

IMPORTANT! Read and save these instructions. This manual to be left with the equipment.



EL
SERIES



RS
SERIES



INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Outdoor Steam Humidifier
Condair EL / RS

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 Before You Start!

Thank you for purchasing the Condair EL/RS Outdoor Humidifier.

The Condair EL/RS Outdoor Humidifier incorporates the latest technical advances and meets recognized safety standards. Never-the-less, improper use of the Condair EL/RS Outdoor Humidifier may result in danger to the user or third parties, and/or damage to property.

To ensure safe, proper and economical operation of the Condair EL/RS Outdoor Humidifier, please observe and comply with all information and safety instructions contained in this manual, as well as all relevant documentation of components of the installed humidification system.

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

1.2 General

Limitations

The subject of this manual is the Condair EL/RS Outdoor Humidifier. It is intended as a supplement to the Condair EL/Condair RS installation, operation and maintenance manuals. The various options and accessories for the Condair EL/RS Outdoor Humidifier may only be described in-so-far as is necessary for proper installation and operation of the equipment. Additional information on available options and accessories can be obtained in the instructions that are supplied with them.

This manual is intended for well trained personnel who are suitably qualified for their respective tasks.

About this Manual

This manual contains supplementary information that applies specifically to the Condair EL/RS Outdoor Humidifier. The Condair EL/Condair RS manuals included with the Condair EL/RS Outdoor Humidifier shipment contain information on installation, operation and maintenance which apply to both the indoor and outdoor models.

For information on the installation of controls, interior piping, interior wiring and steam lines refer to the respective Condair EL/Condair RS installation manual.

The operation of the Condair EL/RS Outdoor Humidifier is identical to the indoor units. Refer to the respective Condair EL/Condair RS operation and maintenance manual for details.

The maintenance items described in this manual are specific to the outdoor model. This is **in addition** to the regular maintenance that is described in the Condair EL/Condair RS operation and maintenance manual.

All illustrations in this manual are for representation purposes only. Actual appearance may vary.

Safety Warnings Usage



CAUTION!

The word "CAUTION" in conjunction with the general caution symbol is used to provide safety instructions that, if neglected, may cause damage and/or malfunction of the unit or damage to property.



WARNING!

The word "WARNING" in conjunction with the general warning symbol is used to provide safety instructions that, if neglected, may cause injury to personnel. Other specific warning symbols may also be used in place of the general symbol.



DANGER!

The word "DANGER" in conjunction with the general danger symbol is used to provide safety instructions that, if neglected, may cause severe injury to personnel or even death. Other specific danger symbols may also be used in place of the general symbol.

Storage of Manual

Keep this manual in a place where it is safe and readily accessible. If the equipment is moved to another location, please ensure that it remains with the equipment.

If the manual is lost or misplaced, please contact your Condair representative for a replacement.

2 For Your Safety

General

Every person who is tasked with the installation, operation and maintenance of the Condair EL/RS Outdoor Humidifier must read and understand this manual, as well as the respective Condair EL/Condair RS installation, operation and maintenance manuals before performing any work. Knowing and understanding the contents of these manuals is a basic requirement for protecting personnel against any kind of danger, preventing faulty operation, and operating the unit safely and correctly.

All labels, signs and marking applied to the Condair EL/RS Outdoor Humidifier must be observed and kept in a readable state.

Personnel Qualifications

All procedures described in this manual must only be performed by personnel who are adequately qualified, well trained and are authorized by the customer.

For safety and warranty reasons, any activity beyond the scope of this manual must only be performed by qualified personnel authorized by Condair.

All personnel working with the Condair EL/RS Outdoor Humidifier must be familiar with, and comply with the appropriate regulations on workplace safety and prevention of accidents.

Intended Use

The Condair EL/RS Outdoor Humidifier is intended exclusively for air humidification using a Condair-approved steam distributor within specified operating conditions. Refer to [chapter 10.2](#) and [chapter 5.3](#) for details. Any other type of application, without the express written consent of Condair, is considered to be NOT conforming to its intended purpose, and may lead to dangerous operation and will void the warranty.

In order to operate the equipment in the intended manner all information contained in this manual, in particular the safety instructions, must be observed closely.

Safety Precautions that Must be Observed



DANGER!
Risk of electric shock!

