



INSTALLATION AND OPERATION MANUAL

Steam humidifier
Condair RH

Thank you for choosing Condair

Installation date (MM/DD/YYYY):

Commissioning date (MM/DD/YYYY):

Site:

Model:

Serial number:

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1 Introduction

1.1 To the very beginning

We thank you for having purchased a **Condair RH steam humidifier**.

The Condair RH steam humidifier incorporates the latest technical advances and meets all recognized safety standards. Nevertheless, improper use of the Condair RH steam humidifier may result in danger to the user or third parties and/or damage to property.

To ensure a safe, proper, and economical operation of the Condair RH steam humidifier, please observe and comply with all information and safety instructions contained in the present documentation as well as in the separate documentations of the components installed in the corresponding steam humidification system.

If you have questions after reading this documentation, please contact your Condair representative. They will be glad to assist you.

1.2 Notes on the installation and operation manual

Limitation

The subject of this installation and operation manual is the Condair RH steam humidifier in its different versions. The steam distribution units, options and accessories are only described insofar as this is necessary for proper installation and operation of the equipment. Further information on options and accessories can be obtained in the respective instructions.

This installation and operation manual is restricted to the **installation, commissioning, operation, maintenance and troubleshooting** of the steam humidifier Condair RH and is meant for **well trained personnel being sufficiently qualified for their respective work**.

This installation and operation manual is supplemented by various separate items of documentation (e.g. spare parts list), which are included in the delivery as well. Where necessary, appropriate cross-references are made to these publications in the installation and operation manual.

Definitions



CAUTION!

The catchword "CAUTION" used in conjunction with the general caution symbol designates notes in this installation and operation manual that, if neglected, may cause **damage and/or malfunction of the unit or damage to property**.



WARNING!

The catchword "WARNING" used in conjunction with the general caution symbol designates safety and danger notes in this installation and operation manual that, if neglected, may cause **injury to persons**. Instead of the general hazard symbol, other specific hazard symbols can also be used.



DANGER!

The catchword "DANGER" used in conjunction with the general caution symbol designates safety and danger notes in this installation and operation manual that, if neglected, may lead to **severe injury or even death of persons**. Instead of the general hazard symbol, other specific hazard symbols can also be used.

Safekeeping

Please safeguard this installation and operation manual in a safe place, where it can be immediately accessed. If the steam humidification system changes hands, the documentation must be passed on to the new operator.

If the installation and operation manual gets misplaced, please contact your Condair representative.

Language versions

This installation and operation manual is available in other languages. Please contact your Condair representative for information.

2 For your safety

General

Every person working with the Condair RH must have read and understood this installation and operation manual before carrying out any work.

Knowing and understanding the contents of this installation and operation manual is a basic requirement for protecting personnel against any kind of danger, to prevent faulty installation and operation, and to operate the Condair RH steam humidifier safely and correctly.

All icons, signs and markings applied to the Condair RH steam humidifier must be observed and kept in readable state.

Qualification of personnel

All work described in this installation and operation manual **may only be carried out by specialists who are well trained and adequately qualified and are authorized by the customer.**

For safety and warranty reasons any action beyond the scope of this manual must be carried out only by qualified personnel authorised by Condair.

It is assumed that all persons working with the steam humidification system are familiar and comply with the appropriate regulations on work safety and the prevention of accidents.

The Condair RH can be used by children aged 8 years and over and by persons with reduced physical, sensory or mental capabilities or a lack of experience and knowledge if they are supervised or have been instructed in the safe use of the device and understand the resulting dangers. Children are not allowed to play with the device. Cleaning and user maintenance must not be carried out by children without supervision.

Intended use

The Condair RH steam humidifier is intended exclusively for air humidification in a controlled residential heat recovery ventilation system (HRV) via a steam distribution unit approved by Condair within the specified operating conditions (see [Section 10.1](#)). Any other type of application, without the written consent of Condair, is considered as not conforming with the intended purpose and may lead to the steam humidification system becoming dangerous.

Operation of the equipment in the intended manner requires **that all the information contained in this installation and operation manual are observed (in particular the safety instructions).**

Dangers that may arise from the steam humidifier



DANGER!
Danger of electric hazard!

The Condair RH steam humidifier is mains powered. Live parts may be exposed when the unit is open. Touching live parts may cause severe injury or danger to life.

Prevention: Before carrying out any work set the Condair RH out of operation as described in [Section 6.5](#) (switch off the unit, disconnect it from the mains and stop the water supply) and secure the unit against inadvertent power-up.



DANGER!
Danger of electric hazard!

If the main cable of the Condair RH is damaged, it must be replaced by the manufacturer, his customer maintenance or a similarly qualified person in order to avoid hazards.



WARNING!
Hot water vapour - Danger of scalding!

The Condair RH produces hot water vapour. There is danger of scalding when coming in contact with hot water vapour.

Prevention: Do not carry out any work on the steam system during operation (steam lines, steam distribution unit, etc.). If the steam system is leaky set the Condair RH immediately out of operation as described in [Section 6.5](#). Correctly seal the steam system before putting the unit into operation again.



WARNING!
Danger of burning!

During operation the components of the steam system (steam cylinder, steam lines, etc.) get very hot (up to 100 °C). There is danger of burning when touching the hot components.

Prevention: Before carrying out any work on the steam system set the Condair RH out of operation as described in [Section 6.5](#), then wait until the components have cooled down sufficiently thus preventing danger of burning.



WARNING!

High humidity can promote the growth of biological organisms and thereby endanger the health of people.

Prevention: To prevent this, the duct or steam distribution unit into which the steam is blown must be cleaned regularly in accordance with the applicable hygiene guidelines.



CAUTION!

The device must not be operated with a DC voltage supply.

Preventing unsafe operation

All persons working with the Condair RH must report any alterations to the unit that may affect safety to the owner without delay, **to shut down the Condair RH and to secure it against accidental power-up.**

Prohibited modifications to the unit

No modifications must be undertaken on the Condair RH without the express written consent of Condair.

For the replacement of defective components use exclusively **original accessories and spare parts** available from your Condair representative.

3 Checking the delivery / storage and transport

3.1 Checking the delivery

The Condair RH is delivered together with the corresponding steam distribution unit as a complete package. Please refer to the information on the scope of delivery in the installation and operation manual of the corresponding steam distribution unit.

After receiving:

- Inspect shipping boxes for damage.
Any damages of the shipping boxes must be reported to the shipping company without delay.
- Check packing slip to ensure all parts has been delivered.
All material shortages are to be reported to your Condair supplier within 48 hours after receipt of the goods. Condair Group AG assumes no responsibility for any material shortages beyond this period.
- Unpack the parts/components and check for any damage.
If parts/components are damaged, notify the shipping company immediately.
- Check whether the components are suitable for installation on your site according to the unit data stated on the specification label.

3.2 Storage and Transportation

Storing

Until installation store the Condair RH in its original packaging in a protected area meeting the following requirements:

- Room temperature: 5 ... 40 °C
- Room humidity: 10 ... 75 %rh

Transportation

For optimum protection always transport the Condair RH and components in their original packaging and use appropriate lifting/transporting devices.

Packaging

If the packaging is to be disposed of, observe the local regulations on waste disposal. Please recycle packaging where possible.


4 Product overview

4.1 Model overview

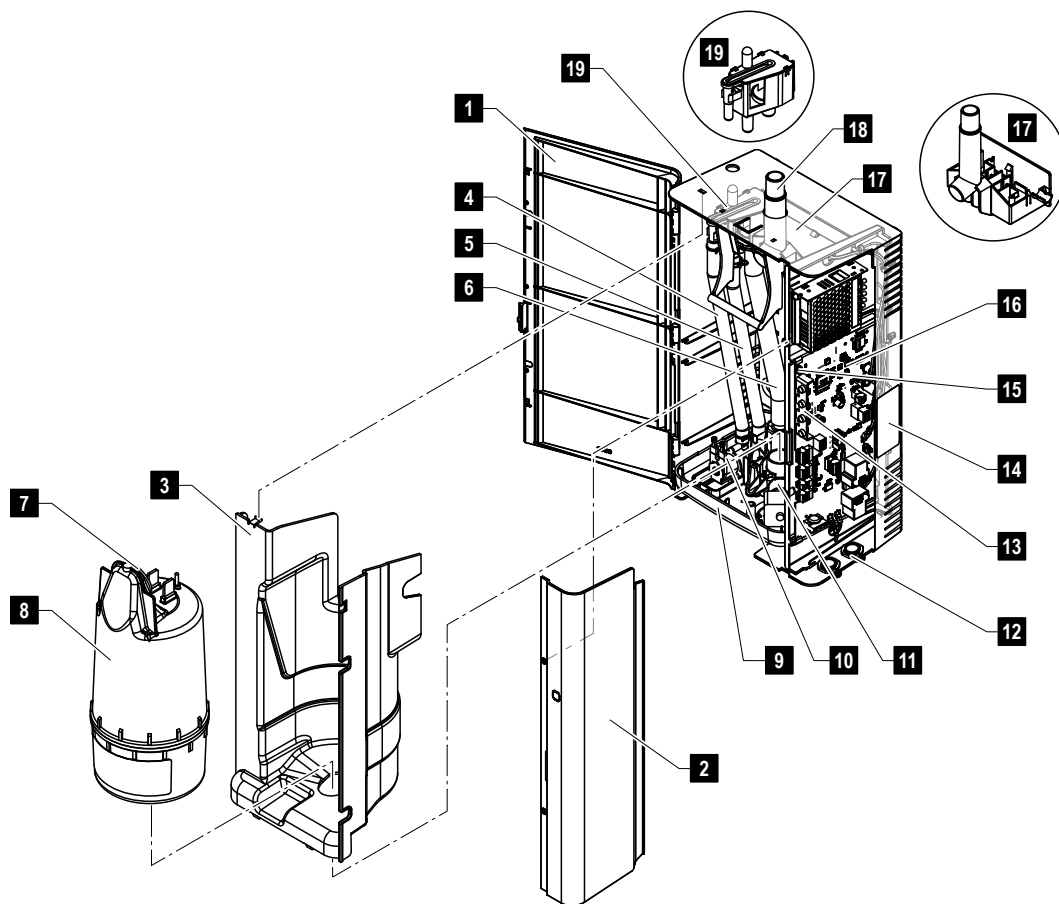
	Model Condair RH	
	RH 1.8	RH 3.6
Max. steam capacity	1.8 kg/h	3.6 kg/h
Heating voltage	230V/1~/50-60Hz	
Integrated P/PI controller	✓	
Admissible control signals	0-10V, 2-10V, 0-20mA, 4-20mA	
Operating parameters	configurable via Condair HumiLife App	

4.2 Product designation

The identification of the unit is found on the specification label (for the location of the specification label, see unit overview):

	Type designation	Serial number (7 digits)	Production Month/Year
	Condair Ltd. 2740 Fenton Road, Ottawa, Ontario K1T3T7, Canada		
Heating voltage	Type: RH-EU 1.8kg/h	Serial-No: XXXXXXX	04/2020
Maximum steam capacity	Heating voltage: 230V1~/50-60Hz	El. Power: 1.35 kW 6 A	
Admissible water supply pressure	Steam capacity: 1.8 kg/h	Contr.volt.: AC 200-240V/50-60Hz	
Field with certification symbols	Water press.: 100..1000 kPa (1..10 bar)		
			
Power consumption	Engineered in Canada, Made in Canada		
Control voltage			

4.3 Construction of the Condair RH steam humidifier



- | | | | |
|----|-----------------------------|----|-------------------------|
| 1 | Unit door | 11 | Drain valve |
| 2 | Cover control compartment | 12 | Cable feedthrough |
| 3 | Cover internal water system | 13 | LED's operating status |
| 4 | Water supply hose | 14 | Specification label |
| 5 | Water overflow hose | 15 | On/Off switch |
| 6 | Water fill hose | 16 | Driver board |
| 7 | Steam cylinder sealing | 17 | Steam connection unit |
| 8 | Steam cylinder | 18 | Steam outlet connection |
| 9 | Drain pan | 19 | Fill cup |
| 10 | Water inlet valve | | |

Fig. 1: Construction of the Condair RH steam humidifier

4.4 Functional description

The Condair RH steam humidifier is an atmospheric steam generator. It operates on the electrode heating principle and is designed for duct air humidification via the Condair VS, Condair DS or Condair DV steam distribution unit in a residential heat recovery ventilation system (HRV).

Water supply

The water is supplied via a filter valve (accessory "Z261") to the steam humidifier. It reaches the steam cylinder via the inlet valve and the open fill cup.

Note: the open fill cup is designed in such a way, that the supply water is separated from the unit water. That means, that no unit water can flow back into the supply water line.

Steam generation

Any time steam is requested, the electrodes are supplied with voltage via the main contactor. Simultaneously, the inlet valve opens and the water enters the steam cylinder from the bottom via the fill cup and filling hose. As soon as the electrodes come in contact with the water, current begins to flow between the electrodes, generating heat and increasing the water evaporation rate. The more of the electrode surface area that is exposed to conductive water, the higher the current consumption and thus steam production. Upon reaching the requested steam capacity, the inlet valve closes. If the steam generation decreases below a certain percentage of the required capacity, due to lowering of the water level (e.g. because of the evaporation process or drainage), the inlet valve opens until the required capacity is available again. If the required steam capacity is lower than the actual output, the inlet valve is closed until the desired capacity is achieved by lowering of the water level (evaporation process).

Level monitoring

A maximum level sensor, provided in the steam cylinder, detects when the cylinder water level is at the maximum. When the sensor comes in contact with water, the inlet valve will close after a short delay.

Drainage

As a result of the evaporation and refill process, the conductivity of the water increases due to an escalating mineral concentration. Eventually, an inadmissibly high current consumption would take place if this concentration process were permitted to continue. To prevent this concentration from reaching a value, unsuitably high for the operation, a certain amount of water is periodically drained from the cylinder and replaced by fresh water.

If the humidifier is in standby mode for a certain period of time (no humidity demand), bacteria and viruses can multiply in the standing water in the steam cylinder. In order to prevent this, the steam cylinder is completely drained automatically (forced blowdown) after 72 hours without humidity demand (standby mode).

Control

The steam production is controlled via the internal continuous Proportional (P) / Proportional-Integral (PI) controller.

Steam distribution

The steam produced by the Condair RH steam humidifier is distributed in the duct air via the steam distribution units Condair VS, Condair DS or Condair DV installed in the supply air duct.

4.5 System overviews

4.5.1 System overview Condair RH with Condair VS

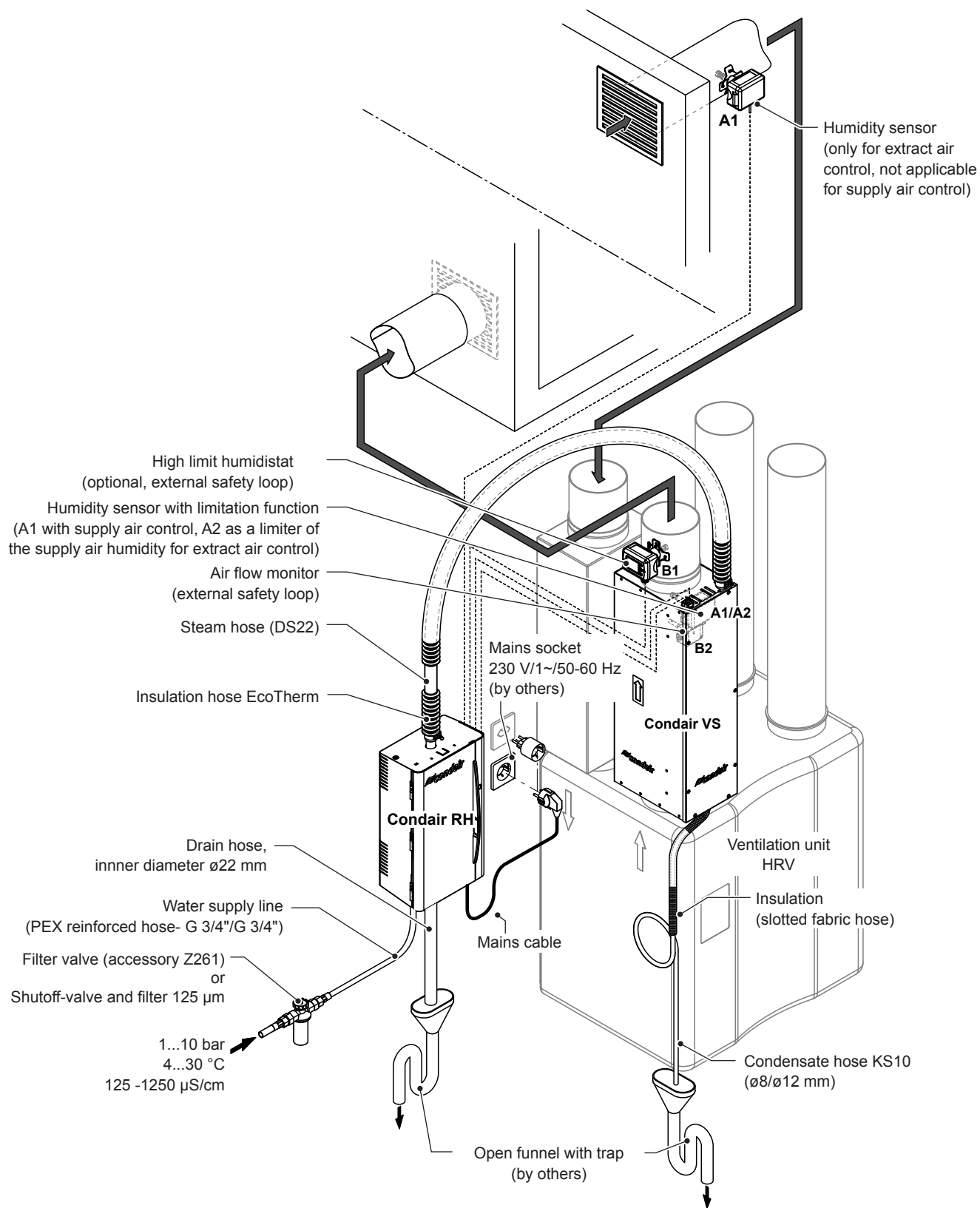


Fig. 2: System overview Condair RH with Condair VS (Example)

