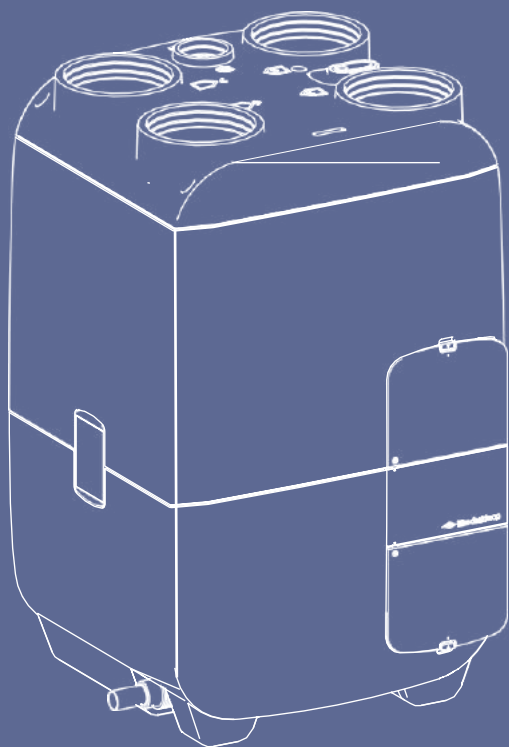


Itho Daalderop  
HRU 400

A+

## Installation & use





# Foreword

This manual is intended for the installer of the ventilation system. It contains important information about installation, use, maintenance and malfunctions of the ventilation system.

The installer is responsible for the installation and commissioning of the unit.

The following definitions are used in this manual to draw attention to dangers, instructions or directions relating to persons, product, installation and/or environment.

## ⚠ Warning!

Indicates a risk of personal injury to persons and/or serious damage to the product, installation or surroundings.

## ⚠ Attention!

Instruction relevant to the installation, operation, operation or maintenance of the product. Ignoring this instruction may cause minor bodily injury to persons and/or serious material damage to the product, installation or environment.

## Note

Instruction relevant to the installation, operation, operation or maintenance of the product. Ignoring this instruction may cause minor material damage to the product, installation or environment.

## Tip

Indications that may be relevant to the installation, operation, operation or maintenance of the product, not related to injury to persons or damage to property.

Although this manual has been compiled with the utmost care, no rights can be derived from it.

Itho Daalderop reserves the right to change products and manuals without prior notice.

Due to our continuous process of improving our products, this document may differ from the product delivered to you. You can download the latest version of this manual from our website.

## Tip

Don't forget to register the product via the app or the Itho Daalderop website for additional warranty!

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# 1. Safety and regulations

## 1.1. Security

- Work on the ventilation system may only be carried out by approved installers <sup>(1)</sup> in accordance with the instructions in the manual. Only accessories and parts as prescribed by the manufacturer may be used.
- Do not use the product for purposes other than those for which it is intended, as described in this manual.
- Handle electrical appliances with care:
  - Never touch the device with wet hands.
  - Never touch the device when you are barefoot.
- This product and/or system may be operated by children aged 8 years and over and by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they are supervised or instructed in its safe use and are aware of the dangers of the product and/or system.
- Cleaning and maintenance by the user must not be carried out by children or by persons with reduced physical, sensory or mental capabilities or a lack of experience and knowledge without supervision.
- Prevent children from playing with the product and/or system.
- Do not use the product in the presence of flammable or volatile substances such as alcohol, insecticides, petrol, etc.
- Safety instructions must be followed to prevent physical injury and/or damage to the product.
- Maintenance and cleaning may only be carried out after the appliance has been de-energized.
- The product contains rotating parts. Therefore, after disconnecting the product from the power supply, wait at least 10 seconds before opening or touching the product, as these parts will continue to rotate for some time.
- Secure the system against unintentional reactivation.
- Maintenance instructions must be followed to prevent damage and excessive wear and tear.
- The product must not be modified.
- The product is only suitable for a 230 V 50 Hz AC system.
- Make sure that the electrical system to which the product is to be connected meets the required conditions.
- Do not expose the product to weather conditions.
- Do not place any objects on the device.
- Regularly inspect the product for defects. In the event of defects, switch off the product and contact your installer or the Itho Daalderop service department immediately.
- Never switch off the product unless when:
  - The product does not function properly.
  - You want to clean the product.

- Wants to carry out maintenance on the appliance.
- The government advises closing windows and doors in the event of a calamity.
- Take care not to damage the electrical circuit.
- The electrical connection must always be easily accessible in order to switch off the power supply.
- Do not use the appliance to vacuum water boilers, heating systems, etc.
- Make sure that the appliance drains into a drain that is suitable and laid for this purpose and that drains to the outside.
- Keep valves free and clean.
- If the power supply cable is damaged, it must be replaced by the manufacturer, his agency or a qualified person in order to avoid danger.

*1) A certified installer is an installer working for a central heating or mechanical installation company registered with the Chamber of Commerce and included in the SEI recognition register (Stichting Erkenning Installatiebedrijven) or who has a Sterkin recognition.*

## 1.2. Standards and guidelines

### ⚠ Warning!

The specifications and settings of the appliance only comply with the standards and laws of the country in which the appliance is sold.

Applications outside this country can lead to very dangerous situations!

The installer must ensure that the entire installation complies with the legal requirements, the regulations contained in this document and other applicable documentation from the manufacturer.

All legal requirements and regulations are subject to additions, amendments or legal requirements that came into force later apply at the time of installation.

After installation, there must no longer be any health, safety or environmental risks in accordance with the applicable CE directives. This also applies to other products included in the installation.

## 1.3. Air supply and exhaust system requirements

The air supply system shall comply with the regulations in force.

- The ducts to and from the house: steel spiral tube, internal diameter Ø 180 mm.
- The ducts from and to the outside: vapour-tight insulated steel spiral tube, internal diameter Ø 180 mm.
- The insulation must be properly (airtight) connected to the appliance. If air can get between the insulation and the pipe, condensation will form.
- In the case of horizontal ducts, the air ducts to and from the house must always be led to the appliance on a slope. Observe 3 mm per metre of duct length.
- Bracket every bend on the socket, with the exception of connection to the appliance:
  - If the connecting pipe is shorter than 0.25 m before and after the first bend, the bracket can be omitted at the first bend.
  - In any case, the first bracket should be placed at a maximum distance of 0.5 m from the appliance.
- Horizontal and non vertical ducts: maximum bracket spacing 1 m. In the case of tensile joints, the maximum bracket spacing is 2 m. Spread lengths between brackets evenly.
- Vertical ducts: maximum bracket spacing 2m. Divide lengths between brackets evenly.
- Bracket the last element of the connection pipe for the conduit/shaft. If this last element is a bend, the element in front of it can also be braced.
- Apply the manufacturer's prescribed brackets.
- Metal connections may be secured with screws.
- Do not use fat, (acid-free) petroleum jelly or oil.
- Mount stress-free.
- Do not mix elements (components) of different materials and/or fabrications other than those permitted by the manufacturer.
- Supply and return air ducts must be kept as short as possible.
- Use as few bends as possible.
- If possible, avoid the use of 90° bends.
- If a 90° bend is unavoidable, do not place it within 1 metre of the appliance.
- Use gable and roof penetrations suitable for a ventilation unit with heat recovery.

# 2. Product information

## 2.1. Living comfort and energy savings

Living comfort and energy savings are becoming increasingly important in housing construction. Nowadays, homes are increasingly insulated, but unfortunately good insulation often comes at the expense of the indoor climate. Without good ventilation, moisture, moulds and dust mites can escape, and the air in the house can quickly feel 'stuffy' due to an increasing concentration of CO<sub>2</sub> (carbon dioxide). Itho Daalderop produces equipment that regulates the indoor climate and takes into account the requirements for comfort and energy consumption in homes.

One of these advanced devices is the Itho Daalderop ventilation system HRU 400.

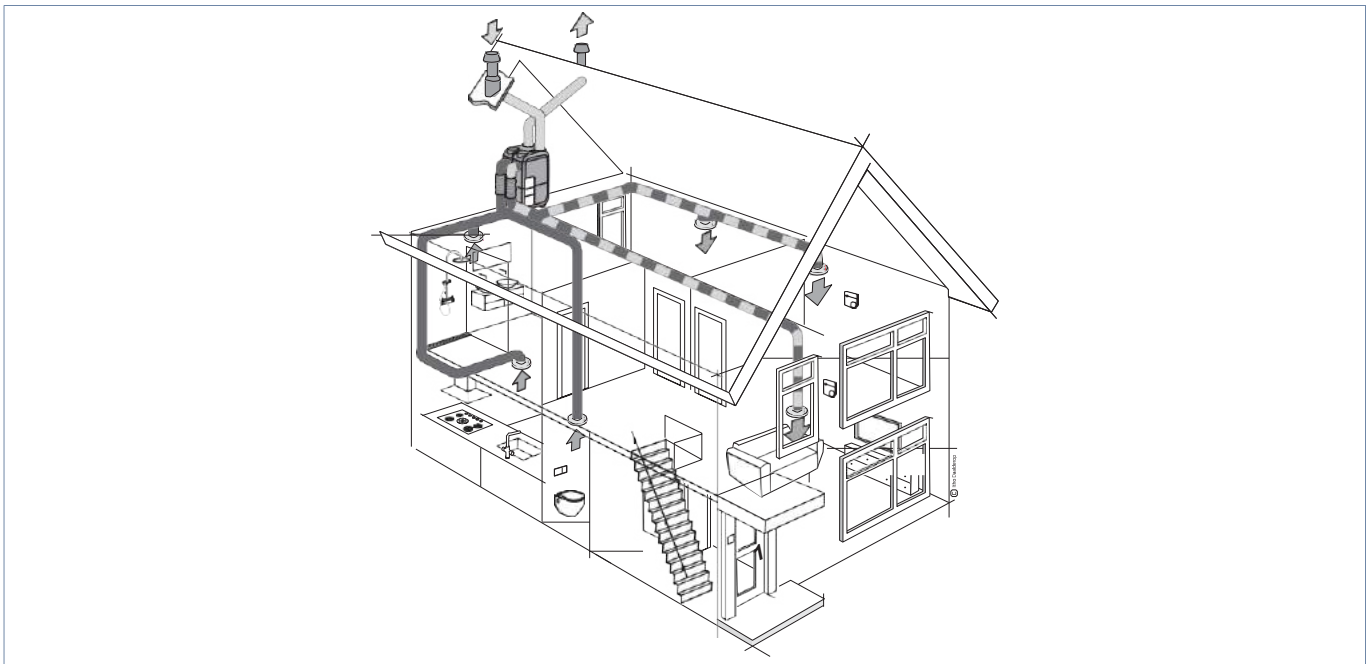
The HRU 400 is a balanced ventilation system with heat recovery. The ventilation unit is equipped with two fans; one for the return air and one for the supply air.

The ventilation unit ventilates several rooms in the house. By means of ducts, the kitchen, the bathroom, the toilet and possibly the indoor storage/laundry room (the 'wet rooms') are connected to the ventilation unit for the removal of polluted/humid air.

The living room, the bedrooms and possibly the corridor/hallway are also connected to the ventilation unit by means of ducts, but here fresh air is supplied.

To ensure good air distribution, the supply and return points in the rooms to be ventilated are fitted with adjustable supply and return valves.

The HRU 400 helps to reduce the humidity in your bathroom by means of the internal RH (Relative Humidity) sensor.





## 2.2. Versions

Versions		
Artikel	Type	
03-00584	HRU 400	Balanced ventilation unit with heat recovery

## 2.3. Accessories

Article N	o Type	Description
536-0150	RFT CAR	Wireless control switch with two positions, one automatic mode and a timer function
04-00045	RFT-CO2 230V	RFT-CO2 sensor with control - 230 V powered
04-00046	RFT-RV BAT	RFT-RV sensor with control - battery-powered
03-00062	Spider Base	Climate thermostat
03-00065	Spider Gateway	Spider Gateway
04-00087	RF-Repeater	RF-Repeater
591-1070	FGD 180-50	Sound-absorbing flexible hose, Ø 180 mm, length 50 cm
591-1270	FGD 180-100	Sound-absorbing flexible hose, Ø 180 mm, length 100 cm
04-00109	PS HRU 400	Pot set HRU 400

## 2.4. Technical Specifications

Description	Unit	HRU 400
<b>DIMENSIONS AND WEIGHT</b>		
Dimensions (HxWxD)	mm	1064x640x 580
Weight	kg	23
<b>CONNECTIONS</b>		
Channel connections top side	mm	4x Ø 180 internal
Side duct connection	mm	2x Ø 180 internal
Drainage of condensation	mm	Ø 32-40 mm external
Frost valve	mm	Ø 80 internal
<b>GENERAL</b>		
IP classification	—	IP30*
Safety class		Double insulated
Installation class		2
Filter class	—	ISO Coarse 65% (G4)
RF (integrated)	—	30 m free field, 868 MHz
Wifi (integrated)	—	2.4 GHz
Supply voltage	—	~ 230V - 50Hz
Power connection	—	3-core power cable with earthed plug L 180 cm)
<b>TECHNICAL PARAMETERS</b>		
Thermal efficiency of heat recovery	%	95,5**
Electrical input power of the fan drive, at maximum flow rate	W	200
<b>APPLICATION</b>		
Temperature range	°C	0-40
Relative humidity range	%	5-90 (non-condensing)

