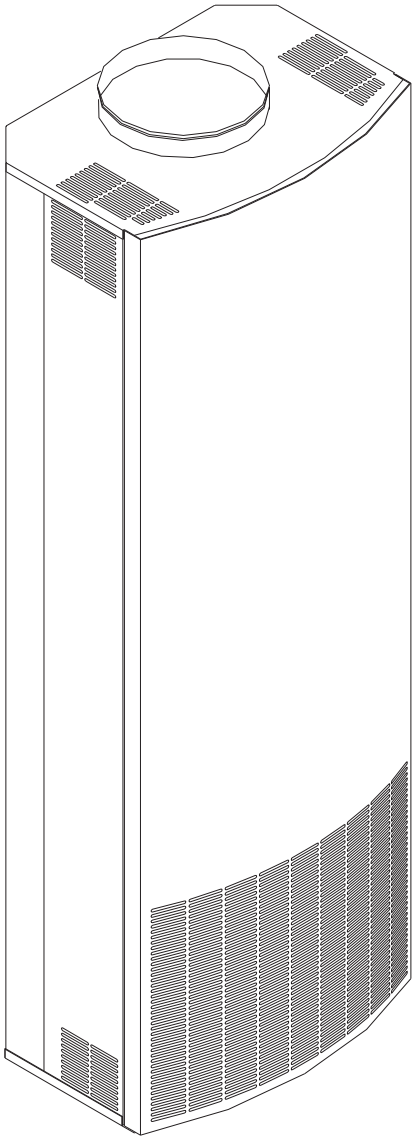
MOUNTING INSTRUCTIONS FOR

TURBOVEX TX 700



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1.0.0 Content

2.0.0 Figures

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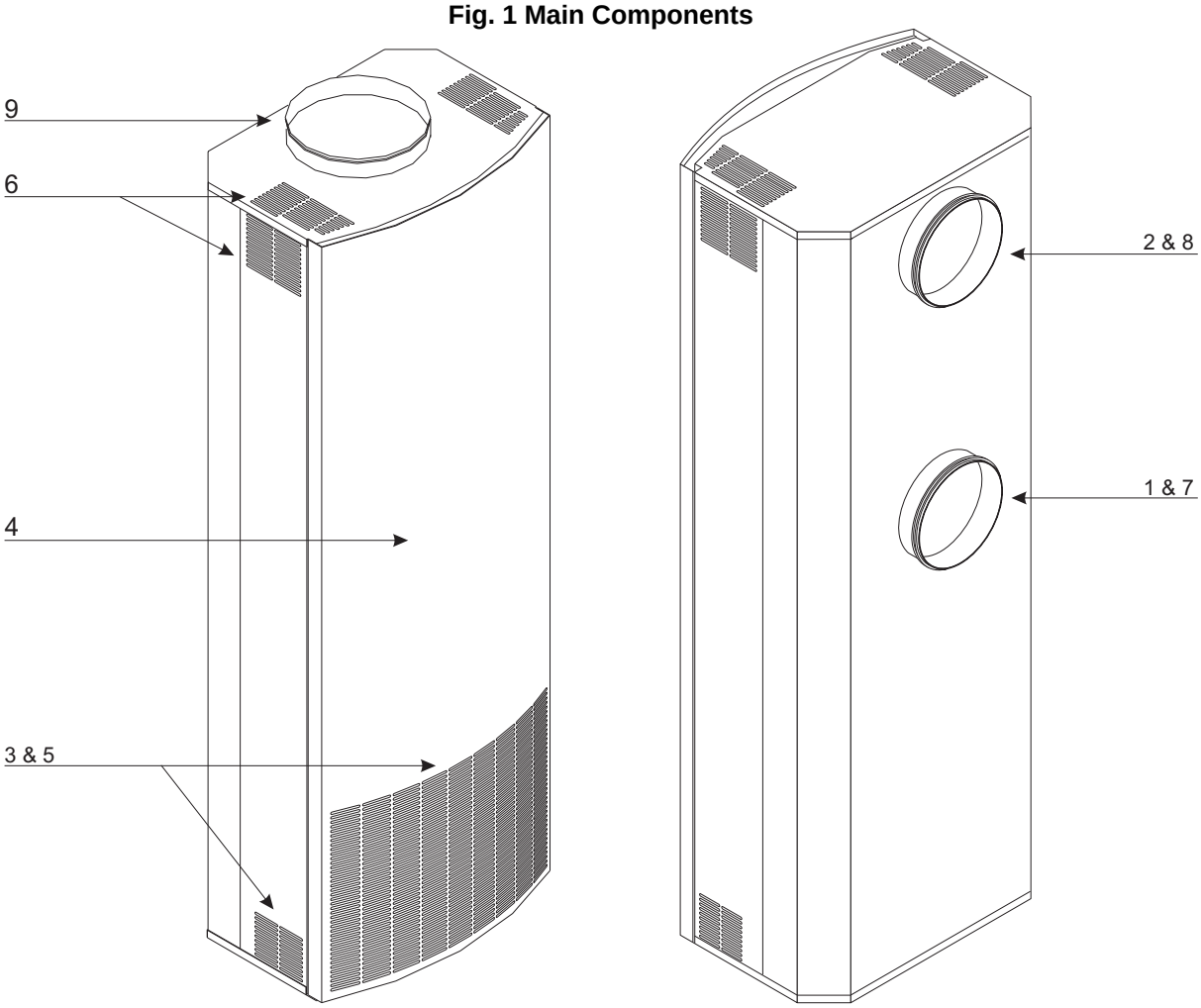
3.0.0 The System

