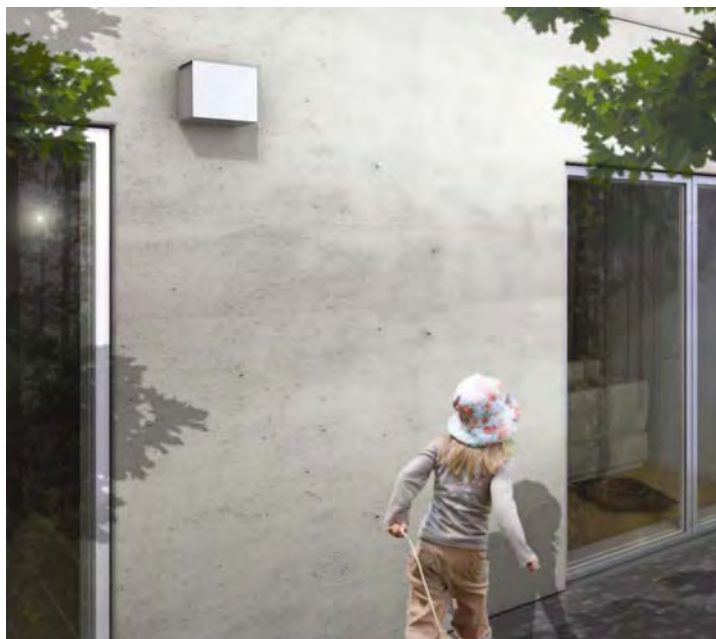


# Installation, operation and maintenance manual

## TX 35A



Rev. 19 January 2011

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## 3.0.0 General information

### 3.1.0 Foreword

This installation and operation manual includes technical information and information about installation and maintenance of the unit.

### 3.2.0 Fields of application

TX 35A is designed for ventilation in private homes such as the bedroom, kitchen and living room.

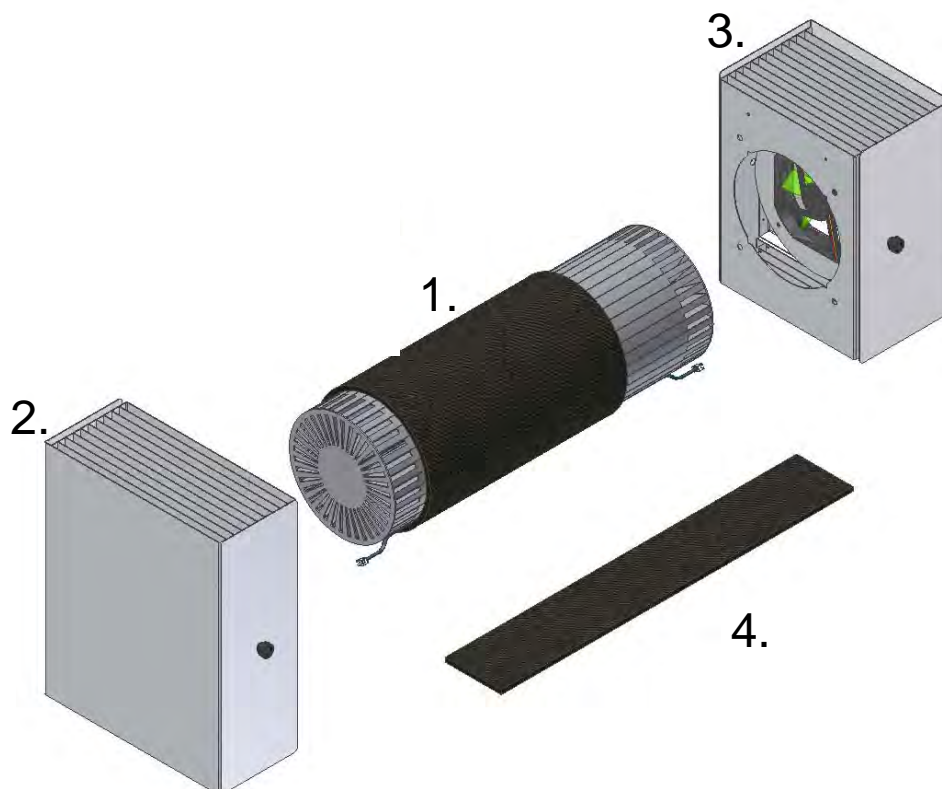
The ventilation system is designed for the living spaces described above. The system is not designed for the purpose of local exhaust ventilation. TX 35A must not be covered up or used as a shelf.

### 3.3.0 Contents of delivery

Figure 1 Contents of delivery, conventional

TX 35A is delivered with the following main components:

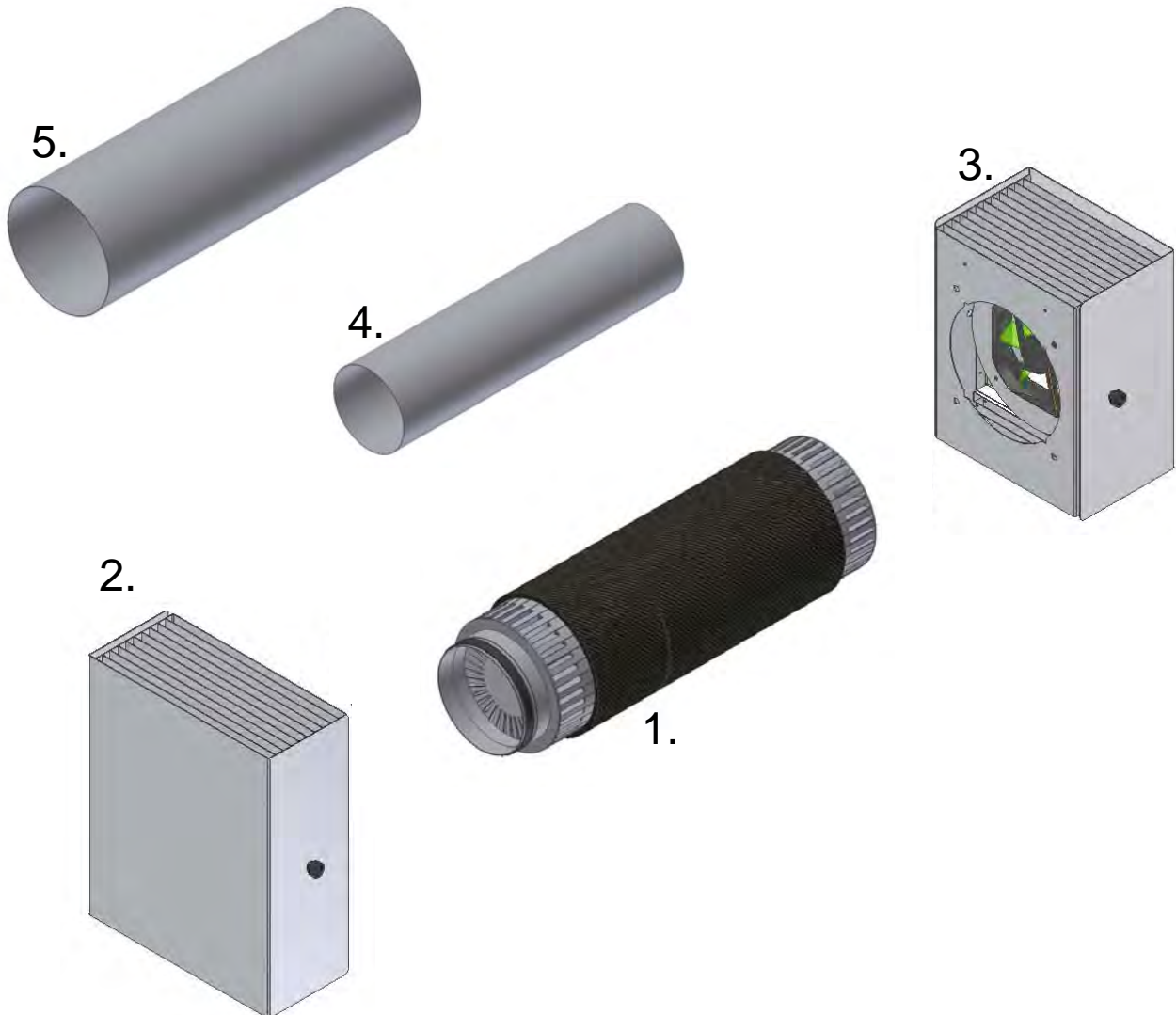
1. Exchanger
2. Inside unit
3. Outside unit
4. Insulation material



**Figure 2 Contents of delivery with extension piece**

TX 35A incl. extension piece is delivered with the following main components:

1. Exchanger
2. Inside unit
3. Outside unit
4. Ø125 pipe (500 mm)
5. Ø160 pipe (500 mm)



### 3.4.0 Operating principle

TX 35A consists of an inner and outer casing and a duct in the form of an aluminium heat exchanger. The unit replaces indoor air by fresh outdoor air and thereby improves the indoor climate.