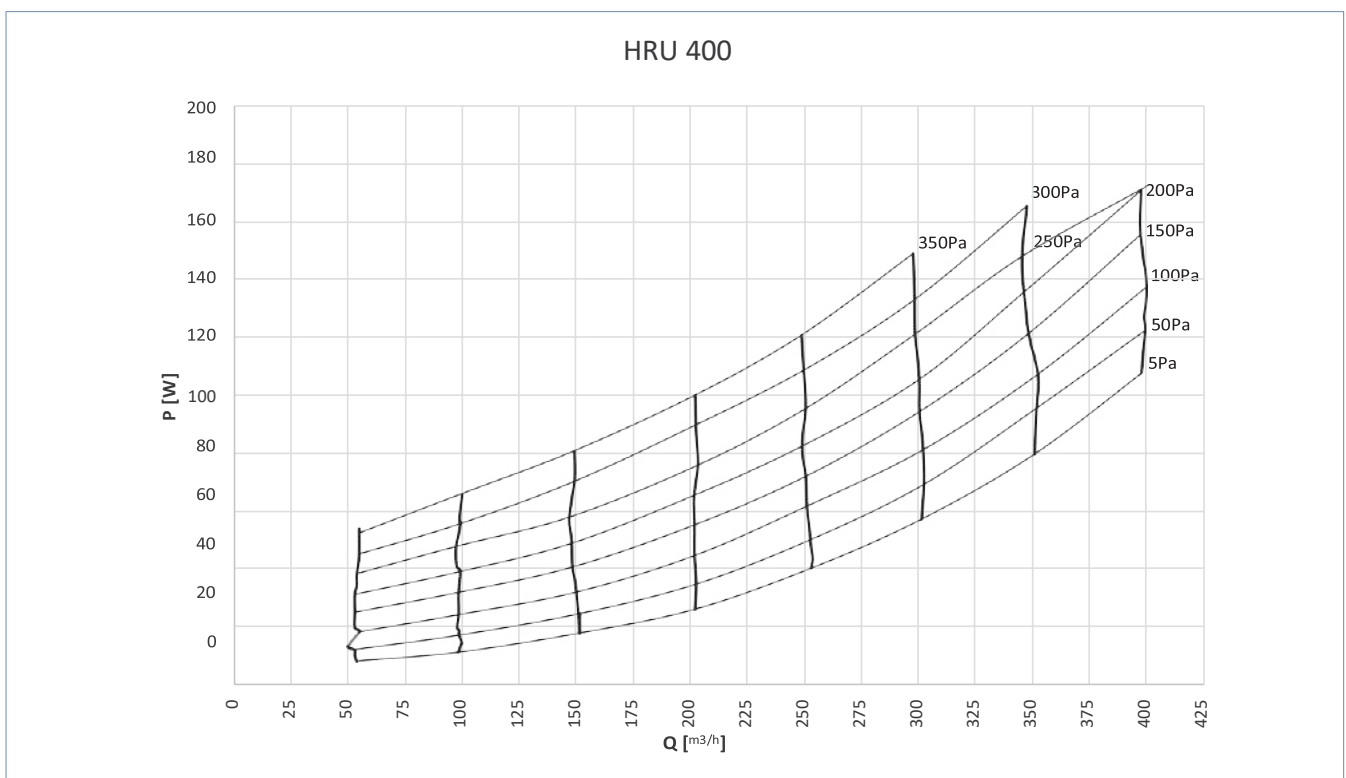
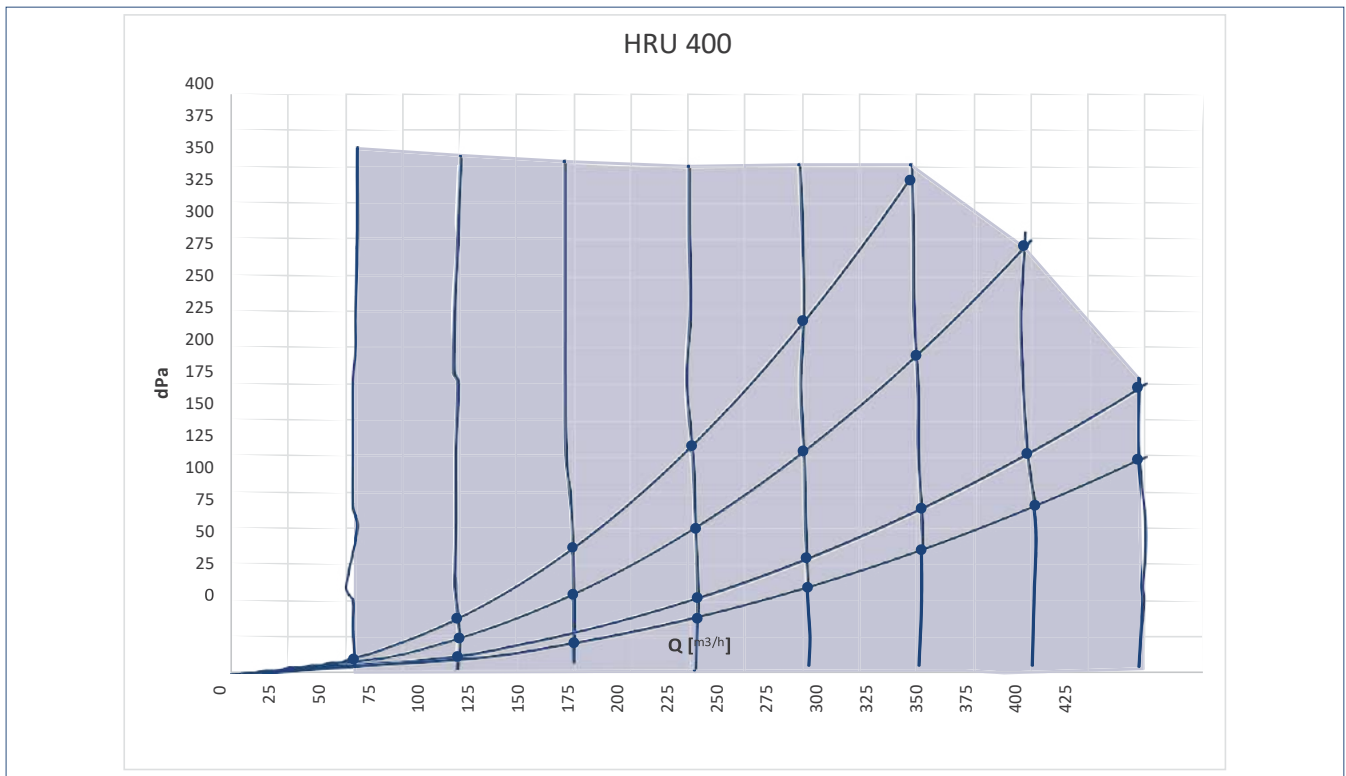
\* According to standard IEC 60529 2001-02

\*\* According to standard NEN 5138:2004

## 2.5. Product card information

Itho Daalderop			HRU
Description	Symbol	Unit	400
Specific energy consumption class	—	—	A+
Specific energy consumption, under moderate climate conditions	SEC	kWh/(m <sup>2</sup> .a)	-44
Specific energy consumption, under warm climate conditions	SEC	kWh/(m <sup>2</sup> .a)	-19
Specific energy consumption, under cold climate conditions	SEC	kWh/(m <sup>2</sup> .a)	-86
Type of ventilation unit	VE	—	Residential ventilation unit (RVE) Two-way ventilation unit (TVE)
Type of drive	X	—	Variable speed
Type of heat recovery system	HRS	—	Recuperative
Thermal efficiency of heat recovery	$\eta^t$	%	88
Maximum flow rate	q <sub>max</sub>	m <sup>3</sup> /h	400
Electrical input power of the fan drive, at maximum flow rate	P <sub>max</sub>	W	138
Sound power level	LWA	dB	53
Reference flow rate	q <sub>ref</sub>	m <sup>3</sup> /s	0,08
Reference pressure difference	$\Delta P_{ref}$	Pa	50
Specific input power	SPI	W/(m <sup>3</sup> /h)	0,2
Ventilation control	—	—	Central needs-driven regulation
Control factor	CTRL	-	0,85
Declared maximum percentages for internal leakage for two-way ventilation units	—	%	1
Declared maximum percentages for external leakage for two-way ventilation units	—	%	1
Replace warning filter	—	—	On Electronics compartment Via external controls
Instructions for pre-assembly/disassembly	—	—	<a href="http://www.ithodaalderop.nl">www.ithodaalderop.nl</a>
Annual electricity consumption	AEC	kWh	2
Annual heating savings, under temperate climate conditions	AHS	kWh	46
Annual heating savings, under warm climate conditions	AHS	kWh	21
Heating saved annually, under cold conditions climate conditions	AHS	kWh	90

## 2.6. Capacity charts



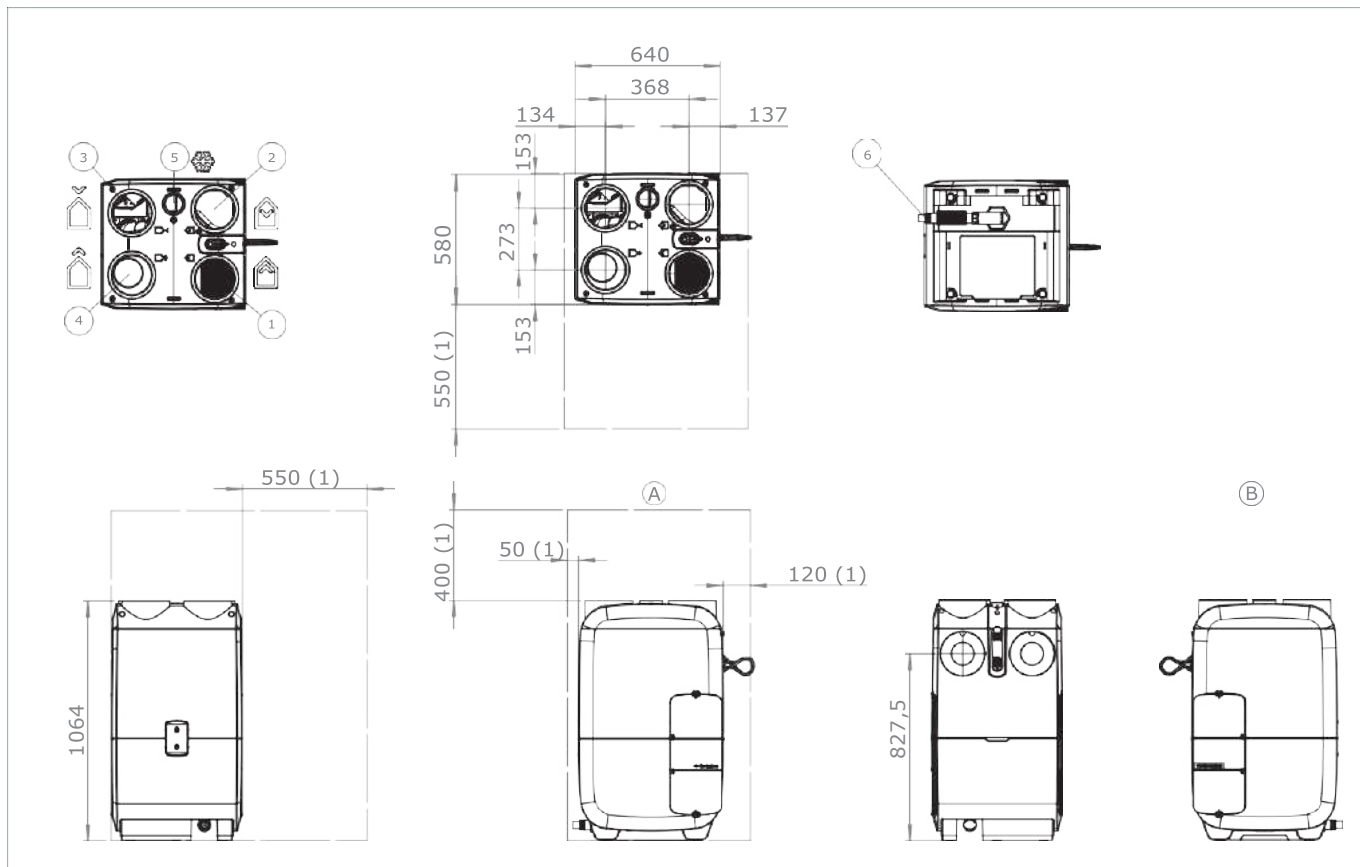
## 2.7. Capacity, pressure and power

Stands		Debiet (m <sup>3</sup> /h)(Pa)	PressurePercentage (%)	Sound power level LwA (dBA)			
				RadiatingFlowDischarge			
Booth 1	Minimum	60	7	15 of position 3*	32,3	< 27,30	8
Position 2	Standaard	200	50	50 of position 3*	46,1	44,4	42.3
Position 3	Maximum	400	200	100 from position 3*	61	60	57.5
Automatic mode with CO2-sensor		84	21 of mode 3				
Automatic mode without CO2-sensor		160	40 of mode 3				
Auto-night stand		240	60 from stand 3				

The values given here are the standard values at which the appliance is delivered.

\* These values can be set with the Itho Daalderop service app.

## 2.8. Dimension drawings



1) Minimum clearance around the ventilation unit.

### Legend

- |   |  |                                |
|---|--|--------------------------------|
| 1 |  | Adischarge air from dwelling   |
| 2 |  | Flow air to dwelling           |
| 3 |  | Supply air from outside        |
| 4 |  | Exhaust air to the outside     |
| 5 |  | Supply air to frost valve      |
| 6 |  | Drainage of condensation water |

A Power cable right

B Power cable left

Spigots connection diameter: Ø 180 mm

Freeze-flap connection diameter: Ø 80 mm

## 2.9. Schemes

The HRU 400 has a standard 3-position control where the ventilation flow rate can be adjusted with the Itho Daalderop service app. In addition, the ventilation unit has an automatic RH control that functions continuously in the background when the unit is in the Auto position.

### 2.9.1. Heat recovery

Before the polluted air is removed to the outside, it is filtered and passed through the heat exchanger. The fresh outside air is also filtered and passed through the heat exchanger before it is brought into the house. In the heat exchanger, the two air currents are routed past each other (i.e. they are not mixed with each other). As a result, the energy of the exhaust air is transferred to the fresh supply air, so that this energy is not lost. In winter, the colder outside air is thus heated. In summer, the relatively colder indoor air is transferred to the warmer supply air so that it becomes less warm.

Note  
Despite the heat exchange, the balanced ventilation system should not be regarded as a heating or cooling system. It prevents the loss of heat through ventilation.

### 2.9.2. Automatic ventilation based on RH measurement

The ventilation unit is equipped with an internal RH sensor.

The sensor measures the increase in humidity and automatically adjusts the ventilation accordingly.

In addition, it is also possible to connect a wireless RH sensor to the ventilation unit. This sensor can be mounted in any room but preferably in a room where a lot of moisture is produced, such as a bathroom.

### 2.9.3. Summer bypass scheme

The purpose of the summer bypass control is to ventilate the house with less, or completely without, heat transfer.

The Itho Daalderop heat recovery unit HRU 400 is supplied as standard with a bypass valve integrated in the unit. This valve works automatically. The bypass valve ensures that the extracted indoor air is guided around the exchanger. The supply air still passes through the air filter and the exchanger.

This automatic regulation will come into effect mainly at night, in summer. The outside air is then usually cooler than the warm inside air. The bypass control ensures that the house remains cooler for longer.

### 2.9.4. Vorstregeling

The purpose of the frost control is to prevent the heat exchanger from freezing and to prevent ventilation.

If the temperature of the supply air in the heat exchanger is too far below freezing point, the unit will regularly open the frost flap at the top of the unit and draw in warm room air. This warm room air is mixed with the cold outside air drawn in. At the same time, the supply fan starts to turn harder (the fan is speeded up so that the amount of fresh outside air remains the same). Because the fresh cold outside air is preheated, the warm extracted air from the house does not have to heat the cold freezing air as much.

Should the outside temperature drop even further, the supply fan will turn softer (the fan will be turned down to a minimum).

If the outside temperature rises, the above measures are carried out in reverse order until the danger of frost has passed. The resident 'always' determines the discharge air quantity.

### 2.9.5. Automatic ventilation based on CO<sub>2</sub> measurement (optional)

A CO<sub>2</sub> sensor can be connected to the ventilation unit which communicates wirelessly with the unit.

The sensor can be mounted in any room (except the bathroom), but preferably in living rooms and/or bedrooms.

The controllable sensor measures the CO<sub>2</sub> concentration in the room. It translates the measured value into a ventilation wish and communicates it wirelessly to the ventilation unit to which the sensor is connected. As the CO<sub>2</sub> concentration in the room increases as the room is used more intensively, ventilation will gradually increase.

Tip  
It is possible to place several wireless sensors and controls in the house, up to a maximum of 20 pieces.

## ä Attention!

Control based on wireless sensors (CO<sub>2</sub> and/or RH) only works if the ventilation unit is in Auto/Auto night mode.

## 2.10. Filters

The HRU 400 has two filters, one for each airflow. Both filters are placed in the ventilation unit in such a way that they protect the exchanger from contamination. In addition, the filter in the air supply also protects the user against dust and other contaminants in the sucked in outside air.

There are different types of filters:

- **Filter ISO16890 Coarse 65% (G4) .**  
This coarse filter is mainly used to filter relatively large dust particles from the air. This mainly protects the heat exchanger against penetrating dirt.
- **Filter ISO16890 ePM1 55% (F7).**  
In addition to the coarser dust particles, this fine filter also stops finer dust particles (pollen). People with allergy complaints in particular can benefit from this.

Over time, the filters will become dirty, which will increase the energy consumption of the ventilation unit. It is therefore necessary that the filters are cleaned according to the instructions and eventually replaced.