The Condair EL/RS Outdoor Humidifier is mains powered. Live parts may be exposed when the door panels are opened. Touching live parts may cause severe injury or even death.

Prevention:

The Condair EL/RS Outdoor Humidifier must be connected to the mains only after all installation work has been completed, checked for correct workmanship, and the door panels are closed and fastened securely.

Only qualified personnel should perform maintenance or repairs on the unit.

Do not service the unit while standing on wet or icy surfaces, or in wet weather.

Follow lockout procedures when servicing the unit.

**WARNING!****Risk of severe burns from contact with hot steam vapors!**

The Condair EL/RS Outdoor Humidifier produces hot steam vapors for humidification. Bare skin in contact with hot steam vapors can result in severe burns.

Prevention: Never perform any work on the steam system (including the steam lines, steam distributors, etc.) while the humidifier is operating. Shut down the humidifier and wait for the components to cool down before working on the steam system.

**WARNING!****Risk of severe burns from contact with hot surfaces!**

The components in the humidifier plumbing cabinet get very hot during operation. Bare skin in contact with hot surfaces can result in severe burns.

Prevention: Avoid contact with hot surfaces. Shut down the humidifier and wait for the components to cool down before working on the unit.

**CAUTION!****Electrostatic discharge (ESD)!**

The components in the control cabinet are sensitive to electrostatic discharge (ESD).

Prevention: Take appropriate measures to protect the electronic components inside the unit against damage caused by electrostatic discharge (ESD). Refer to IEC 61340.

Preventing Unsafe Operation

All personnel working with the Condair EL/RS Outdoor Humidifier must immediately report to the customer any alterations to the unit that may affect safety, and **secure the humidifier against accidental power-up**.

Modifications to the Unit Prohibited

Modifications are NOT permitted on the Condair EL/RS Outdoor Humidifier without the express written consent of Condair.

3 Receiving and Storage

3.1 Inspection

After receiving the shipment, inspect the goods as follows:

- Inspect the shipping boxes for damage.
Report any shipping box damages to the shipping company without delay.
- Check the goods against the packing slip to ensure that all items have been delivered.
- Report any shortages to your Condair representative within 48 hours of receipt of the goods. Condair does not assume responsibilities for any shortages beyond this period.
- Unpack the parts/components and check for any damage.
If parts/components are damaged, notify the shipping company immediately.
- Verify the model type, capacity and voltage on the specification label to ensure that it is suitable for your installation site. Refer to [Fig. 3](#).

3.2 Storage and transportation

Moving and handling the unit

The Condair EL/RS Outdoor Humidifier is bolted to a shipping skid and enclosed in a packaging crate before it is shipped from the factory. While still attached to the skid, the humidifier can be lifted onto a rooftop or other mounting location using a forklift or crane. Refer to [Table 8](#) for weights.



CAUTION!
Risk of damage to equipment.

Prevention: Do not use handles on the unit to hoist it onto a rooftop – hoist the unit while it is still attached to the shipping skid. Do not drop the humidifier when handling the unit. Protect the unit from damage by tethers and other lifting equipment.

Storage

Store the Condair EL/RS Outdoor Humidifier in its original packaging inside a protected area that meets the following requirements until it is installed, or if it needs to be stored for an extended period of time:

- Room temperature: 5 to 40°C
- Room humidity: 10 to 75% RH non-condensing

Transportation

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

Packaging

Keep the original packaging of the unit/components for later use.

If the packaging needs to be disposed off, observe local regulations on waste disposal. Recycle packaging where possible.

4 Product Overview

4.1 General Description

The Condair EL/RS Outdoor Humidifier is CE-declared for installation outdoors. It is housed in an enclosure that has an IP55 rating, and comes with built-in heating, ventilation and freeze protection for the plumbing components. The unit is intended to operate in -20 °C to +40 °C temperatures.

The Condair EL/RS Outdoor Humidifier comes in three different housing sizes depending on the steam capacity. Refer to [Fig. 1](#). These units can range from 5 kg/h to 90 kg/h. Refer to [chapter 4.3](#).