4.5.2 System overview Condair RH with Condair DS

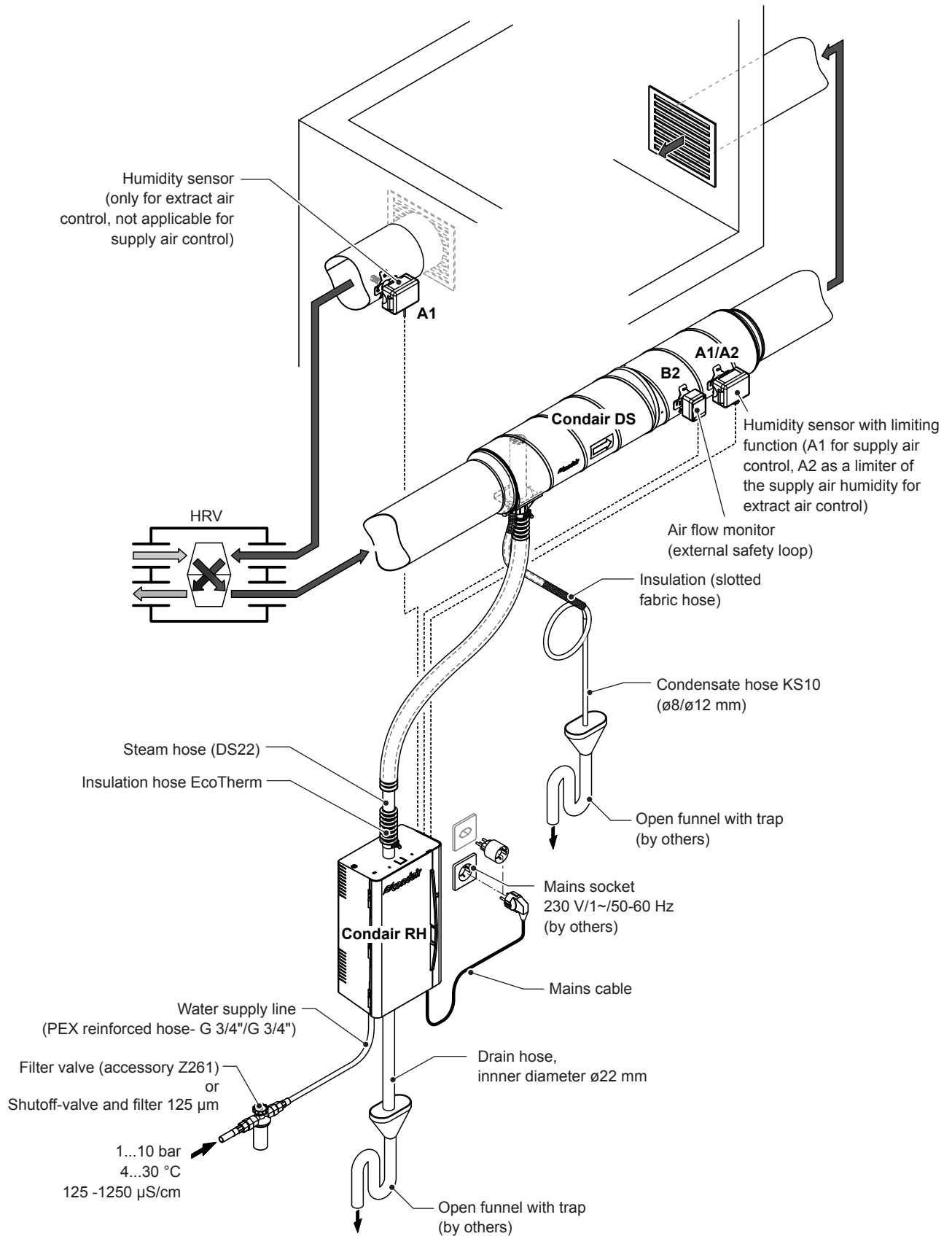


Fig. 3: System overview Condair RH with Condair DS (Example)

4.5.3 System overview Condair RH with Condair DV

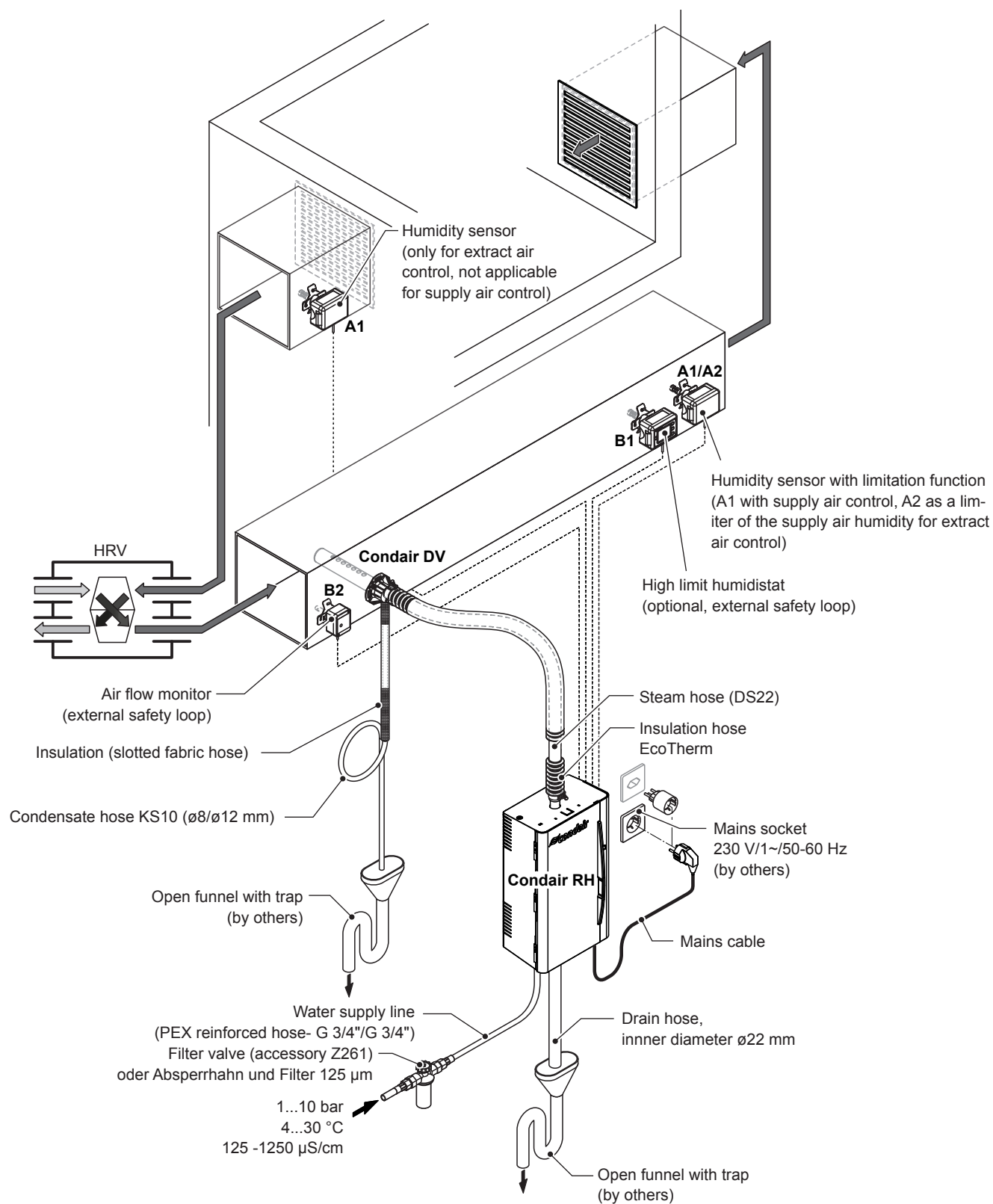


Fig. 4: System overview Condair RH with Condair DV (Example)

4.6 Accessories

Accessory unit mounting

	Condair RH	
	RH 1.8	RH 3.6
Ceiling bracket RH	1x	

Accessory for water installation

	Condair RH	
	RH 1.8	RH 3.6
Filter valve	1x Z261	

Accessory steam installation

	Condair RH	
	RH 1.8	RH 3.6
Steam hose	DS22	
Insulation hose for steam hose	EcoTherm	
Condensate hose	KS10	
Insulation hose for condensate hose	Slotted fabric hose	

Accessory humidity control

	Condair RH	
	RH 1.8	RH 3.6
Duct humidity sensor	CDC-SL	
Duct High limit humidistat	CHD-S	

5 Installation

5.1 Safety instructions for installation work

Personnel qualifications

All mounting and installation work may be performed only by suitably trained, adequately qualified personnel who are authorised by the operator. It is the responsibility of the operator to check the qualification.

General notes

Strictly observe and comply with all information given in the present installation manual regarding the mounting of the unit and the installation of water, steam and electricity.

Observe and comply with all local regulations dealing with water, steam and electrical installations.

Safety

For some of the installation work, the device covers of the Condair RH must be removed. Therefore make sure to observe the following safety notes:



DANGER!
Danger of electric shock

If the Condair RH is opened, live parts can be touched, which can lead to serious injuries or death.

Prevention: Before starting any work on the Condair RH, make sure that the unit is disconnected from the power supply, the water supply is closed and that the unit is secured against inadvertent starting up.



CAUTION!

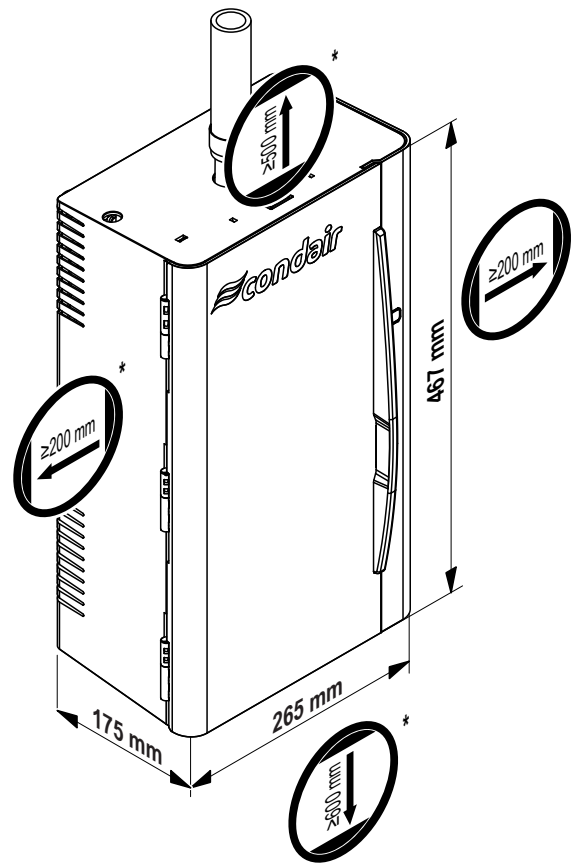
The electronic components inside the steam humidifier are sensitive to electrostatic discharge.

Prevention: Before starting any work on the electrical equipment of the unit measures must be taken against damage from electrostatic discharge (ESD protection).

5.2 Placement and installation of the steam humidifier

5.2.1 Placement of the steam humidifier

Minimum clearances, unit dimensions and weights



* recommended minimum clearances

Note: For the installation of the steam humidifier between the pipes of the HRV ventilation unit, there must be a minimum clearance of 300 mm between the pipes.

Net weight	6.0 kg
Operating weight	9.5 kg

Fig. 5: Minimum clearances, unit dimensions and weights

Notes on locating the unit

The positioning of the Condair RH depends largely on the location of the steam distribution unit. To **ensure proper functioning** of the steam humidifier and to **obtain an optimal efficiency**, the following points must be considered and observed when choosing the location for the steam humidifier:

- Install the steam humidifier so that:
 - the **length of the steam hose** is kept as short as possible (**max. 4 m**),
 - the **minimum bend radius ($R_{\min} = 250 \text{ mm}$)** and the minimum **upslope** and **downslope of 10 %** of the steam hose from the steam humidifier to the steam distribution unit are maintained.
- The steam humidifier is designed for wall mounting or, with the ceiling bracket available as an accessory, for mounting on a ceiling in protected interiors. Make sure that the construction (wall, ceiling, etc.) to which the humidifier is to be mounted, offers a **sufficient load-bearing capacity** (take notice of the weight information, see [Fig. 5](#)), and is suitable for the installation.

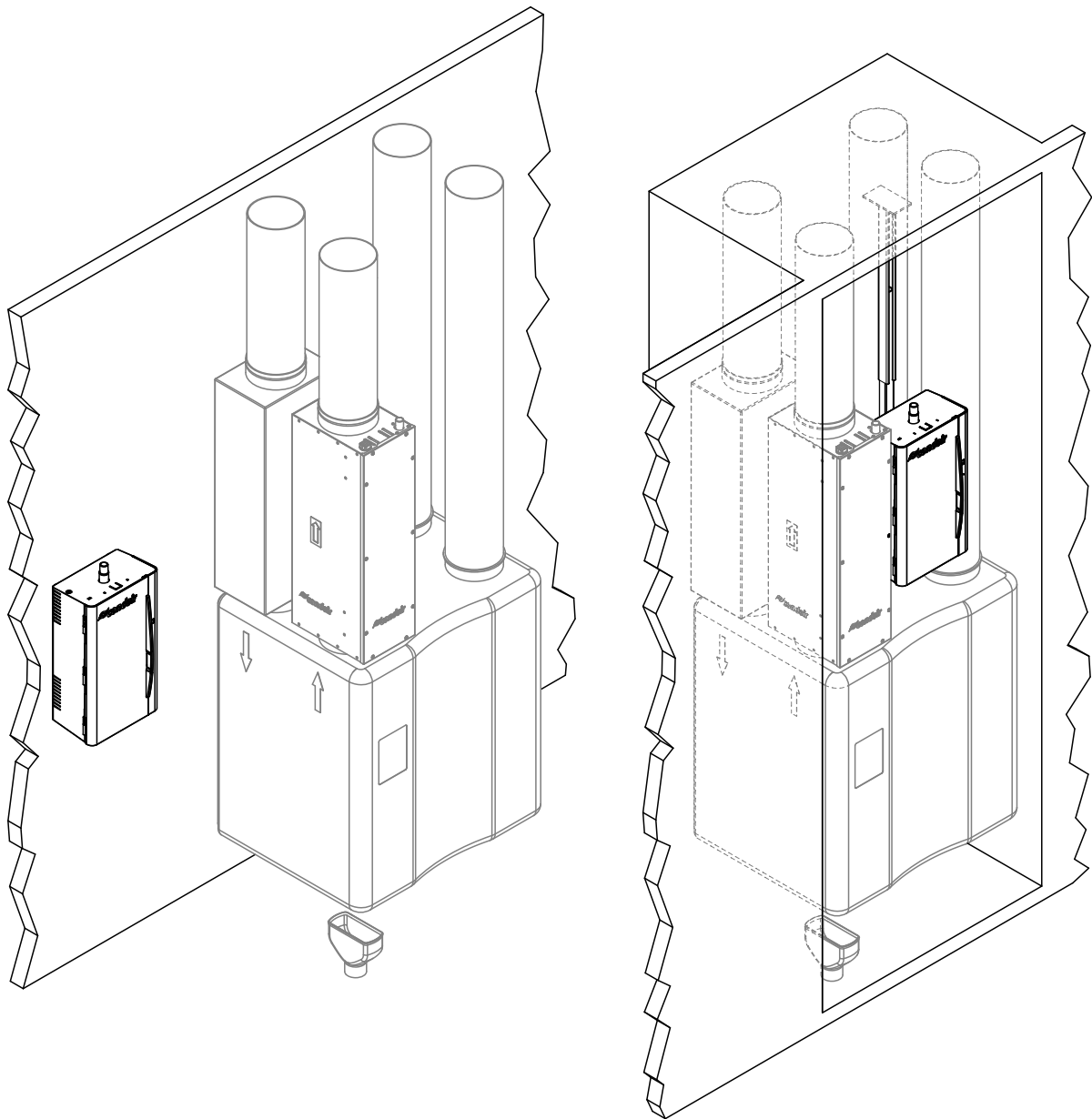


Fig. 6: Example: Wall and ceiling mounting Condair RH

- The steam humidifier heats up during operation. Make sure that the construction (wall, pillar, etc.) on which the device is to be mounted is made of heat-resistant material.
- Install the steam humidifier in such a manner that it is **freely accessible** with sufficient space available for maintenance purposes. The minimum distances shown in [Fig. 5](#) should be observed if possible.
- Make sure that the steam humidifier is protected from dripping water at the installation site and that the permissible ambient conditions are observed.
- Do not mount the steam humidifier on hot or very cold walls or on vibrating components.

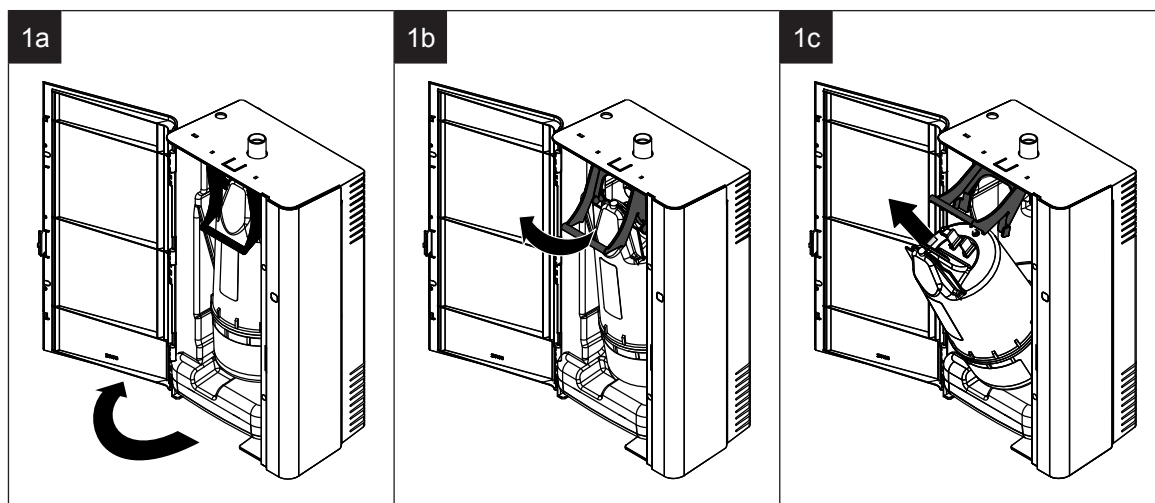
5.2.2 Mounting the steam humidifier

1. Remove the steam cylinder:

1a Open the unit door.

1b Pull the lever up.

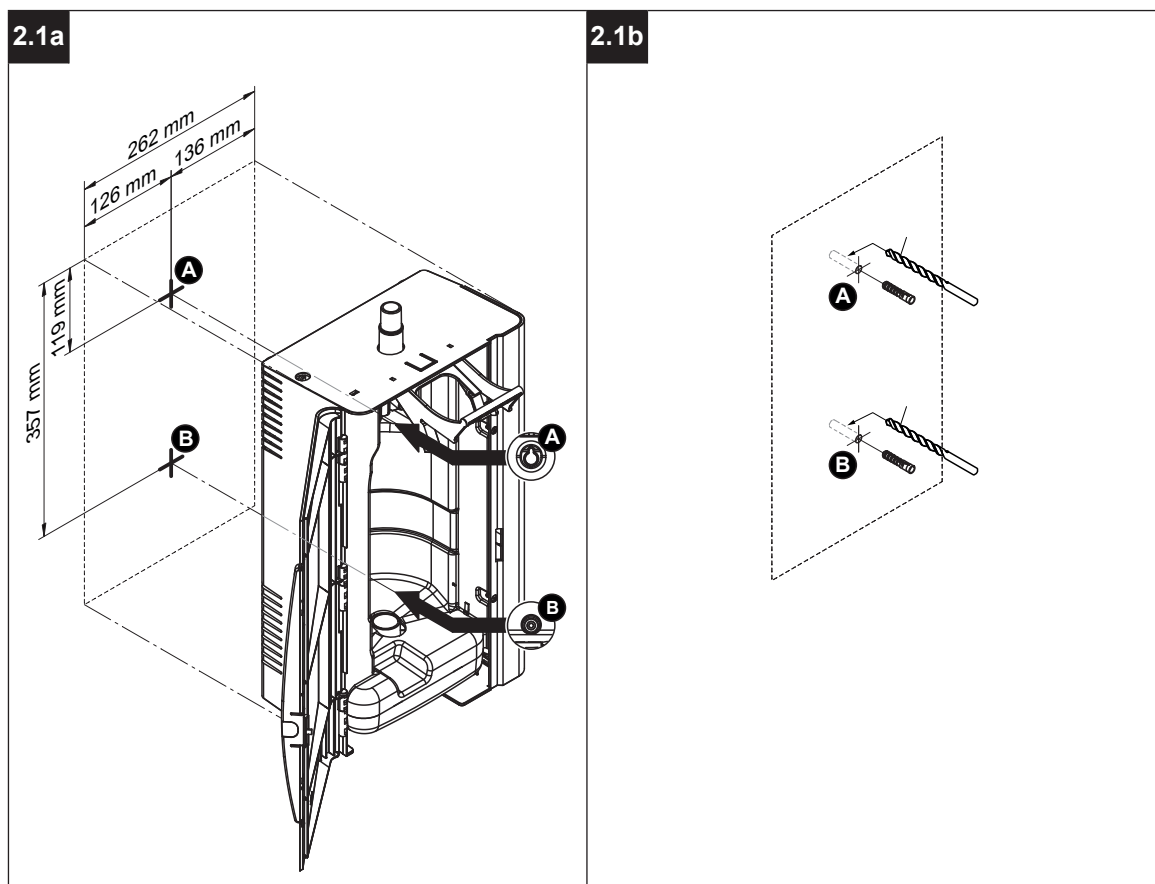
1c Lift the steam cylinder at an angle upwards out of the humidifier.



