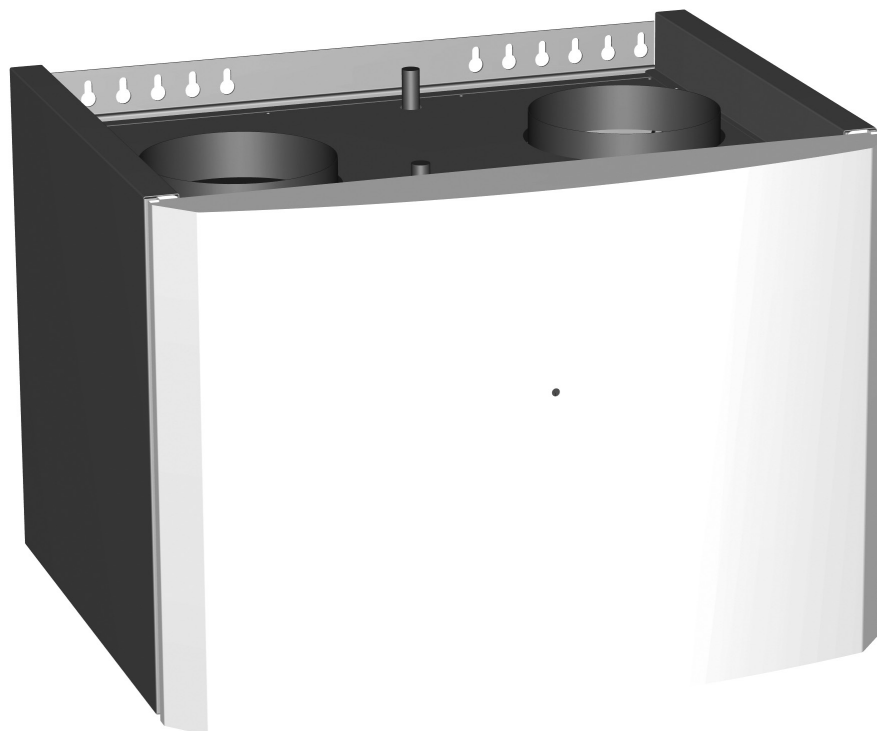


Installation and maintenance instructions

Vent



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1 Unit design

Use

The Vent heat recovery unit is used for transporting air according to ELSÄK-FS 1999:5-Group B, i.e. not for transporting flammable and explosive substances, grinding dust, and similar. When ventilating residential buildings, Vent transfers the energy found in the extracted air to heat transfer fluid in a heat pump therefore increasing the heat pump's heating factor.

Casing

The Vent heat recovery unit is made up of dual galvanized plates with intermediate condensation and sound insulation. The outer casing is available in steel plate and powder-coated versions.

Filter

The unit is equipped with a non-washable G80 filter to protect the fan and the heat recovery coil from blockages. A filter sensor indicates when the filter must be inspected. Use a vacuum cleaner to clean the filter. We recommend replacing the filter once a year.

Heat recovery unit

The hot extracted air passes a water coil and transfers its heat to the water that comes from the ground or rock collector etc. The transferred energy supplies the cold side of the heat pump and therefore increases the heat factor of the heat pump.

Fan

The Vent heat recovery unit has a fan of the EC-type with forward angled blades, which gives 50 – 60% lower energy consumption compared to conventional fans.

Circulation pump

Vent has an integrated circulation pump.

Control system

Vent's control equipment is located on the front of the unit. The control unit regulates the fan capacity from 20 - 99%, continuous control of the circulation pump, pump stop during defrost and indicates when the filter needs inspecting.

Connections

The duct connections of the Vent heat recovery unit are 160 mm in size with the extracted air to the right and the exhaust air to the left, seen from the front of the unit.

2 Project planning and installation instructions

2.1 Ventilation

Positioning the unit

The Vent heat recovery unit is designed to be hung on a wall next to the rock heat pump. Alternatively the unit can be placed at attic level in the house. If placing the Vent heat recovery unit at attic level, note the freezing risk to the condensation outlet. Vent must not be mounted on walls adjoining bedrooms.

Duct connections

The Vent heat recovery unit is designed to ventilate residences or premises with similar environments using extracted air ducts.