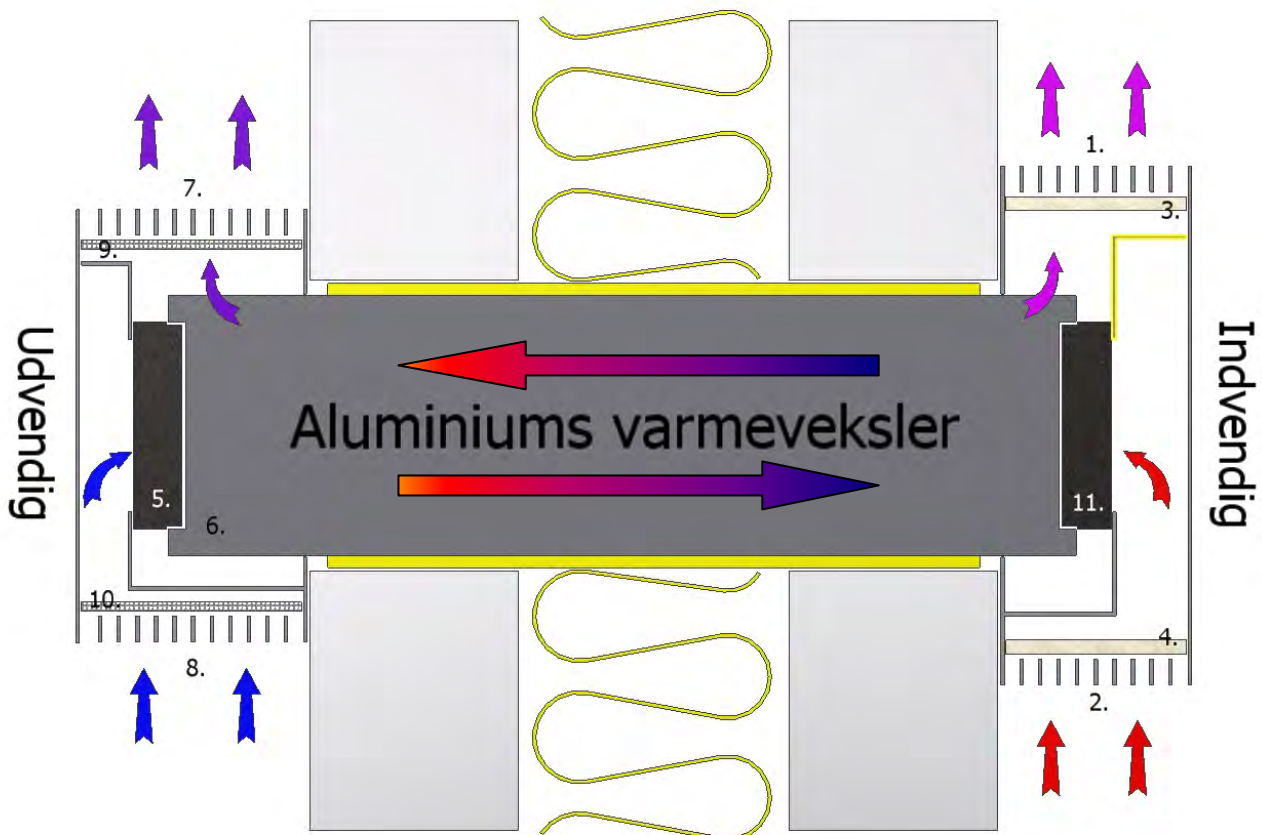
The aluminium heat exchanger (6.) utilises warm indoor heat to heat up the fresh outdoor air. The heat exchanger's sole function is for heat retention.

The air supply motor (5.) creates inflow of fresh outdoor air through the exchanger (6.) and the insect net (10.), leading the inflow through a filter (3.) and further through the air supply grate (1.) and out into the room.

The air exhaust motor (11.) leads the indoor air through the filter (4.) and the exchanger (6.) and further through the air exhaust grate (7.) out to the open air outside.

- |                             |                           |
|-----------------------------|---------------------------|
| 1. Air supply grate         | 7. Air exhaust grate      |
| 2. Air exhaust grate        | 8. Air supply grate       |
| 3. Air supply filter        | 9. Insect net air exhaust |
| 4. Air exhaust filter       | 10. Insect net air supply |
| 5. Air supply motor         | 11. Exhaust motor         |
| 6. Aluminium heat exchanger |                           |

Figure 3 Operating principle



## 4.0.0 Installation

### 4.1.0 Scale illustration

Scale illustration of the main components.

#### 4.1.1 Exchanger

The length of the exchanger depends on the thickness of the exterior wall, as the exchanger is mounted through the wall.

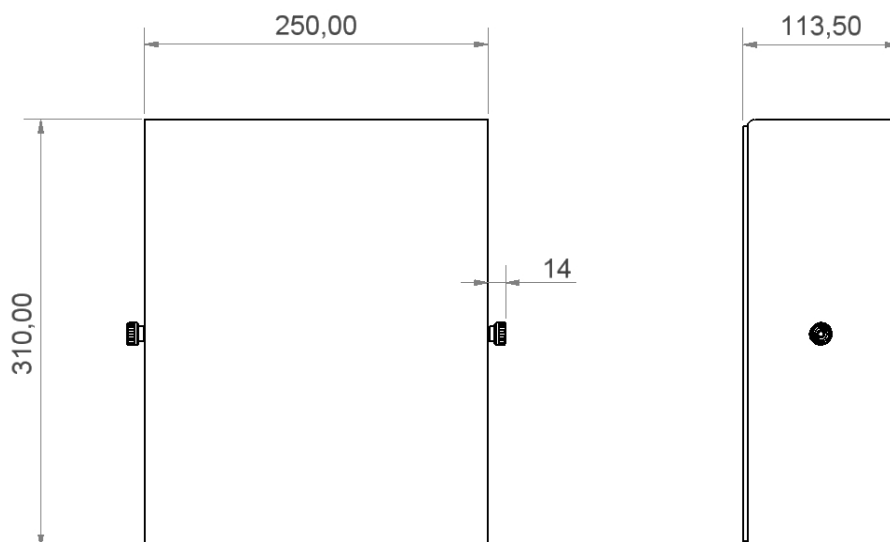
Figure 4 Scale illustration of exchanger



Type no.	L [mm]
L-280	383
L-350	453
L-440	543

#### 4.1.2 Inside unit

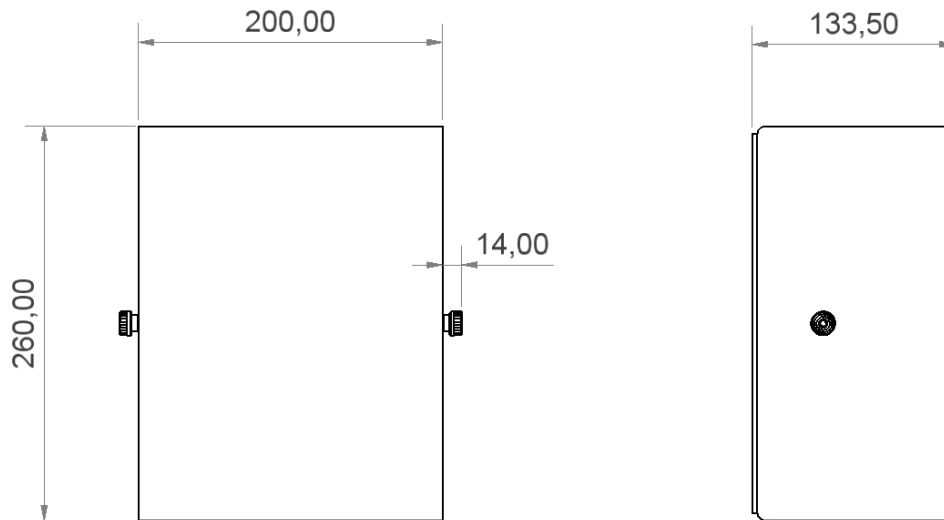
Figure 5 Scale illustration of inside unit