2.1 Mount the steam humidifier on the wall:

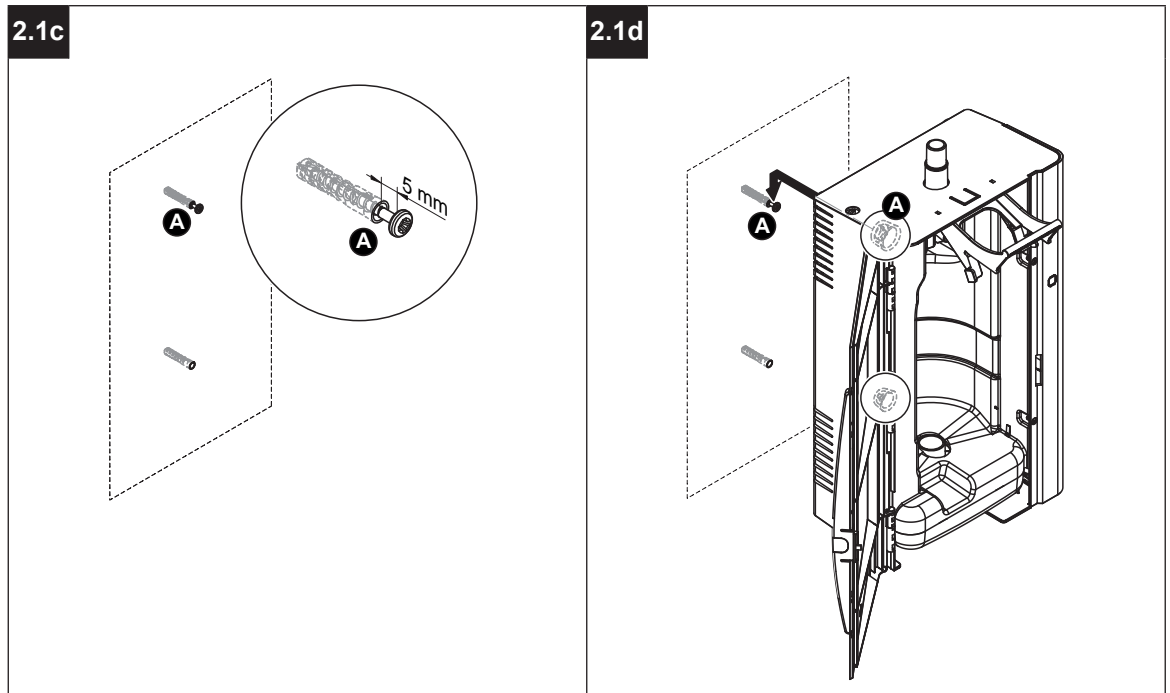
2.1a Mark the fixing points "A" and "B" at the desired location on the wall using a spirit level.

2.1b Drill appropriate holes and insert dowels.

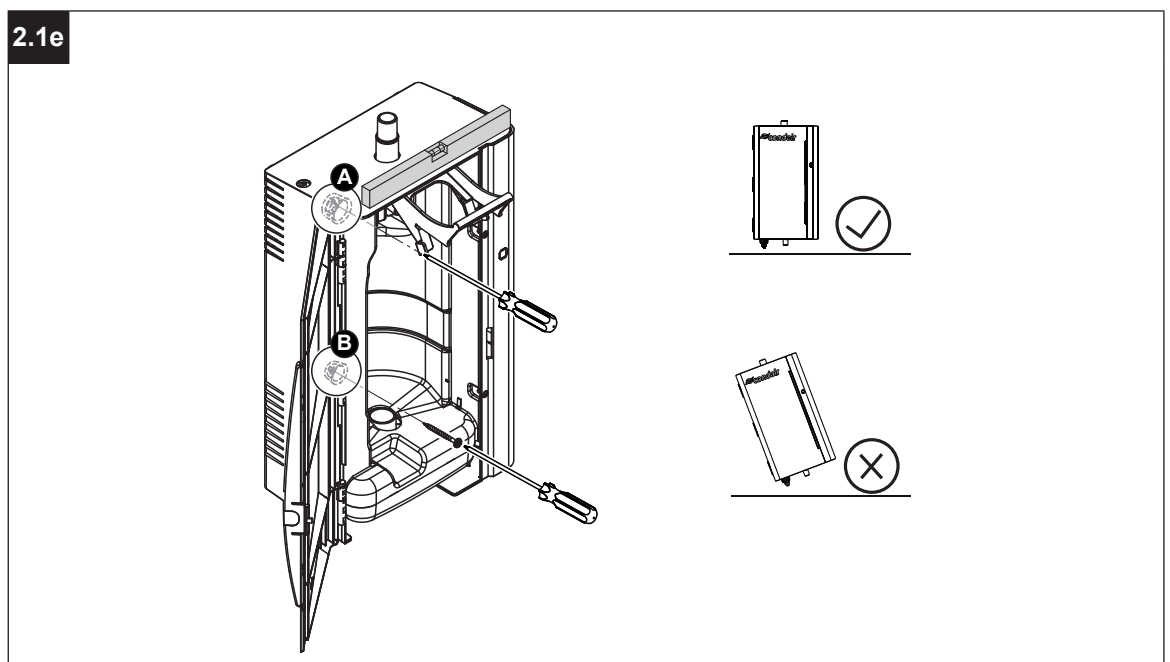


2.1c Screw a screw into the fixing hole "A" up to a distance of 5 mm between the screw head and the wall.

2.1d Hang the unit onto the previously installed screw.



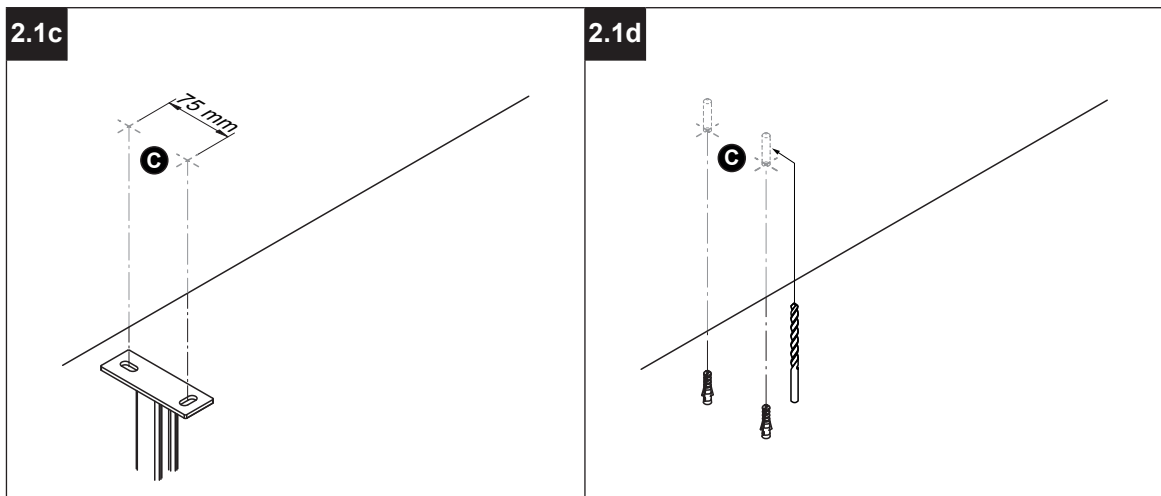
2.1e Screw a screw through the rear wall of the unit into the fixing hole "B". Then align the unit with a spirit level and tighten both screws.



2.2 Mount the steam humidifier to the ceiling:

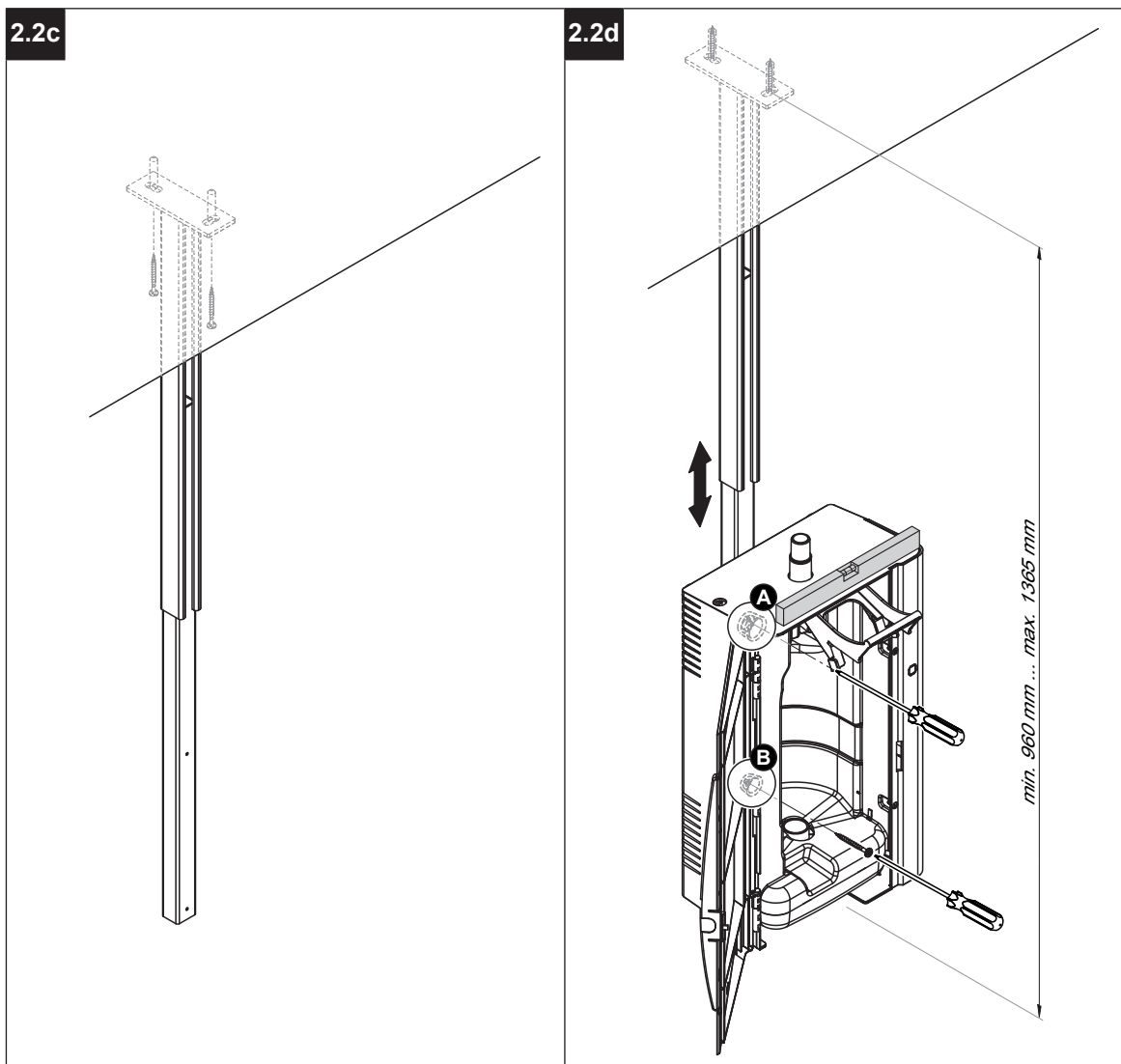
2.2a Mark the fixing points "C" at the desired location.

2.2b Drill appropriate holes and insert dowels.



2.2c Fasten the ceiling bracket with two screws.

2.2d Fasten the unit to the ceiling bracket through the rear wall of the unit with M6 screws. Then align the unit with a spirit level and tighten both screws. Set the unit to the desired height using the adjustable ceiling bracket.

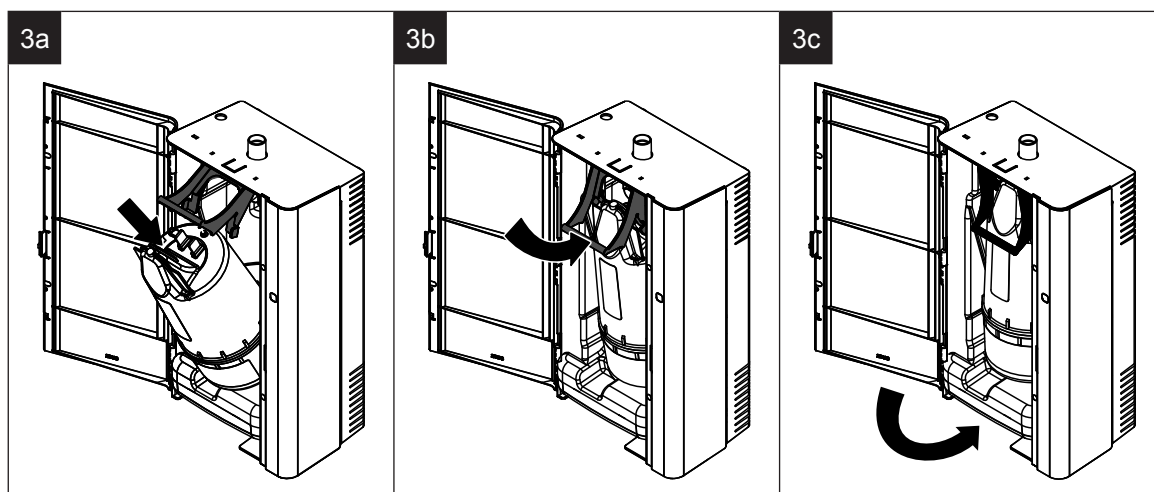


3. Install the steam cylinder:

3a Insert the steam cylinder into the receptacle in the unit at an angle from above.

3b Push the lever down as far as it will go.

3c Close the unit door.



5.3 Water installation steam humidifier

5.3.1 Overview water installation

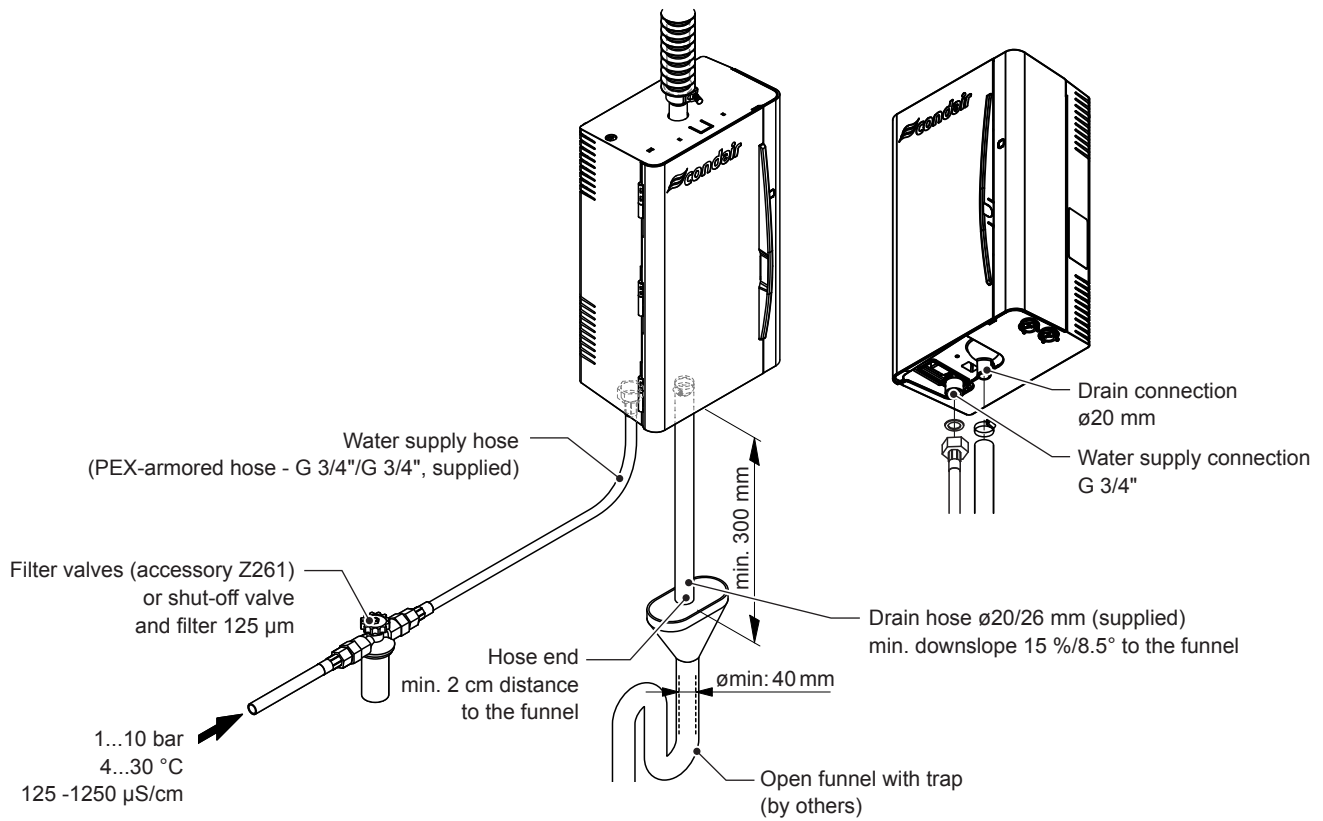


Fig. 7: Overview water installation

5.3.2 Notes on water installation

Water supply

The water supply is to be carried out according to the installation overview (see [Fig. 7](#)) and the applicable local regulations for water installations. The indicated connection specifications must be observed.

- The installation of the **filter valve** (accessory "Z261", alternatively a shut-off valve and a 125 µm water filter can be used) should be made as close as possible to the steam humidifier.
- Admissible water supply pressure: **1...10 bar**

Note: For mains pressures >6 bar, it is recommend to make the connection via a pressure reducing valve (adjusted to 2.0 bar). For mains pressures <1.0 bar please contact your Condair supplier.