Turbovex TX 700 is a decentralized ventilation system based on the systems of displacement, with build in heat recovery for the ventilation, mainly in comfort rooms.

Turbovex TX 700 consist of the following components Fig. 1

1. Ventilator air inlet
2. Ventilator air outlet
3. Filter
4. Front cover
5. Injection
6. Suction from the room
7. Intake
8. Discharge wall
9. Discharge roof

Fig. 1 Main Components



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3.1.0 Working Principle

The fan (2) sucks fresh air from the outside trough the filter (1) and blows the air over the heat exchanger (4) and trough the heating coil (5) into the room.

At the same time, the exhaustion fan (3) remove the soiled air from the room trough the heat exchanger (4) and blows to the outside trough the grating.

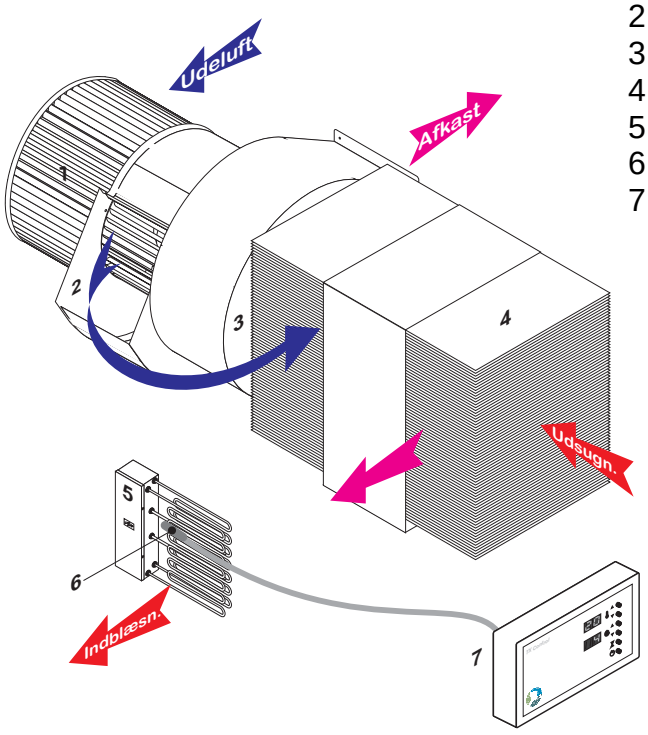
The heat exchanger will recover the calories from the room temperature with up to 75%, and therefore the heating coil is only a complement to give the wanted temperature in the fresh air.