### 4.1.3 Outside unit

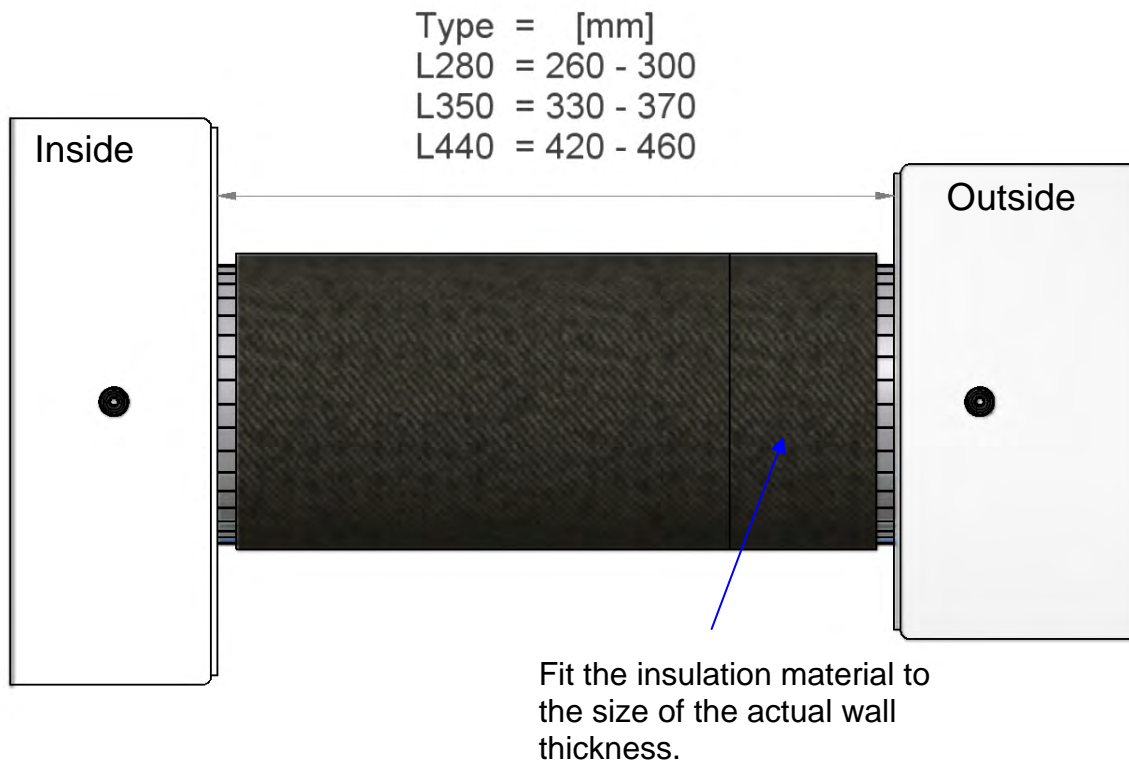
Figure 6 Scale illustration of outside unit



### 4.1.4 Assembled unit

The distance varies by +/- 20 mm dependent on the type of exchanger purchased.

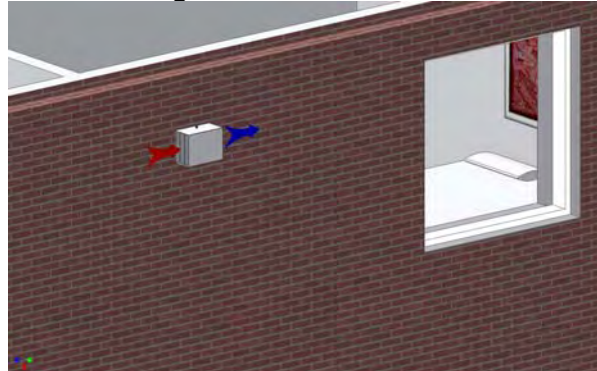
Figure 7 Scale illustration of assembled unit



#### 4.2.0 Location

Place the outside part of the unit in a horizontal position with the lamellas facing sideways to prevent rain water from penetrating the unit and damage the motor or the exchanger.

**Figure 8 Outside location**

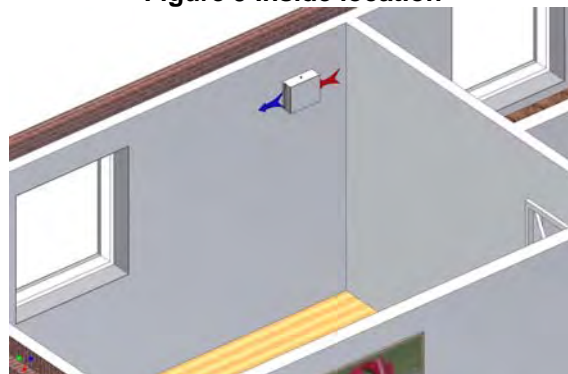


Outside - must be installed in a horizontal position.

The inside part must be installed in a horizontal position. It is important to ensure that the supply air is led horizontally along the wall to avoid draughts from the unit. When installing the unit it is important to make sure that there is ample space for the supply air. Fig. 8

Use the horizontal air supply to avoid a set-up with close proximity between the air supply and the air exhaust.

**Figure 9 Inside location**



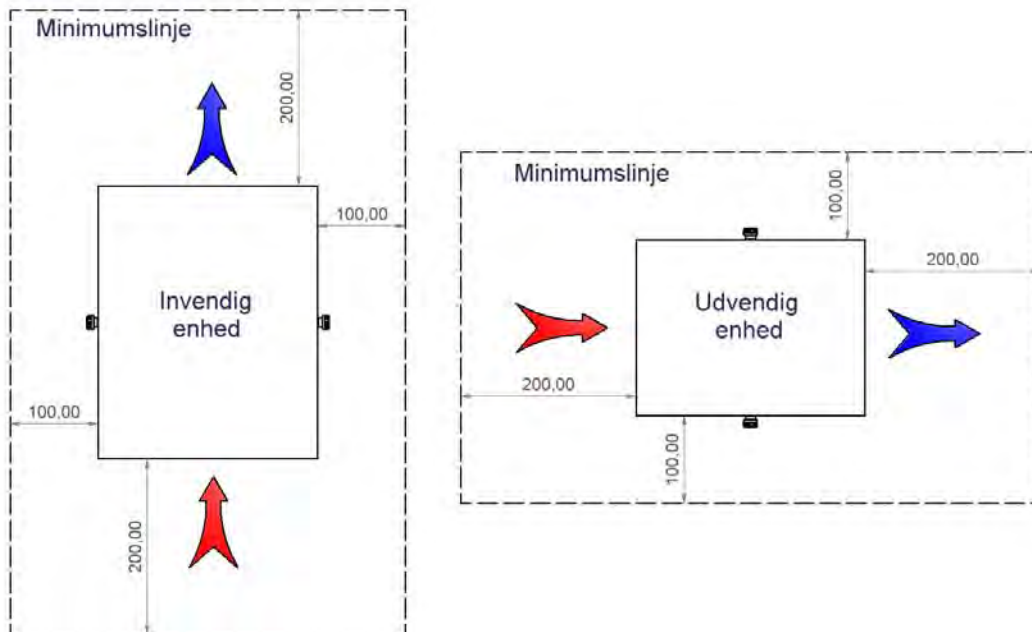
Indoors - horizontal position. Leave ample space to the air supply