### ⚠ Warning!

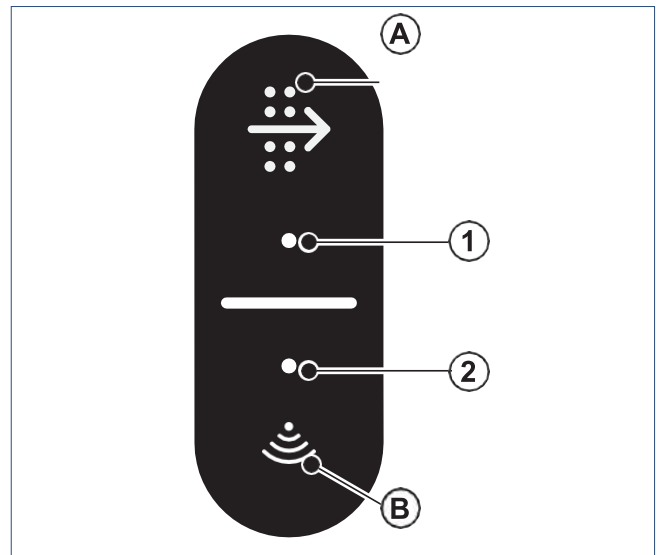
The HRU 400 must be fitted with the matching original filters at all times! Without filters, the unit can suffer irreparable damage.

### ⚠ Attention!

In the case of a new house, the filters of the ventilation unit must be cleaned after 1 week and replaced after 3 months!

## 2.11. Interface

The device is equipped with an interface with two buttons and two LEDs. On the interface, the filter warning can be reset using the button at the top (A). The LED (1) shows the status in terms of messages and errors. The wifi connection can be activated with button (B) and the status of the appliance and that of the wifi mode is shown with LED (2). In the event of error messages, both LEDs flash.



### Legend

- A Dirtfilter reset
- B Wifi mode
- 1 Status LED messages and errors ventilation unit
- 2 Status LED wifi mode and ventilation unit errors

The LEDs can display the following messages:

Status LEDs			
Pattern		Function	
Blue*	Orange**	Red	
Led 2	LED 1	Both leds	
x			Normal operation
x			WIFI mode
	x		Filter dirt
		x	Error RV sensor
		x	Error temperature sensor
		x	Fault valve
		x	Communication error
		x	Volume sensor error
		x	Fan module fault

\* In normal operation, LED 2 slowly chimes blue. When activating the wifi mode with button B, LED 2 starts pulsing blue faster and when the wifi connection is active (pairing mode) LED 2 lights blue.

\*\* At the filter warning LED 1 flashes orange.



## 2.12. Valves

The quantity of air to be extracted is regulated by law, and the quantity of air to be blown in must be in balance with this. In other words, as much air has to be extracted as is supplied. The appliance regulates this balance on its own. The minimum air quantity per room is also determined by law. The quantities are chosen in such a way that no unnecessary energy is wasted and an optimum indoor climate is still achieved. For example, for each room the air volume that is extracted and supplied is different in size. As a result, the extraction and supply valves each have their own settings.

### Note

It is very important that the occupant does not change the setting of the valves. This disrupts the proper functioning of the entire ventilation system. The valves may not be exchanged.

## 2.13. Application in a new home

Every new home contains a large amount of building moisture. This moisture comes from wet building materials such as concrete, cement, paint and glue. The building moisture disappears best by ventilating the house well and keeping the temperature as constant as possible, preferably at room temperature.

Dry-fire - not too fast.

By bringing heat into the house you stimulate the drying process of the house, this is also known as dry firing. This drying must not be done too quickly, because drying out too quickly results in a lot of damage (such as shrinkage cracks). Keep in mind that this drying process can take up to six months. Set the heating to 15 to 18°C, and when you are going to live there to 20 degrees. Do not turn up the heating, because if it gets too hot the materials dry too quickly and damage can occur.

Ventilation during dry firing.

Good ventilation is essential during the drying process. During the first year, keep about 5 centimetres of space between the walls and your furniture so that moisture can escape. In addition, the mechanical ventilation system must always be on, so never unplug it from the wall socket. Put the ventilation system in a high position as much as possible during the first months.

This creates the best possible air circulation in the home.

### ä Attention!

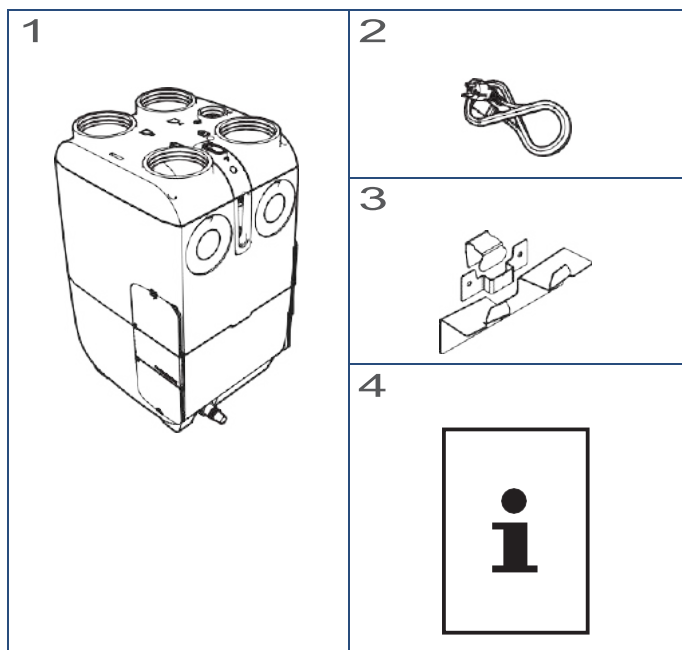
In the case of a new house, the filters of the ventilation unit must be cleaned after 1 week and replaced after 3 months!

### ä Attention!

The building dust can damage the heat exchanger if no filter is inserted.

## 2.14. Scope of delivery

Note  
Report damage and/or missing parts to your point of sale.



### Legend

- 1 Ventilation unit\*
- 2 Power cable
- 3 Wall bracket set
- 4 Documentation

\* The ventilation unit is put into operation with an app.

## 2.15. Unpacking and checking

- a) Carefully take the equipment out of the box.
- b) Check the nameplate details and type for correctness as shown on the sticker on the outside of the box.
- c) Check the equipment for damage and completeness.
- d) Check that the necessary documentation and accessories are packed with the appliance.
- e) Place the ventilation unit upright on the ground.

# 3. Installation

## 3.1. Installation requirements

Please take the following into account before installing the system:

- Mount the ventilation unit
  - in a closed set-up room (where the system can cause as little noise nuisance as possible).
  - in an installation room that is frost-free.
  - in the vicinity of a socket outlet 230 V, 50 Hz (for earthed plug); the length of the supply cable is 1.8 m.
  - in the vicinity of a siphon with connection to the sewerage system (for connection of the condensate drain with a 40 mm diameter connection).
  - in such a way that the filters can always be easily removed. For this purpose at least 550 mm of free space is required on the filter side of the unit.
  - in such a way that it remains accessible from above for service and maintenance. This requires at least 400 mm of free space at the top of the appliance.
  - tension-free on a floor/wall with sufficient load-bearing capacity (min. 200 kg/m<sup>2</sup>).
- The duct system and the drainage and supply points must be correctly dimensioned.
- The correct fastening materials must be present.

### ⚠ Attention!

To prevent condensation, the duct coming from outside and the duct going out to the ventilation unit must be insulated thermally and vapour-tight.

#### Tip

Itho Daalderop recommends connecting the ducts from the ventilation unit to the house, and the ducts from the house to the ventilation unit, with (flexible) silencers. In this way, noise complaints are prevented as much as possible.

#### Tip

The opening of the frost valve must remain free at all times. Do not place any objects on top of the appliance!

### ⚠ Attention!

The appliance must be mounted vertically and level!

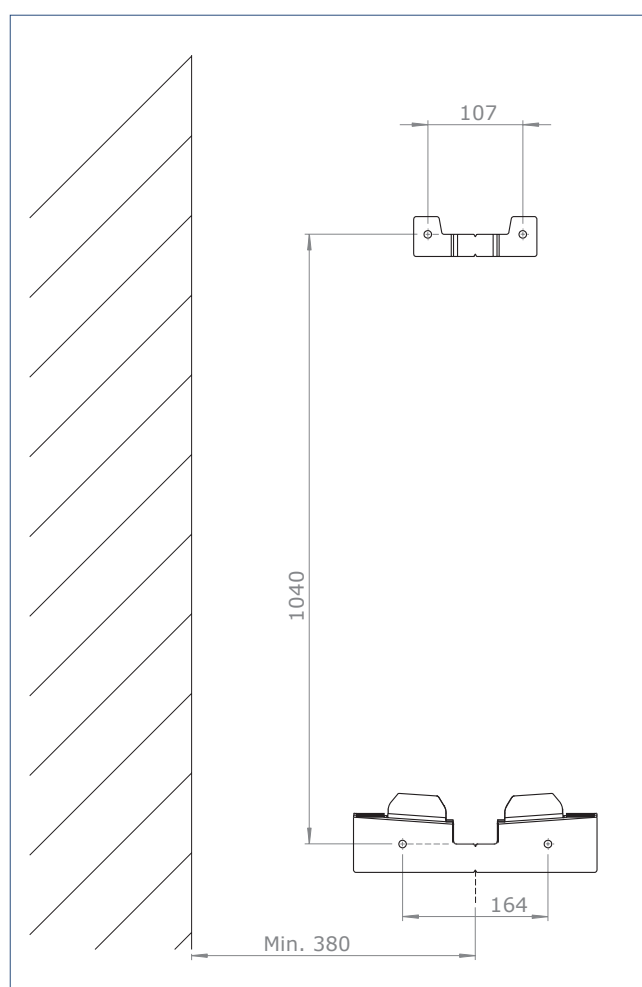
## 3.2. Installing the ventilation unit

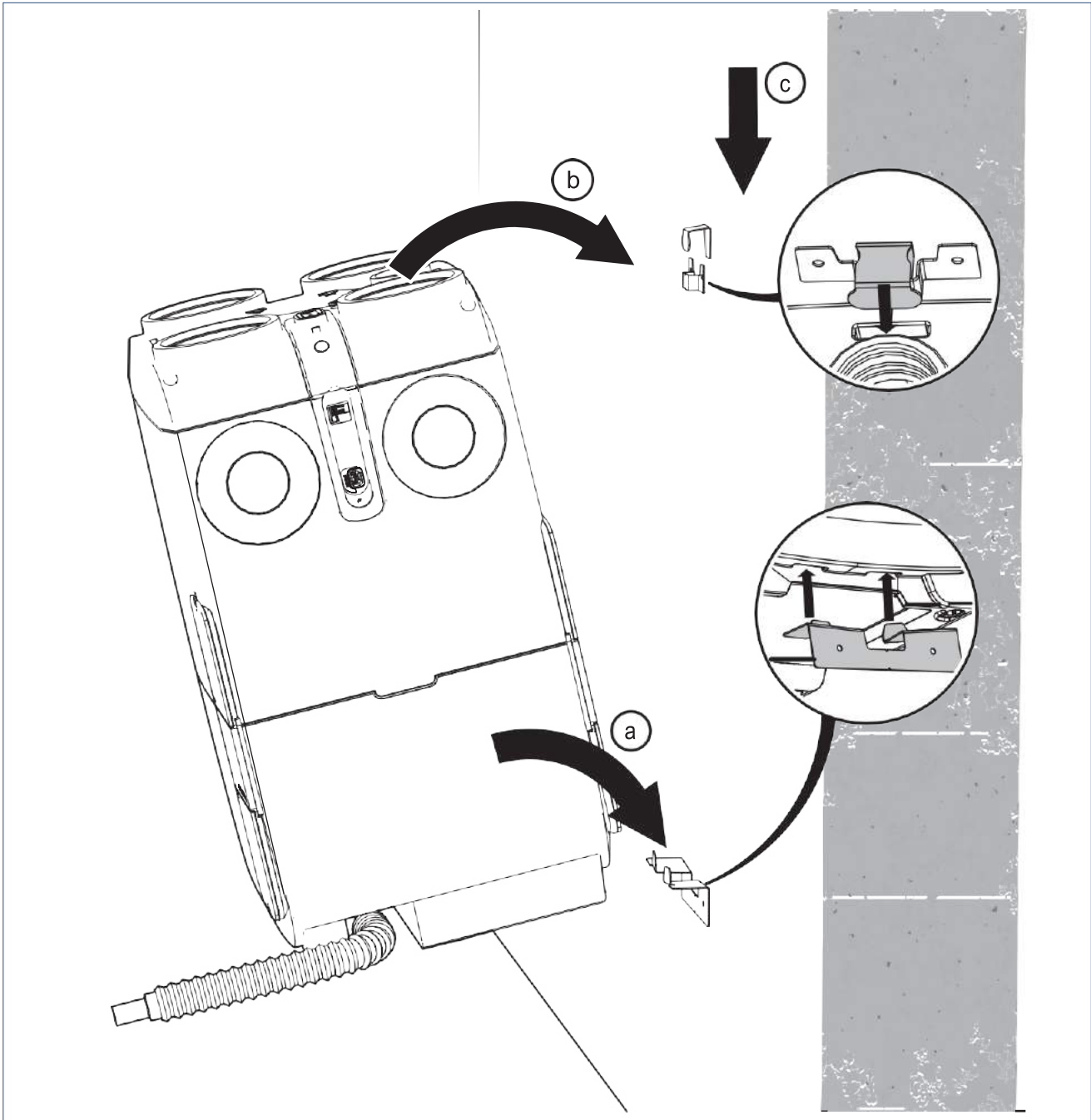
### ⚠ Warning!

Do not lift or pull the ventilation unit by the spouts at the top. The unit may be damaged! Lift the unit via the bottom or the side.

### 3.2.1. Installation with the wall bracket set

The HRU 400 can be mounted on the wall using the supplied wall bracket set.





After taking the measurements (see the dimension sketch for the spaces to be kept free around the appliance), you can attach the lower bracket to the wall using suitable dowels and screws. There are recesses in the underside of the appliance that allow the appliance to rest on the lower bracket.

The top bracket consists of two parts: a bracket part that you can attach to the wall after measuring out, and a U-shaped part that hooks into the recess in the upper part of the appliance and into the top bracket, thus fixing the appliance to the wall.

a) After mounting the lower bracket and the upper bracket, tilt the appliance onto the lower bracket.

b) Then tilt the appliance against the wall.

c) Then the u-shaped part fits in the top bracket and in the recess at the top of the appliance.

### 3.2.2. Mounting positions

#### ⚠ Attention!

Attach the ventilation unit to a concrete surface, not to a wooden or plaster surface or to a surface with insufficient load-bearing capacity (< 200 kg/m<sup>2</sup>). This leads to noise nuisance.

#### ⚠ Attention!

Always ensure that the ventilation unit is mounted in such a way that the ducts are connected to the correct inlet and outlet openings!

#### ⚠ Attention!

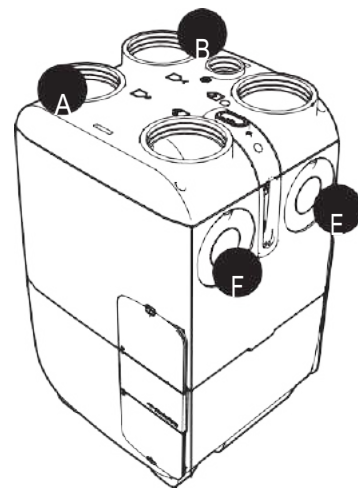
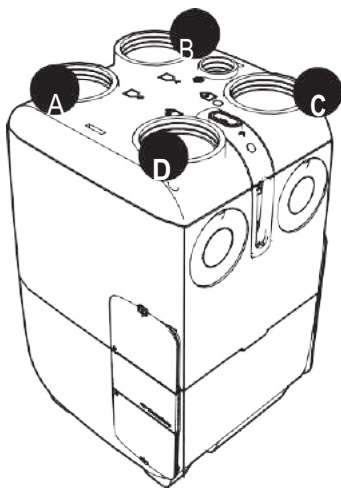
The appliance must be mounted vertically and level!