Note: The water supply system must be free of pressure bumps (**hammer-free**). The installation of a check valve in the water supply line is therefore not permitted, as this can lead to pressure bumps in the water system and damage the inlet valve. If a pipe disconnect is to be installed in the inlet water system, a model with overpressure protection must be installed. If water hammers cannot be avoided in the supply line, a pressure shock absorber must be installed.

- **Notes on water quality:**
 - Only use **untreated tap water** in accordance with local drinking water regulations with a **conductivity of 125 - 1250 µS/cm** to feed the steam humidifier. The use of reverse osmosis water or deionized water is not permitted.
 - The use of **additives** such as corrosion inhibitors, disinfectants, etc. is **not allowed**, since these additives may endanger health and affect proper operation.
- The connection material must be **pressure-proof** and **certified for use in drinking water systems**.
- The water supply line must be fastened with suitable means.
- **Important!** Before connecting the water line, **the line must be well flushed out**.



CAUTION!

The thread at the humidifier connection is made of plastic. To avoid overtightening, the union nut of the water pipe must be **tightened by hand** only.

Water drain

The water drain is to be carried out according to the installation overview (see [Fig. 7](#)) and the applicable local regulations for water installations. The indicated connection specifications must be observed.

- The draining temperature is <60 °C. Nevertheless, only temperature-resistant installation materials should be used!
- Make sure that the drain pipe, the funnel and the trap are correctly fixed and easily accessible for inspections and cleaning purposes.
- Lead the supplied drain hose down to the drain funnel with a constant downslope (min. 15 %/8.5°).
- Fasten the drain hose so that it cannot slip out of the drain funnel during operation
- The open end of the drain hose must not touch the funnel (min. air gap 2 cm)!

5.4 Installing the steam and condensate lines

The layout of the steam installation and the condensate drain depends on the steam distribution unit that is used together with the Condair RH steam humidifier. Detailed information on steam hose and condensate hose layout can be found in the installation and operation manual of the respective steam distribution unit (Condair VS, Condair DS or Condair DV).

5.5 Electrical installation

5.5.1 Notes on electrical installation

- All work concerning the electrical installation must be performed only by **skilled and qualified technical personnel (e.g. electrician with appropriate training) authorised by the owner**. It is the owner's responsibility to verify proper qualification of the personnel.
- The electrical installation must be carried out according to the wiring diagram (see [Section 5.5.2](#)) and the applicable local regulations. All information given in the wiring diagrams and additional notes must be followed and observed.
- The connection cables are to be fed into the unit through the cable glands at the bottom of the Condair RH.
- Make sure the cables are adequately fixed, do not rub on any components or become a tripping hazard.

In order to make the electrical connections, the control compartment of the Condair RH must be opened.



DANGER!
Danger of electric shock

The Condair RH is mains powered. Live parts may be exposed when the control compartment is open. Touching live parts may cause severe injury or danger to life.

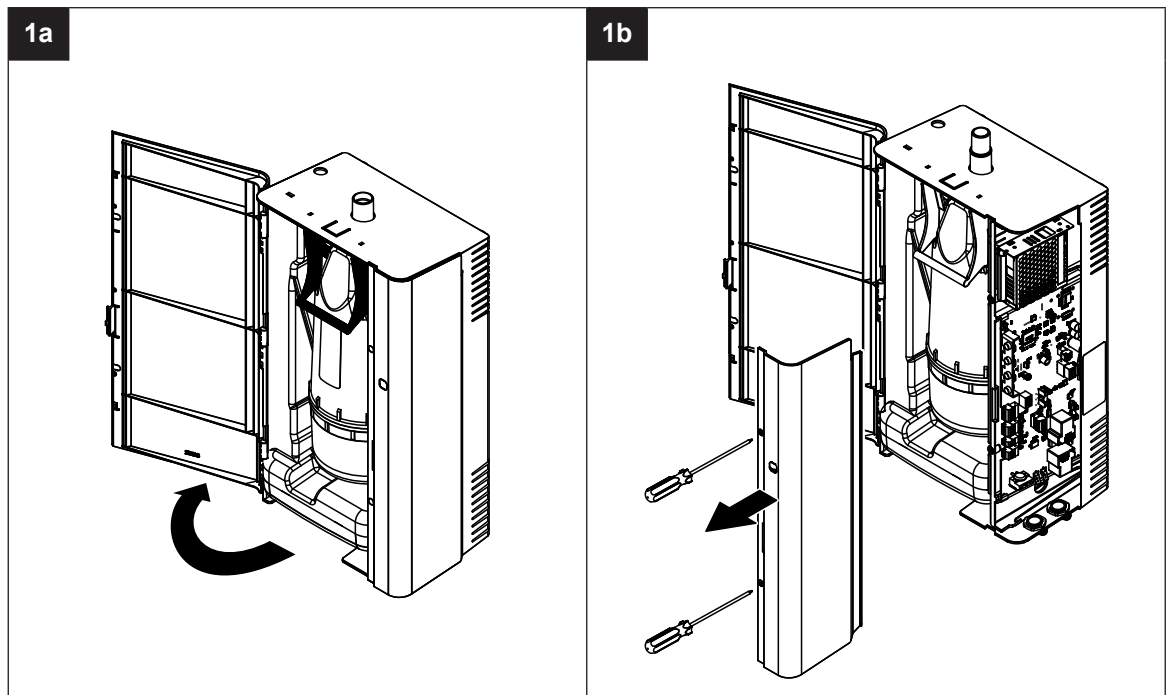
Prevention: The Condair RH unit must be connected to the mains only after all mounting and installation work has been completed, all installations have been checked for correct workmanship and the unit is closed and properly locked.



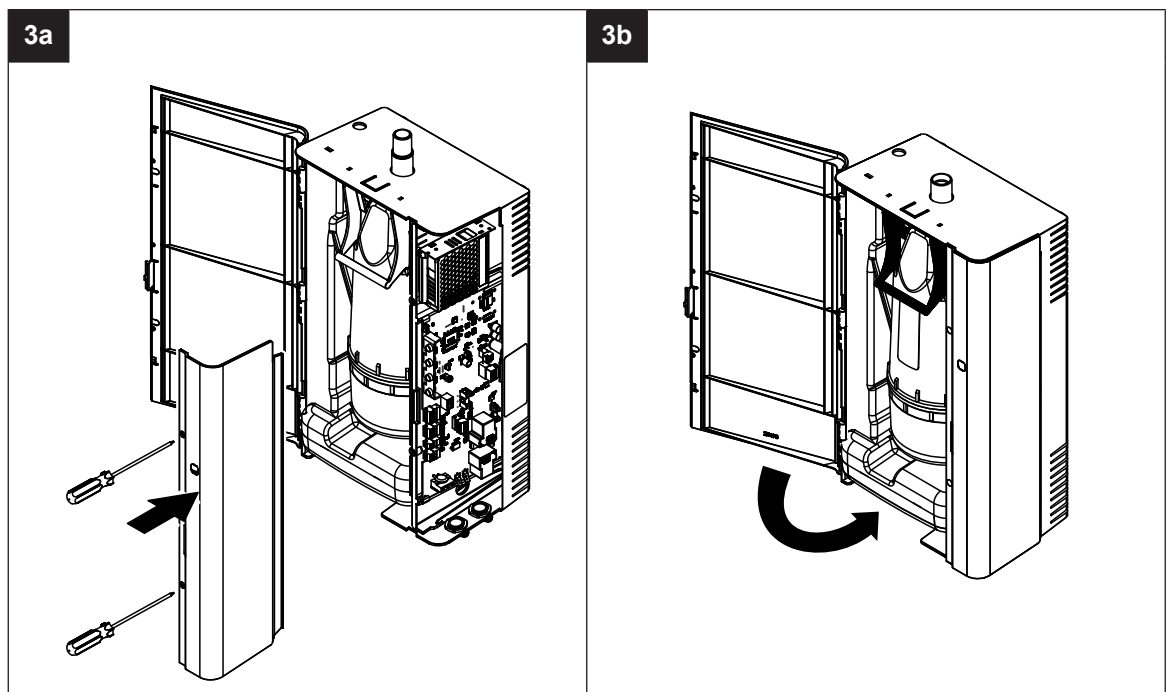
CAUTION!

The electronic components inside the Condair RH are very sensitive to electrostatic discharge. Before carrying out installations work inside the unit, appropriate measures must be taken to protect the electronic components against damage caused by electrostatic discharge (ESD protection).

1. Open the control compartment:
 - 1a Open the unit door.
 - 1b Undo the two screws on the control compartment cover and remove it.



2. Make electrical connections according to [Section 5.5.3](#).
3. Close the front covers:
 - 3a Attach the control compartment cover and secure it with the two screws.
 - 3b Close the unit door.



5.5.2 Wiring diagram Condair RH

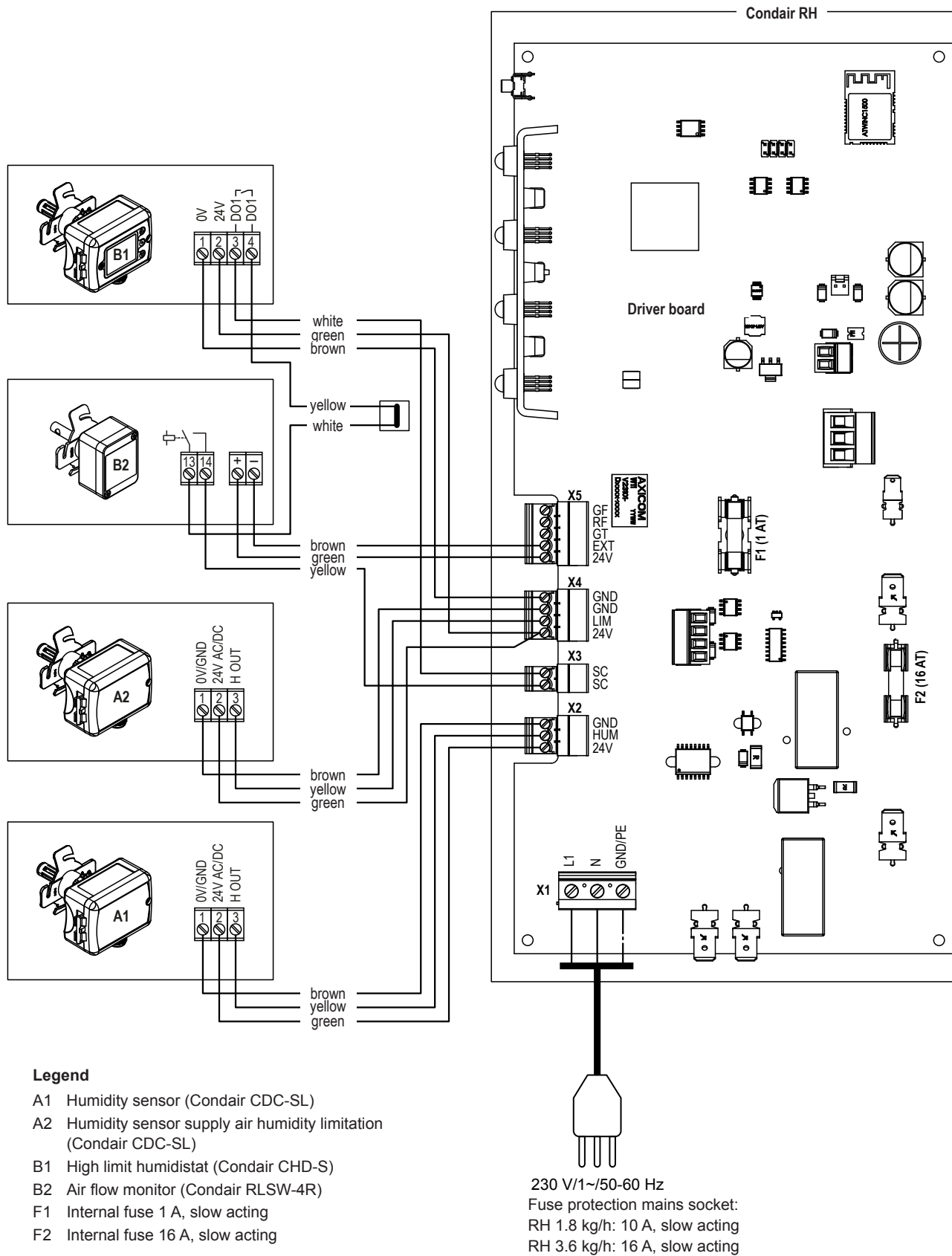
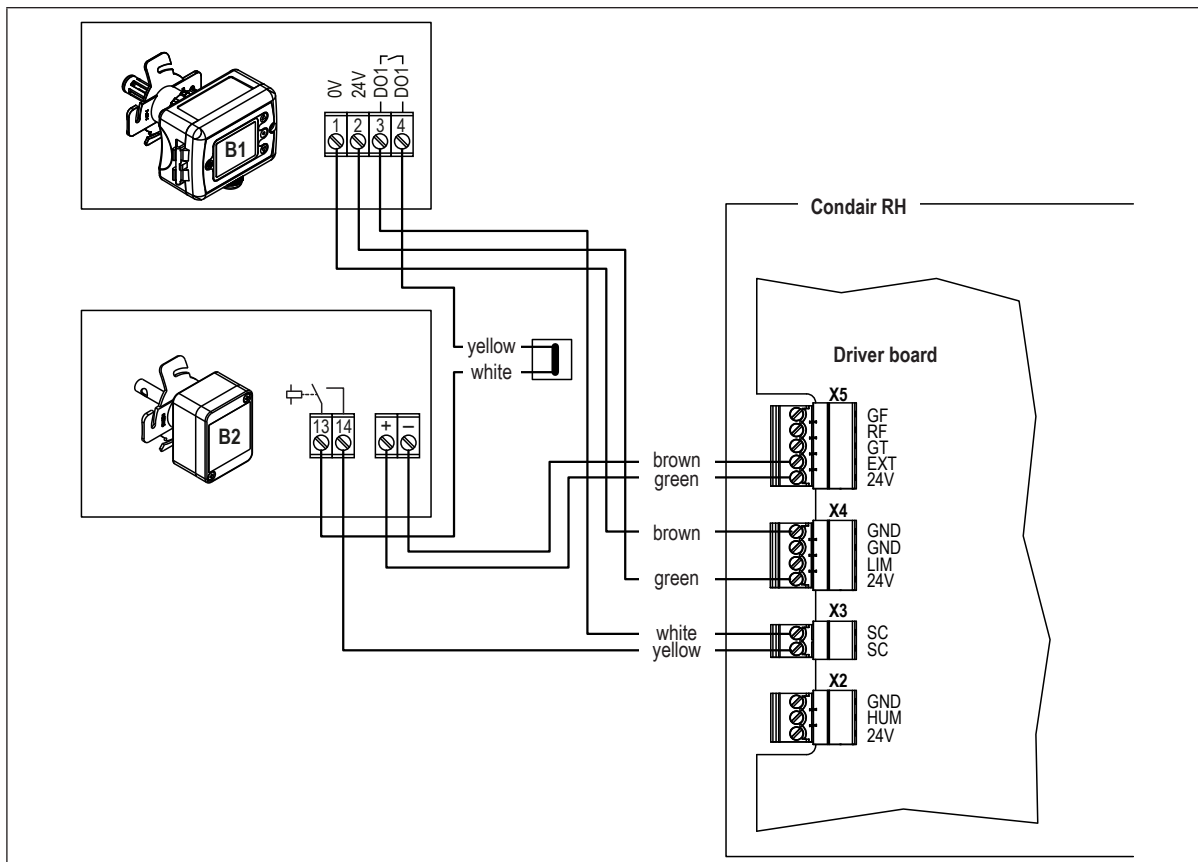


Fig. 8: Wiring diagram Condair RH

5.5.3 Installation work external connections

5.5.3.1 Connection of the high limit humidistat "B1" and the air flow monitor "B2" to the external safety loop

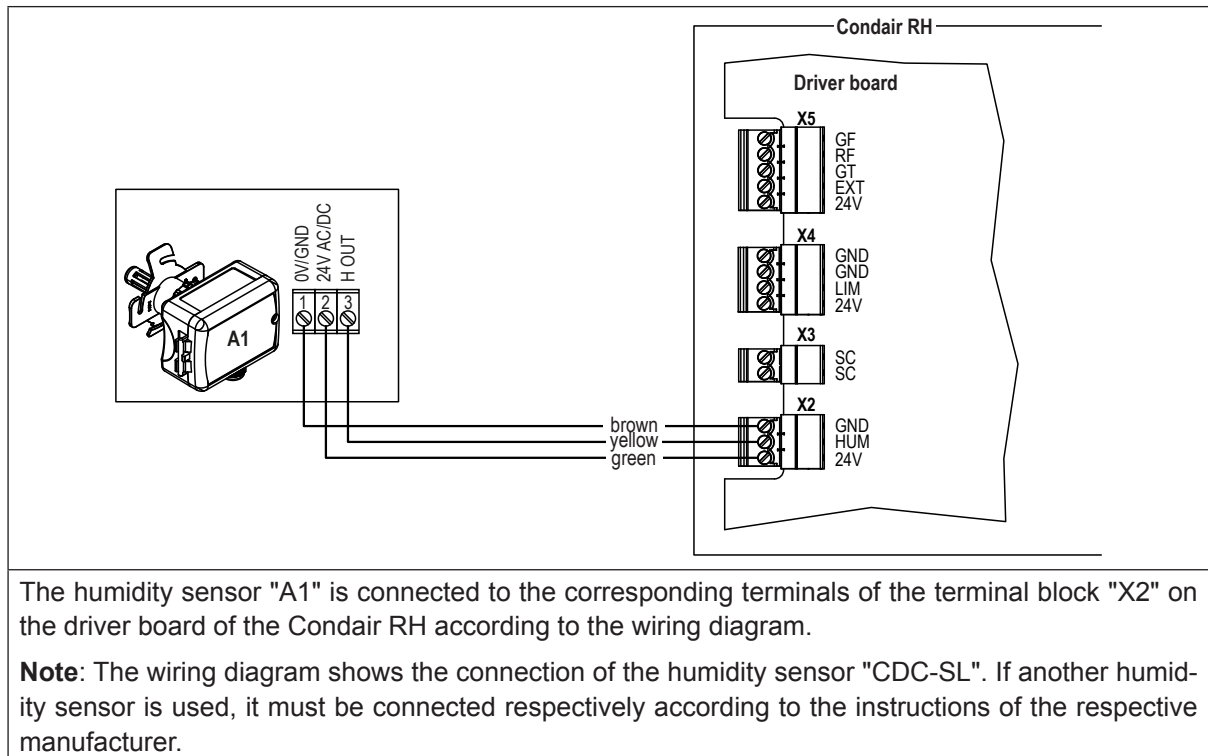


The high limit humidistat "B1" and the air flow monitor B2 "are connected to the corresponding terminals of the terminal blocks" X3 ", " X4 " and " X5 " on the driver board of the Condair RH according to the diagram.