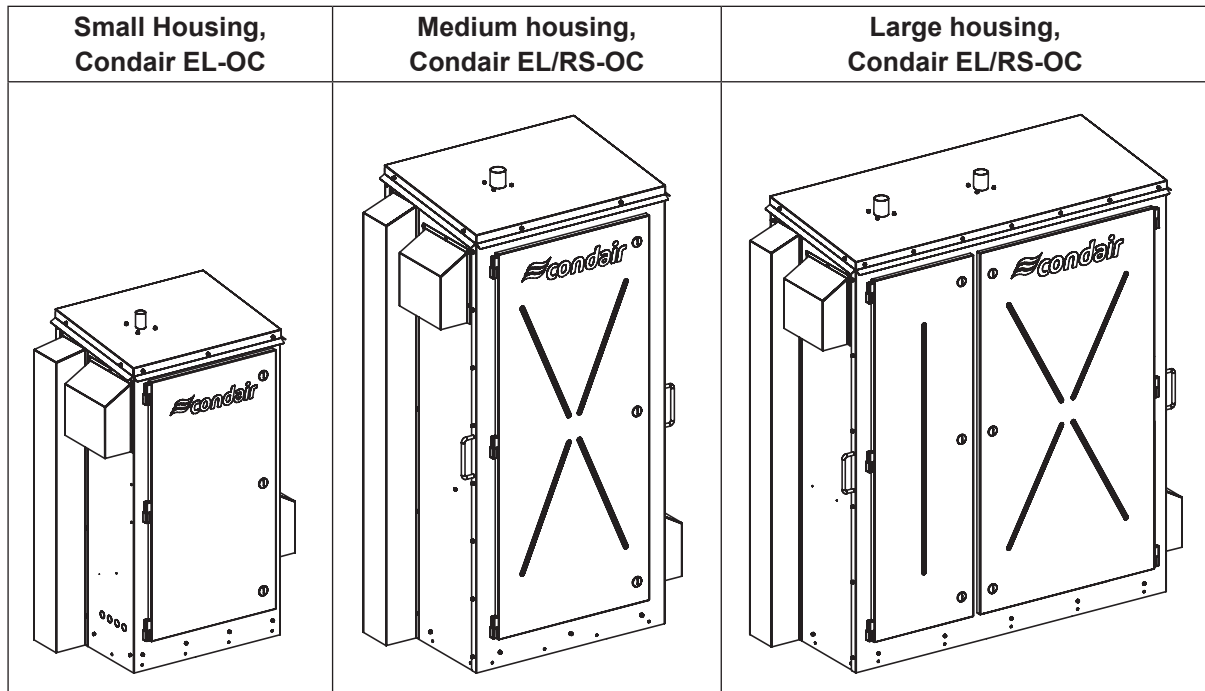


Fig. 1: Condair EL/RS Outdoor Steam Humidifier Model Sizes

[Fig. 2](#) shows the major components of the Condair EL/RS Outdoor Humidifier. The built-in heating system consists of a heater that is controlled by an internal thermostat (set to 16 °C; 50% on EL units) to maintain an appropriate operating temperature inside the enclosure. The heat control is automatic and cannot be activated manually.

A mechanical freeze protection valve drains all the water from the steam cylinder(s), fill cup, valves, and hoses to prevent freeze up when the temperature inside the enclosure drops below 6 °C.

During warm weather, a weather-shielded exhaust fan moves air through the enclosure to maintain an appropriate operating temperature. The exhaust fan is automatically controlled by a thermostat, and cannot be activated manually.

The Condair EL/RS Outdoor Humidifier is also equipped with a remote fault indication board (standard, not shown) that can be used to remotely monitor the unit.

All other features of the Condair EL/RS Outdoor Humidifier are similar to the Condair EL/RS humidifier. Refer to the respective Condair EL/RS humidifier manuals for details.