The ventilation unit can be mounted directly on the floor or on the wall with the supplied wall bracket set. A pot set (optional) is also available.

The pictograms on the top of the appliance, near the duct connections, indicate where the ducts of the house are to be connected.

You must always connect a minimum of 4 channels. You can use connections A and B and at least C or E and at least D or F.

Mounting position



#### Legend



A Exhaust air to the outside



B Supply air from outside



C-E Supply air to home

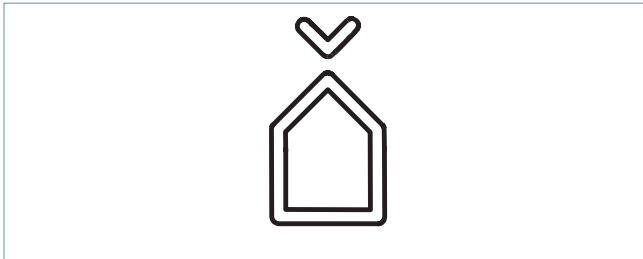


D-F Exhaust air from home

### 3.3. Connecting the channels

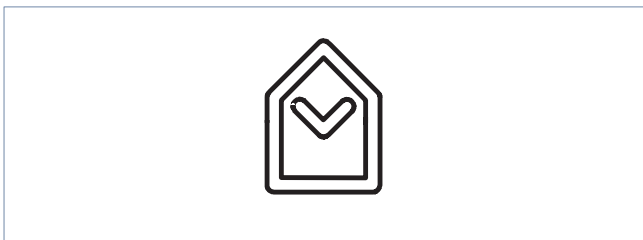
In order to prevent condensation, the duct coming from outside and the duct going out to the ventilation unit must be insulated thermally and vapour-tight.

#### 3.1.1. Supply air from outside



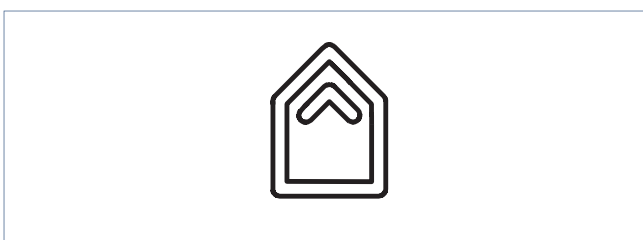
The ventilation unit draws in outside air via this spout. This duct must be thermally and vapour tightly insulated to prevent condensation on the outside of the duct.

#### 3.2. Supply air to the dwelling



Via this spout, the ventilation unit feeds the heated air into the house. For optimum comfort it is necessary to install a silencer in this duct.

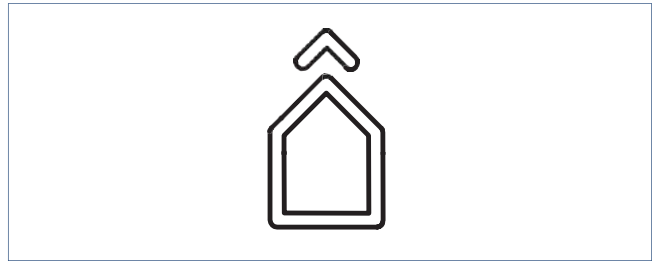
#### 3.3. Exhaust air from dwelling



Via one of these spouts, the ventilation unit extracts the exhaust air from the house. In principle, this duct does not need to be thermally insulated. Only if the ventilation unit is placed outside the thermal shell of the house (for example in an uninsulated attic) is it advisable to insulate the duct thermally and vapour-tight.

Note  
For optimum comfort it is necessary to install a silencer in this duct.

### 3.4. Exhaust air to the outside



Via this spout, the ventilation unit discharges the exhaust air to the outside. This duct must be thermally and vapour-tight insulated to prevent condensation on the inside and outside of the duct. It is recommended to use a roof gutter that prevents condensation or rainwater from leaking. If this is not the case, the components of the flue system must be installed watertight between this outlet and the roof gutter. The unit drains any condensation water via the condensation drain.

### 3.4. Frost valve opening



The frost valve serves to protect the heat exchanger against frost.

When the ventilation unit is mounted in an uninsulated room, hot air can be introduced from another room via the frost flap with an insulated and vapour-tight duct.

### ä Attention!

The opening of the frost valve must remain free at all times. Do not place any objects on top of the appliance!

### 3.5. Connecting condensation drain

### ä Attention!

If the ventilation unit is placed outside the thermal shell of the dwelling (for example, in an uninsulated attic), the condensation drain must be thermally insulated up to the ventilation unit.

In winter, the exhaust air from the house can condense in the heat exchanger. A condensation drain is integrated in the ventilation unit for this purpose.

## ⚠ Attention!

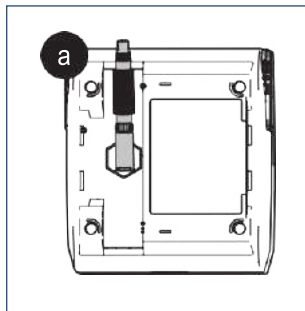
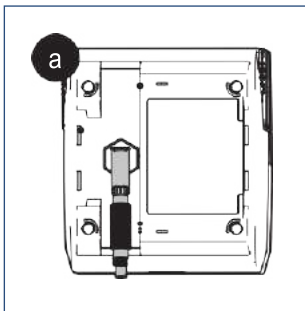
The condensation hose must not have any sharp bends!

## ⚠ Attention!

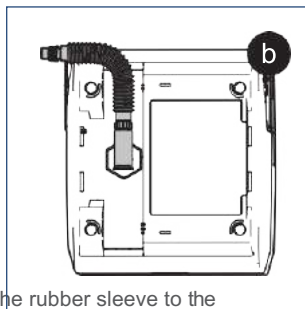
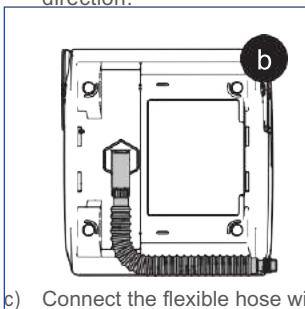
The distance between the underside of the appliance and the condensation drain must *never* exceed 70 mm (lower may be).

The condensate drain (with dry siphon) can be connected either right or left-handed. The condensate drain can be loosened and tightened by hand and converted as required. In addition, the flexible hose can be pulled out so that the drain can be connected well outside the unit.

a) Mount the condensation drain to the left or right as required.



b) Pull out the flexible hose to the desired length and direction.

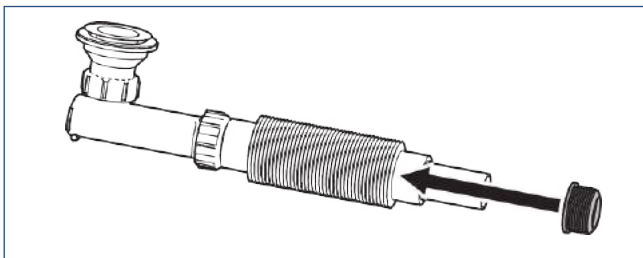


c) Connect the flexible hose with the rubber sleeve to the condensation drain connection that leads to the

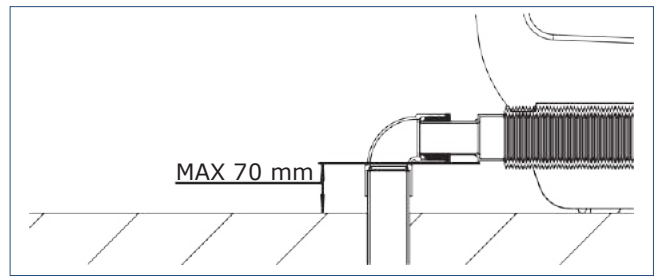
## ⚠ Attention!

Always mount the condensation drain with the rubber sleeve. The rubber sleeve ensures a watertight seal. The condensation hose may not be glued.

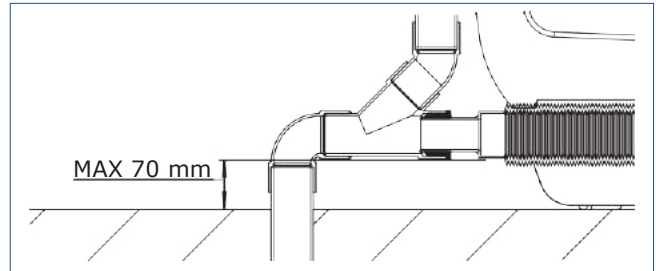
sewer.



When the ventilation unit is placed on the ground, the condensation drain can be connected to the sewer in the following ways:



Mounting with knee pad.



Assembly with Y-piece. It is also possible to connect the boiler to the vertical piece, for example.

### 3.6. Connecting electrically

The appliance is equipped with an earthed plug. The wired three-position switch cannot be connected to this model.

Operation takes place via wireless control switches and/or sensors.

Connect the ventilation unit with the earthed plug to a wall socket.

## ⚠ Warning!

Never connect the ventilation unit with an extension cord!

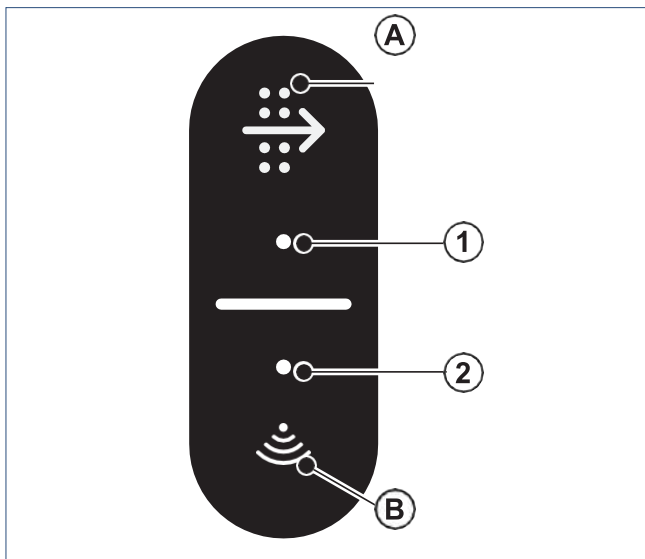
## ⚠ Warning!

Never connect the ventilation unit with a damaged power cable!

# 4. Operation

The HRU 400 is operated by means of a wireless control, CO<sub>2</sub> sensor, RH sensor or the Spider climate controller, all of which communicate wirelessly with the ventilation unit. The HRU 400 cannot be operated on the unit's interface.

On the interface, the filter warning can be reset using the button at the top (A). The LED (1) shows the status in terms of messages and errors. The wifi connection can be activated with button (B) and the status of the appliance and that of the wifi mode is shown with LED (2). In the event of error messages, both LEDs flash.



## Legend

- A. Reset filter warning
- B. Wifi mode
- 1 Status LED messages and errors ventilation unit
- 2 Status LED wifi mode and ventilation unit errors

## 4.1. Ventilation modes

The ventilation unit is factory set to the automatic position as standard. Using the Itho Daalderop accessories, such as the wireless control switch, the sensors or the Spider climate thermostat, the unit can be set to one of the following positions as required:

- Auto mode, **automatic mode**; control based on existing sensors (CO<sub>2</sub> and/or RH). The capacity is automatically controlled between low and high position. **Auto-Night mode**; control at night with an extra increase of the minimum setting.
- Position 1, **low position**: when one person is present during the day or night or when nobody is present.

- Position 2, **middle position**: for day or night when more than one person is present.
- Stand 3, **high level**: for when cooking, showering or bathing or when many people are present.
- Timer

The duration of the timer is determined as follows:

- Press timer button once: 10 minutes high.
- Press timer button twice: 20 minutes high.
- Press timer button 3 times: 30 minutes high.

After the timer has elapsed, the unit switches back to automatic mode.

The **Auto-Night setting** ensures that the minimum ventilation setting is increased so that you are also assured of an optimal climate at night. You can use the **Auto-Night mode** when using a room without CO<sub>2</sub> sensor.

To activate the **Auto-Night mode**, press the **Auto-button** twice on the wireless control switch or select **Auto-Night mode** on the controllable sensor.

## ⚠ Attention!

The Auto-Night stand becomes available when at least two CO<sub>2</sub> sensors are used.

## ⚠ Attention!

The Auto-Night mode does not switch off automatically after a certain period of time. In the morning you have to switch on Auto mode (or another mode) yourself.

During Auto-Night mode, all sensors remain active and the ventilation unit will normally respond to an increased ventilation wish. The highest ventilation wish remains leading.

### Note

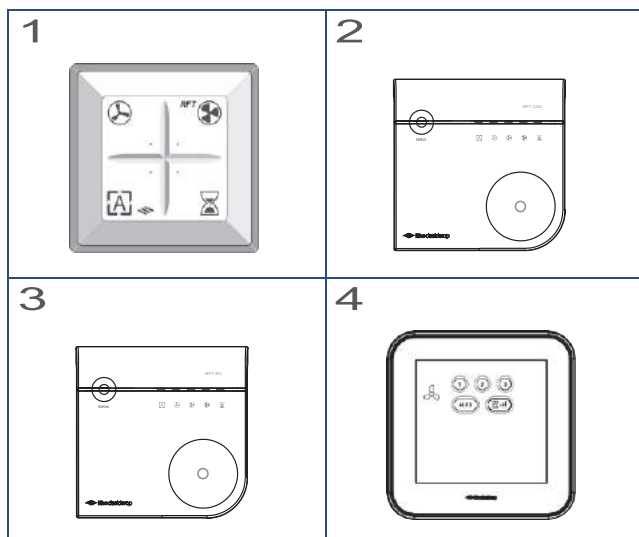
When multiple sensors are used, the sensor with the highest ventilation requirement is always leading.

### Note

When using sensors, the maximum time that the ventilation unit can be in a position other than the automatic position is limited to 24 hours. After this period, the unit switches back to automatic mode.



## 4.2. Controls and sensors



Various positions are pre-programmed in the ventilation unit. A number of controls are available for active tuning to the correct stand/ventilation capacity:

1. Wireless control switch with two positions, an automatic position and timer function.
2. Wireless CO<sub>2</sub> sensor with control-230V powered.
3. Wireless stainless steel sensor with battery operated control.
4. Spider Base Climate Thermostat.

A combination of the above possibilities.

You can register up to 20 wireless control switches and/or sensors on an Itho Daalderop ventilation unit or system.

Note  
The HRU 400 cannot be operated with a wired control switch.

## 4.3. App

The Itho Daalderop service app guides you through the commissioning (IBS) and service of the device. The app is only intended for the installer.



Use the QR code or search in Google Play or in the App store.

Download and install the free Itho Daalderop service app for your smartphone. You can also download the service app from the Itho Daalderop website: <https://www.ithodaalderop.nl/downloaddeserviceapp>.

- The Itho Daalderop service app can be used on Android and iOS operating systems and runs from Android 4.4 and iOS 10 and higher.
- The Itho Daalderop service app is specifically designed for smartphones.
- To use the Itho Daalderop service app, an internet connection is required.

## 4.4. Subscribe and unsubscribe accessories

The connection and disconnection of wireless controls, sensors and the Spider climate controller to the HRU 400 is controlled via the Itho Daalderop service app.

See the paragraphs below.