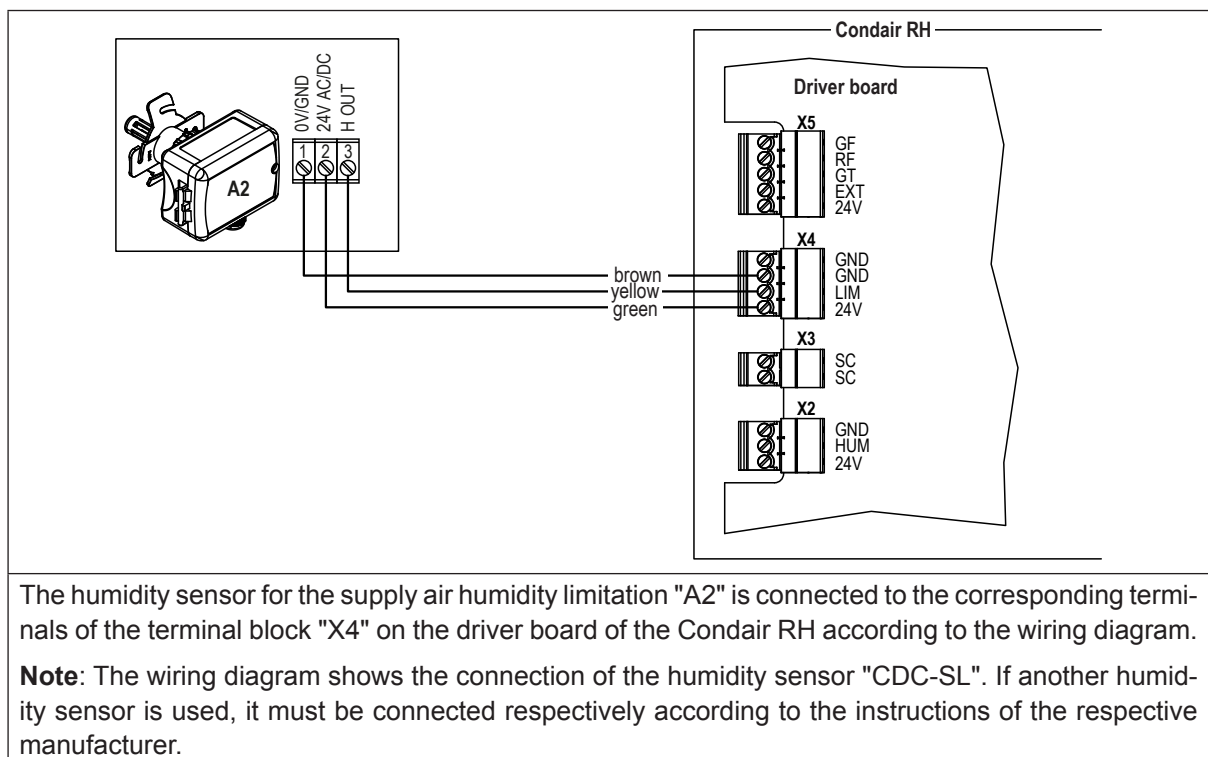
Note: If only one of the two monitoring devices is connected to the safety chain (air flow monitor or high limit humidistat), the yellow and white wires are connected directly to the terminals "SC" of the terminal block "X3".

Note: The wiring diagram shows the connection of the high limit humidistat "CHD-S" and the air flow monitor "CDA-S". If other devices are used, these must be connected respectively according to the instructions of the respective manufacturer.

5.5.3.2 Connection of the humidity sensor "A1"



5.5.3.3 Connection of the humidity sensor for the supply air humidity limitation "A2"



5.6 Checking the installation of the Condair RH steam humidifier

Check the correct installation of the Condair RH Steam humidifier using the following checklist:

- Installation of the steam humidifier
 - ☐ Has the unit been placed correctly?
 - ☐ Is the load-bearing capacity of the supporting structure sufficient?
 - ☐ Is the unit correctly aligned vertically and horizontally?
 - ☐ Is the unit correctly fixed?
- Water installation
 - Water supply
 - ☐ Has filter valve (accessory "Z261") or shut-off valve and 125 µm water filter respectively been installed in supply line?
 - ☐ Has acceptable water pressure of 1 ... 10 bar and acceptable water temperature of 4 – 30 °C been maintained?
 - ☐ Is the water supply capacity sufficient and is the minimum inside diameter of 8 mm of the supply pipe maintained throughout the entire length?
 - ☐ Is the steam humidifier connected to a tap water network and is the conductivity of the supply water between 125 ... 1250 µS/cm?
 - ☐ Are all components and pipes properly secured and are all threaded connections securely tightened?
 - ☐ Is the water supply system properly sealed?
 - ☐ Does the water supply installation meet the requirements of the local regulations for water installations?
 - Water drain
 - ☐ Is the minimum inside diameter of the drain pipe of 20 mm maintained throughout the entire length?
 - ☐ Has drain hose been installed with a downslope of at least 15 %/8.5°?
 - ☐ Has the heat resistance of the material used been verified to be at least 100 °C?
 - ☐ Is the drain hose properly secured (hose clamp at unit connection tightened)?
 - ☐ Is there an air gap (min. 2 cm) between the open end of the drain hose and the funnel?
 - ☐ Does the water drain installation meet the requirements of the local regulations for water installations?

– Electrical installation

- ☐ Does the supply voltage correspond to the information in the electrical diagram?
- ☐ Is the mains socket for connecting the Condair RH correctly fused (Condair RH 1.8 kg/h: 10 A, slow acting, Condair RH 3.6 kg/h: 16 A, slow acting)?
- ☐ Are all sensors correctly connected according to the corresponding wiring diagram?
- ☐ Are all connection cables correctly attached?
- ☐ Are the connection cables strain-relieved (passed through the cable gland)?
- ☐ Have the local regulations for the execution of electrical installations been observed?
- ☐ Has the control compartment cover been correctly attached and screwed tight and is the front door closed?

– Steam distribution unit

To check that the steam distribution unit has been installed correctly, please refer to the checklist in the installation and operation manual for the respective steam distribution unit.

6 Operation

6.1 Initial commissioning

The initial commissioning of the steam humidifier Condair RH must always be carried out by a service technician from your Condair representative or by a specialist authorized and trained by Condair. Therefore the current manual does not provide detailed information on this procedure.

The following steps are carried out upon initial commissioning in the specified order:

The following steps are carried out upon first-time commissioning in the specified order:

- Inspecting the steam humidifier for correct installation.
- Inspecting the electrical installation
- Inspecting the water installation
- Inspecting the steam installation
- Flushing the water supply line.
- Configuring the control of the Condair Rh via the Condair HumiLife App.
- Carrying out test runs including checking of the control and monitoring devices.
- Filling in the commissioning protocol.

6.2 Display and operating elements

6.2.1 Overview display and operating elements

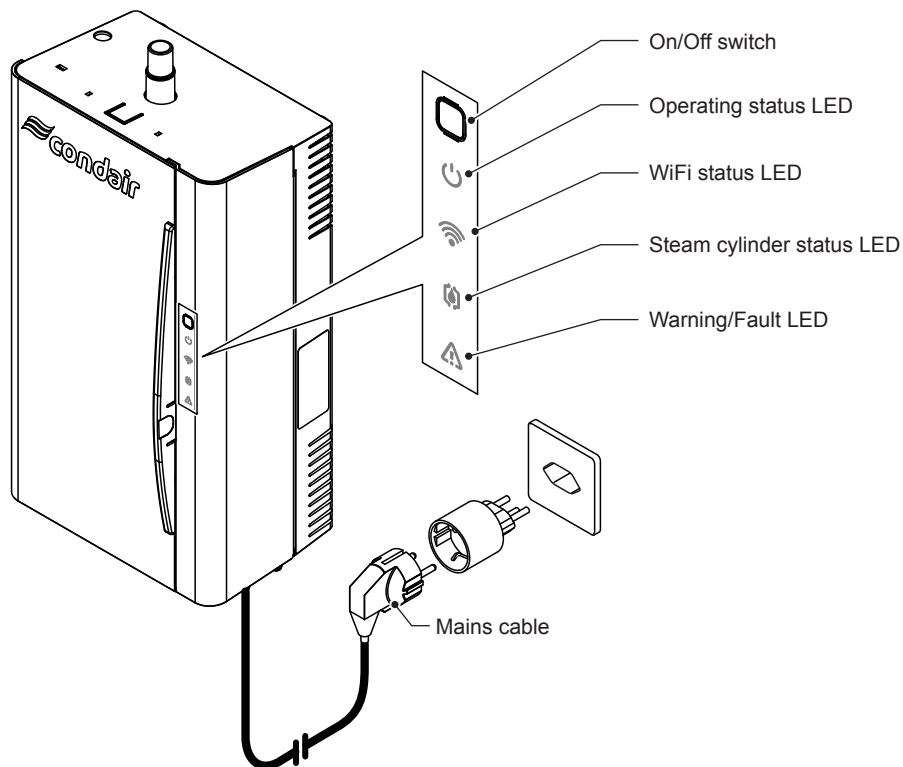


Fig. 9: Overview display and operating elements


6.2.2 Functions of the display and operating elements

On/Off switch


The On/Off switch on the device has the following functions:

- Switching the Condair RH on and off
- Draining the steam cylinder
- Connecting to WLAN network
- Resetting a fault display


Operating status LED

	Description/function
LED does not light	The Condair RH is not connected to the power supply.
LED swells on and off (blue)	The Condair RH is in standby mode (no humidity demand present).
LED swells on and off (red)	The Condair RH is in standby mode. The Condair RH was switched off via the Condair HumiLife App. The Condair RH does not humidify again until it is switched on via the Condair HumiLife App.
LED blinks blue	Safety loop open (W2)
LED lights red	The Condair RH is switched off but still connected to the power supply.


WiFi status LED

	Description/function
LED lights blue	The Condair RH is connected to the WLAN network.
LED lights green	The hotspot mode (access point) is activated. The Condair RH is connected to the mobile device.
LED swells on and off (blue)	The control software of the Condair RH is updated.
LED swells on and off (green)	The Condair RH is in hotspot mode (access point) and tries to establish a connection to the mobile device.
LED lights red	There is no connection to the WLAN network (W6).

Steam cylinder status LED

	Description/function
LED lights blue	The steam cylinder is ok.
LED blinks blue	The steam cylinder is drained
LED swells on and off (blue)	The steam cylinder is filling (appears when a newly installed steam cylinder is filled for the first time.
LED lights yellow	The service life of the steam cylinder will soon expire (W5). The steam cylinder should be replaced as soon as possible.
LED lights red	The service life of the steam cylinder has expired (E5). The steam cylinder must be replaced.
	Wrong steam cylinder installed (E6).

Warning/Error status LED

	Description/function
LED lights yellow	A malfunction with the status "Warning" has occurred. The Condair RH remains in operation.
LED lights red	A malfunction with the status "Error" has occurred. The operation of the Condair RH has been stopped.

6.3 Commissioning after an interruption of operation

The Condair RH steam humidifier may only be operated by persons who are familiar with the Condair RH and who are sufficiently qualified for this work.

The following describes the procedure for commissioning the Condair RH after an interruption in operation (e.g. after servicing the steam humidifier). It is assumed that the first commissioning has been carried out correctly by the service technician of your Condair representative and that the Condair RH has been configured correctly.

1. Check the Condair RH and the components of the steam humidification system **for damage**.



DANGER!

A steam humidification system with damaged installations components may present danger to human life or cause severe damage to material assets.

For this reason: Steam humidification systems with damaged components/installations must not be put into operation.

2. Make sure that the control compartment cover is attached and screwed tight and the unit door of the humidifier is closed.
3. Open the filter valve or shut-off valve in the water supply line.
4. Make sure that the HRV ventilation unit is running and the external safety loop (e.g. fan lock, flow monitor, etc.) is closed.

5. Connect the power cable of the Condair RH to the mains socket.
6. Briefly press the On / Off switch on the Condair RH (0.5 s). The operating status LED lights up blue.

The Condair RH carries out an automatic system test (initialization).

Note: If a fault is detected during the system test, a corresponding fault message is output via the LEDs (see [Section 8.2](#) and [Section 8.3](#)).

If the initialization was successful, the Condair RH goes in standby mode (the operating status LED (blue) swells on and off).

As soon as a humidity demand is present, the heating current is switched on. The inlet valve opens (somewhat delayed) and the steam cylinder fills with water. As soon as the electrodes are immersed in the water, the electrodes heat the water in the steam cylinder and steam is produced.

Note: If the conductivity of the water is low, it is possible in the first hours of operation that the required steam output will not be achieved. This is normal. As soon as sufficient conductivity of the water is achieved through the evaporation process, the steam humidifier will work with the required output.

6.4 Notes on operation

6.4.1 Inspections during operation

The hygiene regulations of Standard VDI 6022 stipulate that during operation, the operator regularly checks the condition of the humidifier and the components of the humidification system that are installed in the air duct. It is recommended that these visual inspections be conducted **every two months** during the humidification season and every six months at other times. These inspections include:

- Visual inspection of the water, steam and condensate line installation for leakage.
- Inspection of the steam humidifier and of the other system components for correct attachment and damage.
- Visual inspection of the installations of the steam distribution unit (see installation and operation manual of the corresponding steam distribution unit).
- Inspection of the electrical installations for damage.

If you detect any abnormalities (such as leakage, indication of a malfunction) or damaged components, the Condair RH must be taken out of service as described in [Section 6.5](#). Then contact your Condair representative.

6.4.2 Perform cylinder draining

To perform a cylinder drainage (blowdown), proceed as follows:

1. Press the On/Off switch on the Condair RH (approx. 2 s) until the cylinder status LED blinks blue. Any steam production in progress is stopped. The drain valve opens and the steam cylinder is drained.
2. Wait until the steam cylinder has completely drained (approx. 11 minutes).

6.5 Decommissioning

To take the Condair RH steam humidifier out of operation, proceed as follows:

1. Press the On/Off switch on the Condair RH (>2 s) until the cylinder status LED blinks blue. Any steam production in progress is stopped. The drain valve opens and the steam cylinder is drained.
2. Wait until the steam cylinder has emptied completely (approx. 11 minutes).



WARNING!
Burn hazard!

The water in the steam cylinder can be up to 100 °C.

For this reason: Before opening the unit, wait until the steam cylinder has been completely drained and cooled down sufficiently so that there is no longer any risk of burns (wait at least 20 minutes).

3. If maintenance work is to be carried out on the Condair RH or the steam humidification system:
 - Close the filter valve (or the shut-off valve) in the water supply line.
 - Disconnect the Condair RH from the power supply: Pull out the mains cable. Signaling the environment that work is being carried out on the unit.



DANGER!
Danger of electric hazard!

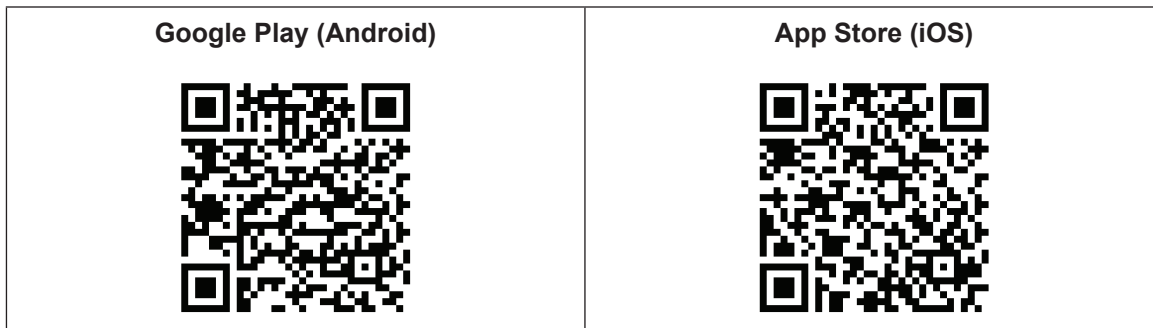
After switching off the unit switch, voltage is still present inside the control compartment of the Condair RH. It is therefore essential to **disconnect the Condair RH from the power supply before opening it.**

- Switch off the HRV ventilation unit and secure it against unintentional start-up.

6.6 Operation of the Condair RH via the Condair HumiLife App

6.6.1 Download the Condair HumiLife App

1. Download the Condair HumiLife App from the App Store (iOS) or the Google Play Store (Android). Use the camera or QR scanner on your mobile device and take a photo or scan the QR code to go to Google Play (Android) or the App Store (iOS).

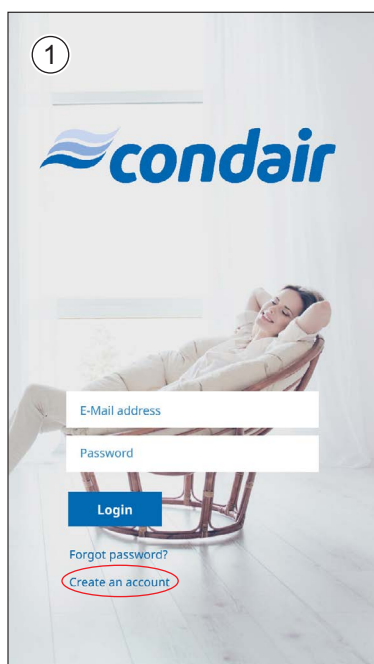


2. Then install the Condair HumiLife App on your mobile device.

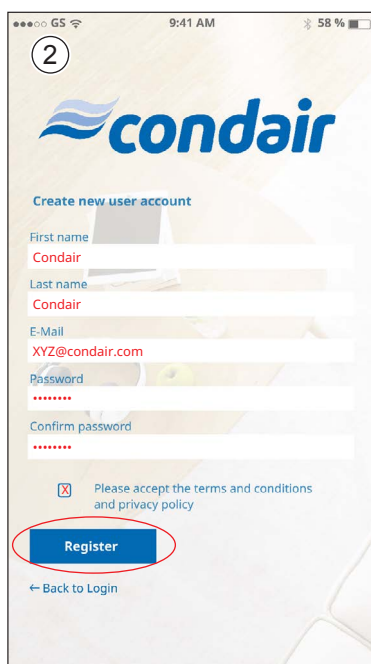
6.6.2 Connect the Condair HumiLife App to the Condair RH

- Go to "Settings" on your mobile device and activate the WLAN function.
- Start the Condair HumiLife App on your mobile device.

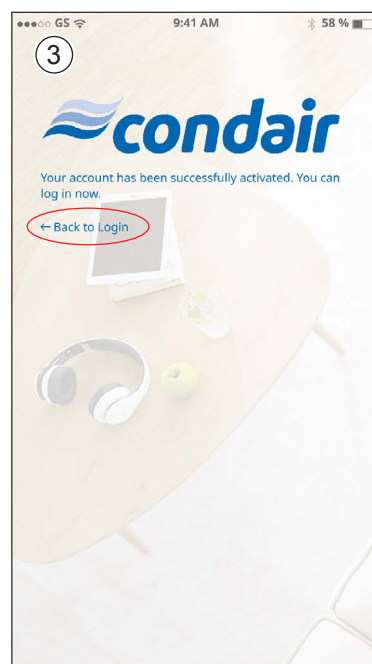
Now proceed proceed as follows:



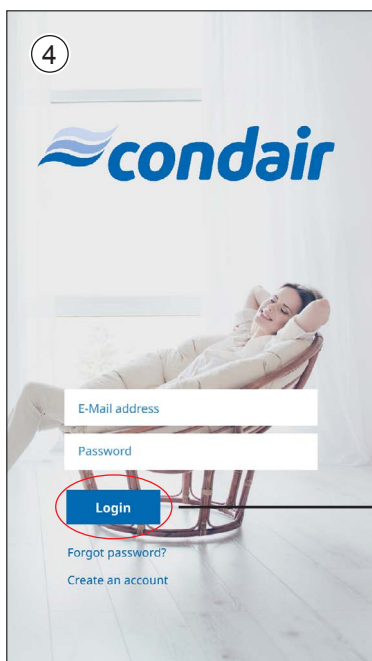
If you do not have a user account yet, press <Create an account>, otherwise continue with step 4.