Air from pool rooms containing chlorine must not be connected to Vent.

Kitchen flues must not be connected to the unit.

Air handling system group B according to the high current regulations.

The duct system must fulfil leak class B.

The exhaust air duct and extracted air duct must be installed with silencers before being connected to the unit.

The extracted air duct must be routed from the unit to its own roof outlet on the external roof or to an external wall vent.

Vent can ventilate houses of up to 250 m² or to a maximum of 90 l/s.

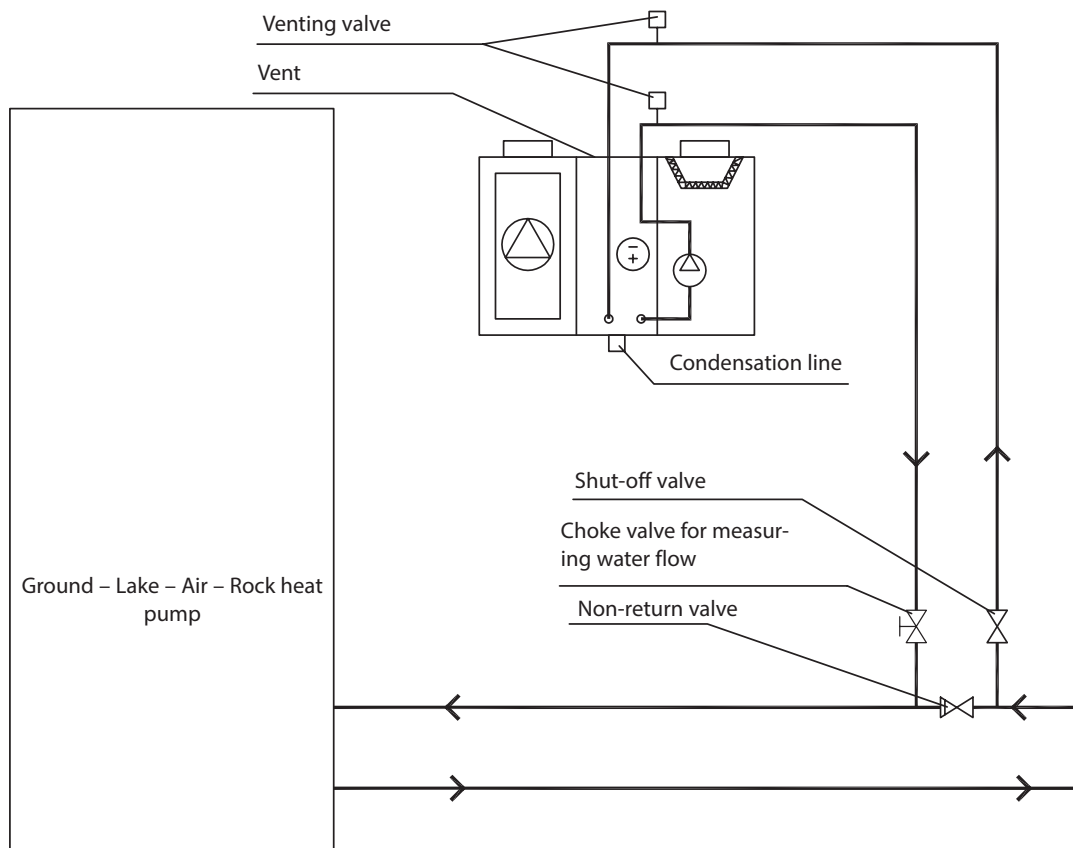
Duct insulation

Extracted air ducts in hot spaces do not have to be insulated while exhaust air ducts must be condensation insulated in cold and hot spaces. Extracted air ducts in cold spaces must be insulated.

See applicable Building regulations.

2.2 Piping installation

The pipe work is connected according the outline chart below.



15 mm copper piping must be used to connect to the water coil

2.3 Condensation line

The condensation line has a 15 mm internal thread connection and is connected to the underneath of the heat recovery unit. The condensation line is supplied with a water seal before the line runs to the outlet funnel.

2.4 Electrical Installation

Electrical connection

The Vent heat recovery unit is classed as a drip proof variant.