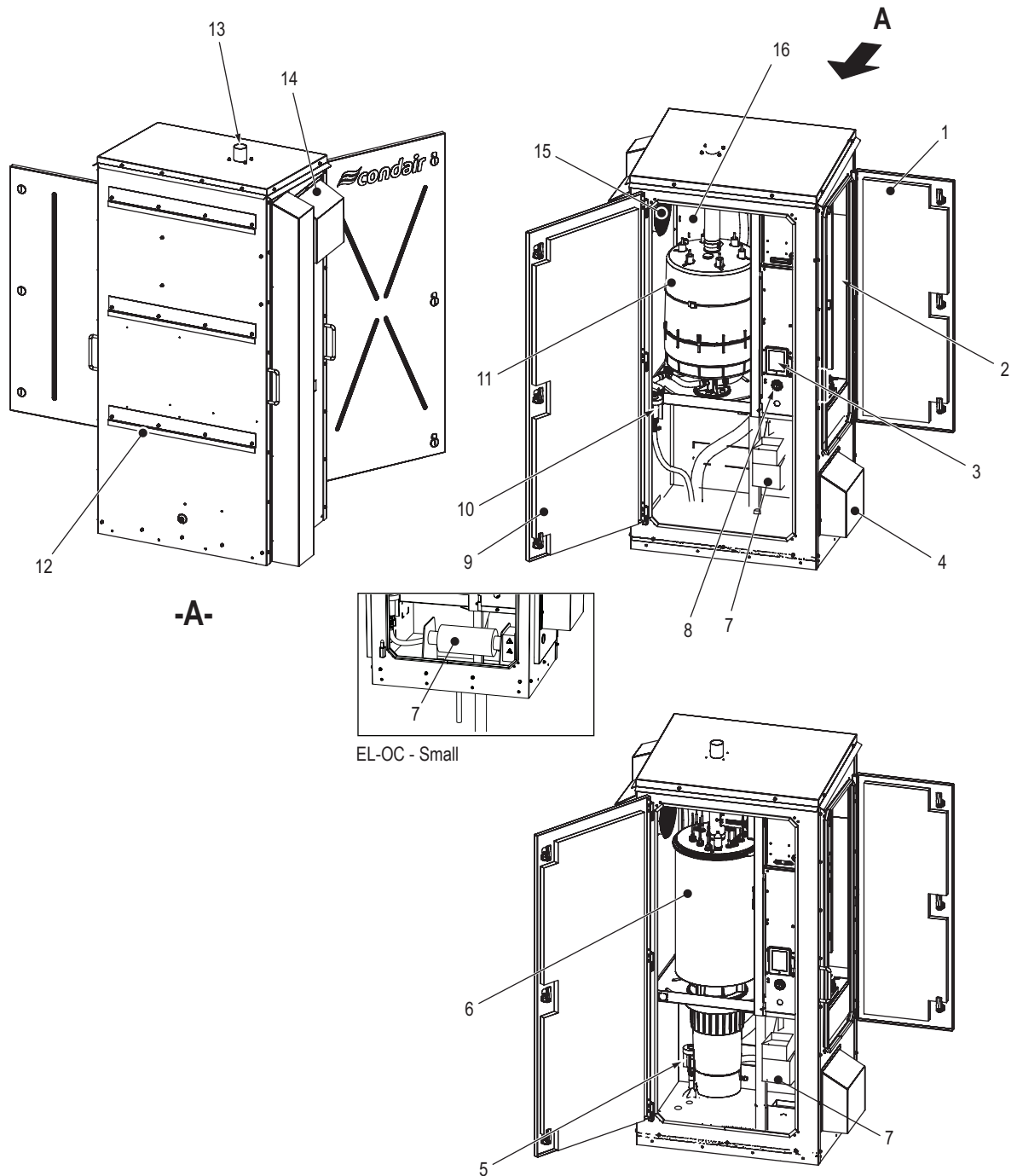


Fig. 2: Condair EL/RS Outdoor Humidifier (medium size unit shown)

- | | | | |
|---|---|----|--|
| 1 | Side door | 10 | Mechanical freeze protection valve
(EL-OC and RS-OC without scale tank) |
| 2 | Controls cabinet | 11 | Steam cylinder (EL-OC) |
| 3 | Touchscreen display | 12 | Mounting bracket |
| 4 | Intake shroud (and filter) | 13 | Steam outlet |
| 5 | Mechanical freeze protection valve
(RS-OC with scale tank) | 14 | Exhaust shroud |
| 6 | Steam cylinder (RS-OC) | 15 | Exhaust fan (and filter) |
| 7 | Heater | 16 | Plumbing cabinet |
| 8 | On/Off switch | | |
| 9 | Front door | | |

4.2 Model Designation

The specification label on the side of the Condair EL/RS Outdoor Humidifier shows its model number, serial number, and ratings. Refer to [Fig. 3](#). The breakdown of the model number is shown in [Fig. 4](#).