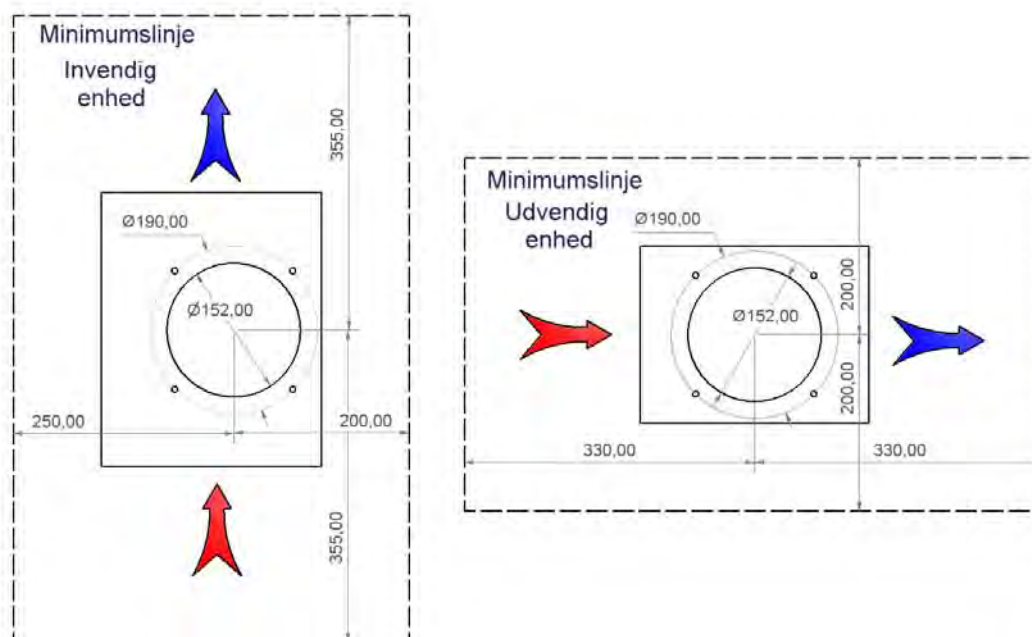
### 4.2.1 Minimum distance

Minimum distance between the unit and other walls, ceilings, cupboards and other surfaces. The distance between the air supply and the air exhaust must be minimum 200 mm inside as well as outside. A distance of minimum 100 mm to the sides is recommended to ensure that there is ample space for the mounting of the front panel and the outside motor.

**Figure 10 Minimum distance from the unit:**



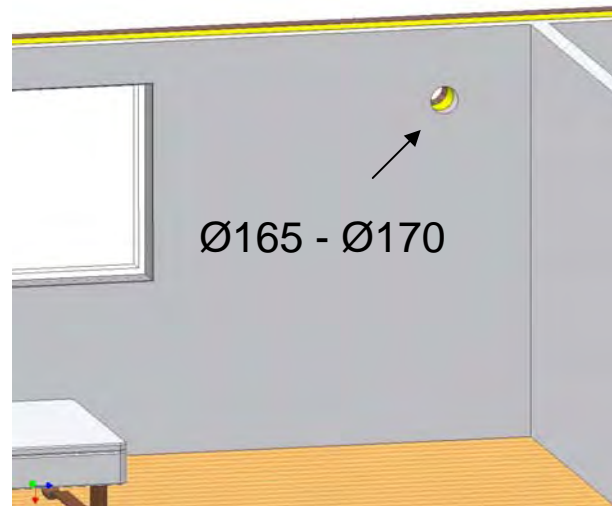
**Figure 11 Minimum distance from the centre of the duct:**



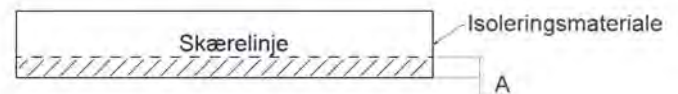
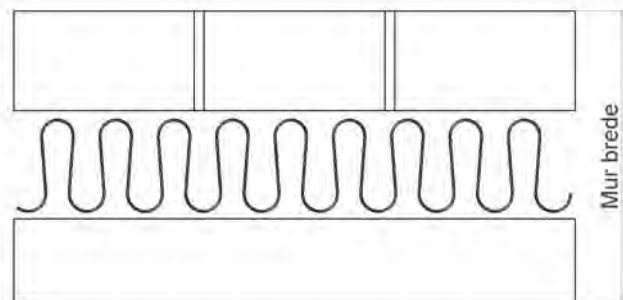
### 4.3.0 Installation of a standard unit (installation incl. extension piece, see page 14)

Before installing the ventilation system it is **important** to check that the unit is placed correctly in relation to airflows and minimum distance (see section 4.2.1 Minimum distance).

Drill a hole of about Ø170 mm through the exterior wall. (Minimum 165 mm)



Fit the insulation material (main component 4 (see section 3.3.0 Contents of delivery)) to the wall thickness. The excess material - piece A - is not needed for the further installation. The distance A depends on the width of the wall and the type of exchanger. See the calculation in the table below.

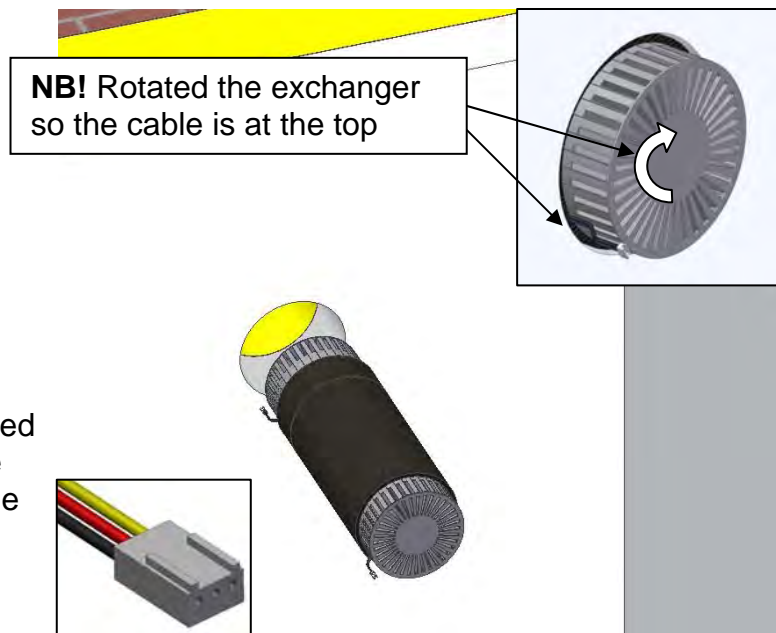


Type no.	Distance [A]
L-280	300 mm minus the width of the wall
L-350	370 mm minus the width of the wall
L-440	460 mm minus the width of the wall

Paste the adjusted material on to the exchanger.



Insulation material  
(see fig. 1. (4.))



The exchanger is placed in the drilled hole in the wall so that it extends out 35 - 40 mm on the exterior side.  
The exchanger should be oriented so that the female header of the cable is on the interior side of the wall.

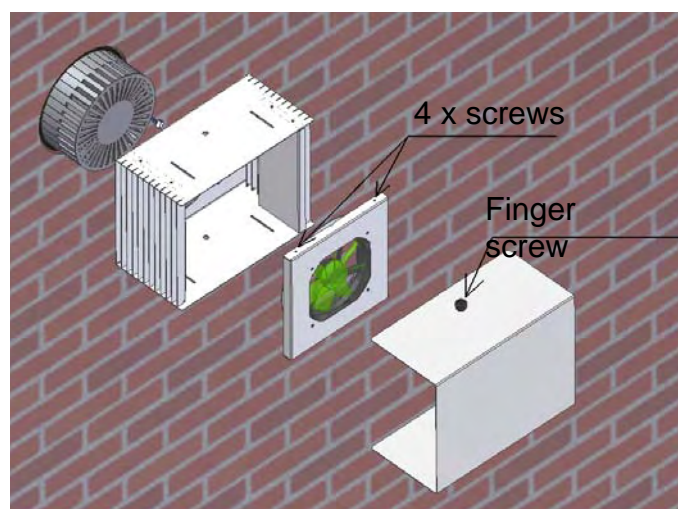
Joint all sides of the exchanger on the interior as well as the exterior side.