### 4.4.1. Sign up accessories

- a) Scan the QR code on the device to retrieve the product data. The app will now retrieve the login details to connect to the device (Access point connection).
- b) Connect to the unit by pressing button (B) on the unit. The LED will quickly flash blue.
- c) Press on the app under Service on **Connect Wifi module**.
- d) In the next screen, press **Connect**.
- e) Press **Install device** to start up the device. If necessary, read the instructions.
- f) Press Getting **Started** in the same screen.
- g) Follow the steps on the **Enter Flow rates** screen. Here you can enter the flow rates per room. Then press **Next**.
- h) Follow the steps on the **Adjust Valves** screen. Here you can enter the inlet and outlet flow rates per room. Then press **Next**.
- i) On the **Binding Mode** screen, press **Enable** to pair accessories.
- j) To connect a control switch, sensor or Spider climate thermostat, refer to the documentation supplied with the relevant product.
- k) Each time you want to pair the next accessory, press the **On button** again.

The ventilation unit turns a little faster to fasten the coupling. The ventilation unit is now ready to be operated with the accessory.

### 4.4.2. Log off accessories

#### ⚠ Attention!

After logging off, all wireless controls and/or sensors must be logged on again.

- a) Follow steps a to h as mentioned in the section Registering accessories on page 26 .
- b) Press **Delete all bindings** in the **Binding Mode** screen.

The ventilation unit no longer reacts to controls, sensors or the Spider climate thermostat.

# 5. Commissioning

## 5.1. Preparation

Prior to commissioning (IBS)

- The ventilation unit and accessories must be mounted.
- The ductwork must be mounted.
- The condensation drain must be installed.
- External and internal doors and windows must be closed.
- There must be sufficient flow-through space under the inner doors.
- The adjustable valves must be fully open in *all* rooms.

### ⚠ Attention!

Increasing the maximum flow rate causes more noise and higher energy consumption.

#### Note

If you are unable to complete the wireless control log-in within 2 minutes, you can put the ventilation unit back into pairing mode via the Itho Daalderop service app. Controls already notified remain notified on the ventilation unit.

## 5.2. Commissioning

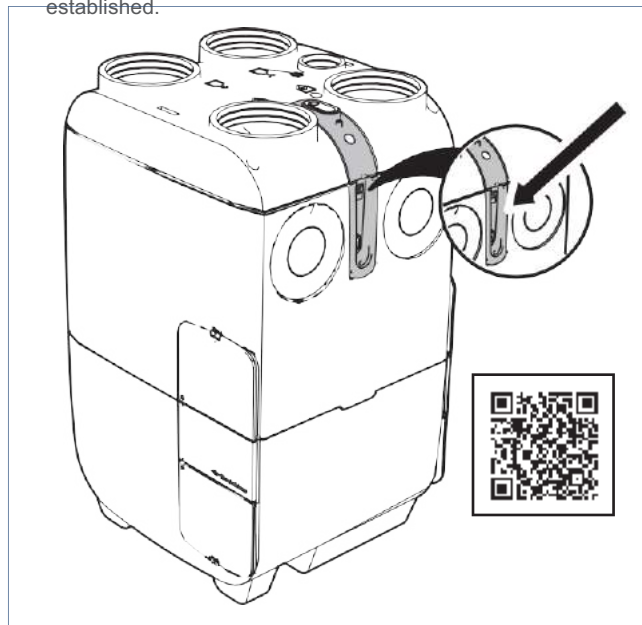
Commissioning of the HRU 400 is done via the Itho Daalderop service app.

- a) Bring the ventilation unit under tension.
- b) Use the button on the unit to set the unit to Commissioning mode (Wi-Fi mode). The LED on the unit will pulse blue faster.

#### Note

The QR code can be found on the electronics compartment, above the power cable and on the type plate.

- c) Scan the QR code on the device with your smartphone. The LED on the device will light up blue as soon as a connection is established.



- d) Start the IBS wizard on the Itho Daalderop service app you downloaded earlier and follow the instructions. You will be guided through a menu that guides you through the commissioning process.

# 6. Inspection and maintenance

The correct functioning of the ventilation system, its performance and service life can only be guaranteed if the system is inspected and maintained in accordance with the regulations below. These regulations are based on normal operating conditions.

## ⚠ Attention!

When the ventilation system is operating under severe operating conditions or in an extra polluted environment, additional maintenance may be necessary.

### 6.1. Inspection and maintenance schedule

Maintenance schedule		User	Installer
Filter ISO16890 Coarse65% (G4)	Cleaning (first 3 months)	1 week*	—
New home	Replace	3 months*	—
Filter ISO16890 Coarse65% (G4)	Cleaning	if necessary**	—
	Replace	if necessary**	—
Filter ISO16890 ePM1 55% (F7)	Cleaning	if necessary**	—
	Replace	if necessary**	—
Valves	Cleaning	if required	—
Ventilation unit	Cleaning condensation hose	—	if required
Fan motor module	Cleaning	—	if required
Bypass valve/frost valve	Cleaning	—	if required
Channels	Cleaning	—	8 years

\* When the appliance is installed in a new building, the filters can contaminate the building dust sooner than indicated by the appliance.

\*\* The device keeps a record of when the filters need to be cleaned or replaced. You will receive a message on the unit, the CO2 and RH sensor and, if necessary, the Spider climate thermostat.

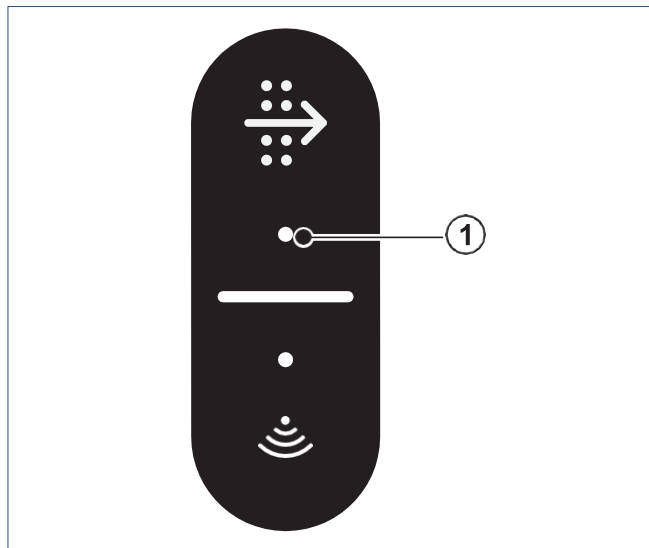
## ⚠ Attention!

When cleaning the valves, the valve positions must not be changed. It is also not allowed to exchange valves.

## 6.2. Filter warning

### On the device:

The control of the ventilation unit keeps track of when the filters need to be cleaned or replaced. If a dirty filter is detected, it is indicated by an LED (1) on the unit (the LED flashes orange).



### On the CO2 sensor / RH sensor

If the ventilation unit detects that the filter needs to be cleaned or replaced, the unit sends a message to the controllable CO<sub>2</sub> sensor, and RH sensor (if connected). The status LED on the sensor will then flash orange.

### On the Spider climate thermostat

If the ventilation unit detects that the filter needs to be cleaned or replaced, the unit sends a message to the Spider climate thermostat. The message **Replace filter** will appear on the thermostat. The orange filter symbol flashes and the ventilation symbol lights up continuously after the thermostat has been activated. The **SERVICE** button will also light up with this message.

When you have cleaned or replaced the filters, reset the filter warning. See the section [Resetting the Filter Warning](#) .

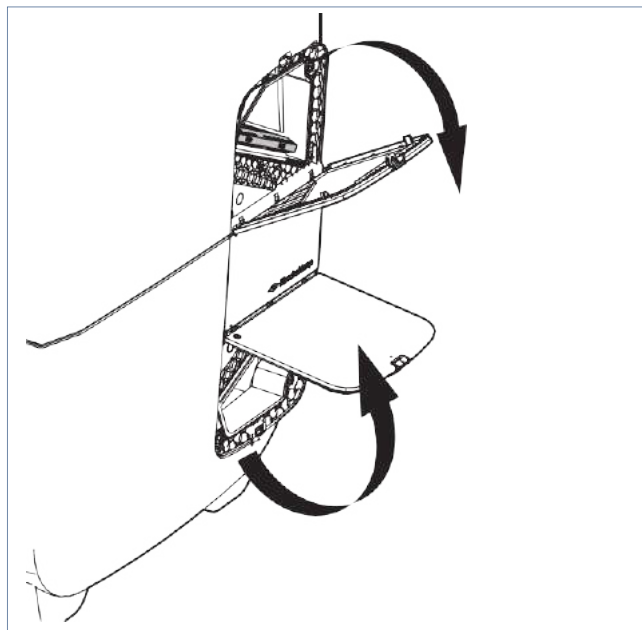
## 6.3. Cleaning or replacing filters

### ä Attention!

The filters can be cleaned once and must be replaced at the next service.

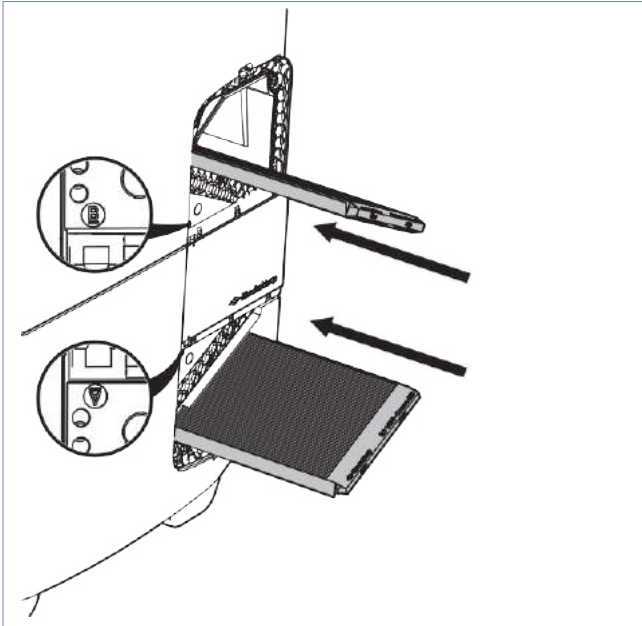
Inspect and clean or replace the filters as follows:

- Disconnect the ventilation unit from the power supply.
- Open both service doors and take them away.



- Remove the filters from the service area.
- Inspect the service area and, if necessary, clean it with a Hoover. Here you can also clean the heat exchanger with a Hoover.
- Visually inspect the filters for contamination. If the filters are dirty, they should be cleaned or replaced.
- Clean or replace the filters. Cleaning can be done by carefully vacuuming the filters with a Hoover.

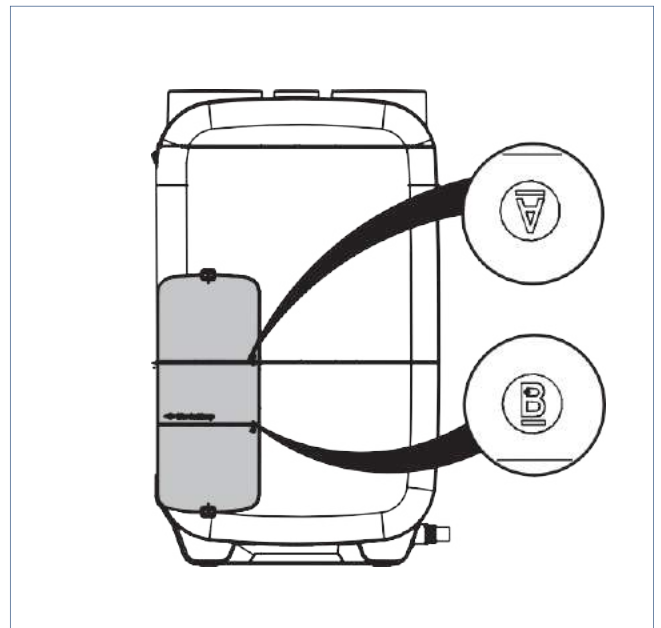
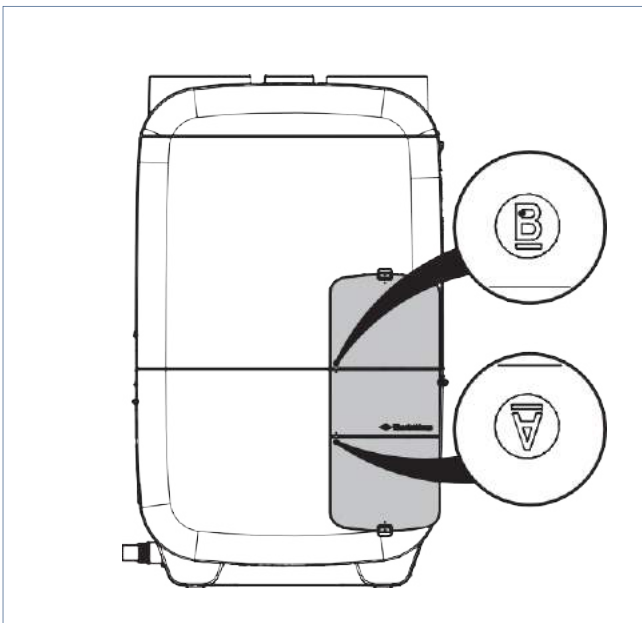
g) Place the cleaned or new filters.



h) Close both service doors. Make sure that the correct service door is at the correct opening in the holder on the ventilation unit.

## ⚠ Attention!

Each service door has an A or B on the outside. This A or B corresponds to the A or B on the service door holder on the ventilation unit. The service door with an A must be mounted on the holder with an A.



i) Bring the ventilation unit back under tension.

## ⚠ Warning!

The HRU 400 must be fitted with the matching original filters at all times! Without filters, the unit can suffer irreparable damage.

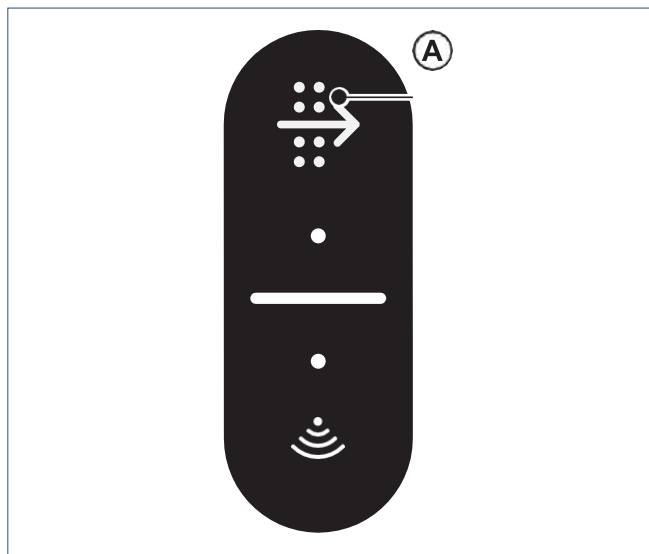
## 6.4. Reset filter warning

When you have cleaned or replaced the filter, reset the filter warning:

- For the reset, *first* disconnect the ventilation unit from the wall socket and wait 15 seconds.
- Then re-plug the unit into the wall socket.

You then have 10 minutes to reset the filter warning in the following way:

- Ventilation unit: Press the button with the arrow (A) on the unit until the orange light goes out.



- Wireless control switch: Press two adjacent buttons on the control switch simultaneously.
- Wireless CO<sub>2</sub> sensor or RH sensor: When the status LED flashes orange, first activate the sensor by pressing the touch button for 5 seconds. Then press the touch button between 5 and 7 seconds until the orange flashing stops and the status LED flashes green 3 times briefly.
- Spider climate thermostat: Activate the thermostat. Press the **Service** button until the message **Replace filter** disappears (approx. 5 seconds).