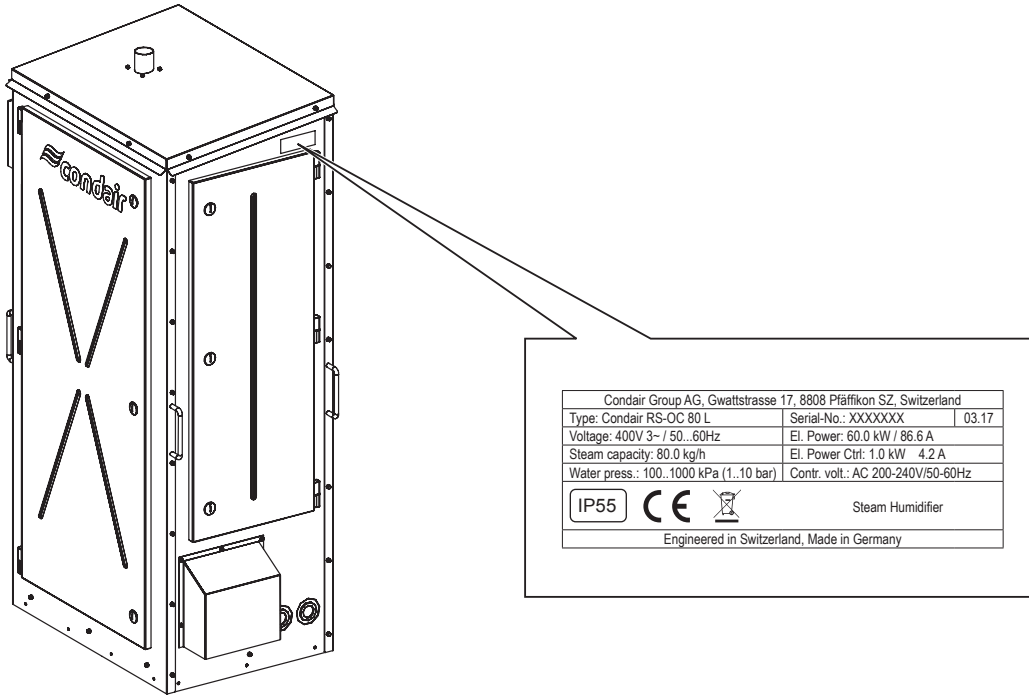


Fig. 3: Condair EL/RS Outdoor Steam Humidifier Specification Label

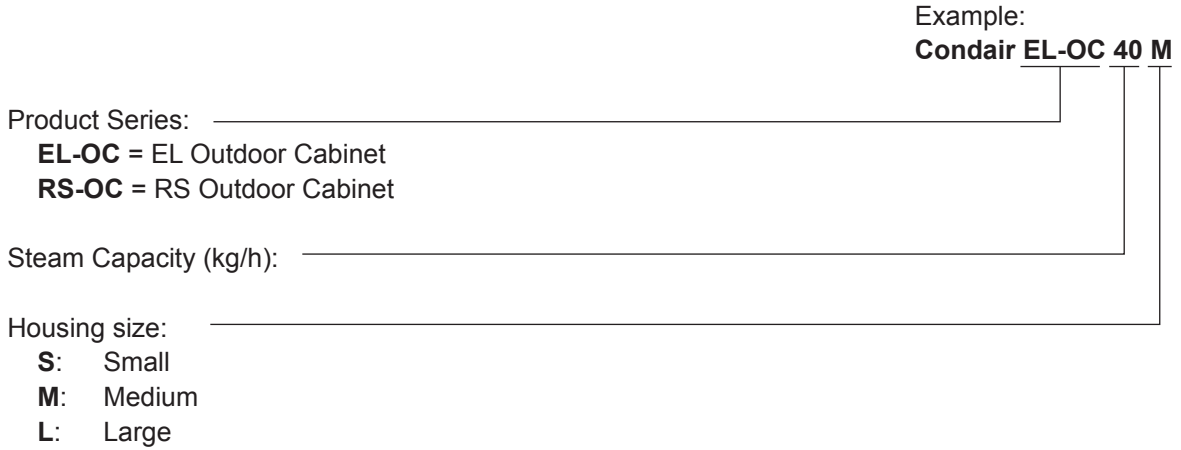


Fig. 4: Model number Breakdown

4.3 Models Overview

The Condair EL/RS Outdoor Humidifier is available in different steam capacities with options, as shown in [Table 1](#) and [Table 2](#) below. Refer to [chapter 4.4](#) for descriptions of the options.