Air handling system group B according to the high current regulations.

The unit is supplied with a plug and must be connected to an earthed, 1 phase 230 V wall socket.

Switch

The unit is started and stopped using the switch, located under the control panel.

In position 0 the unit's electrical components should be treated as conductors.

Electrical connection circulation pump

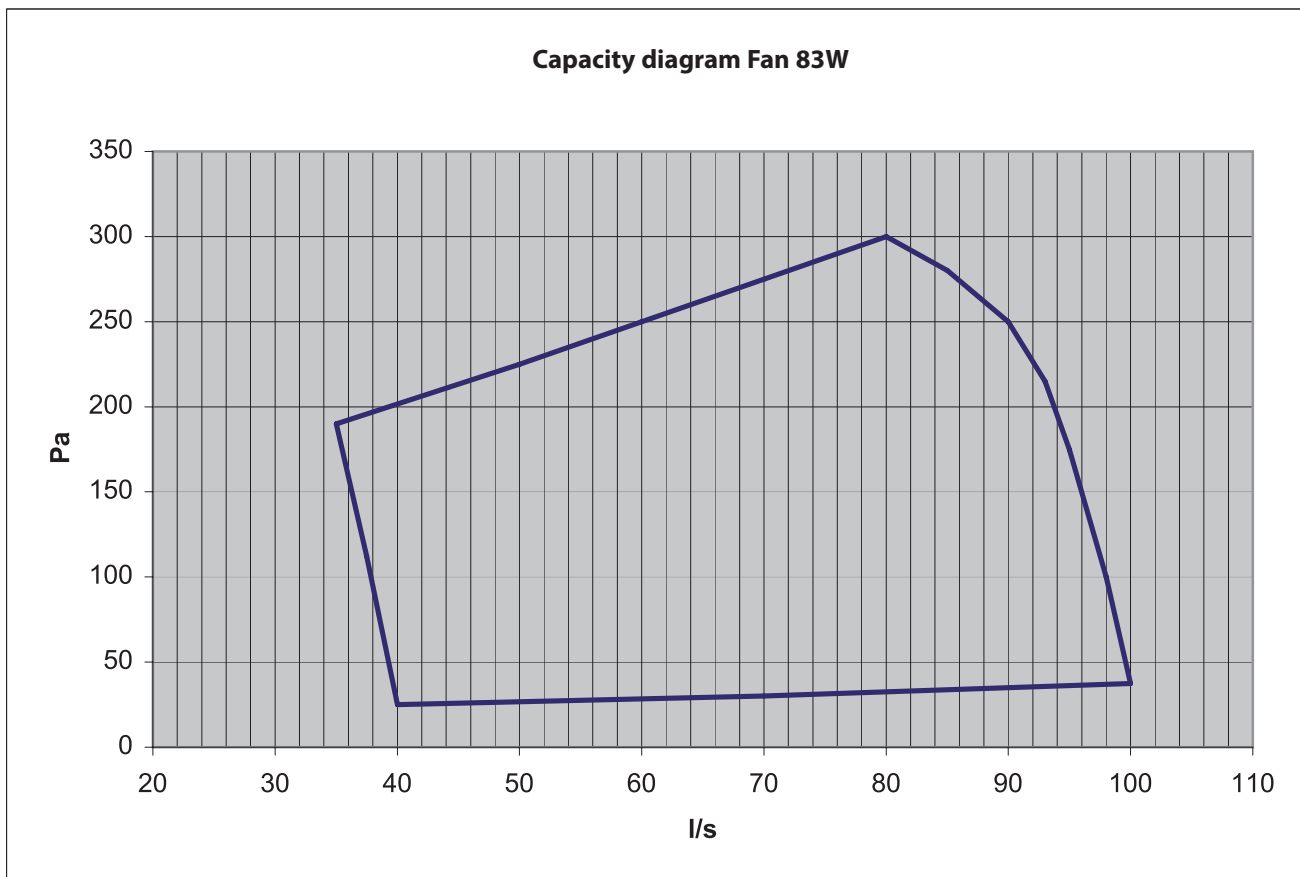
Circulation pump, CP, for Vent is not electrically connected at delivery.

The circulation pump in the Vent heat recovery unit must not be electrically connected until the system has been filled with water.