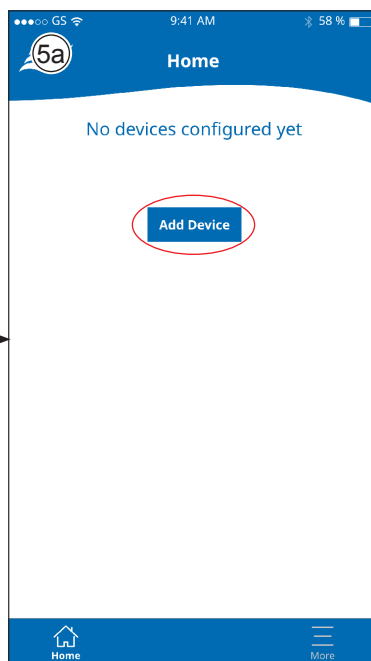
Fill new user details, then press <Register>.



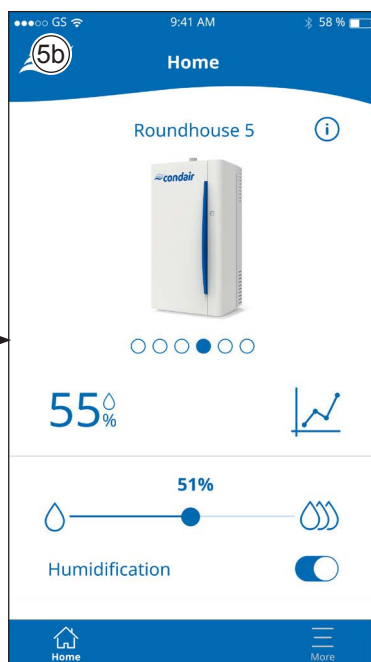
Registration successful, press <Back to Login>.



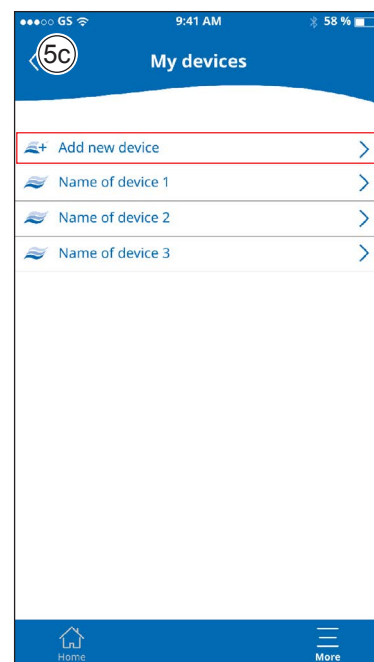
Enter registered email address and password and press <Login> to login to your account.



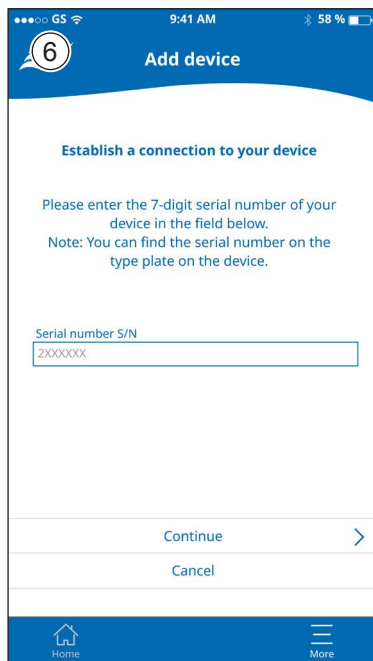
This screen appears if no devices are configured yet. Press <Add device> and proceed with step 6.



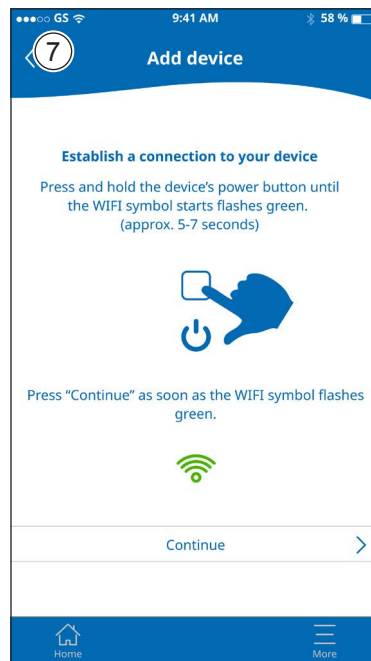
This screen appears if other devices have already been configured. Press <More>.



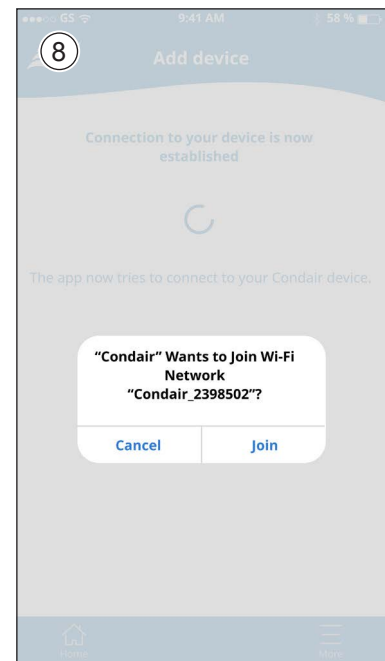
Press <Add new device> and proceed with step 6.



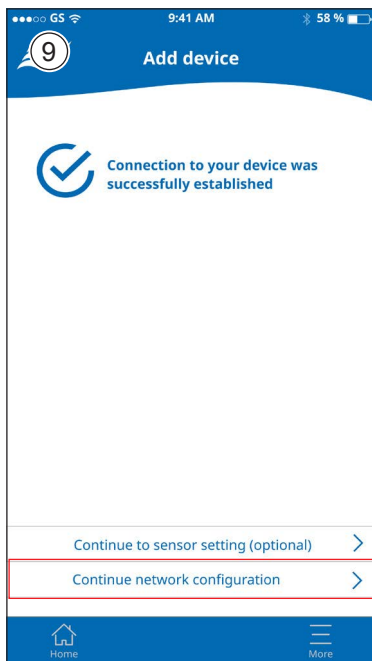
Enter Serial Number of device, then press <Continue>. You can find the serial number on the type plate. The type plate is located on the right side of the device.



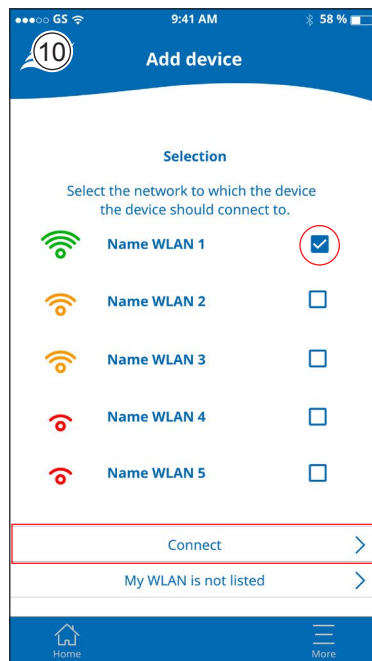
Press the power button on the unit until WiFi LED flashes green, then press <Continue> on the Condair HumiLife App.



The operating system is asking you if you want to join the network with Condair_Serial number. If the number is correct, confirm by pressing <Join>.

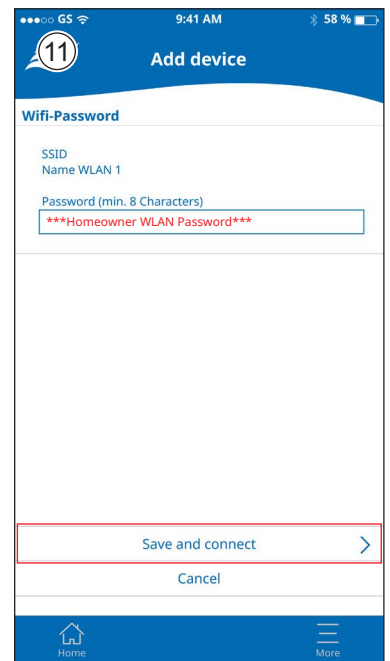


Connection successful, press <Continue network configuration> to connect to local WLAN.

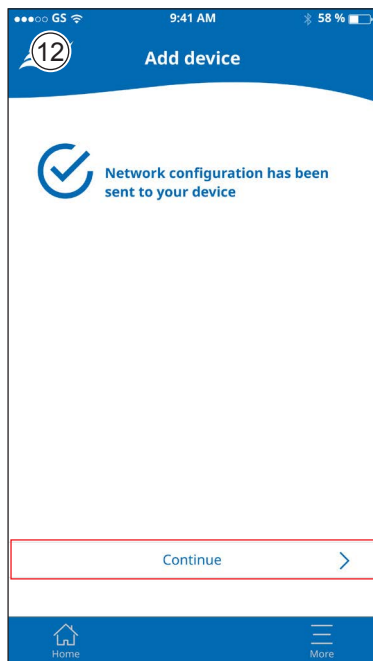


Select your local WLAN network and press <Connect>. Note: in case your WLAN signal is not listed, then select "My WLAN is not listed" and enter it manually.

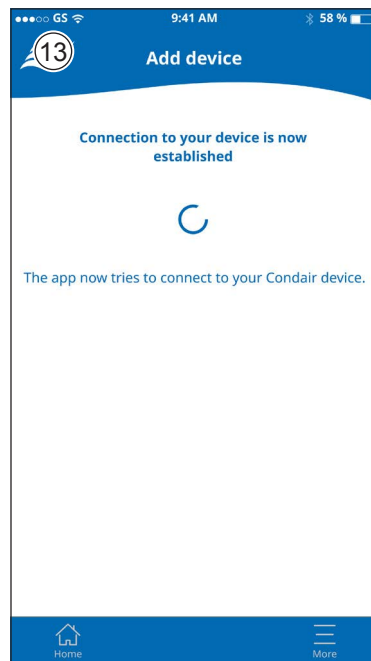
Note: If the WLAN Symbol of your local WLAN network is red, signal strength is low which can lead to unstable connection. To improve WiFi signal strength, relocate the WLAN Router or place a repeater between the unit and the device.



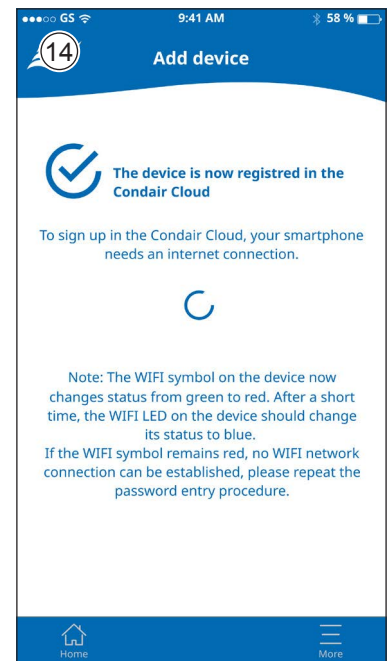
Enter your local WLAN network password (make sure it is entered correctly), then press <Save and connect>.



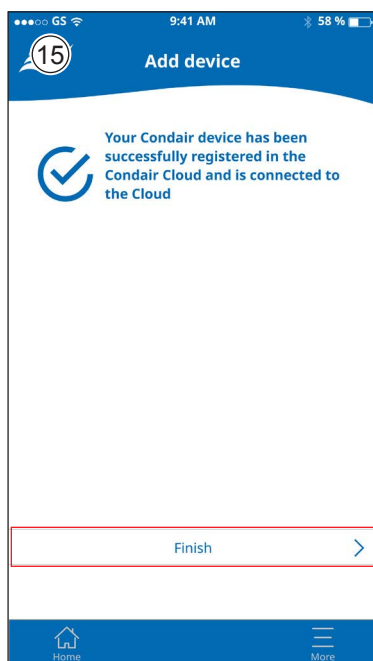
After completing the network configuration, press <Continue>.



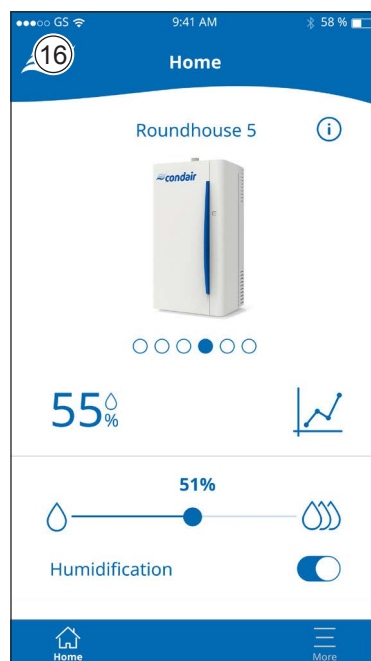
Wait for few seconds for the Condair HumiLife App to receive a confirmation from the device.



Once confirmation is successful, wait for a few seconds for the Condair HumiLife App to connect to the cloud.



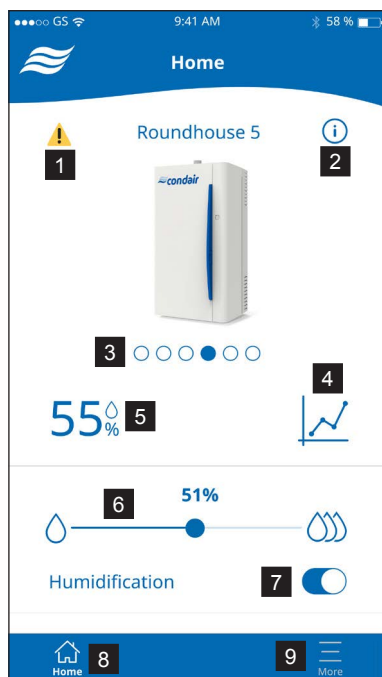
Successfully connected to the cloud, press <Finish> to proceed. The WiFi LED on unit should now change to solid blue.



The Home screen is shown. Press <More> for more options (WiFi symbol on unit should be solid blue).

6.6.3 Operation of the Condair HumiLife App

Operation of the home screen

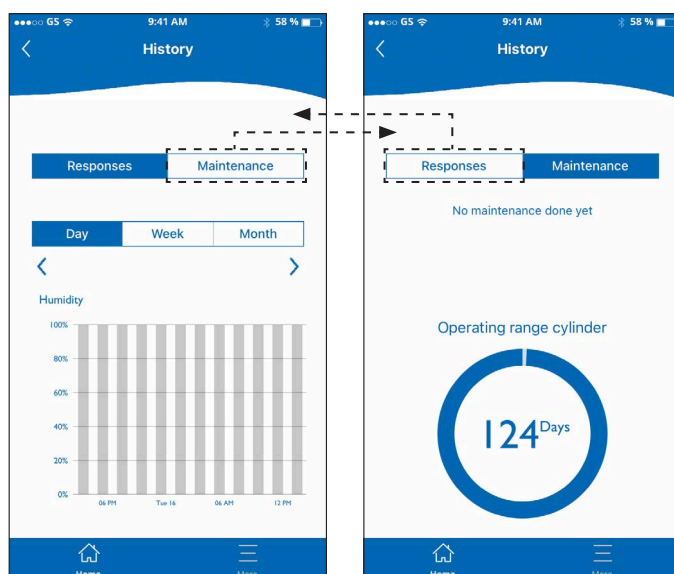


- 1 Fault indication: Appears if there is a warning or an error.
- 2 Accessing the help screen (contains information on using the home screen).
- 3 Selection of the device to be controlled
- 4 Accessing the measured value graphic and maintenance information
- 5 Actual measured humidity value in %rh
- 6 Slider for setting the humidity setpoint in% RH
- 7 Switching the Condair RH on and off
- 8 Accessing the home screen (this screen)
- 9 Accessing the "User Settings" Menu

Measured value graph and maintenance information

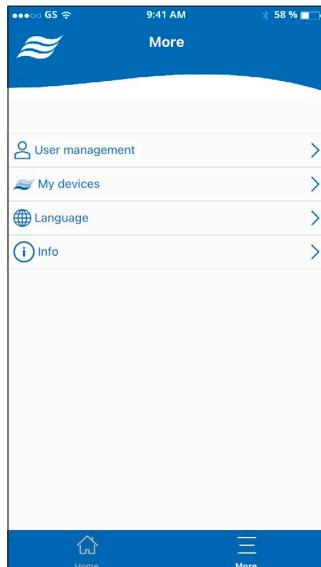
Press the graphic symbol (4) on the home screen. The measured value graphic appears (figure on the right). Here you can:

- Use the <Day>, <Week> and <Month> control fields to display the graphical progression of the humidity value in% RH for the current day, the current week or the current month.
- Display the maintenance information screen using the **<Maintenance>** button. The maintenance progress (completed cylinder changes) and the remaining time until the next replacement of the steam cylinder are displayed here. Use the **<Responses>** button to return to the display of the measured value graphic.



Menu "User Settings"

Press **<More>** (9) on the home screen. The user menu appears.



Here you can:

- Under user data:
 - View the data of the user account
 - Change the user password.
 - Log out.
 - Delete the user account.
 - View the terms and conditions.
- Under my devices
 - Add a new device to your account
 - Select a device from the list of devices in your account and then,
 - view the current device data.
 - change the device name.
 - change the sensor type used.
 - change the network configuration of the device.
- Under language
 - Change the dialog language of the Condair HumiLife App.
- Under Info
 - View the current software version of the Condair HumiLife App and information about the time zone.

7 Maintenance

7.1 Important notes on maintenance

Qualification of personnel

All maintenance work may only be carried out by a **Condair maintenance technician or by maintenance personnel authorized and trained by Condair**. It is the owner's responsibility to verify proper qualification of the personnel.

General note

The instructions and details for service work must be followed and upheld.

Only the maintenance work described in this documentation may be carried out.

Only use original Condair spare parts to replace faulty parts.

Safety

Some of the maintenance work requires the device covers to be removed. Please note the following:



DANGER!
Danger of electric hazard!

You may get in touch with live parts when the unit is open. Touching live parts may cause severe injury or even lethal violation.

Prevention: Before carrying out any maintenance work set the Condair RH out of operation as described in [Section 6.5](#) (switch off the unit, disconnect it from the mains and stop the water supply) and secure the unit against inadvertent power-up.



CAUTION!

The electronic components inside the humidifier are very sensitive to electrostatic discharge.

Prevention: Before carrying out any maintenance work to the electrical or electronic equipment of the humidifier, appropriate measures must be taken to protect the respective components against damage caused by electrostatic discharge (ESD protection).



WARNING!
Danger of burning!

The water in the steam cylinder can be hot (up to 100 °C). There is danger of burning when the steam cylinder is dismantled shortly after steam has been produced.

Prevention: Before carrying out any work on the steam system set the Condair RH out of operation as described in [Section 6.5](#), then wait until the components have cooled down sufficiently thus preventing danger of burning.

7.2 Maintenance intervals

To maintain operational safety, the Condair RH steam humidifier should be serviced once a year (e.g. before the humidification season).