Table 1: Condair EL Outdoor Steam Humidifier Models

Heating Voltage	Steam Capacity	Unit Size	Voltage Option	Condair EL Outdoor Options												
				Terminal Heating Voltage	Internal Control Voltage	Remote Fault Indication	Mounting Bar	Drain Water Cooler	Cleanable Cylinder	LonWorks	BACnet IP	BACnet MS/TP	Accessory Board	Disconnect Mounting Brackets	Enclosure Lighting	
V	[kg/h]	S/M/L	SV, SV/DV, DV**	THV	CVI	RFI	MP	DWC	CL	LON	BN-IP	BN-MSTP	ACC	DC	ENL	
200V/1~	5	S	SV	standard		standard	standard	standard	1x CL	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	8															
230V/1~ - 240V/1~	5	S	SV	1x THV-S		standard	standard	standard	1x CL	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	8															
	10															
230V/3~	5	S	SV	1x THV-S		standard	standard	standard	1x CL	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	8															
	10															
	15	M														
	20															
	24															
30																
200V/3~	5	S	SV	standard		standard	standard	standard	1x CL	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	8															
	20															
	15	M														
	20															
	24															
30																
400V/3~ - 415V/3~	5	S	SV/DV	1x THV-S	1x CVI-S	standard	standard	standard	1x CL	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	8															
	10															
	15	M														
	20															
	24															
	30															
	35															
	40															
	45	L*														
	50															
	60															
	70															
80																
90																

Heating Voltage	Steam Capacity	Unit Size	Voltage Option	Condair EL Outdoor Options												
				Terminal Heating Voltage	Internal Control Voltage	Remote Fault Indication	Mounting Bar	Drain Water Cooler	Cleanable Cylinder	LonWorks	BA Cnet IP	BA Cnet MS/TP	Accessory Board	Disconnect Mounting Brackets	Enclosure Lightning	
V	[kg/h]	S/M/L	SV, SV/DV, DV **	THV	CVI	RFI	MP	DWC	CL	LON	BN-IP	BN-MSTP	ACC	DC	ENL	
440 - 500V/3~	5	S	DV	1x THV-S	standard	standard	standard	standard	1x CL	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	8															
	10															
	15															
	20	M		1x THV-M												
	24															
	30															
	35															
	40															
	45															
600V/3~	5	S	DV	1x THV-S	standard	standard	standard	standard	1x CL	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	8															
	10															
	15															
	20	M		1x THV-M												
	24															
	30															
	35															
	40															
	45															

* These models have two steam cylinders.
** SV - Single Voltage (without Trafo/CVI)
SV/DV - Single Voltage (CVI) or Double Voltage
DV - Double Voltage Only

Table 2: Condair RS Outdoor Steam Humidifier Models

Heating Voltage	Steam Capacity	Unit Size	Voltage Option	Condair RS Outdoor Options													
				Terminal Heating Voltage	Internal Control Voltage	Remote Fault Indication	Mounting Bar	Full Drainage	Drain Water Cooler	Version for RO Water	LonWorks	BACnet IP	BACnet MS/TP	Accessory Board	Disconnect Mounting Brackets	Enclosure Lighting	
V	[kg/h]	S/M/L	SV, SV/DV, DV **	THV	CVI	RFI	MP	SV	DWC	VE	LON	BN-IP	BN-MSTP	ACC	DC	ENL	
230V/1~ 240V/1~	5	M	SV	1x THV-S		standard	standard	standard	standard	standard	1x VE	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL
	8																
	10																
230V/3~	5	M	SV			standard	standard	standard	standard	standard	1x VE	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL
	8																
	10																
	16																
	20																
	30																
200V/3~	16	M	SV			standard	standard	standard	standard	standard	1x VE	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL
	20																
	24																
	30																
380V/~3, 400V/3~, 415V/3~	5	M	SV/DV	1x THV-S	1x CVI-S	standard	standard	standard	standard	standard	1x VE	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL
	8																
	10																
	16																
	20																
	24	L*	SV/DV	1x THV-M	1x CVI-M	standard	standard	standard	standard	2x VE	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL	
	30																
	40																
	50																
	60																
80																	
"440V, 460V, 480V, 500V/3~"	10	M	DV	1x THV-S		standard	standard	standard	standard	standard	1x VE	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL
	16																
	20																
	30																
	40																
600V/3~	10	M	DV	1x THV-S		standard	standard	standard	standard	standard	1x VE	1x LON	1x BN-IP	1x BN-MSTP	1x ACC	1x DC	1x ENL
	16																
	20																
	30																
	40																