**Remember** to ensure that the cable of the exchanger is passed through both sides of the wall.



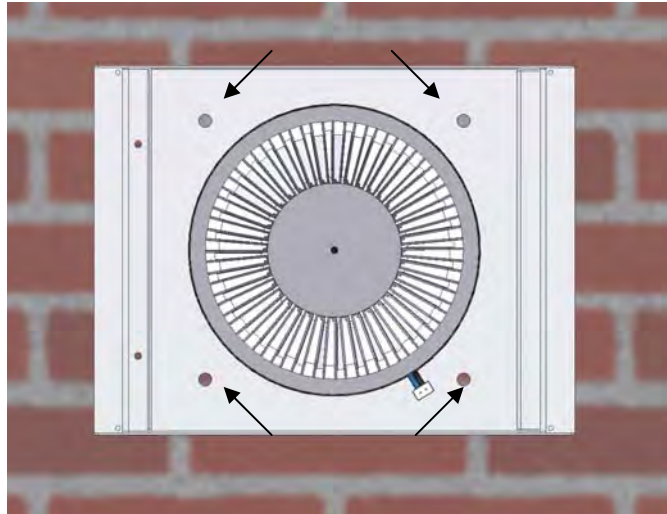
Outside unit:

- Remove the front panel by unscrewing the two finger screws
- Remove the motor plate by unscrewing the 4 screws on the side of the unit



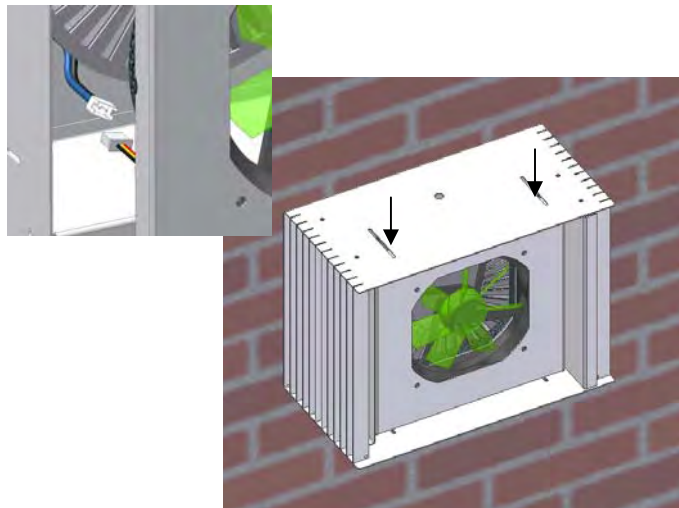
Outside unit:

- Mount the outside unit on the wall with 4 screws.



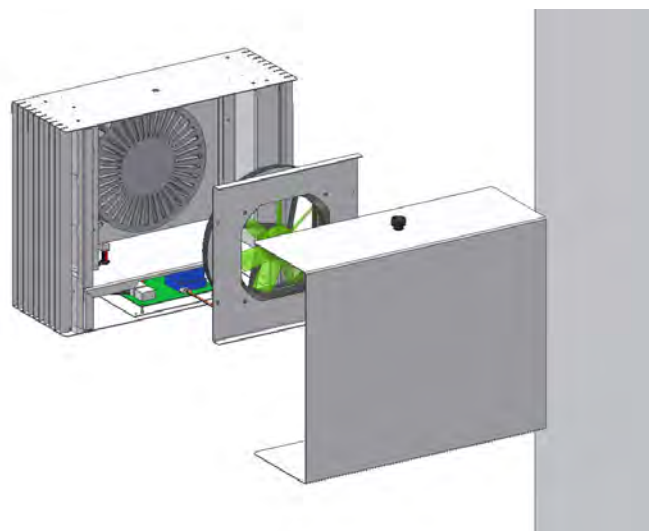
Outside unit:

- Connect the motor with the cable of the exchanger.
- Press the motor plate onto the exchanger and tighten it with the 4 screws on the side of the unit.
- Mount the front panel with the 2 finger screws.



Inside unit:

- Loosen the two finger screws and remove the front panel.
- Loosen the 4 screws on the top of the plate and remove the motor plate.

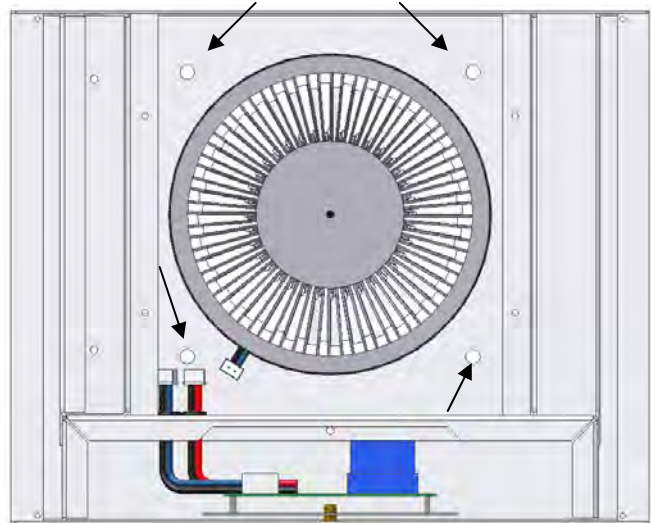




Inside unit:

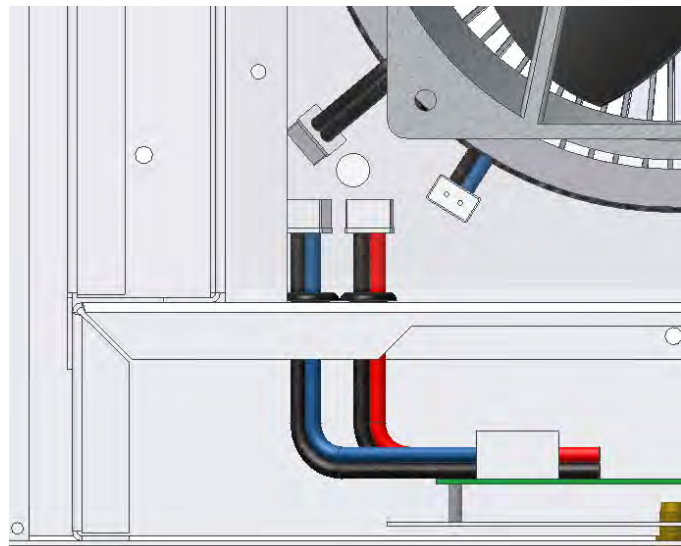
- Mount the inside unit on the wall with 4 screws.

Note! The inside unit can be turned so as to optimise the inflow of the air supply.



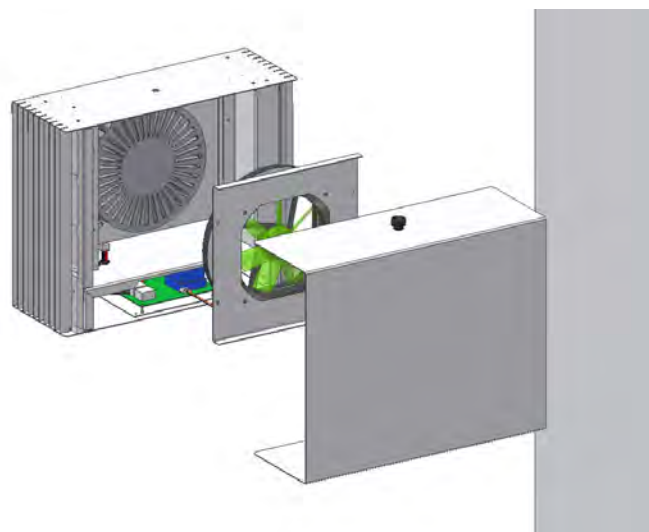
Inside unit:

- Connect the cable of the exchanger with one of the cables of the circuit board.
- Connect the cable of the air supply motor with the other cable of the circuit board.  
(It is impossible to connect the cables incorrectly.)



Inside unit:

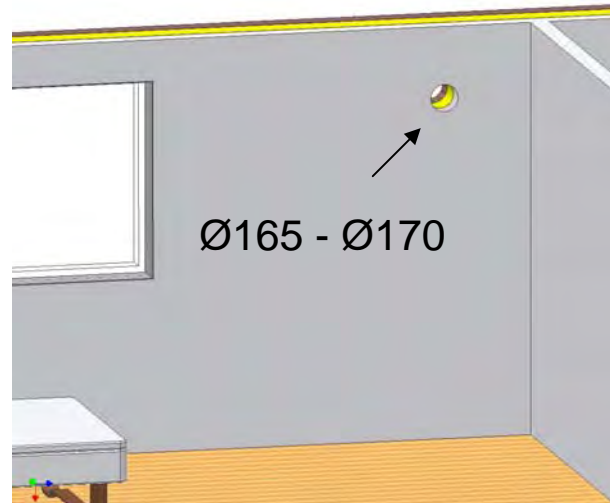
- Press the engine plate onto the exchanger and tighten it with the 4 screws on the top of the plate.
- Connect to 230V (see 5.0.0 Power connection.)
- Mount the front panel with the 2 finger screws.