At the control panel (7) the inlet temperature is adjusted. The sensor (6) will register the currant temperature in the inlet air, and if the temperature is lower than the adjusted value, the heating unit (5) will turn on, and automatically turn the heat off again when the wanted inlet temperature are reached.

In cold conditions, under -12°C, it is good economy to program the controller for automatic reduction of the airflow.

Be sure to observe the instructions for connection of any external of demand control, to obtain a secure and satisfactory operation of the aggregate.

Fig. 2 Working Principle



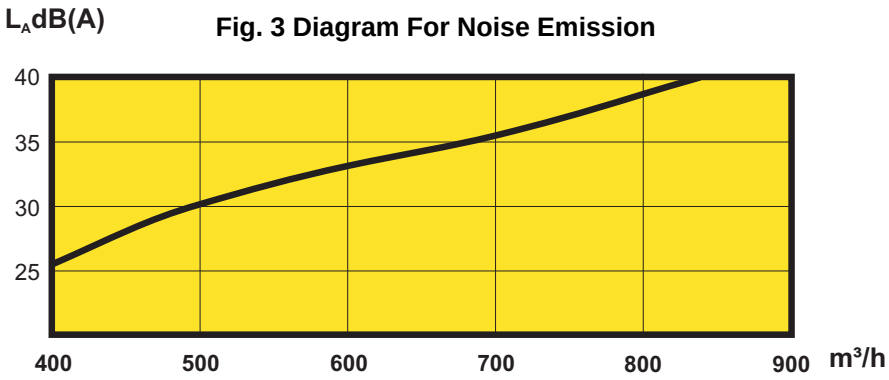
1 Filter
2 Fresh air fan
3 Exhaustion fan
4 Heat exchanger
5 Heating unit
6 Sensor for inlet temperature
7 Electronic control panel

4.0.0 Technical Specifications

Ventilator Type:	**Turbovex TX 700**
Capacity:	300 - 680 m³/h
Voltage:	1 x 230V/50Hz
Wattage (Motor):	150 Watt
Energy Consumption (Motor):	1,05 kJ/m³
Heat Element el / water:	2,67 kW / 5,6 kW
Filter:	F5 filter
Thermal efficiency:	75%

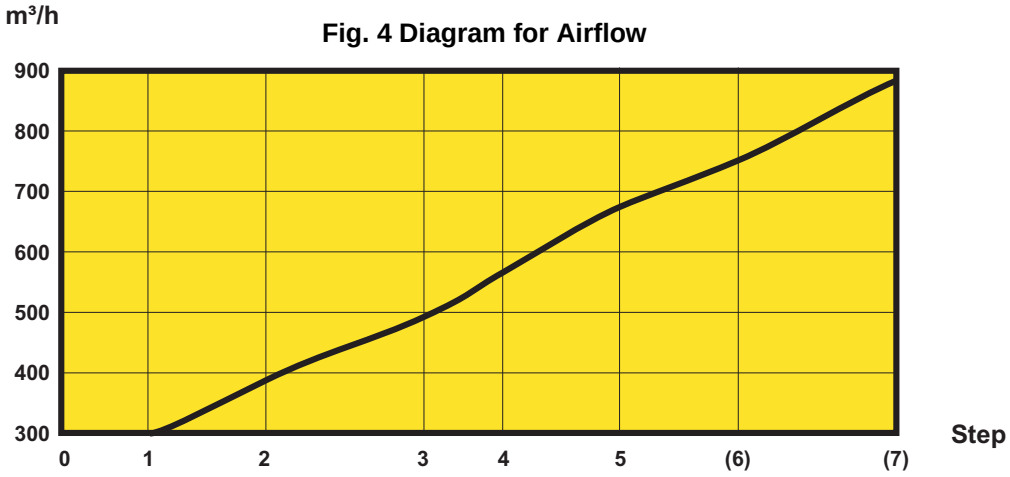
Notice! *Thermal efficiency: is according to Danish reference year*

Fig. 3 Diagram For Noise Emission



The measurements shown in the diagram is made according to the Danish building regulations, (Standard BR95)

Fig. 4 Diagram for Airflow



The prioritised average according to the insert flow measurement with a pressure fall over the orifice gauge in the connection piping, and the connected air meter for measuring the airspeed according to the flow volume.