Note: The Condair RH has a special maintenance counter for replacing the steam cylinder. If the service life of the steam cylinder is about to expire, the yellow cylinder status LED and the yellow fault LED alert you that the steam cylinder needs to be replaced. If the steam cylinder is not replaced before the maintenance counter has elapsed (approx. 3 weeks), the Condair RH is stopped and the cylinder status LED and the fault LED light up red.

7.3 Maintenance list for annual maintenance

Below you will find an overview of the work to be carried out during the annual maintenance of the Condair RH steam humidifier.

Components	Work to be done
Steam cylinder	Replace as soon as the cylinder status LED and the fault LED light up red.
Drain valve	Remove, disassemble and clean, replace if necessary.
Inlet valve	Remove and clean filter insert, replace if necessary.
Fill cup	Inspect, clean if necessary.
Drain pan	Inspect, clean if necessary.
Drain pipe and siphon	Inspect, clean if necessary (decalcify and rinse out).
Steam installation	Inspect steam and condensate hoses for cracks and ensure that they are correctly attached, replace defective hoses.
Water installation	Inspect water hoses in the unit for cracks and to see that they are correctly attached, replace defective hoses. Check supply pipe is tight, tighten it if necessary. Clean water filter, if available.
Electrical installation	Have all cables in the unit checked by an electrician that they are correctly fixed and that the insulation is not damaged

7.4 Maintenance of the Condair RH

Before starting the maintenance work, the Condair RH must be taken out of operation in accordance with [Section 6.5](#) and secured against unintentional restart.

7.4.1 Replacement of the steam cylinder

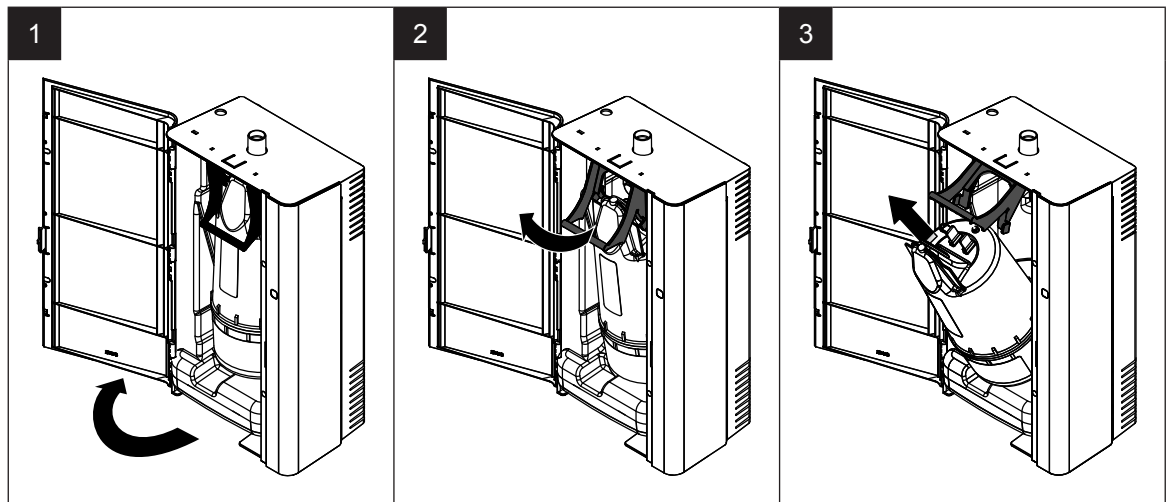
7.4.1.1 Removal of the steam cylinder

1. Open the unit door.
2. Pull the lever up.
3. Lift the steam cylinder at an angle upwards out of the humidifier.



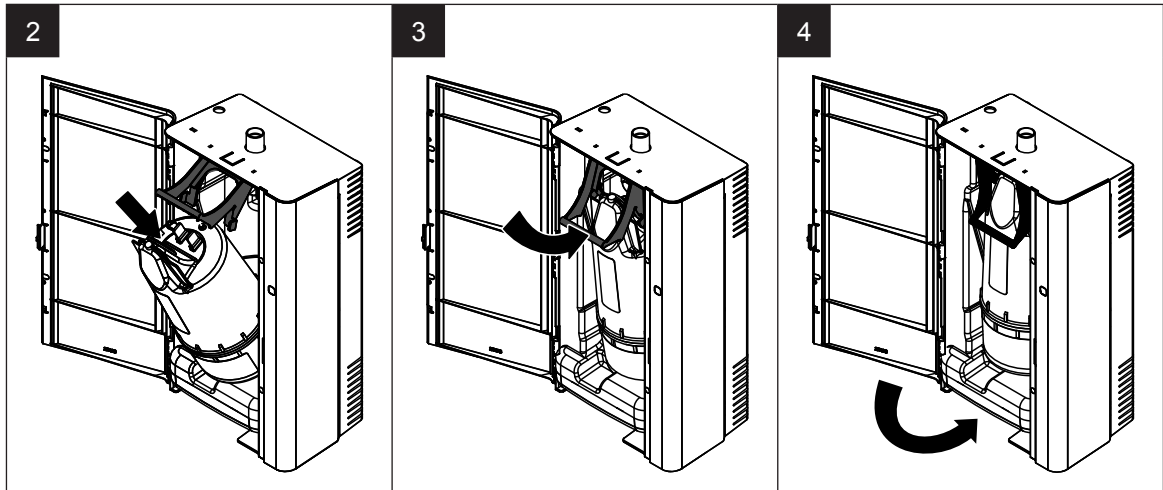
CAUTION!

Some residual water could leak out.



7.4.1.2 Installation of the steam cylinder

1. Make sure that the seal on the steam connection of the steam cylinder is attached and not damaged.
2. Insert the steam cylinder into the receptacle in the unit at an angle from above.
3. Push the lever down as far as it will go.
4. Close the unit door.



5. Connect the Condair RH to the power supply (RH 1.8: plug in the mains cable, RH 3.6: Switch on electrical isolator) and open the filter valve or shut-off valve in the water supply line.
6. Switch on the Condair RH via the On/Off switch on the unit.
Note: The control of the Condair RH automatically recognizes that a new steam cylinder has been inserted and automatically resets the maintenance counter.

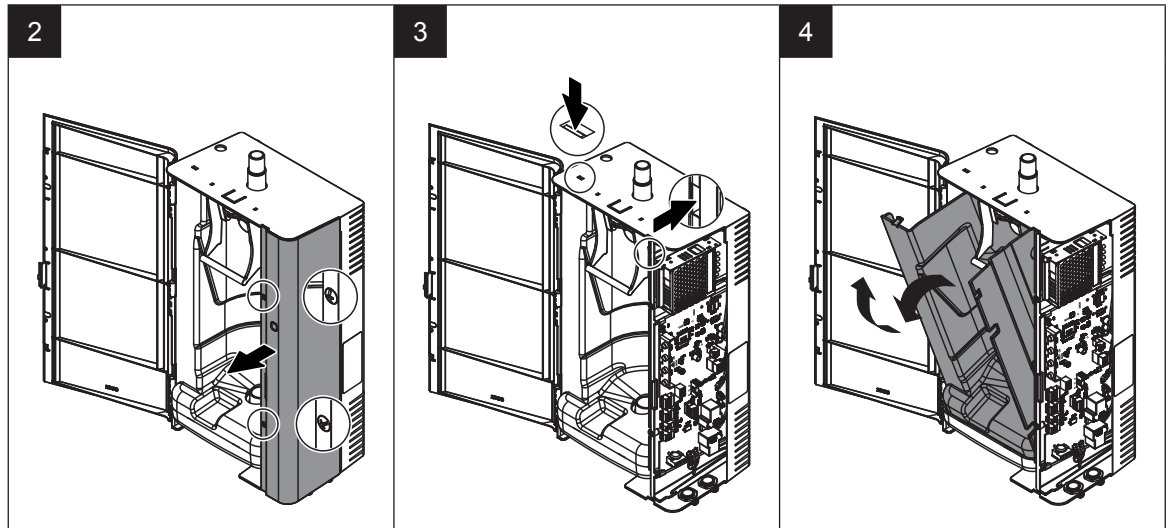
Note: If the fault LED lights up yellow or red after replacing the steam cylinder, press the On/Off switch on the unit for approx. 3 seconds to reset the fault indication. If a fault shows up again, the steam cylinder may be defective.

Note: If the conductivity of the water is low, it is possible in the first hours of operation that the required steam output will not be achieved. This is normal. As soon as sufficient conductivity of the water is achieved through the evaporation process, the steam humidifier will work with the required output.

7.4.2 Removal and installation of the components of the Condair RH for maintenance

7.4.2.1 Removal and installation of the cover of the internal water system

1. Remove the steam cylinder according to the information in [Section 7.4.1.1](#).
2. Undo the two screws on the control compartment cover and remove the cover.
3. Use a flat-blade screwdriver to press in the two tabs that secure the cover of the internal water system to the housing of the Condair RH. One tab is on the top and one is on the separating plate of the control compartment.
4. Pull out the top of the cover, then lift the cover out of the humidifier housing.



The cover of the internal water system is **installed** in the reverse order of the removal. When installing, make sure that the two tabs on the cover correctly snap into the slots in the housing.

7.4.2.2 Removal and installation of the drain valve

To remove the drain valve, the steam cylinder (see [Section 7.4.1.1](#)) and the cover of the internal water system (see [Section 7.4.2.1](#)) must be removed.

1. Disconnect the plug connection of the connection cable on the drain valve.
2. Disconnect the hose from the connector on the drain valve.

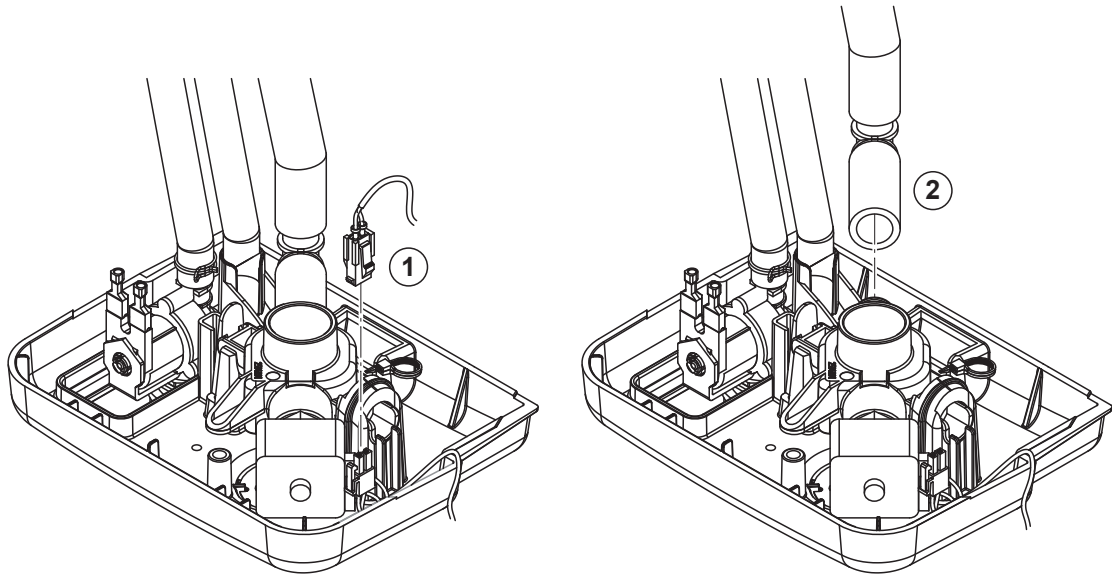


Fig. 10: Unplug the connection cable and pull off the hose

3. Push the tab that secures the left side of the drain valve into the drain pan to the left and lift the drain valve.
4. Pull the drain valve upwards at an angle from the holder in the drain pan.

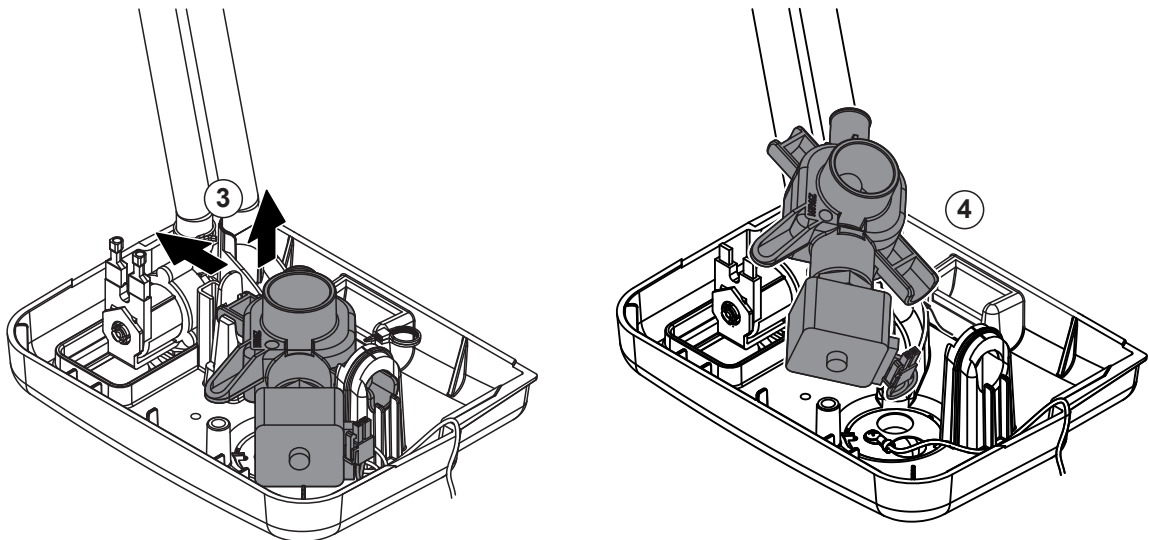


Fig. 11: Removal of the drain valve

5. Loosen the grounding cable on the EFC protective disk and remove the disk.

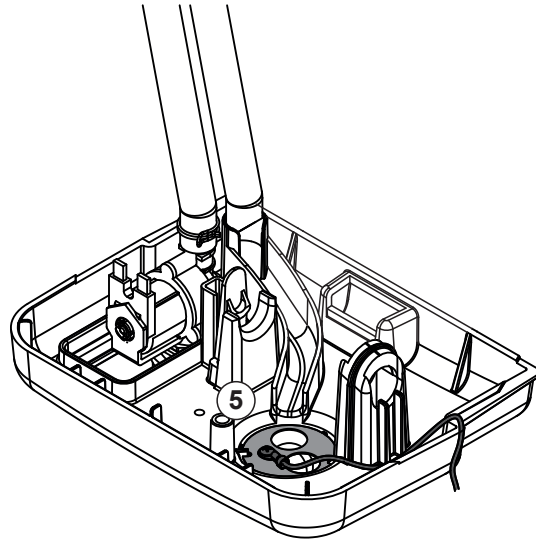


Fig. 12: Remove the EFC protective disk

6. Disconnect the solenoid from the drain valve. Then remove the valve stem and spring.

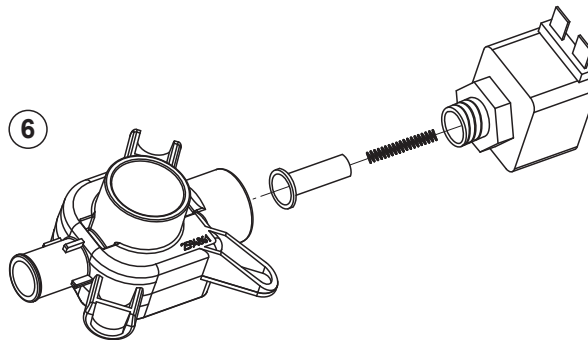


Fig. 13: Disassemble the drain valve

The **assembly** and **installation** of the drain valve is carried out in the reverse order of the removal. Before assembling the drain valve, check parts for damage and replace if necessary.

7.4.2.3 Removal and installation of the inlet valve

To remove the inlet valve, the steam cylinder (see [Section 7.4.1.1](#)) and the cover of the internal water system (see [Section 7.4.2.1](#)) must be removed.

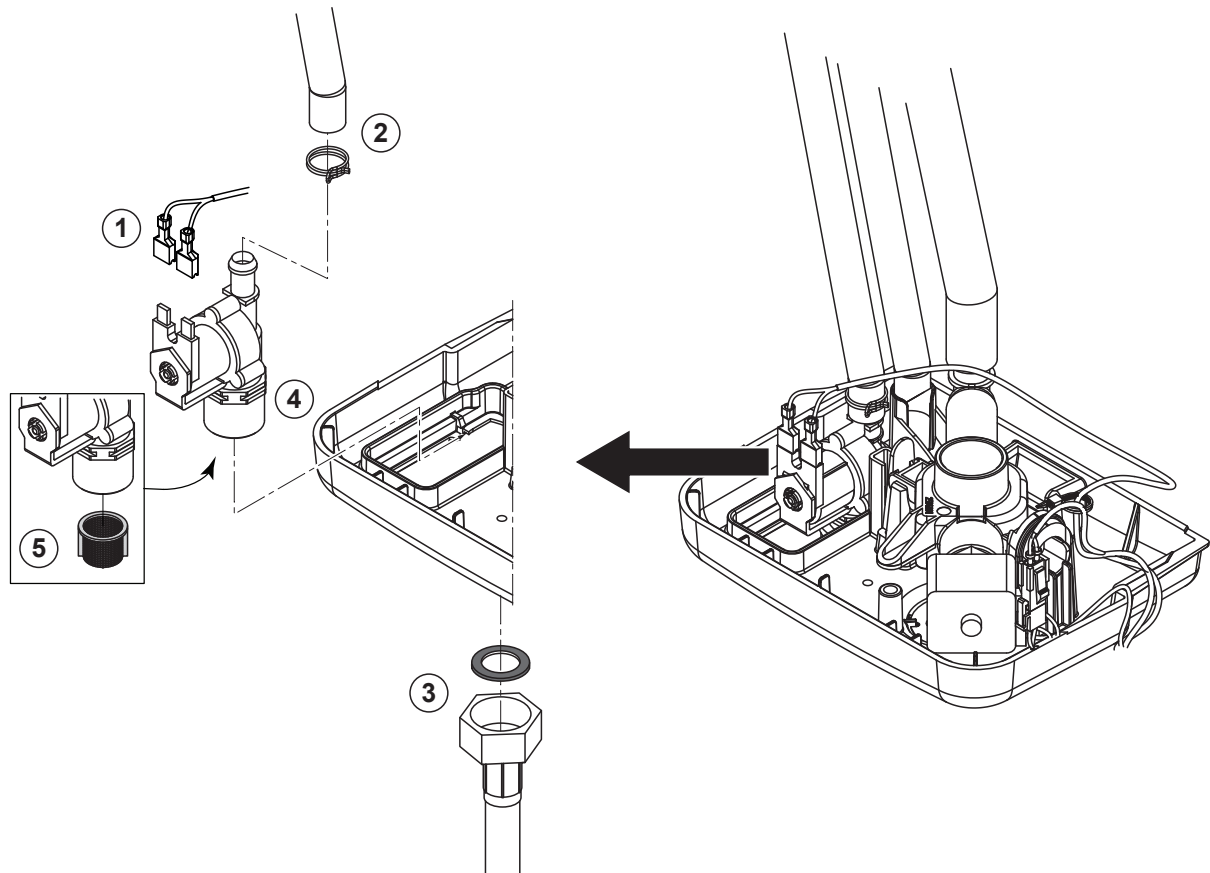


Fig. 14: Removal of the inlet valve

1. Disconnect the electrical cables from the connectors on the inlet valve.
Note: The polarity of the electrical cables does not have to be observed.
2. Loosen the hose clamp and pull the hose off the connector.
3. Loosen the water supply hose and remove the hose.
4. Pull the inlet valve forwards out of the holder in the drain pan and remove it.
5. Use pointed pliers to pull the strainer out of the inlet valve.