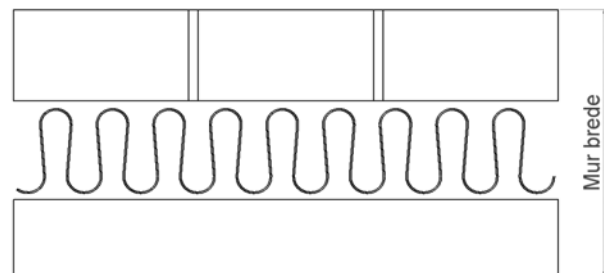
#### 4.4.0 Installation of unit with extension piece

Before installing the ventilation system it is **important** to check that the unit is placed correctly in relation to air flows and minimum distance (see section 4.2.1 Minimum distance).

Drill a hole of about  $\text{Ø}170$  mm through the exterior wall. (Minimum 165 mm)



When the hole has been drilled, measure the width of the wall.



Fit the big pipe ( $\text{Ø}160$ ) to the relevant wall thickness. Press the pipe onto the exchanger, so that it covers the end of the exchanger by about 150 mm. The overall dimensions are:

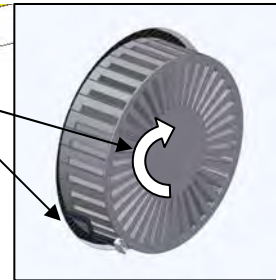


the width of the wall + 40 mm



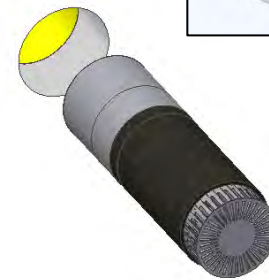


**NB!** Rotated the exchanger so the cable is at the top



The exchanger is placed in the drilled hole in the wall so that it extends out 40 mm on the interior side.  
The exchanger should be oriented so that the female header of the cable is on the interior side of the wall.

**Note!** The fitted pipe must be in line with the outside wall.

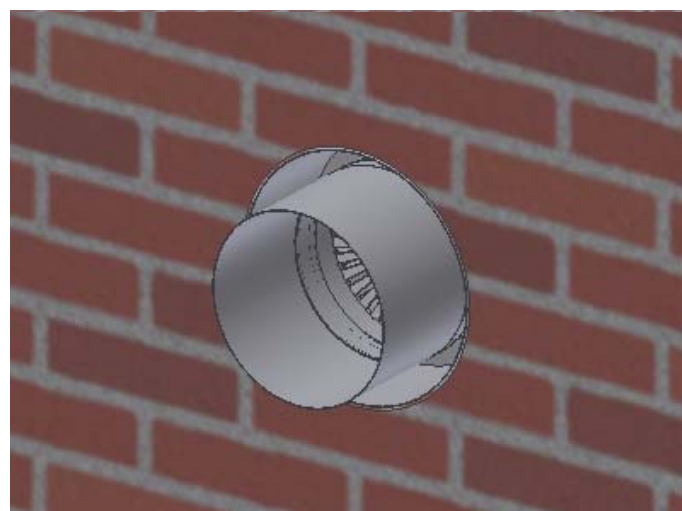


Joint around the exchanger on the internal as well as the external side.

**Remember** to make sure that the cable of the exchanger is passed through both sides of the wall. Use the extra cable to extend the cable on the outside, if necessary.

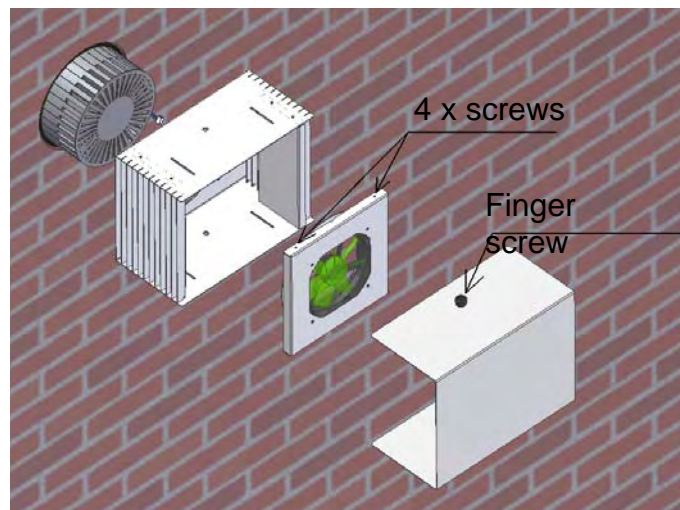


Fit the small pipe (Ø125 mm) so that it extends out 60 mm from the wall when placed over the intake ring that is fixed to the exchanger.



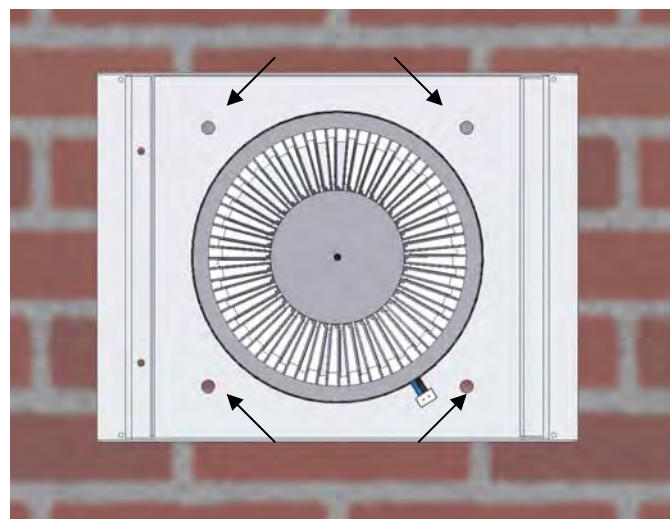
Outside unit:

- Loosen the 2 screws on the side of the unit and remove the front panel.
- Loosen the 4 screws that became visible at removal of the front panel and remove the motor plate



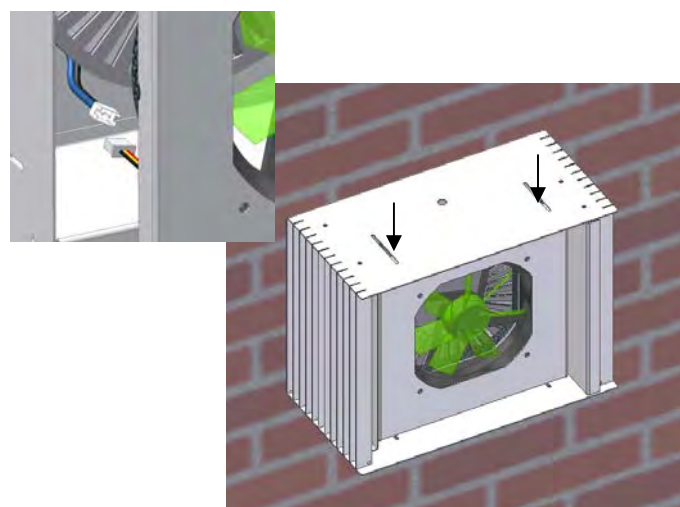
Outside unit:

- Mount the case on the wall with 4 screws.