* These models have two steam cylinders.
 ** SV - Single Voltage (without Trafo/CVI)
 SV/DV - Single Voltage (CVI) or Double Voltage
 DV - Double Voltage Only

4.4 Options

[Table 3](#) shows the list of options for the Condair EL/RS Outdoor Humidifier. Contact your local Condair representative for details.

Table 3: Condair EL/RS Outdoor Humidifier Options

Option	Application
Terminal set heating voltage (THV)	Separate optional terminals for connecting supply heating voltage to the unit where direct connection to the main contactor (standard version) is not permitted by local regulations.
2x Terminal set heating voltage (THV-L)	Optional terminal set for separate connection of the heating voltage to each module of the large devices (only available for the large Condair EL-OC / RS-OC devices)
Internal Control Voltage (CVI)	Optional kit that supplies internal power for control signal voltage (not available for large Condair EL-OC / RS-OC devices).
Remote Fault Indication (RFI)	Printed circuit board with relay contacts to indicate operating status of humidifier. Board supplied standard on outdoor units.
Mounting bracket (MP)	Mounting brackets to permit installation of the unit on an air handling unit or an exterior wall. Brackets supplied standard.
Full Drainage (SV)	Drain valve kit for automatically emptying the RS-OC scale tank.
Drain Water Cooling (DWC)	Kit for cooling drain water to less than 60 °C before it is discharged into the drain. Kit supplied standard in all units in Europe.
Cleanable Cylinder (CL)	Option to install a cleanable cylinder in the EL-OC unit.
BACnet IP (BTL-certified board)	Optional board to provide BTL-certified BACnet IP connectivity to the building management system (BMS).
BACnet MS/TP (BTL-certified board)	Optional board to provide BTL-certified BACnet MS/TP connectivity to the BMS. This option also enables full Master functionality when using BACnet MS/TP.
LonWorks board (LON)	Optional board to provide LonWorks connectivity to the BMS.
Accessory board (ACC)	Optional printed circuit board with relay contacts for connecting other accessories such as fans and supply water flushing valves.
Disconnect Mounting Bracket (DC)	Optional mounting bracket for installing disconnect switches on the back of a unit that is secured to the mounting rack accessory (Table 4).
Enclosure Lighting (ENL)	Optional lighting for the inside of the humidifier enclosure with integrated GFI socket.

4.5 Accessories

[Table 4](#) shows the list of accessories for the Condair EL/RS Outdoor Humidifier. Contact your local Condair representative for details. To install and operate the accessories, please refer to the instructions supplied with the accessories.

Table 4: Condair EL/RS Outdoor Humidifier Accessories

Accessory	Application
Mounting Rack	Frame to permit free-standing installation of the unit.
Water inlet filter (Z261)	In-line water filter (5µm) and shutoff valve.

5 Installation

5.1 General

Strictly observe and perform all installation tasks including the mounting of the unit and connection of the water, steam and power supplies as described in this manual.

Comply with all local and national codes dealing with water, steam and electrical installations.

Condair does not accept any liability for installation of humidification equipment by unqualified personnel, or the use of equipment/parts that are not authorized by Condair.

Personnel Qualifications

All installation work must be performed only by licensed personnel authorized by the customer. It is the customer's responsibility to verify qualifications of the personnel.

Safety

Observe all safety precautions noted in [chapter 2](#).

5.2 Installation Overview

The Condair EL/RS Outdoor humidifier can be installed in three different ways:

- mounted directly on a suitably reinforced vertical surface on the air handling unit (AHU), see [Fig. 5](#) in [chapter 5.2.2](#).
- mounted on a mounting rack, see [Fig. 6](#) in [chapter 5.2.2](#)
- mounted on a suitable vertical surface on an exterior wall, see [Fig. 7](#) in [chapter 5.2.3](#).