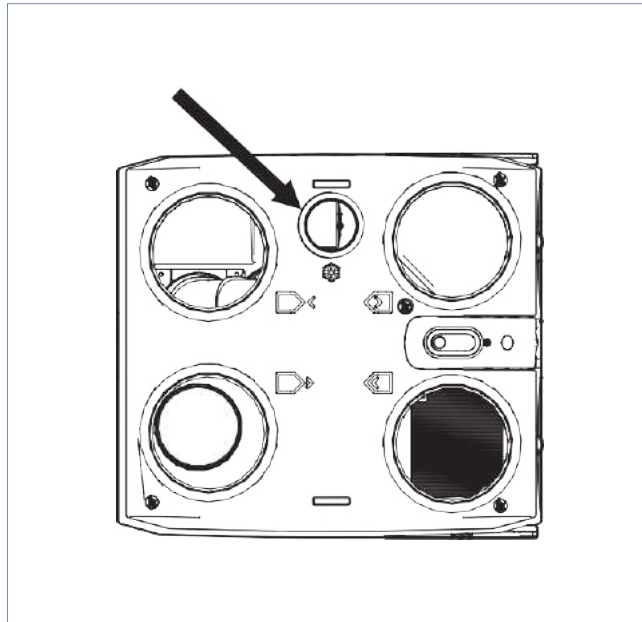
### ⚠ Warning!

The HRU 400 must be fitted with the appropriate filters at all times! Without filters, the unit can suffer irreparable damage.

## 6.5. Cleaning opening frost valve

If necessary, the opening of the frost valve can be cleaned. This can be done by the user himself.

- Remove the plug from the wall socket or de-energize the ventilation unit.
- If a channel is connected, it must first be disconnected.



- Then insert the hose of the Hoover into the opening of the frost valve and turn the Hoover on. This will remove all dirt from the Hoover.

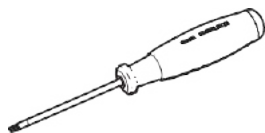
### ⚠ Warning!

Do not use soap or detergents when cleaning!

- If a channel was connected, reassemble it on the opening.
- Put the HRU 400 back into operation by plugging the plug back into the wall socket.

## 6.6. Detach or replace electronics compartment

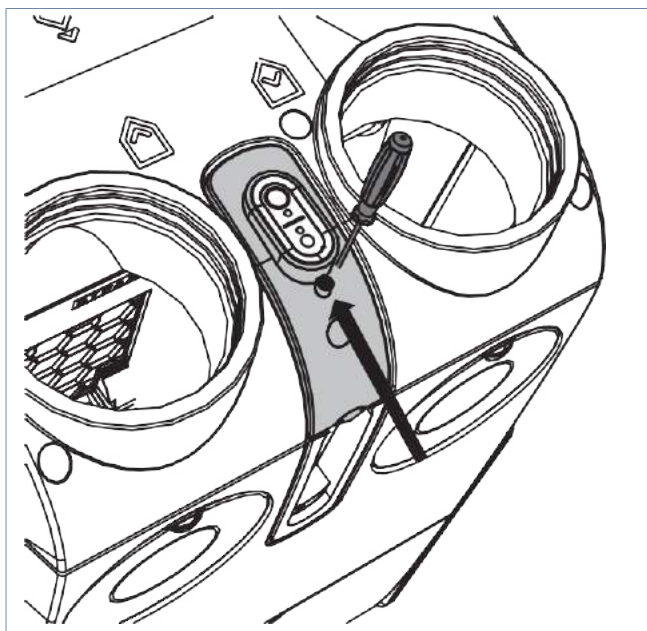
Tip  
Required tools: Torx 20



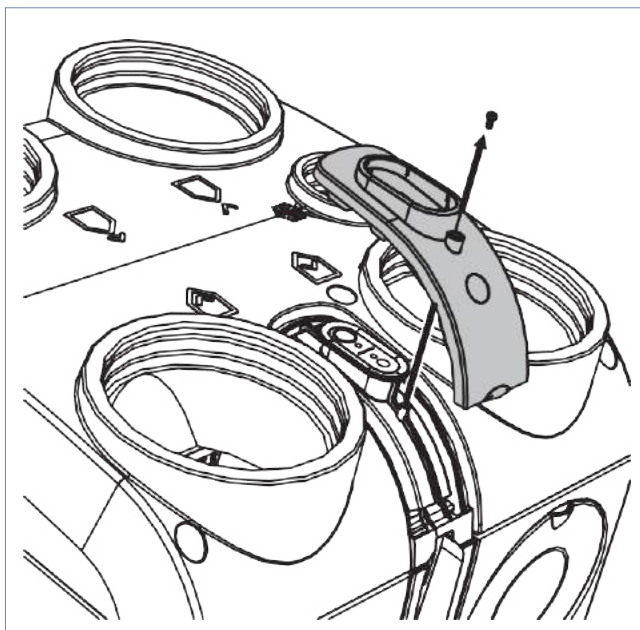
Note  
To remove the electronics compartment, it is not necessary to dismantle the top of the appliance.

The electronics compartment can be removed in the following way:

- Loosen the screw on the cover plate on the top of the electronics compartment.



- Remove the cover plate on top of the electronics compartment.

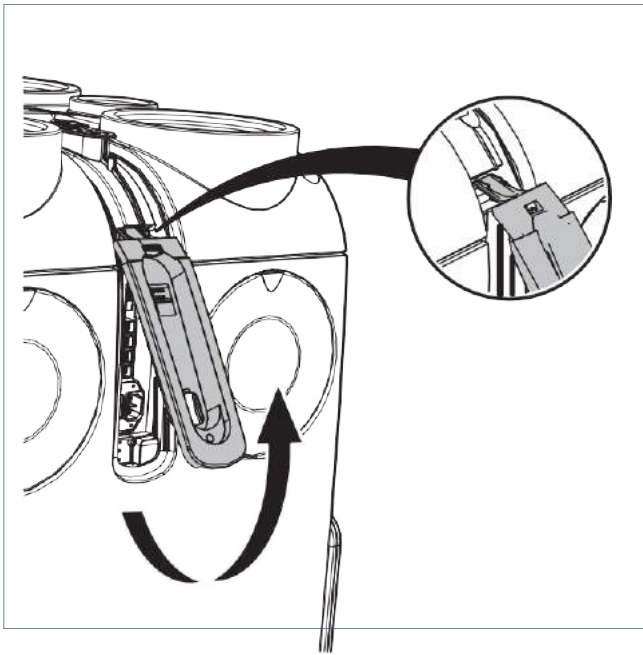


- Loosen the screw on the underside of the electronics compartment cover plate.

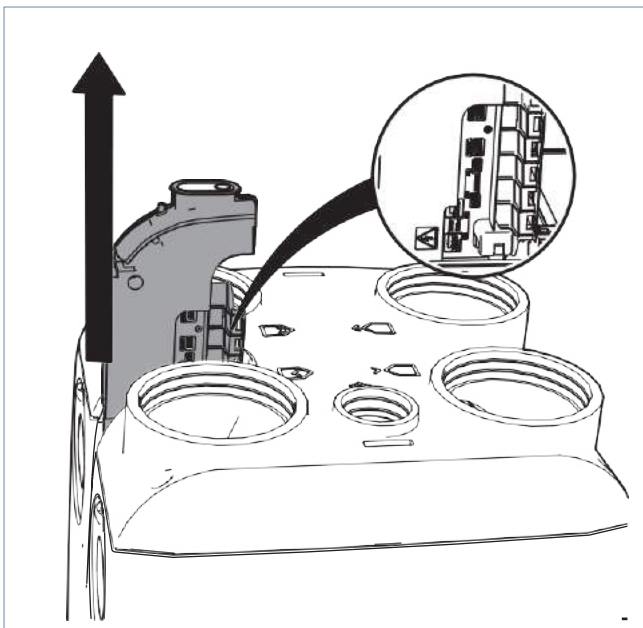




- d) The underside of the cover plate hooks under the electronics compartment. Tilt the cover plate upwards before removing it.



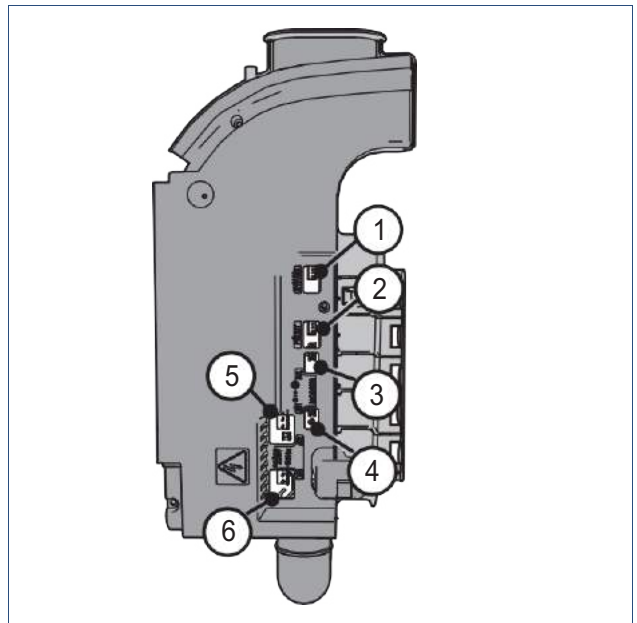
- e) Remove the underside of the cover plate from the electronics compartment.  
 f) Carefully pull the electronics compartment up a little.



- g) Disconnect all connectors.

**Tip**  
 The cables of the bypass valve, the frost valve, and the fan modules are labelled. The connections to the PCB module are also marked.

- h) Remove the electronics compartment.



Legend		Label cable
1	Connection bypass valve	Bypass
2	Frost valve connection	Frost
3	Connection control cable supply fan	M2
4	Drain fan control cable connection	M1
5	Supply fan connection	M2
6	Drain fan power supply connection	M1

- (i) When replacing the electronics compartment, mount it in reverse order.

## ä Attention!

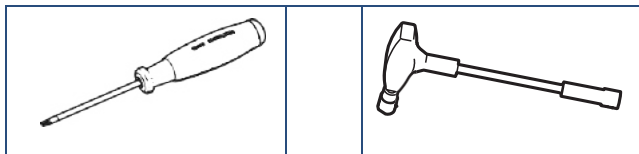
Two new QR-Code stickers are also supplied with the new electronics compartment. Use these stickers during commissioning and then stick them on the device.

- j) Carry out commissioning again.

## 6.7. Access to internal components

Tip

Required tools: Torx 20 and socket spanner 10.

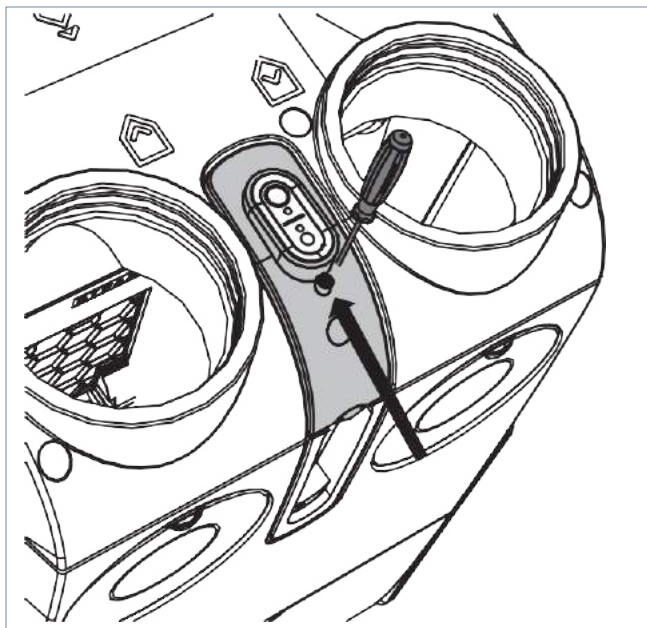


Go through the following steps to gain access to the internal components:

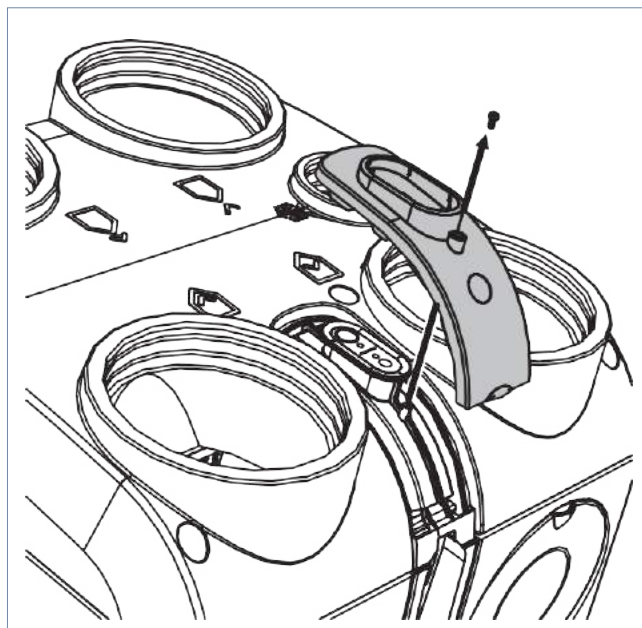
### ä Attention!

Always carefully loosen and tighten the screws of the upper part!

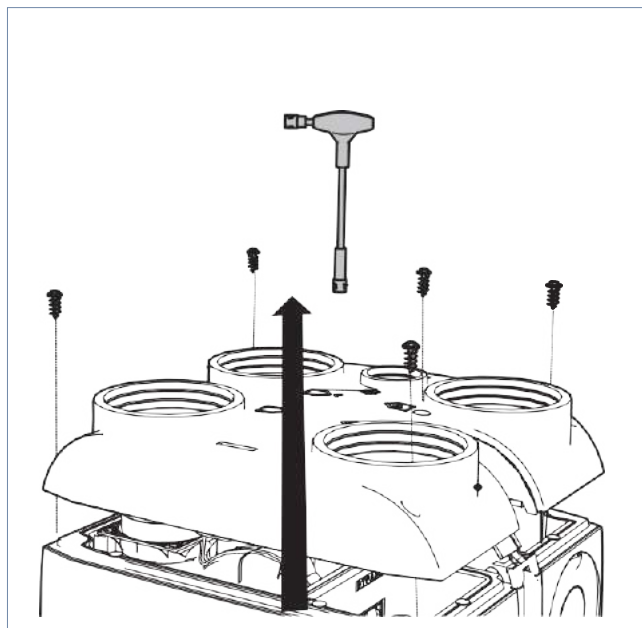
- Disconnect the ventilation unit from the power supply.
- Disconnect all channels.
- Dismantle the condensation drain if necessary.
- Loosen the screw on the cover plate on the top of the electronics compartment.



- Remove the cover plate on top of the electronics compartment.



- Carefully loosen the 5 EPP screws of the upper part.

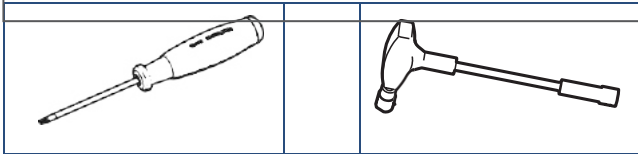


- Carefully remove the upper part including the insulation. You now have access to the internal components of the appliance.

## 6.8. Cleaning or replacing internal components

Tip

Required tools: Torx 20 and socket spanner 10.



### ⚠ Attention!

Always carefully loosen and tighten the screws of the upper part!

- Inspect the inside for dirt.
- Clean the inside (with a Hoover) if necessary.

### ⚠ Attention!

Make sure that no dust falls into the appliance.