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5.0.0 Mounting

5.1.0 *Erection of Wall Version*.

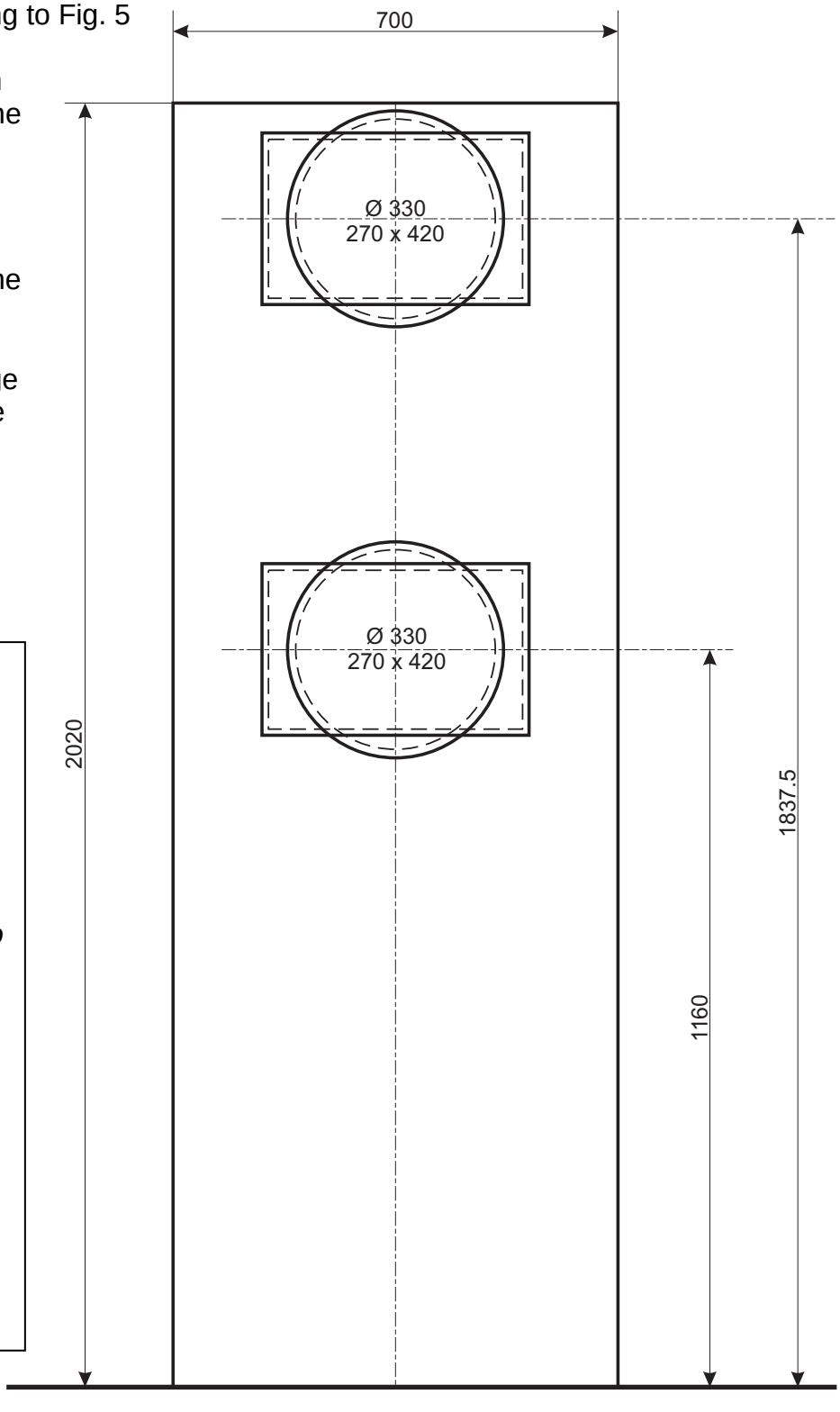
1. Make the holes according to Fig. 5

2. Unscrew the two bolts in top of the unit, and lift off the front cover.(See Fig. 1).

3. Place the unit along the wall and fix it in place, by mounting the brackets to the wall and top of the unit.

4. Construct the air passage trough the wall with a slope of 1° to 2° towards the outside wall, this way rain cannot penetrate the passage and reach the ventilator.

Fig. 5 Inlet/Outlet Trough Wall



Notice!
It is important that the passage is sealed 100 %, to avoid false air occurring in the ventilator.
Make sure that the passage pipes is not twisted or pressed on to the mounting flanges, while it will result in a increased noise level, even up to 6 dB(A).
make sure the hole in the wall is big enough for insulating with glass wool or foam slats around the passage pipe

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5. Mount the outside facade grates. The grate used for the air outlet is side turned and shall turn away from the predominant wind direction. On the inlet side the grate is turning down wards. Make sure that the damper on the outlet side, has a free access and is not wedged in.

6. Connect the power supply according to the electrical diagram (see Fig. 9).