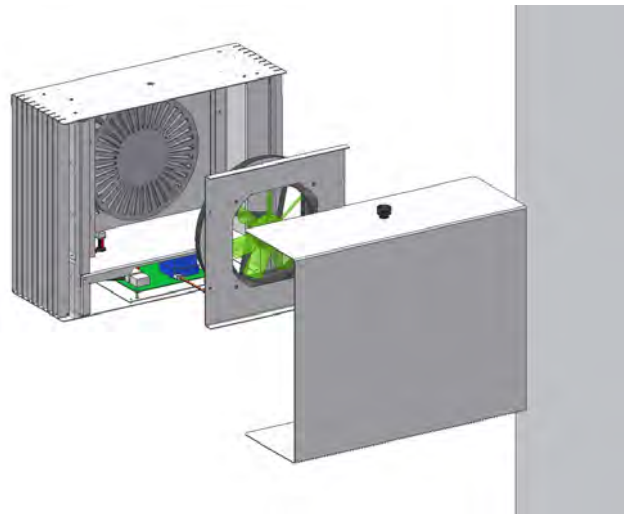
Outside unit:

- Connect the motor with the cable of the exchanger.
- Press the engine plate into the small pipe (Ø125 mm) and fasten it with the 4 screws on the side of the unit.
- Mount the front plate with the 2 screws on the side.



Inside unit:

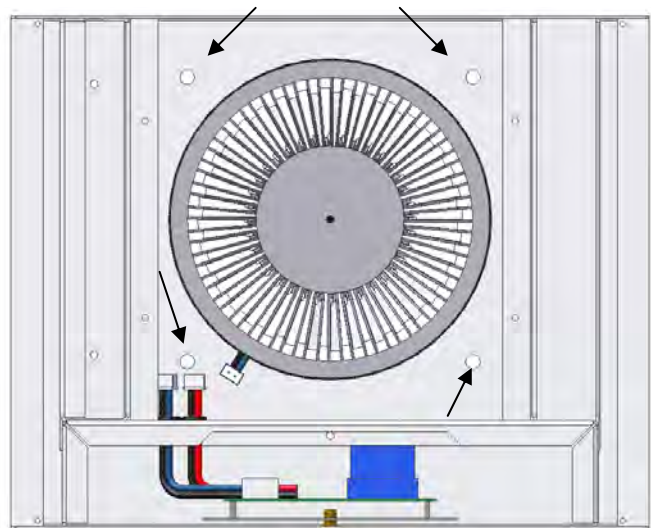
- Loosen the 2 screws to remove the front panel.
- Loosen the 4 screws on the top of the motor plate to remove it.



Inside unit:

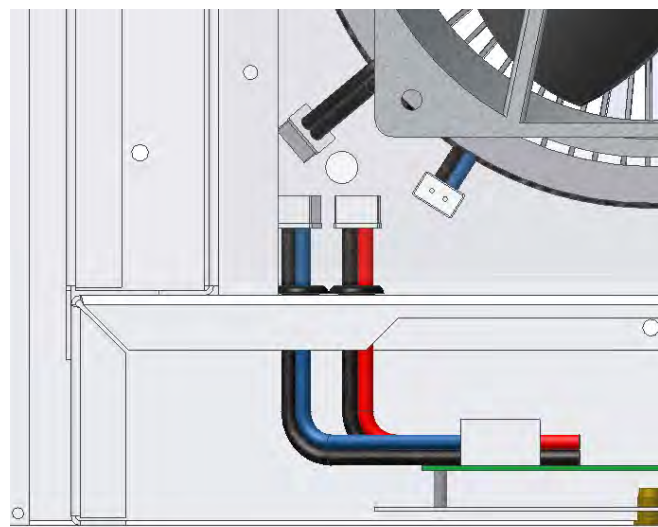
- Mount the inside unit on the wall with 4 screws.

Note! The inside unit can be turned so as to optimise the inflow of the air supply.



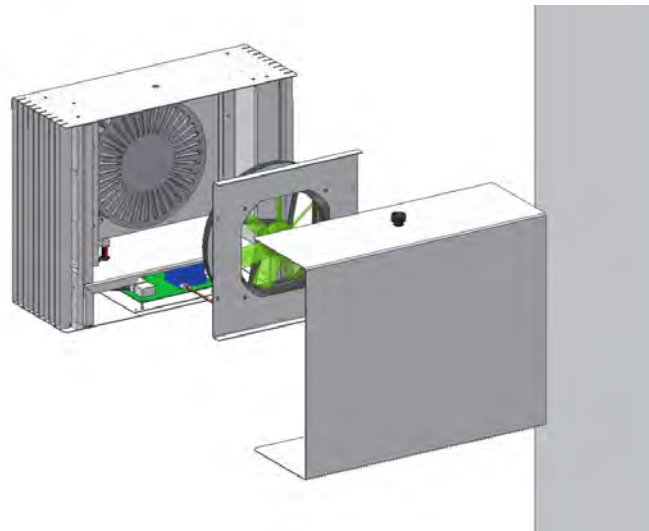
Inside unit:

- Connect the cable of the exchanger with one of the cables of the circuit board.
- Connect the cable of the air supply motor with the other cable of the circuit board.



Inside unit:

- Press the engine plate onto the exchanger and tighten it with the 4 screws on the top of the plate.
- Connect to 230V (see 5.0.0 Power connection.)
- Mount the front panel with the 2 finger screws.



## 5.0.0 Power connection

### 5.1.0 Connection of circuit board

Connect Turbovex 35A to the power supply, 230V, and connect it to the circuit board in the inside unit.

The easiest way to do this is to loosen the circuit board while connecting the unit. Remove the 4 screws indicated in the illustration. Remove the circuit board. Pass the cable through the wall, if necessary.

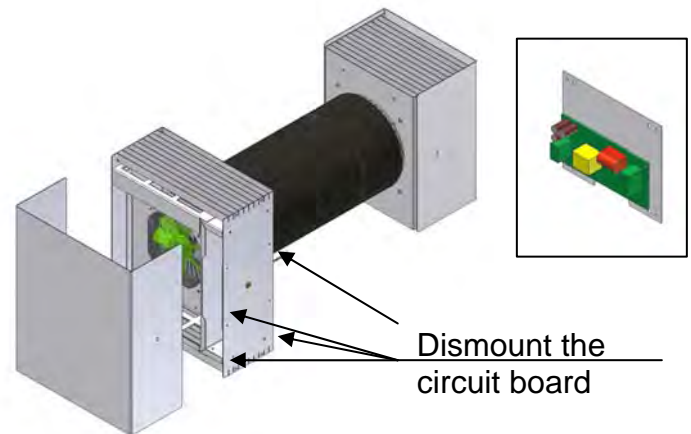
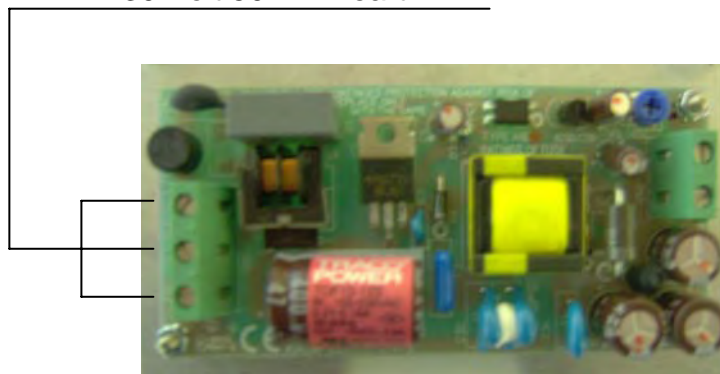


