 98 14 62

Forhandler:

Navn: Turbovex A/S
Adresse: Industrivej 45
DK-9600 Aars
Land: Danmark
Telefon: + 45 96 98 14 62

erklærer hermed, at

Produkt:

Navn: Turbovex TX 115A
Type: Comfort ventilation
Serie nr.: 115A-000-000

er i overensstemmelse med

Rådets Direktiv af 17. Maj 2006 om tilnærmelse af medlemsstaternes lovgivning om elektriske materiel bestemt til anvendelse inden for visse spændingsgrænser (2006/42/EF)

er fremstillet i overensstemmelse med følgende nationale standarder, der gennemfører en harmoniseret standard:

DS/EN ISO 12100-1/A1:2009

Maskinsikkerhed - Grundlæggende begreber og generelle principper for projektering, konstruktion og udformning - Del 1: Grundlæggende terminologi og metodik (ISO 12100-1:2003)

DS/EN ISO 12100-2/A1:2009

Maskinsikkerhed - Grundlæggende begreber og generelle principper for projektering, konstruktion og udformning - Del 2: Tekniske principper (ISO 12100-2:2003)

DS/EN 60269-1/A1:2009

Lavspændingssikkerhed – Del 1: Generelle krav (IEC 60269-1-1998) tillæg A1:2005 til

DS/EN ISO 13857:2008

Maskinsikkerhed - Sikkerhedsafstande til forhindring af, at hænder, arme, ben og fødder kan nå ind i fareområder

DS/EN 61000-6-1:2007

Elektromagnetisk kompatibilitet (EMC) Del 6-1: Generiske standarder, Immunitet for bolig, erhverv og letindustri miljøer

DS/EN 61000-6-3:2007

Elektromagnetisk kompatibilitet (EMC) Del 6-3: Generiske standarder, Emissionsstandard for bolig, erhverv og letindustri miljøer

DS/EN 61000-6-4:2007

Elektromagnetisk kompatibilitet (EMC) Del 6-1: Generiske standarder, Emissionsstandard industrielle miljøer

Aars

09/11-2009

Anders Vestergaard

Dato:

Produktionsteknolog: Anders Vestergaard