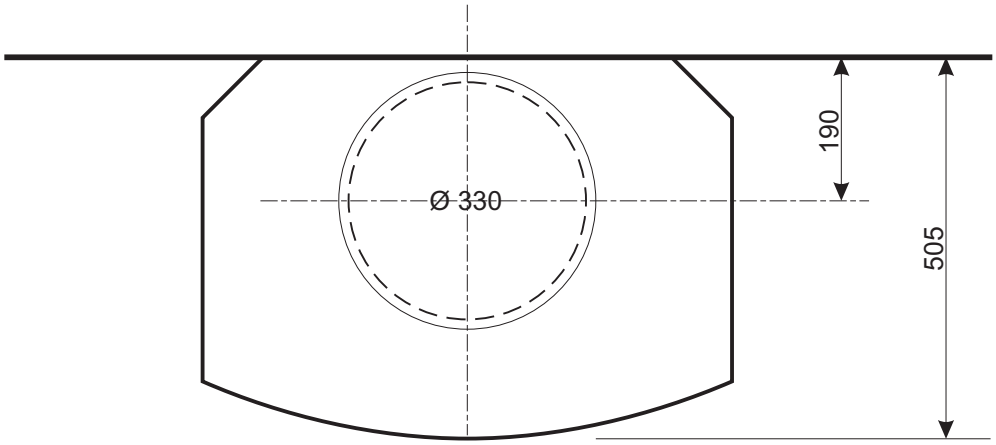
> ***Notice!***
> The connection to the electrical power supply, shall be executed by an authorised electrician.

10. Attach the front cover again.

5.2.0 Outlet Trough Ceiling

1. Make the holes according fig. 6
   Hole for the inlet trough wall see fig. 5

Fig. 6 Outlet Trough Sealing



2. Unscrew the two bolts in top of the unit, and lift off the front cover.(See Fig. 1).

3. Place the unit along the wall and fix it in place, by mounting the brackets to the wall and top of the unit

4. Construct the air passage for the inlet trough the wall with a slope of 1° to 2° towards the outside wall, this way rain cannot penetrate the passage and reach the ventilator. The outlet trough roof in a ø 315 piping.

5. Mount hereafter the piping over the roof.

> ***Notice!***
> *It is important that the passage is sealed 100 %, to avoid false air occurring in the ventilator.*
> *Make sure that the passage pipes is not twisted or pressed on to the mounting flanges, while it will result in a increased noise level, even up to 6 dB(A). make sure the hole in the wall is big enough for insulating with glass wool or foam slats around the passage pipe*

6. Mount the outside facade grate at the inlet, and the roof weathering surface (local supply) and exhaust hut at the outlet.