The installation of the inlet valve is done in the reverse order of the removal. Before installation, ensure that the strainer insert is reinstalled in the inlet valve.

7.4.2.4 Removal and installation of the fill cup and the hoses

To remove the fill cup and the hoses, the steam cylinder (see [Section 7.4.1.1](#)) and the cover of the internal water system (see [Section 7.4.2.1](#)) must be removed.

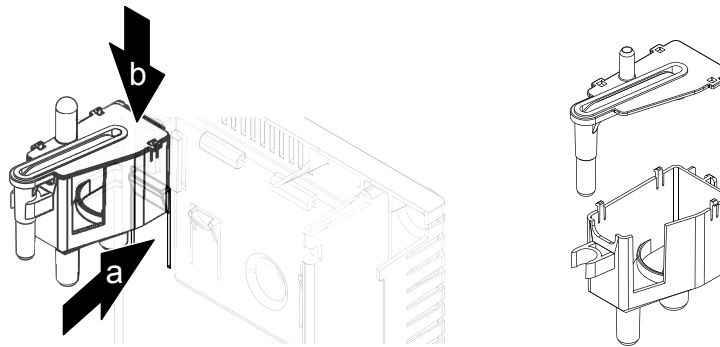
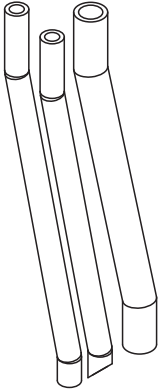

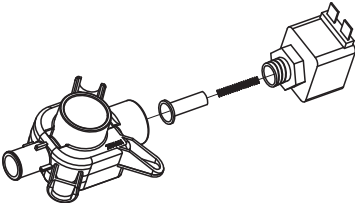
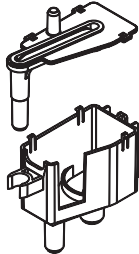


Fig. 15: Removal of the fill cup and the hoses

1. Loosen the hose clamps, pull all hoses in the device off the connections and remove the hoses.
Note: The hoses connected to the fill cup can also be removed together with the fill cup and only removed from the connections on the fill cup afterwards.
2. Press the snap lock on the rear wall backwards (a) and slide the filling cup downwards (b) and remove it.
3. Loosen the tabs on the lid of the filling cup and lift the lid off.

The **installation** of the filling cup and the hoses takes place in the reverse order of the removal. Check hoses for damage before installation and replace if necessary. Before attaching fixing the hoses with the hose clamps, align the hoses so that they are not twisted.

7.4.3 Notes on cleaning the unit components

Unit component	What to clean and how to clean
Hoses 	<ul style="list-style-type: none"> Loosen any limescale in the hoses by carefully twisting and flexing the hoses, then flush out the hoses thoroughly with hot tap water.
Inlet valve  <p>Strainer insert</p>	<ul style="list-style-type: none"> Carefully remove any limescale inside the inlet valve and on the strainer using a soft bristled brush (do not use a wire brush). Thoroughly rinse the inlet valve and the strainer insert with fresh tap water. <p>Let the inlet valve dry before reinstallation!</p>
Drain valve 	<ul style="list-style-type: none"> Carefully remove any limescale from the drain valve and the valve stem using a soft bristled brush (do not use a wire brush). Thoroughly rinse the drain valve and the valve stem with fresh tap water. <p>Let the drain valve dry before reinstallation!</p>
Fill cup 	<ul style="list-style-type: none"> Carefully remove any limescale from the fill cup and its connectors using a soft bristled brush (do not use a wire brush). If fill cup is heavily calcified, place it in an 8% formic acid solution (observe safety notes in Section 7.4.4), until the limescale comes off. Thoroughly rinse the fill cup with fresh tap water. Reassemble fill cup.
Drain pan	<ul style="list-style-type: none"> Carefully remove any limescale from the drain pan using a soft bristled brush (do not use a wire brush). Then rub the drain pan with a damp cloth without detergent.
Interior of the unit (water side only)	<p>Wipe the interior of the unit with a damp cloth without using any cleaning agent.</p> <p>CAUTION: Take care that the electrical connections and the electronic components remain dry!</p>

7.4.4 Notes on cleaning agents

Only use cleaning agents stated in the table above. The use of disinfectants is only permitted if they do not leave any toxic residues. In any case the parts must be thoroughly rinsed with clean drinking water after cleaning.



WARNING!

Formic acid is indeed harmless to the skin, but it attacks the mucous membranes. Therefore prevent your eyes and respiratory tracts from getting in touch with the acid and its vapours (wear goggles and work in a well ventilated room or outside).



CAUTION!

Do not use soap to clean the parts since residual soap can cause foaming which will affect proper operation of the humidifier.



CAUTION!

Do not use any solvents, aromatized or halogenized hydrocarbons or other aggressive substances as they may cause damage to the components of the unit.

It is mandatory to observe and comply with the information and instructions regarding cleaning agents. Observe in particular: all information relating to the protection of personnel, environmental protection and restrictions regarding usage.

8 Fault elimination

8.1 Important notes on fault elimination

Qualification of personnel

Repair work must be carried out only by **qualified and well trained professionals authorised by the owner**.

Repair work relating to the electrical installation must be carried out by an electrician or professionals authorised by the owner.

General notes

Only use original spare parts from your Condair representative to replace defective parts.

Safety

Before starting repair work on the Condair RH set the unit out of operation and disconnect it from the mains (see [Section 6.5](#)).



DANGER!

Make sure the Condair RH is separated from the mains (check with voltage detector) and the shut-off valve in the water supply line is closed.







CAUTION!

The electronic components inside the control compartment of the Condair RH are very sensitive to electrostatic discharge.

Prevention: Before carrying out any repair work to the electrical or electronic equipment of the Condair RH, appropriate measures must be taken to protect the respective components against damage caused by electrostatic discharge (ESD protection).

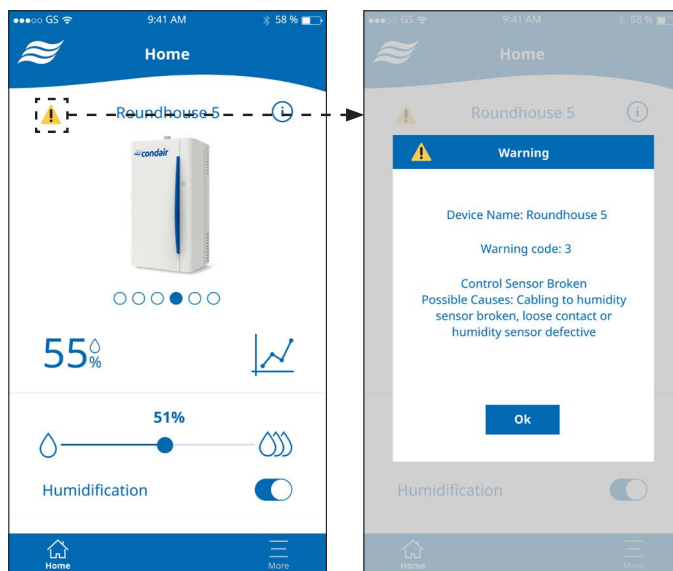
8.2 Fault indication on the Condair RH

				
blinks blue				Safety loop open (W2)
	lights red			No WLAN connection (W6)
		lights yellow		End of service life of steam cylinder soon reached (W5)
		lights red	lights red	End of service life of steam cylinder reached (E5)
				Wrong steam cylinder installed (E6)
			lights yellow ¹⁾	Connection to the humidity sensor interrupted (W3)
				Connection to the limiter sensor interrupted (W4)
				Timeout for receiving a WiFi signal reached (W6)
			lights red ¹⁾	Overcurrent detected (E1)
				Problem detected with inlet and outlet (E2)
				No current even though there is a demand for humidity (E3)
				Fault in driver board (E4)

¹⁾ The malfunction code can only be queried via the Condair HumiLife App.

8.3 Fault indication in the Condair HumiLife App







If a malfunction occurs, the yellow warning triangle appears on the home screen of the Condair HumiLife App. If you tap on it, a window appears with the error message (warning or error), the error code and information on how to remedy the malfunction.



8.4 Malfunction lists







8.4.1 Warning list



If a malfunction occurs with the status "Warning", the operation of the Condair RH is generally not stopped. If the fault is rectified or the cause of the fault disappears by itself, the Condair RH automatically returns to normal operation.

Code	Warning		Description	
	LED unit	Indication App	Possible causes	Remedy
W1	 lights yellow	W1	Overcurrent detected. The measured heating current is greater than 115% (but less than 130%) of the permissible maximum current over a certain period of time. The heating circuit is deactivated. After a set time, the Condair RH will restart and return to normal operation.	
			Humidity demand dropped too quickly.	Automatic adjustment of the working point.
			Drain valve defective.	Check/replace drain valve.
			Drain obstructed in the steam cylinder.	Replace steam cylinder.
			Used cylinder not recognized.	Replace steam cylinder.
			Steam cylinder fills too fast.	Check/replace inlet valve.
W2	 blinks blue	W2	External safety loop open. The Condair RH is stopped. The Condair RH automatically returns to normal operation as soon as the external safety loop is closed, there is no system error and the unit is switched on again via the Condair HumiLife App.	
			Ventilation switched off.	Check/switch on ventilation.
			High limit humidistat or air flow monitor has responded.	Check the setting of the high limit humidistat or the flow monitor.
			Wiring to the high limit humidistat interrupted or incorrectly wired.	Check the wiring of the high limit humidistat.
			High limit humidistat defective.	Check/replace high limit humidistat.
			Wiring to the air flow monitor interrupted or incorrectly wired.	Check the wiring of the air flow monitor.
W3	 lights yellow	W3	No signal from the humidity sensor.	
			Wiring to the humidity sensor interrupted or incorrectly wired.	Check the wiring of the humidity sensor.
			Humidity sensor defective.	Check/replace humidity sensor.
W4	 lights yellow	W4	No signal from the limiter sensor.	
			Wiring to the limiter sensor interrupted or incorrectly wired.	Check the wiring of the limiter sensor.
			Limiter sensor defective.	Check/replace limiter sensor (humidity sensor in the supply air duct).
W5	 lights yellow	W5	The end of service life of the steam cylinder is soon reached. The steam cylinder has to be replaced in the near future.	
W6	 lights red	—	No WiFi signal	
			WiFi signal interrupted.	Disconnect the device from the power supply and reconnect. Reconnect unit (see Section 6.6.2).

8.4.2 Error list

If a malfunction occurs with the status "Fault", further operation is no longer possible and the Condair RH is stopped. After eliminating the fault, the Condair RH must be restarted.

Code	Error		Description	
	LED unit	Indication App	Possible causes	Remedy
E1	 lights red	E1	Overcurrent detected. The measured heating current is greater than 130% of the permissible maximum current over a certain period of time. The Condair RH is stopped.	
			Humidity demand dropped too quickly	Automatic adjustment of the working point.
			Drain valve defective.	Check/replace drain valve.
			Drain obstructed in the steam cylinder.	Replace steam cylinder.
			Used cylinder not recognized.	Replace steam cylinder.
			Steam cylinder fills too fast.	Check/replace inlet valve.
E2	 lights red	E2	Problem with inlet or drain. No heating current was measured for 30 minutes, although there is a humidity demand present.	
			Water supply interrupted (shut-off valve closed) or obstructed.	Check water supply (open shut-off valve, check water pressure).
			Strainer in the inlet valve clogged or inlet valve defective.	Check/clean the strainer in the inlet valve or replace the valve.
			Drain valve leaking or defective.	Check/clean or replace the drain valve.
			Fuses on the driver board defective.	Check/replace fuses on the driver board.
			Heating cable harness defective.	Check/replace heating cable harness.
			Loss of water in the water system (via fill cup overflow) due to excessive back pressure in the steam line.	Check steam installation: steam line not too long, not kinked, no condensate pocket.
E3	 lights red	E3	No heating current detected. No heating current was detected, although the max. level sensor has been activated.	
			Inlet valve not closing or leaking.	Check whether inlet valve is closing, e.g. in standby mode. Replace valve if required.
			Max. level sensor not working properly.	Check max. level sensor state when cylinder is empty.
			Heating cable harness defective.	Check/replace heating cable harness.
E4	 lights red	E4	Unexpected heating current detected: The control measures a heating current although there is no humidity demand. The Condair RH is stopped.	
			Fuse of the heating circuit on the driver board is defective	Check/replace fuse.
			Driver board defective.	Replace driver board.
E5	 lights red  lights red	E5	End of life of the steam cylinder reached. The steam cylinder must be replaced. The Condair RH is stopped.	

Code	Error		Description	
	LED unit	Indication App	Possible causes	Remedy
E6	 lights red  lights red	E6	Invalid cylinder installed.	
			Cylinder not installed correctly (contact cylinder fuse bad).	Install cylinder correctly.
			The controller cannot verify the newly installed cylinder.	Contact your Condair representative.

9 Taking out of service/Disposal

9.1 Taking out of service

If the Condair RH must be replaced or if the Condair RH is not needed any more, proceed as follows:

1. Take the Condair RH out of operation as described in [Section 6.5](#).
2. Have the steam humidification system be unmounted by a qualified specialist.
3. If components of the steam humidification system are to be stored long-term, store them in the original packaging in a protected area.

9.2 Disposal/Recycling

Components not used any more must not be disposed of in the domestic waste. Please dispose of the individual components in accordance with local regulations at the authorised collecting point.

If you have any questions, please contact the responsible authority or your local Condair representative.

Thank you for your contribution to environmental protection.

10 Product specifications

10.1 Technical data

	Condair RH	
Type	RH 1.8	RH 3.6
Max. steam capacity	1.8 kg/h	3.6 kg/h
Max. power consumption	1.35 kW	2.70 kW
Heating voltage	230 V1 /50..60Hz	
Control voltage	230 V1 /50..60Hz	
Operating data		
Admissible control signals	0-10V, 2-10V, 0-20mA, 4-20mA	
Admissible water pressure	1 - 10 bar (100 kPa - 1000 kPa)	
Water quality	Untreated drinking water with a conductivity of 125...1250 uS	
Admissible water temperature	4 - 30° C	
Admissible ambient temperature	4 - 30° C	
Admissible ambient humidity	max.75%hr	
Max. admissible duct pressure	-0.8 kPa...0.8 kPa	
Drain temperature	<60°C (integrated drain water cooling)	
Sound pressure level	37 dBA ¹⁾	
Protection class	IP20	
Conformity	CE	
Unit connections		
Water supply connection	3/4" (External thread)	
Water drain connection	ø20 mm	
Steam outlet connection	ø22 mm	
Electrical connections	230V via integrated mains cable	
Absicherung Netzsteckdose	10 A, slow acting	16 A, slow acting
Dimensions and weights		
Operating weight empty	6.0 kg	
Operating weight filled	9.5 kg	
Unit height	467 mm	
Unit width	265 mm	
Unit depth	175 mm	

¹⁾ During blowdown higher sound pressure level values (up to 45 dBA) may be achieved for a short period of time.

10.2 Dimensional drawing Condair RH

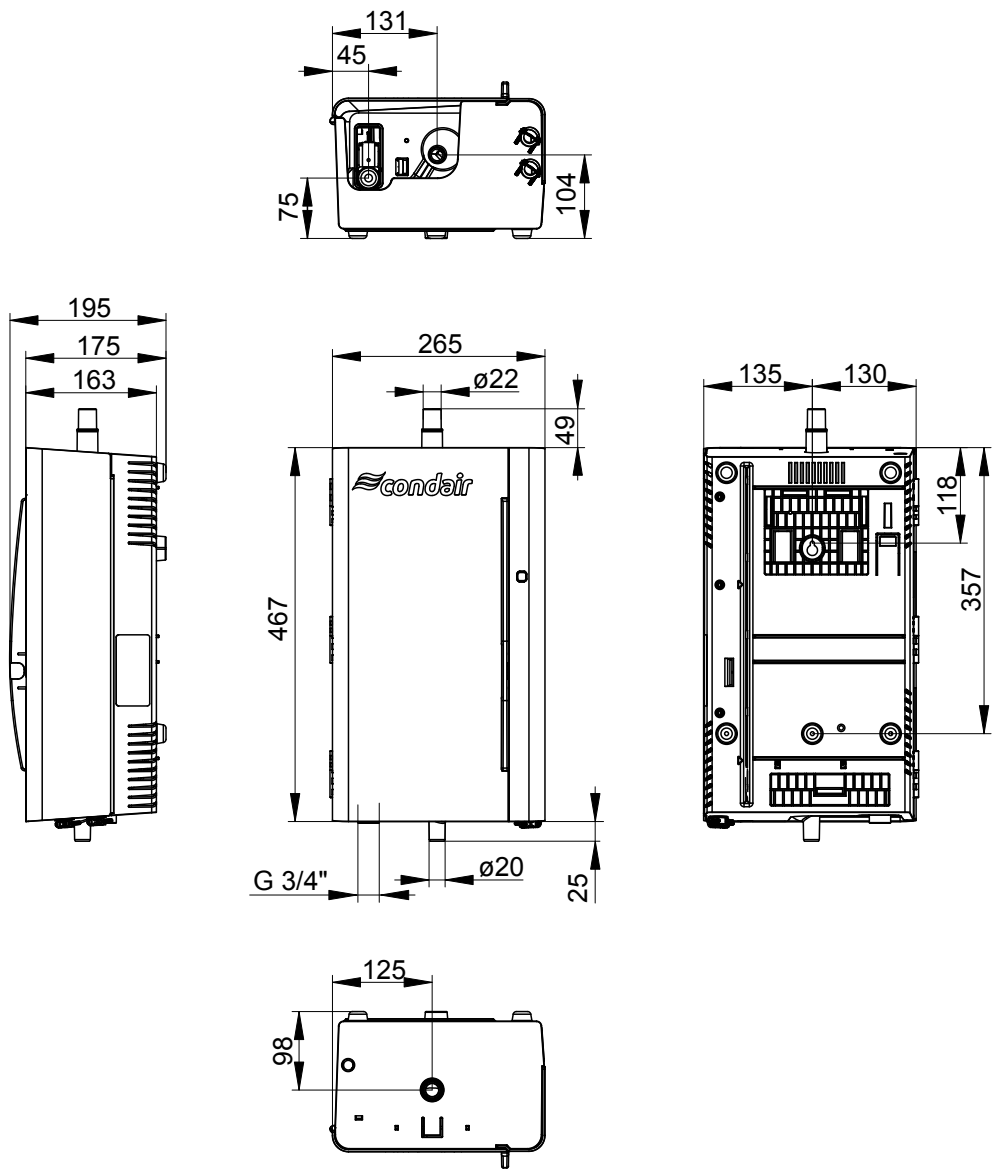


Fig. 16: Dimensional drawing Condair RH (dimensions in mm)

Notes

CONSULTING, SALES AND SERVICE:



CH94/0002.00

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