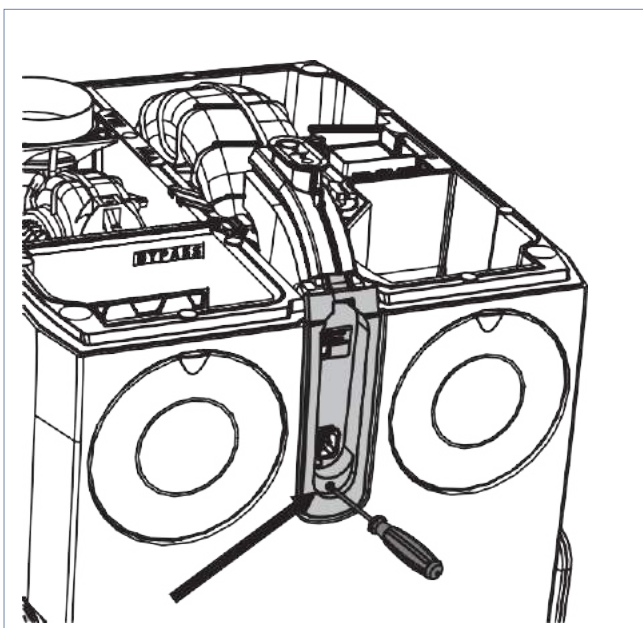
- If necessary, also clean the frost valve and the bypass valve from the top (using a Hoover).
- If necessary, clean the fans from the top.

### ⚠ Warning!

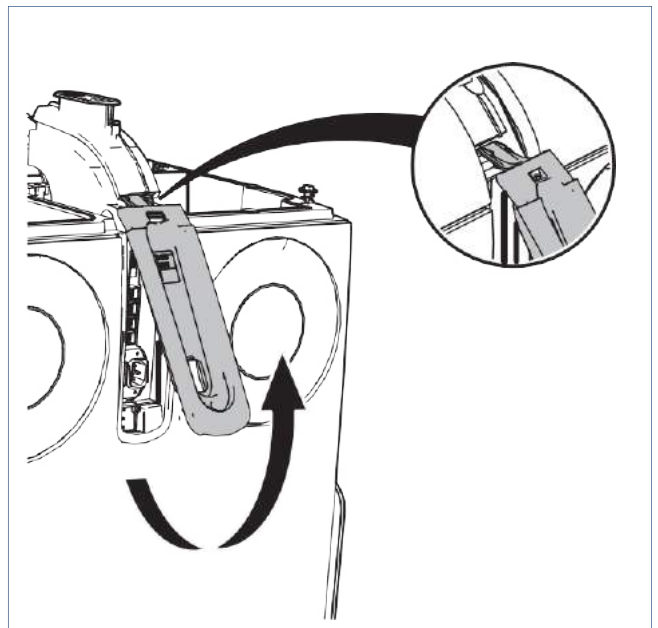
Do not use soap or detergents when cleaning!

When the bypass valve, the frost valve, or the fan modules need to be removed for cleaning, or when one or more of these components need to be replaced, they can be removed in the following way:

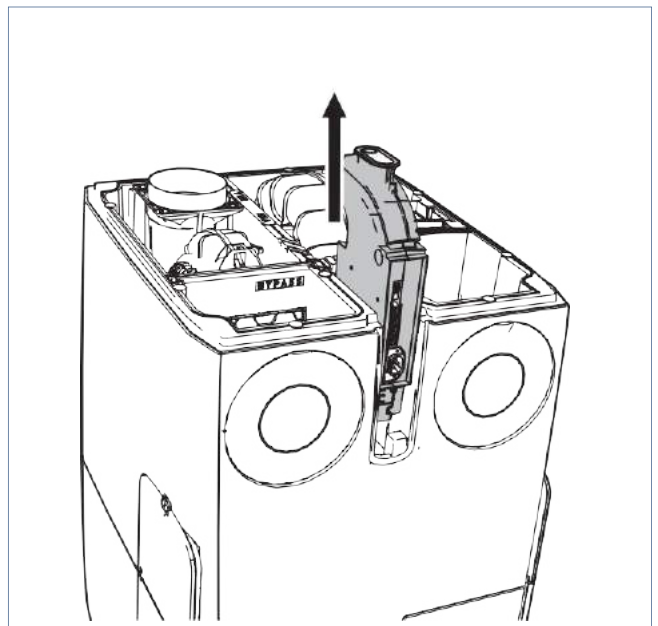
- Loosen the screw on the underside of the electronics compartment cover plate.



- The underside of the cover plate hooks under the electronics compartment. Tilt the cover plate upwards before removing it.

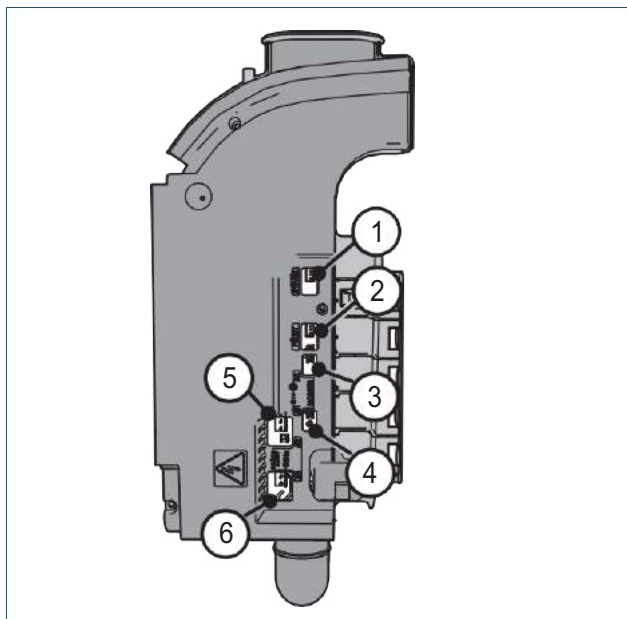


- Remove the underside of the cover plate from the electronics compartment.
- Carefully pull the electronics compartment up a little.



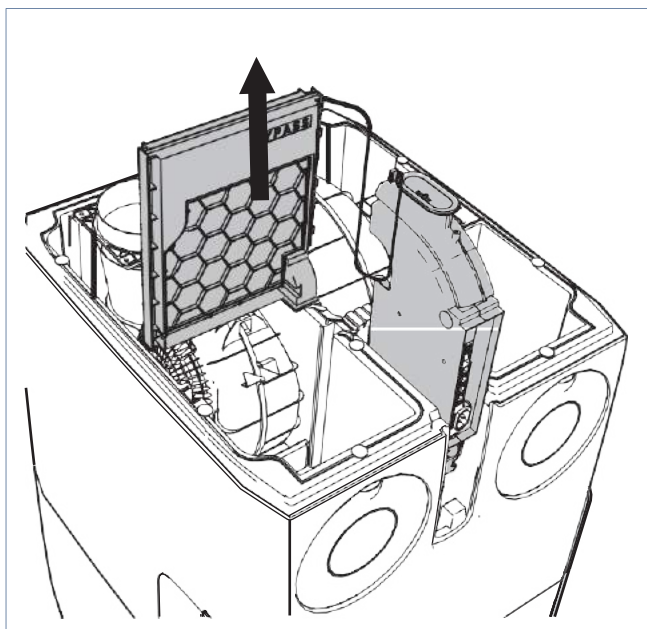
Note

The cables of the bypass valve, the frost valve, and the fan modules are labelled. The connections to the electronics compartment are also marked.



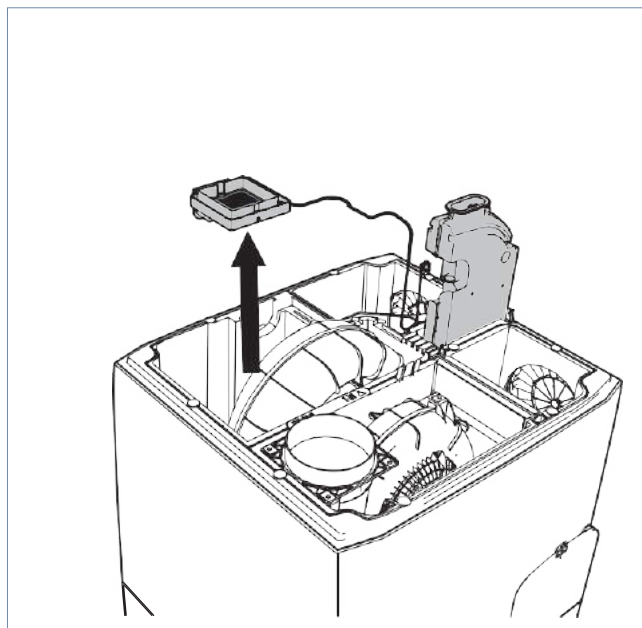
Legend		Label cable
1	Connection bypass valve	Bypass
2	Frost valve connection	Frost
3	Connection control cable supply fan	M2
4	Drain fan control cable connection	M1
5	Supply fan connection	M2
6	Drain fan power supply connection	M1

e) Disconnect the connector of the bypass valve (1).



- f) Remove the bypass valve from the ventilation unit.
- g) Clean or replace the bypass valve .

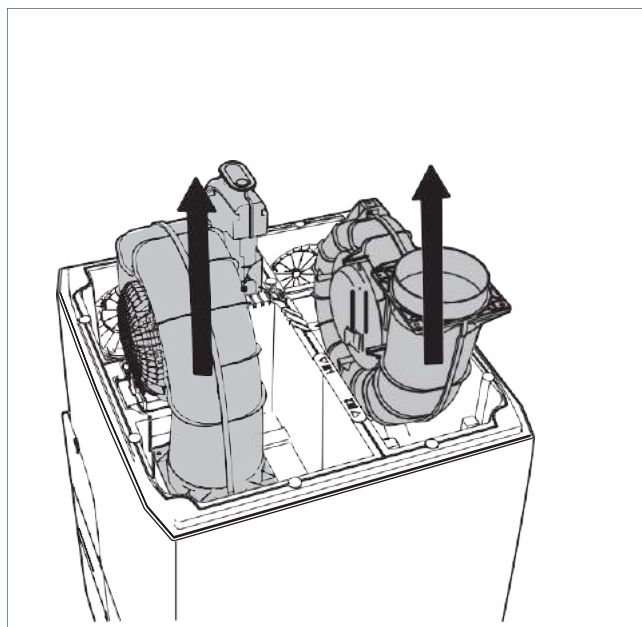
h) Disconnect the connector of the frost valve (2).



- i) Remove the frost flap from the ventilation unit.
- j) Clean or replace the frost valve.
- k) Install the cleaned or new bypass valve or frost valve in reverse order.

You can remove the fan modules for cleaning or replacement in the following manner:

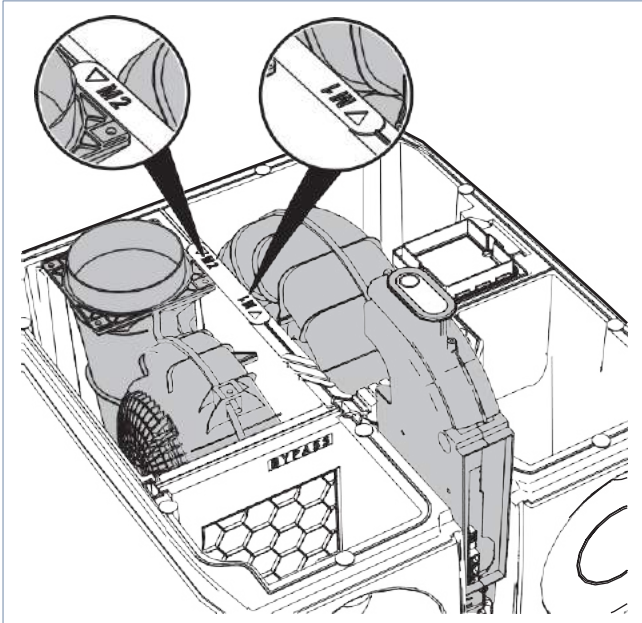
- a) Disconnect the connectors (control cable and power cable) (3; 4; 5; 6) from the fan modules.
- b) Remove the fan modules from the ventilation unit.



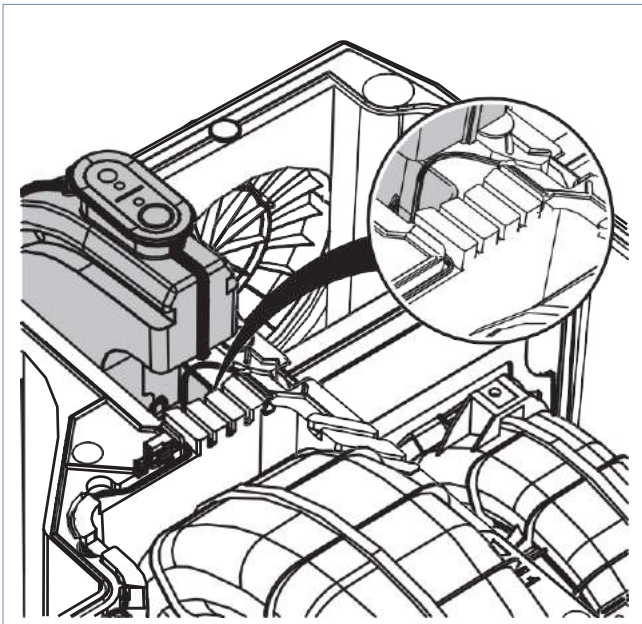
- c) Clean or replace the fan modules.
- d) Mount the cleaned or new fan modules in reverse order.

## ⚠ Attention!

Make sure that the right module is placed back in the right place: the cables of the supply module are marked M1 and the cables of the drain module are marked M2. The enclosure is also marked M1 and M2 are marked (2x).



- h) Tighten the upper part with the 5 EPP screws.
- i) Reconnect the channels.
- j) If necessary, also install the condensation drain.
- k) Bring the ventilation unit back under tension.



- e) Place the cables correctly in the recesses.
- f) Mount the electronics compartment and screw the cover plates back onto the compartment.
- g) Mount the upper part with the gasket.

## ⚠ Attention!

Make sure to replace the gasket correctly and undamaged!

# 7. Malfunctions

## 7.1. Fault reports

The appliance has various fault messages that are displayed on the appliance, on the app and on the Spider climate thermostat:

- Warning
- Blocking
- Locking

**Tip**  
The filter warning is shown on the interface of the unit, the app and the Spider climate thermostat as well as on the CO<sub>2</sub> sensor and the RH sensor. See Filter warning on page 29 .

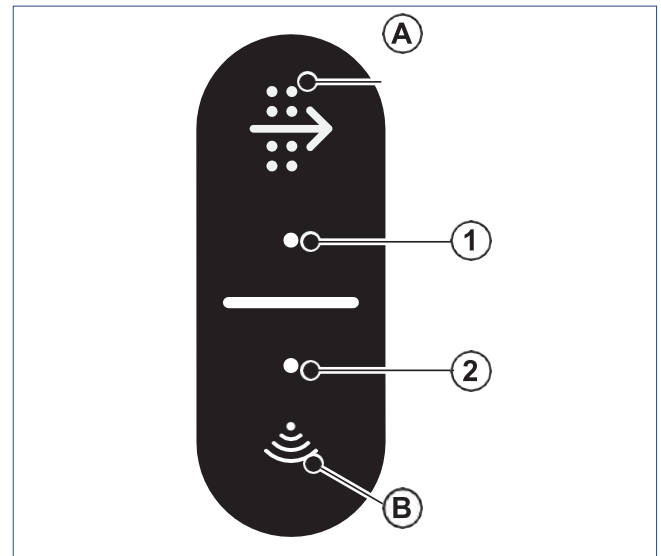
**Tip**  
Refer to Diagnosis of faults on page 40 to determine the cause of a fault.