Connect the circulation pump electrically as follows:

NOTE! The system must be filled with water.

- 1 Remove the cover marked "FILTER".
- 2 You will now see the circulation pump behind the cover.
- 3 Electrically connect the circulation pump in the Vent heat recovery unit by connecting the joint connectors.



3 Adjustment

3.1 Ventilation

The ventilation flow must be adjusted according to the Building regulation norms.

If there is a chart, the airflow is adjusted according to the airflow specified on the chart.

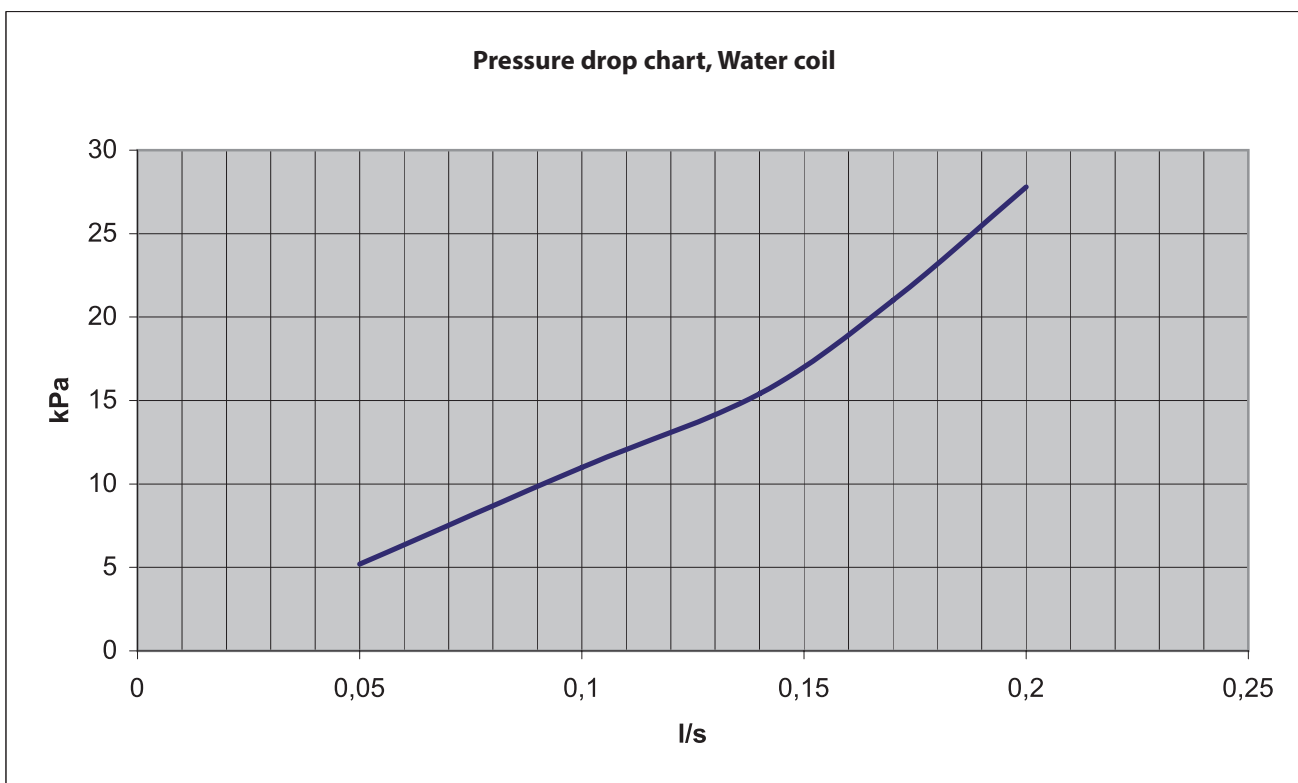
Kitchen flues from kitchen fans or hoods must not be connected to the system.

The fan capacity is described in the diagram on page 4 and is set according to the instructions on page 6.