7. Connect the power supply according to the electrical diagram (see Fig. 9).

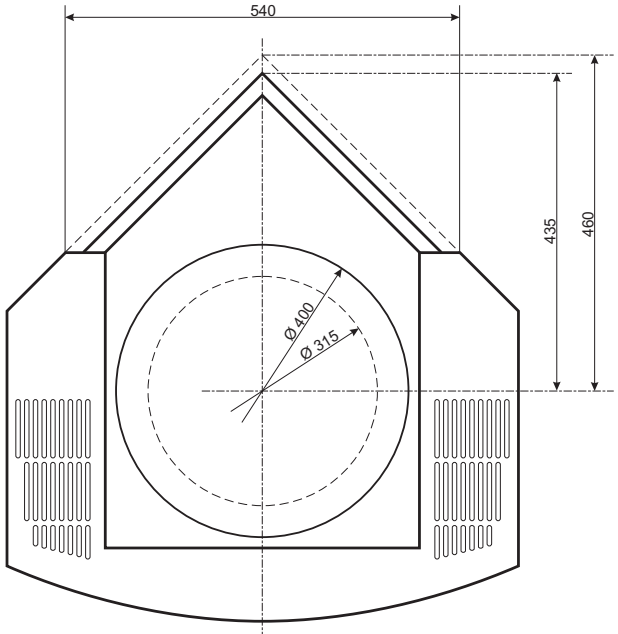
> ***Notice!***
> The connection to the electrical power supply, shall be executed by an authorised electrician.

8. Attach the front cover again

5.3.0 Inlet/Outlet Trough Ceiling with single piping.

Fig. 7 Inlet/Outlet Trough Sealing with single piping.

1. Make the holes according Fig. 7



2. Unscrew the two bolts in top of the unit, and lift off the front cover.(See Fig. 1).

3. Mount the suction chamber and the combi adapter

4. Mount hereafter the piping over the roof

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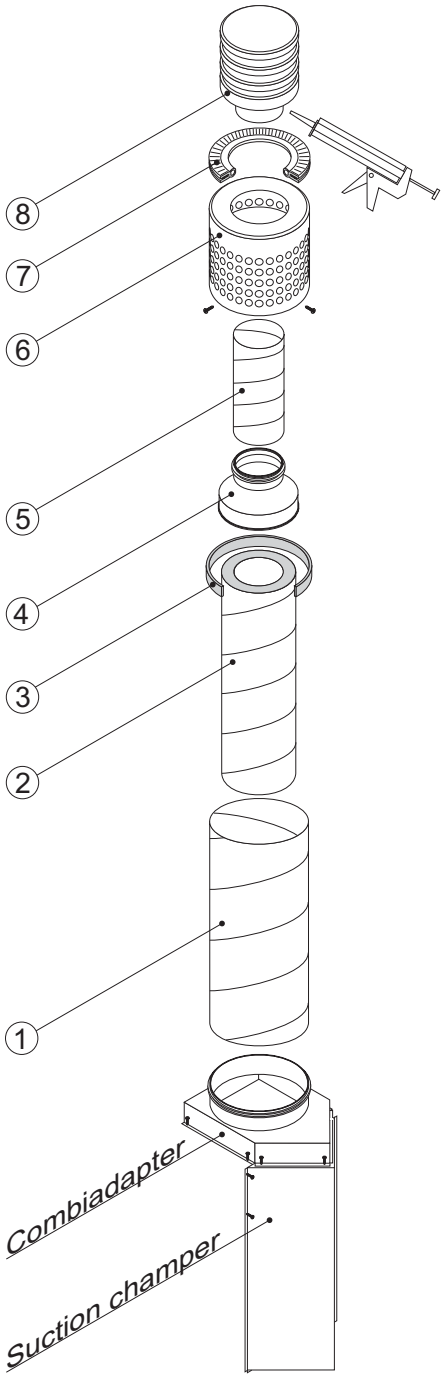
Notice!
It is very important that the following assembly of the piping is sealed 100% between every connection over the roof adaptor. This has to be done to prevent false air leak into the system, but also to eliminate noise emission from ventilator vibrations.
Be aware the damper on the outlet side, has free access and is not stuck

Fig. 9 Roof Inlet



5. Trim the piping (1) and (2) at the same length, measured from the upper edge of the inlet/outlet adapter on the ventilator, so the upper edge of the pipes is 300 mm over the highest point of the cut out in the roof.