If the app cannot connect to the device, you can still connect an accessory to the device in the following way:

- Press and hold button B on the device. The LED will quickly flash blue. You can pair an accessory for 2 minutes.
- Connect the accessory (control switch, CO<sub>2</sub> or Rv sensor, or Spider climate thermostat) as described in the documentation supplied with the product.

### 7.1.1. Error messages on the Interface

The device is equipped with an interface with two buttons and two LEDs.



#### Legend

- A Dirtfilter reset
- B Wifi mode
- 1 Status LED messages and errors ventilation unit
- 2 Status LED wifi mode and ventilation unit errors

The LEDs can display the following messages:

Status LEDs			
Pattern		Function	
Blue*	Orange**	Red	
Led 2	LED 1	Both leds	
x			Normal operation
x			WIFI mode
	x		Filter dirt
		x	Error RV sensor
		x	Error temperature sensor
		x	Fault valve
		x	Communication error
		x	Volume sensor error
		x	Fan module fault

\* In normal operation, LED 2 slowly chimes blue. When activating the wifi mode with button B, LED 2 pulses blue faster and when the wifi connection is active (pairing mode) LED 2 lights blue.

\*\* At the filter warning LED 1 flashes orange.

## 7.2. Warning

The device remains in operation.

Thermostat	Description
1	Filter dirt (volume measurement)
2	Filter dirt (time measurement)
3	Flow warning discharge volume*
4	Flow warning supply volume*

\* With this error message, the LED on the appliance does not flash orange.

---

Both the app and the Spider climate thermostat display an error message.

---

The LED on the appliance flashes orange continuously when the filter is dirty.

- When the cause of the malfunction has been eliminated, reset the malfunction. See Reset filter warning on page 31. The unit will then function normally again.

## 7.3. Blocking

A defect occurs which must be remedied as soon as possible. The ventilation unit functions differently than in normal operation.

Thermostat	Description
11	Moisture sensor fault internal
12	Moisture sensor drain error
13	Moisture sensor supply error
14	Internal temperature sensor fault
15	Error temperature sensor drain
16	Error temperature sensor supply
17	Fault valve zone 1
18	Fault valve zone 2
19	Fault valve zone 3
20	Fault valve zone 4
21	Bypass valve fault
22	Frost valve error
23	Electronic compartment error

---

Both the app and the Spider Climate Thermostat display an error message.

---

Both LEDs on the unit flash red.

- In order to remove the fault message, the fault must be resolved. Once the cause of the fault has been resolved, the fault message disappears automatically. The unit will then function normally again.

## ! Attention!

Disconnect the device from the power supply before you solve the problem.

## 7.4. Locking

The device is no longer in operation and is locked. All functions are disabled.

Only after the cause of the lock has been resolved can the appliance continue in normal operation.

Thermostat	Description
31	Error volume sensor drain
32	Error volume sensor supply
33	Error fan module drain
34	Fan module supply error

---

Both the app and the Spider climate thermostat display an error message.

---

Both LEDs on the unit flash red.

- In order to remove the fault message, the fault must be resolved. Once the cause of the fault has been resolved, the fault message disappears on restart. The appliance will then return to normal operation.

## ! Attention!

Disconnect the device from the power supply before you solve the problem.

## 7.5. Diagnosis of faults

1	Filter dirt (volume measurement)	
	Oorzaak	Solution
	a) The ventilation unit detects that the filters need to be cleaned or replaced. (based on volume measurement)	<ul style="list-style-type: none"> <li>• Disconnect the appliance from the power supply and clean or replace the filters.</li> <li>• Reset the filter warning after the cleaning or replacement of the filters.</li> </ul>
2	Filter dirt (time measurement)	
	Oorzaak	Solution
	a) The ventilation unit detects that the filters need to be cleaned or replaced. (based on time measurement)	<ul style="list-style-type: none"> <li>• Disconnect the appliance from the power supply and clean or replace the filters.</li> <li>• Reset the filter warning after the cleaning or replacement of the filters.</li> </ul>
3	Flow volume warning	
	Oorzaak	Solution
	a) The ventilation unit detects that the exhaust fan does not achieve the desired flow rate. within 10 seconds.	<ul style="list-style-type: none"> <li>• Clean the flue system, especially the drain.</li> <li>• Then check the volume flow rate.</li> </ul>
4	Flow warning supply volume	
	Oorzaak	Solution
	a) The ventilation unit detects that the supply fan does not achieve a) the desired flow rate. within 10 seconds.	<ul style="list-style-type: none"> <li>• Clean the duct system, especially the inlet.</li> <li>• Then check the volume flow rate.</li> </ul>
11	Moisture sensor fault internal	
	Oorzaak	Solution
	a) The ventilation unit detects that the internal moisture sensor is defective.  The ventilation goes to the maximum position.	<ul style="list-style-type: none"> <li>• Replace the electronics compartment and perform commissioning again. Report all controls and sensors on again.</li> </ul>
12	Moisture sensor drain error	
	Oorzaak	Solution
	a) The ventilation unit detects that the humidity sensor in the drain is defective.  The ventilation goes to the maximum position.	<ul style="list-style-type: none"> <li>• Replace the corresponding fan module.</li> </ul>
13	Moisture sensor supply error	
	Oorzaak	Solution



a) The ventilation unit detects that the humidity sensor in the supply is a) defective.  
The ventilation goes to the maximum position.

- Replace the corresponding fan module.

14	Internal temperature sensor fault	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the internal temperature sensor is a) defective.</p> <p>The ventilation goes to the maximum position. Close the frost valve and the bypass valve. All controls are blocked.</p>	<ul style="list-style-type: none"> <li>Replace the electronics compartment and perform commissioning again. Re-register all controls and sensors.</li> </ul>

15	Error temperature sensor drain	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the temperature sensor in the drain is a) defective.</p> <p>The ventilation goes to the maximum position. Close the frost valve and the bypass valve. All controls are blocked.</p>	<ul style="list-style-type: none"> <li>Replace the corresponding fan module.</li> </ul>

16	Error temperature sensor supply	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the temperature sensor in the supply is a) defective.</p> <p>The ventilation goes to the maximum position. Close the frost valve and the bypass valve. All controls are blocked.</p>	<ul style="list-style-type: none"> <li>Replace the corresponding fan module.</li> </ul>

17	Fault valve zone 1	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the damper for zone 1 is not, or not properly connected or defective.</p> <p>The ventilation unit functions normally, but the air flow may be out of balance.</p>	<ul style="list-style-type: none"> <li>Connect the relevant valve correctly.</li> <li>Replace the valve in question.</li> </ul>

18	Fault valve zone 2	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the damper for zone 2 is not, or not properly connected or defective.</p> <p>The ventilation unit functions normally, but the air flow may be out of balance.</p>	<ul style="list-style-type: none"> <li>Connect the relevant valve correctly.</li> <li>Replace the valve in question.</li> </ul>

19	Fault valve zone 3	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the damper for zone 3 is not, or not properly connected or defective.</p> <p>The ventilation unit functions normally, but the air flow may be out of balance.</p>	<ul style="list-style-type: none"> <li>• Connect the relevant valve correctly.</li> <li>• Replace the valve in question.</li> </ul>

20	Fault valve zone 4	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the valves for zone 4 are not, or not properly connected or defective.</p> <p>The ventilation unit functions normally, but the air flow may be out of balance.</p>	<ul style="list-style-type: none"> <li>• Connect the relevant valve correctly.</li> <li>• Replace the valve in question.</li> </ul>

21	Bypass valve fault	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the bypass valve is not, or not properly connected or is defective.</p> <p>The ventilation unit functions normally, but the air flow may be out of balance.</p>	<ul style="list-style-type: none"> <li>• Connect the bypass valve correctly.</li> <li>• Replace the bypass valve.</li> </ul>

22	Frost valve error	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the frost valve is not, or not properly connected or defective.</p> <p>The ventilation unit functions normally, but the air flow may be out of balance.</p>	<ul style="list-style-type: none"> <li>• Connect the frost valve correctly.</li> <li>• Replace the frost valve.</li> </ul>

23	Electronic compartment error	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the electronics compartment is a) either incorrectly connected or defective.</p> <p>Ventilation is switched to automatic mode in all zones.</p>	<ul style="list-style-type: none"> <li>• Connect the electronics compartment correctly and perform commissioning again.</li> <li>• Replace the electronics compartment and feed the Commissioning off again.</li> </ul>

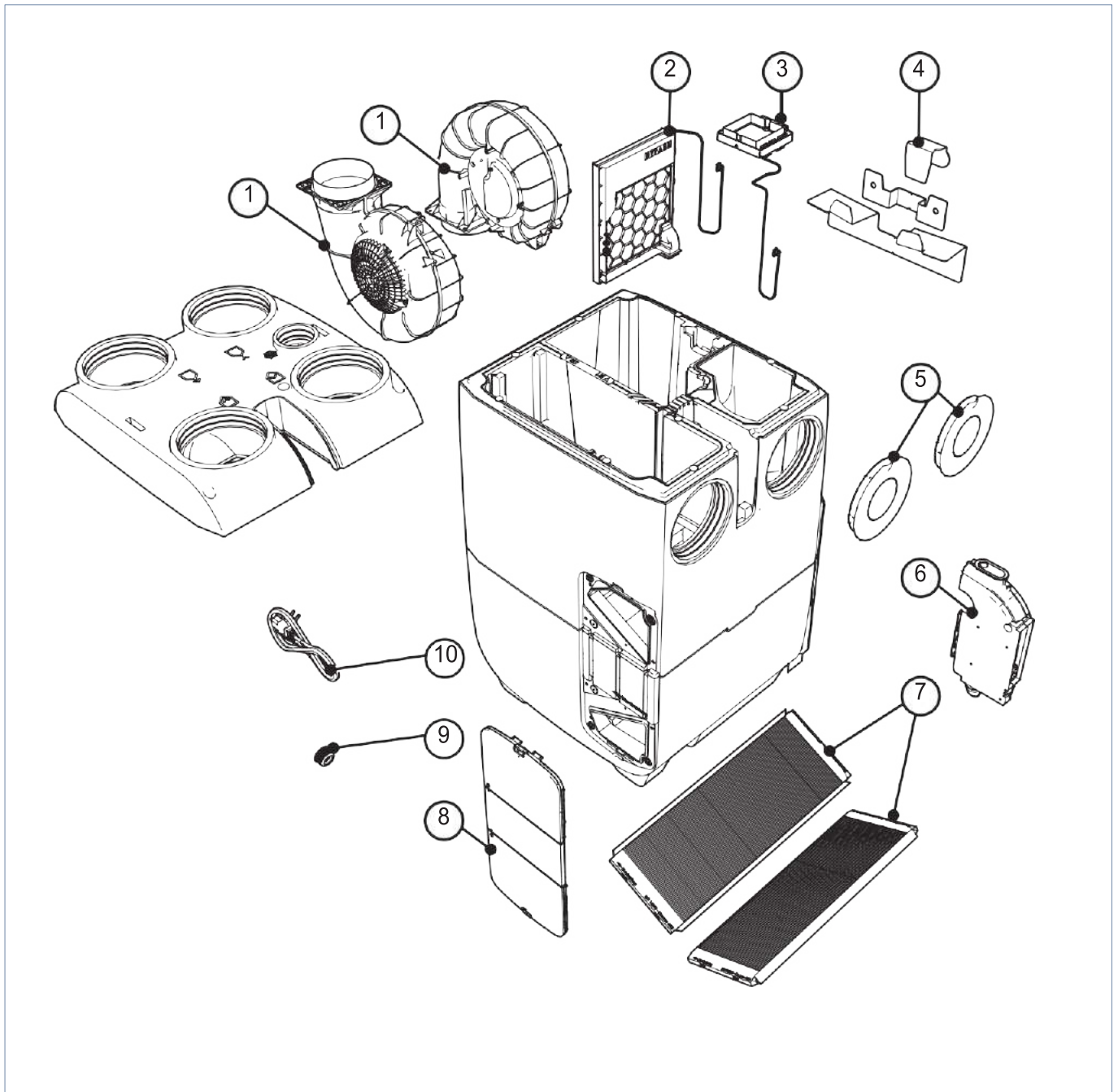
31	Error volume sensor drain	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the volume sensor of the outlet is defective.</p> <p>The ventilation unit stops.</p>	<ul style="list-style-type: none"> <li>• Replace the corresponding fan module.</li> </ul>

32	Error volume sensor supply	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the inlet a) volume sensor is defective.</p> <p>The ventilation unit stops.</p>	<ul style="list-style-type: none"> <li>• Replace the corresponding fan module.</li> </ul>

33	Error fan module drain	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the exhaust fan module is a) defective.</p> <p>The ventilation unit stops.</p>	<ul style="list-style-type: none"> <li>• Replace the corresponding fan module.</li> </ul>

34	Fan module supply error	
	Oorzaak	Solution
	<p>a) The ventilation unit detects that the supply fan module is a) defective.</p> <p>The ventilation unit stops.</p>	<ul style="list-style-type: none"> <li>• Replace the corresponding fan module.</li> </ul>

# 8. Service parts



Exploded view

No ..... ..... ...	Article number	Description	Order number
01	05-00645	Fan module	1
02	05-00646	Bypass valve	1
03	05-00647	Frost valve	1
04	04-00110	Wall bracket set	1
05	05-00648	Cover caps set (2pcs)	1
06	05-00649	Electronics compartment	1
07	05-00650	Filter set ISO16890 Coarse 65% (G4) (2pcs)	1
07	05-00651	Filter set ISO16890 ePM2.5 70% (F7) (2pcs)	1
08	05-00652	Service door set complete	1
09	05-00653	Rubber sleeve condensation drain	1
10	05-00654	Power cable	1

# 9. Warranty

All Itho Daalderop products come with a standard two-year manufacturer's warranty. Within this period, the product or parts thereof will be repaired or replaced free of charge.

Provisions and exclusions are included in our guarantee conditions.

See the product page on our website for full warranty terms and/or additional warranty terms or conditions.

If there are any problems with the operation of our product, we advise the consumer to first consult the manual. If the problems persist, contact the installer who installed the product or the Itho Daalderop service department. The contact details can be found at the end of the manual or on our website.

## EC declaration of conformity

Itho Daalderop Group BV  
PO Box 7  
4000 AA Tiel  
Netherlands

Declares that the product :

- Balanced ventilation unit with heat recovery HRU 400

complies with the provisions :

Richtlijnen	Harmonised European standards
Directive 2009/125/EC (Ecodesign) <i>establishing a framework for the setting of ecodesign requirements for energy-related products</i>	<ul style="list-style-type: none"><li>• NEN-EN 13141-4:2018</li><li>• NEN-EN 13141-7:2018</li></ul>
Regulation (EU) 1253/2014 <i>implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for ventilation units</i>	
Delegated regulation (EU) 1254/2014 <i>supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of residential ventilation units</i>	
Regulation (EU) 2017/1369 <i>establishing a framework for energy labelling and repealing Directive 2010/30/EU</i>	
Directive 2011/65/EU (RoHS) <i>on the restriction of the use of certain hazardous substances in electrical and electronic equipment</i>	
Directive 2014/53/EU (RED) <i>on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC</i>	<ul style="list-style-type: none"><li>• NEN-EN 55014-2:2015</li><li>• NEN-EN 55014-1:2017</li><li>• NEN-EN-IEC 61000-3-3:2013</li><li>• NEN-EN-IEC 61000-3-2:2019</li><li>• ETSI AND 301 489-1 V2.2.3:2019</li><li>• ETSI AND 301 489-3 V2.1.1:2019</li><li>• AND 60335-1:2012</li><li>• AND 60335-2-80:2015</li></ul>

Tiel, 1 April 2020.



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