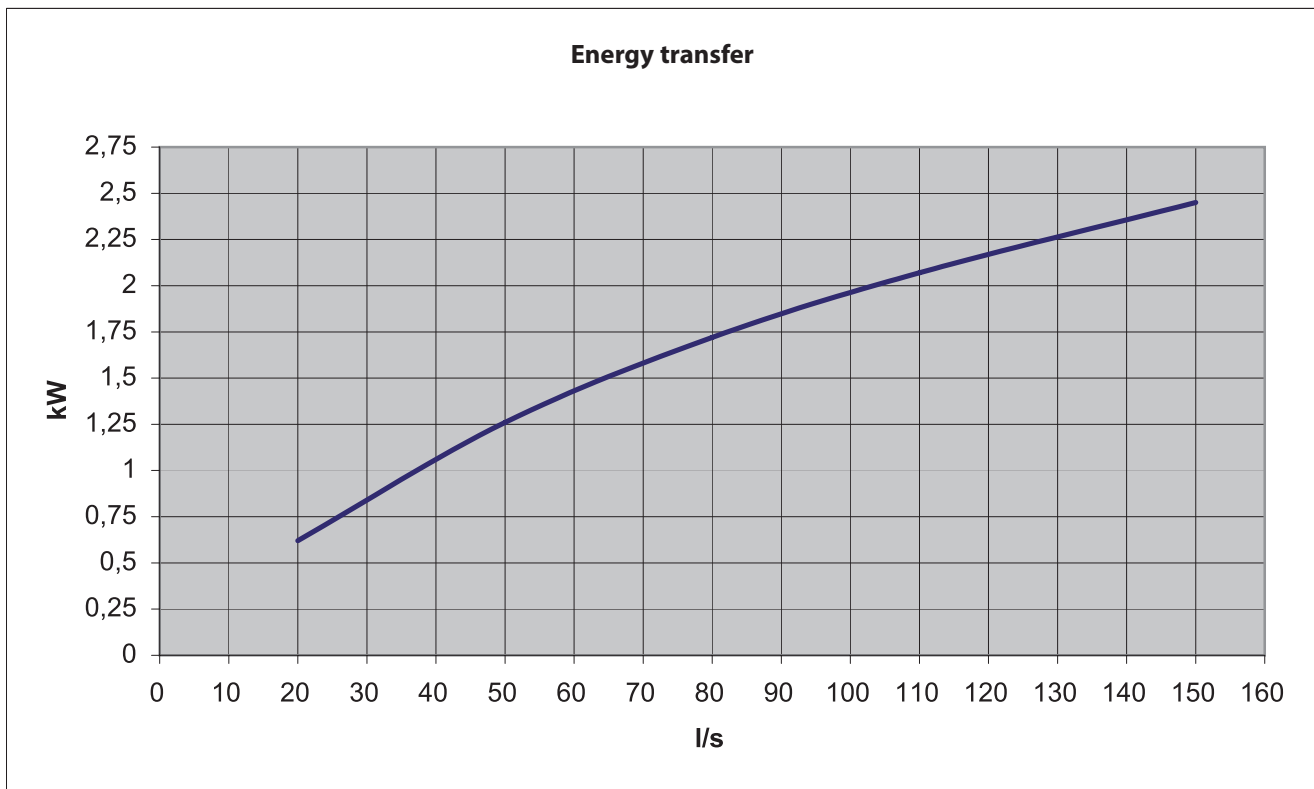
3.2 Piping installation

The water flow through the Thermia Vent heat recovery unit must be 0.15 l/s (9.0 l/min) if the air flow is between 40 -80 l/s.

In combination with heat pump and Vent, the water flow must be 0,02 l/s (9.0 l/min) if the air flow is between 40 -80 l/s.



Specified output for heat transfer fluid in relation to the airflow



The chart applies to:

- Air temperature In +20°C
- Relative humidity 50%
- Temp. Brine In 0°C
- Ethylene alcohol 29%

Introduction, control equipment

The fan capacity can be changed between 20 -99%. Adjustment is described in the instructions on page 7.

The Circulation pump CP is continuously controlled. If the temperature falls below the set temperature at GT1 the circulation pump CP stops for a set time (factory setting = 5 minutes) and until the temperature has risen to the set value. The LED at the bottom right of the display lights when the circulation pump CP is in operation.

Settings

To access the service menus, keep the arrow button depressed for 3 seconds.