6. Glue the sealing strip (3) around upper edge of the inner pipe (2), mount hereafter the pipes (1) and (2) to the inlet/outlet adapter on the ventilator. When the pipes is connected to the adapter the upper edge of the inner pipe (2) is approximately 100 mm under the upper edge of the outer pipe (1)

7. Connect the reduction adapter (4) with the separation pipe (5). Pack tight the combined parts over the sealing strip (3) on the inner pipe (2)

8. Connect the selvage (7) over the tophole on the suction hut (6). Mount these two units with screws or turbular rivets on the lower edge on the outer pipe (1). The separation pipe (4) now stick 25 mm trough the hole on the suction hut (5)

9. Glue silicon around edge of the exhaust hut (8), push it hereafter down over the separation pipe (5) and down to the suction hut (6).

10. Mount the roof weathering surface (local supply) and hereafter insulate the piping over the roof.

11. Connect the power supply according to the electrical diagram (see Fig. 11 and 12).

Notice!
The connection to the electrical power supply, shall be executed by an authorised electrician.

15. Attach the front cover again.

5.4.0 Water connection

Look chapter 8.0.0 before connecting water to the unit.
It is advisable to mount a Danfoss FV filter at the inlet side, to prevent blockade of the heating unit.

PS. The hoses mounted in the unit, must always be used, to soften the shocks in the system when controlling the water flow

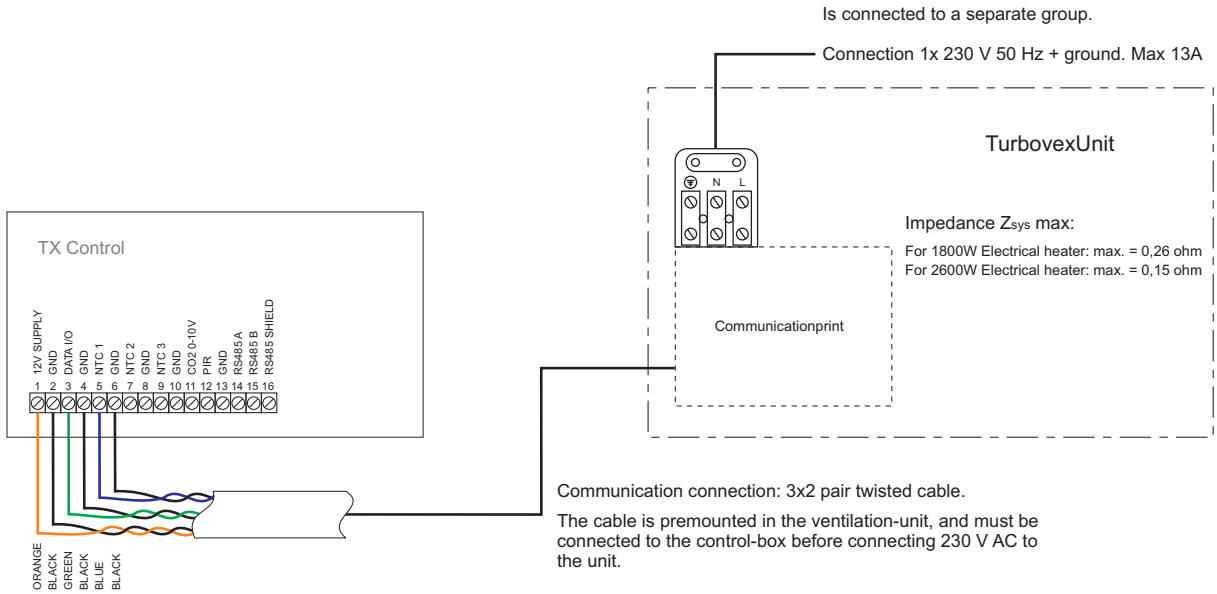
5.5.0 *Power Supply*

The electrical supply is connected according to the electrical diagram Fig. 9.