Figure 12 Circuit diagram

1 x 230 Volt 50 Hz + earth



#### Note!

**An interrupter must be installed in front of the unit.**

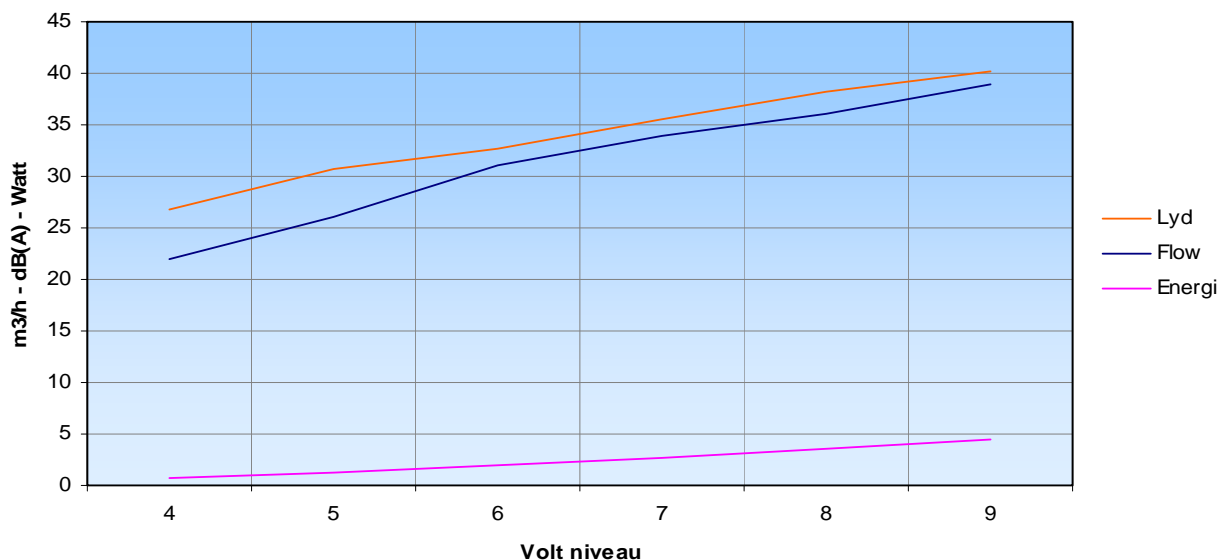


## 6.0.0 Technical specifications

### 6.1.0 Unit

Type of unit:	Turbovex TX 35A
Dimensions:	310 x 250 x 113.5 (inside)
Capacity:	22 – 40 m <sup>3</sup> /h
Power supply:	1 x 230V/50Hz
Power (motor):	2 x 3.36 Watts
Energy consumption (motor):	2.7 Watts - 0.28kJ/m <sup>3</sup> (35 m <sup>3</sup> /h)
Temperature efficiency:	65 %
Recovery:	72 %
Weight:	14 kg
Duct:	1 x Ø170

Figure 13 Diagram of technical specifications



The airflow indicates the balanced air renewal in relation to the motor voltage stated in m<sup>3</sup>/h. The operation is controlled from 0 – 100 % or on/off (100 %) according to the way the user has chosen to operate the unit.

The sound level is indicated in dB(A) in relation to air renewal measured at a distance of 1 meter from and 1 meter over the air supply grate. By way of comparison it may be mentioned that whispering corresponds to 30 dB(A), ordinary talk to 60 dB(A) and street traffic to about 90 dB(A).

The temperature efficiency on the exchanger is stated in % and is expressed as the ratio between the obtained temperature difference and the maximum achievable temperature difference, i.e. the outdoor temperature minus the air supply temperature divided by the outdoor temperature minus the room temperature, converted into per cent.

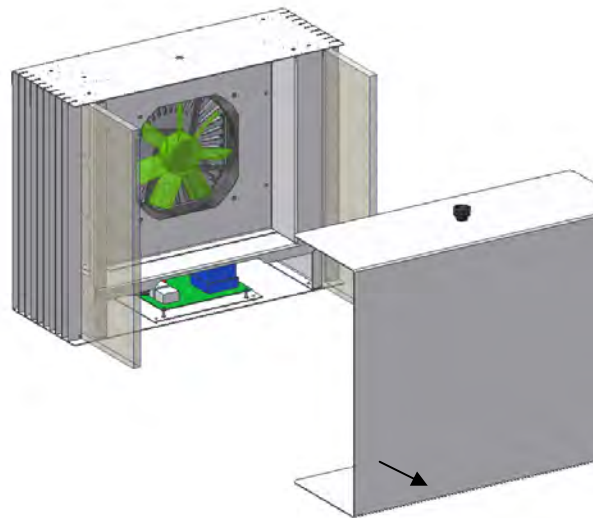


## 7.0.0 Operation

### 7.1.0 Change of filter

- Loosen the two finger screws and remove the front panel of the inside of the
- Remove the 2 filters and rinse them under the tap.
- Put the filters back
- Remount the front panel.

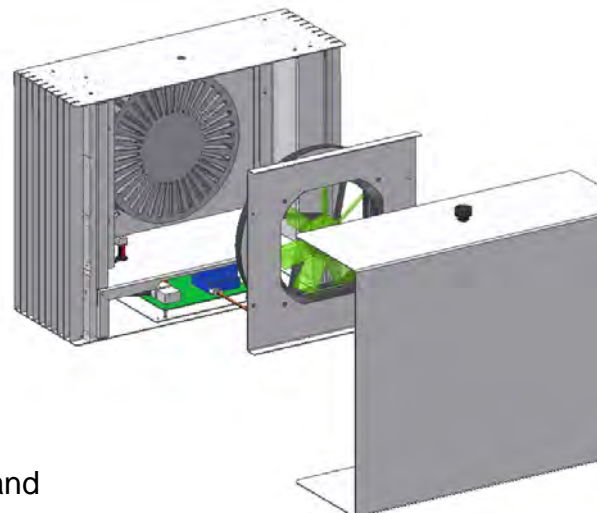
It is recommended to change the filters twice a year.



### 7.2.0 Cleaning of exchanger

It is recommended to clean the exchanger once a year.

- Switch off the power supply before proceeding to the next step.
- Loosen the 2 screws to remove the front panel of the inside of the unit.
- Remove the motor plate.
- Clean with a vacuum cleaner.
- Remount the motor plate and the front panel and reconnect the ventilation system to the power supply.
- Follow the same procedure on the outside.

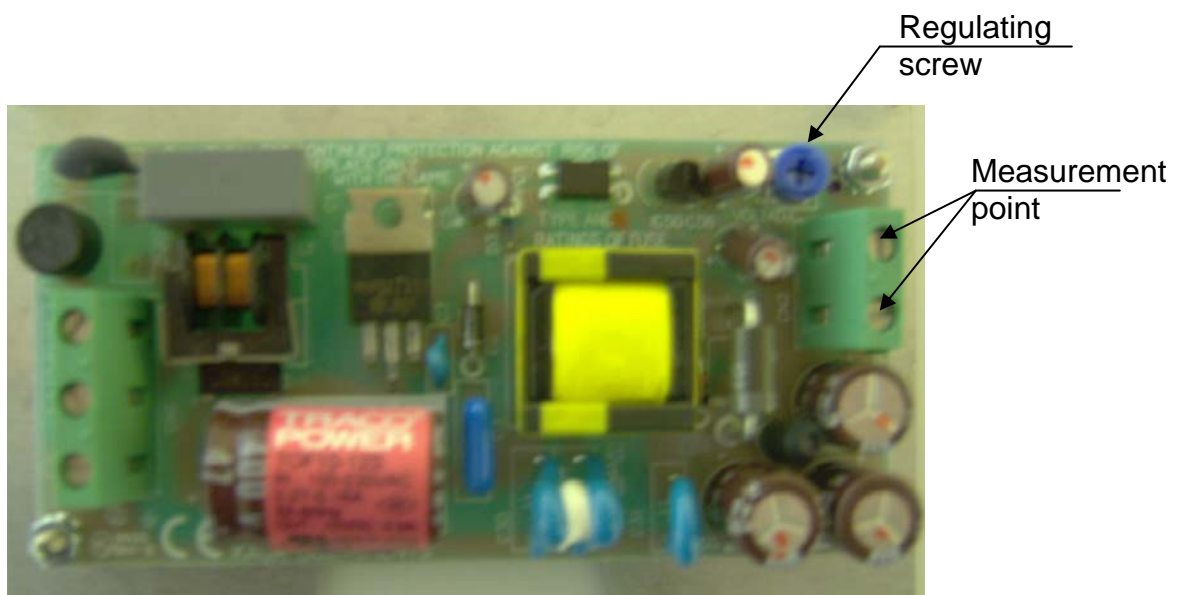


## 8.0.0 Service

### 8.1.0 Standard circuit board

On the standard model of TX 35A it is possible to control the velocity by turning the blue regulating screw as indicated in the figure below

Figure 14 Service



Turn the regulating screw to vary the motor voltage and thereby the velocity of the air fan.

It is possible to control the volt level and thereby the flow by measuring the voltage between the two measuring points. Use the technical specification diagram (Fig. 12) to adjust the ventilation system to the desired flow rate. (The default mode of TX 35A is 7V)

## 9.0.0 Declaration of conformity

### 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 35A  
Type: Comfort/bolig ventilation  
Serie nr.: 051-000-000

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

11/11-2009

Anders Vestergaard

Dato:

Produktionsteknolog: Anders Vestergaard