Use the arrow buttons to scroll between the menus. If a button is not pressed for 10 minutes the display returns to normal view, extracted air temperature at GT4

Menu 1 – 4 show the current temperature of the sensor. For calibration, press + or – for relevant sensor.

N (normal view)	5.0 Temperature display at GT4
FL (filter alarm)	Display filter alarm (reset by holding in the – and + buttons for 3 seconds)

Service menus

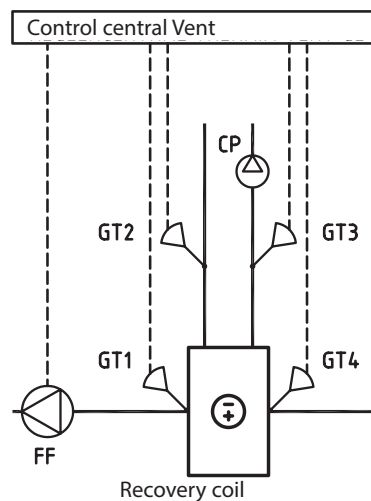
Menu	Factory set.	Min/Max	Explanation
1	0°C	-4 / 4	Temperature display GT1 (calibrating)
2	0°C	-4 / 4	Temperature display GT2 (calibrating)
3	0°C	-4 / 4	Temperature display GT3 (calibrating)
4	0°C	-4 / 4	Temperature display GT4 (calibrating)
5	70%		Display current speed FF1

Menu	Factory set.	Min/Max	Explanation
11	70	20 / 99	Setting FF1 speed
14	0°C	-10 / 10	Setting temperature GT1 (circulation pump)
15	3°C	1 / 10	Setting start difference GT1
16	5 minutes	1 / 20	Setting stop time of circulation pump
18	4 months	1 / 10	Filter sensor (time in months) Test output CP 1 = operational, 0 = stationary

High current

CP	Circulation pump (L)
N	Circulation pump (N)
L	Incoming phase
N	Incoming zero

Control diagram



Data Inputs Low current

1 – 2	GT1 sensor 22k NTC
3 – 4	GT2 sensor 22k NTC
5 – 6	GT3 sensor 22k NTC
7 – 8	GT4 sensor 22k NTC
11 – 12	FF 0 – 10V controlling fan FF

Conversion table for sensors

NTC22k	kΩ
0	66,3
10	41,8
20	27,1
30	18,0
40	12,2
50	8,5
60	6,0

4 Operation and maintenance instructions

Filter maintenance

Replace or clean the filter as follows:

1. Cut the power to the product by turning off the switch underneath the control equipment.
2. Remove the inspection cover marked "FILTER".
3. The filter can now be accessed for cleaning, using a vacuum cleaner, or can be replaced.
4. We recommend replacing the filter once a year.
5. Reset the filter alarm (FL flashes) by holding in the – and + buttons for 3 seconds.

Fan maintenance

1. Before servicing, maintenance or repair the fan must be disconnected from the power supply (all pole break) and the fan wheel must have stopped.
2. Beware of the fan's weight at removal or when opening larger fans to prevent any injuries and damage.
3. The fan must be cleaned when necessary, but at least once a year, to maintain the capacity and to prevent imbalance resulting in unnecessary bearing damage.
4. The fan bearings are maintenance free and must only be replaced if necessary.
5. Do not use a high-pressure washer or strong cleaning agents when cleaning the fan. Cleaning must be carried out in such a way that the fan wheel's balance weights do not rub and that the fan wheel is not damaged.
6. Check that no unusual noise is heard from the fan.

Cleaning the fan

Unscrew the left front cover, then remove the two panel screws. Fold the fan panel down to access the fan for cleaning. Use a vacuum cleaner with brush to clean the fan wheel.