Note!

A main switch must be inserted in the power lead for the unit.

Fig. 9 El-diagram "Standard Version"



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6.0.0 Operation

6.1.0 Air Supply Rate (Digital Controller)
See the manual for CPU control

Normally it is possible to control the airflow in 5 steps, but when using internal damper, there will only be 4 steps.

PS. When using demand control with CO2 sensor, the adjustment of airflow, must be set to 1.

PS: Units with electric heating will run for 2 minuts, after switch off, to get the heater chilled.

6.2.0 Heat Adjustment. (Digital Controller)
See the manual for CPU control

7.0.0 Maintenance.

7.1.0 *Service Safety*.

Notice!
It is very important that the main power supply for the ventilator is switch off before any maintenance is carried out

At least once a year inspection, cleaning and maintenance of the wear components shall be carried out.

7.2.0 Filter:
The ventilator is equipped with filter type F5 (See Fig. 1) .As a guideline it is recommended that the filter is changed between 2 to 4 times per year.

7.3.0 Heat Exchanger:

Cleaning of the heat exchanger is to be carried out once a year, to avoid reduction of the efficiency.

Demount the front cover. Unscrew the plates in front of the heat exchanger and pull this out from the unit.

Clean it with compressed air – If necessary with a high-pressure washer.

7.4.0 Motor and ventilator:

When the heat exchanger is removed “see chapter 7.3.0” the ventilator for air outlet can be cleaned.

It is very important to clean the ventilator wheel with a vacuum cleaner with brushes, to avoid imbalancing the ventilator wheel. Be sure that ribs on the wheel are **NOT** damaged because it will result in an imbalance of the ventilator wheel.

The motor has closed and prelubricated bearing and is therefore maintenance free.

Change of motor, should only be carried out with guidelines from the dealer.

8.0.0 Frost protection of heating element

To prevent the element from busting by frost, the water inlet temperature must never increase +40°C, and the water flow must be min. 20 litre/h.

Never change the pre set values from the factory.

Before connecting water to the unit please refer to the label placed at the connection chamber.

Important!

Connection to units with water-heating.

The heating element is secured against bursting from frost, down to -12ºC, when the value at the scale of the thermostate is set to min. “1,5”.
The difference pressure must be at least 0,3 bar and max. 0,9 bar, wich can be secured by adding a regulator in the systems main circuit.
If the difference pressure is less than 0,3 bar, it will infer on the closing speed of the servo valve.
Too high difference pressure will generate noise from the valve when opening.

EC Declaration of Conformity

Manufacturer:

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hereby declare that
Product:

TURBOVEX TX 700
Ventilation Unit

was manufactured in conformity with the following national standards and technical specifications.

COUNCILDIRECTIVE of June 1998 on mutual approximation of the laws of the Member States on the safety of machines (89/392/EEC as amended by directive 91/368/EEC) with special reference to Annex 1 of the Directive on essential safety and health requirements in relation to the construction and manufacture of machines.

COUNCIL DIRECTIVE 89/336/EEG of 3 May 1989 on the approximation of the laws of the Member
States relating to Electromagnetic Compatibility

EN 292-1
Safety of machinery. Basic concepts, general principles for design. Basic terminology, methodology
Safety of machinery. Basic concepts, general principles for design.
Technical principles and specifications
EN 294
Safety of machinery; safety distances to prevent danger zones from being reached by the upper limbs.
EN 50081-1
Generic Emissions: Residential, Commercial, and Light Industrial Environments.
EN 50081-2
Generic Emissions: Heavy Industrial Environments.
EN 50082-1
Generic Immunity: Residential, Commercial, and Light Industrial Environments
EN 60269-1
Low-voltage fuses. General requirements.
EMC
Generic emission standard - Part 2 . Industrial environment.

Aars, January 2006
Frede Sørensen
TURBOVEX A/S DENMARK