Troubleshooting the fan

1. Check that the fan is supplied with voltage.
2. Interrupt the voltage and check that the fan is not blocked.

5 Technical data

Exhaust air fan 83 W

Circulation pump Wilo RS 25/6

Duct connections diameter 160 mm

The unit is supplied with a plug for an earthed wall socket, 1 phase 230V

dimension details and connections

1 Bleeding

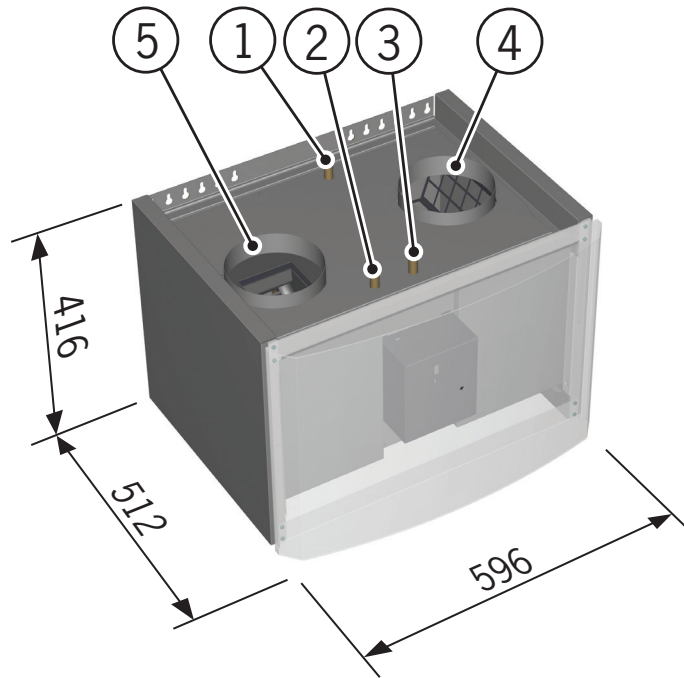
2 Water IN, Cu 15 mm

3 Water OUT, Cu 15 mm

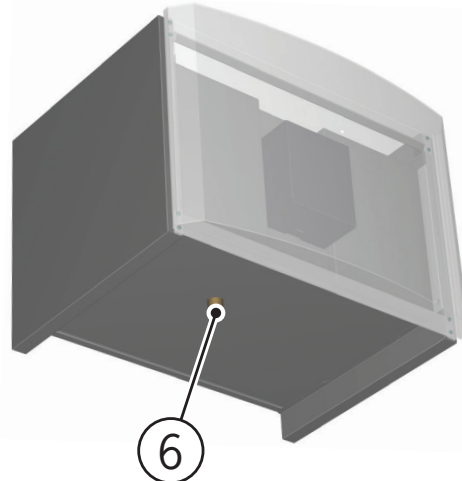
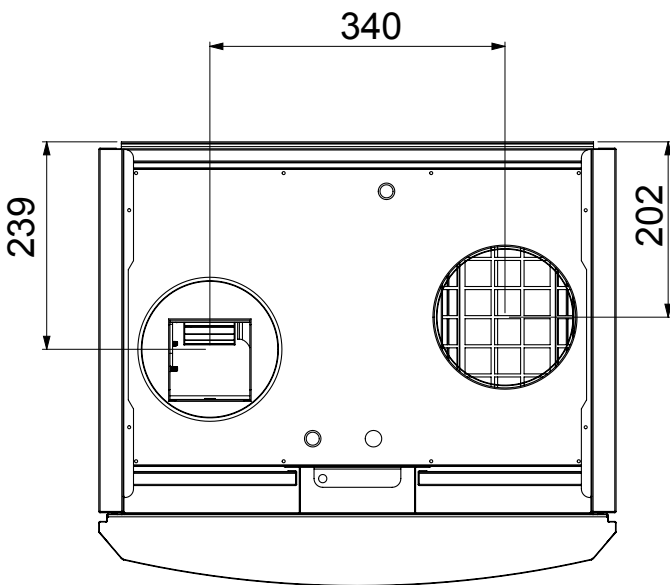
4 Air IN, connection diameter 160 mm

5 Air OUT, connection diameter 160 mm

6 Drainage line, DN 20 internal thread



Connections on top



Connections underneath

6 References

Installation carried out by:

PIPE INSTALLATION

Date
Company
Name
Tel. No.....

ELECTRICAL INSTALLATION

Date
Company
Name
Tel. No.....

If these instructions are not followed during installation, operation and maintenance the manufacturer's liability according to the applicable warranty is not binding.

The manufacturer retains the right to make changes to components and specifications without prior notice.

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