5.2.1 Installation Overview Mounting on Air Handling Unit

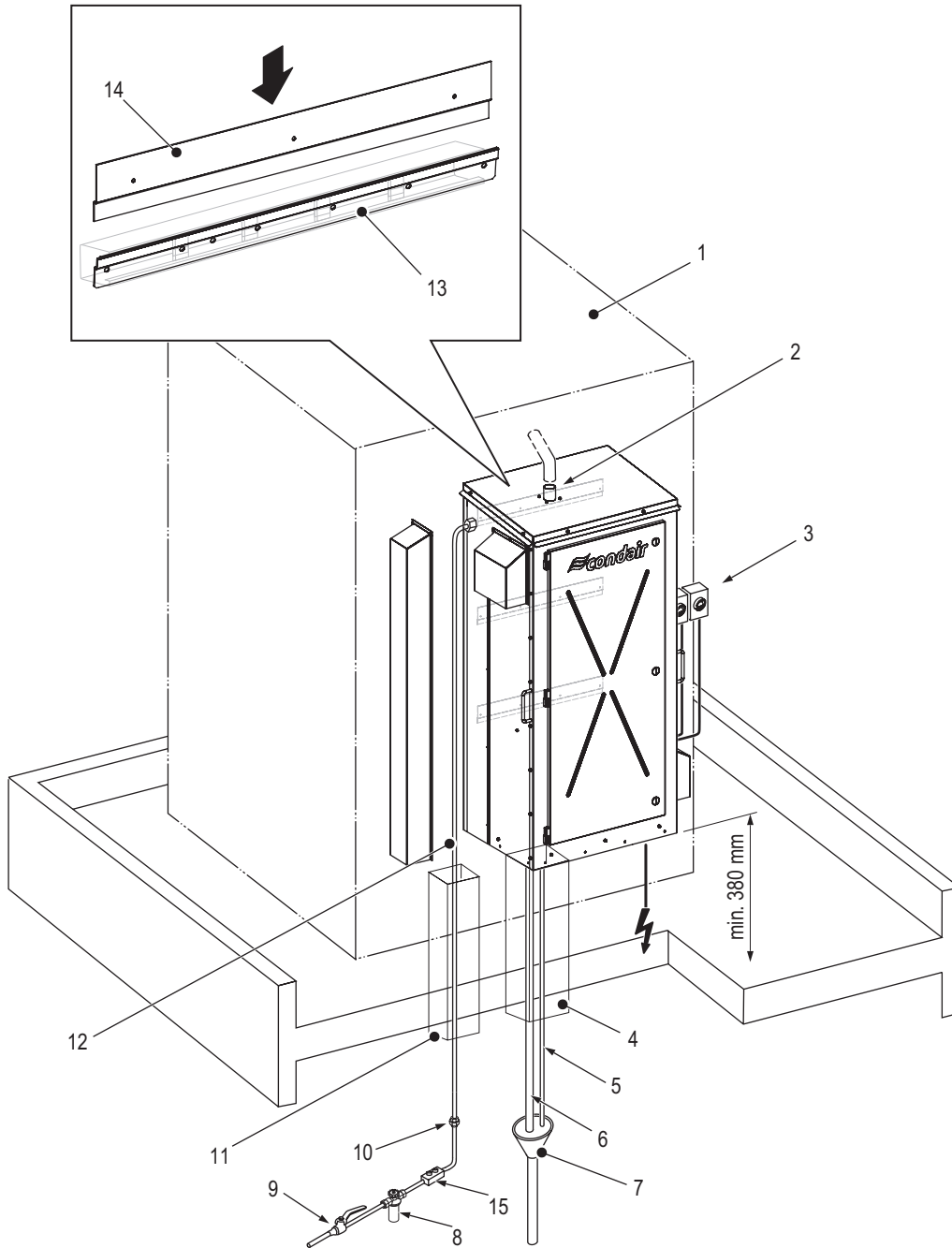


Fig. 5: Typical Installation on Air Handling Unit (medium size unit shown)

Legend:

- | | | | |
|---|--|----|---|
| 1 | Air handling unit | 10 | Union fitting (supplied by others) |
| 2 | Steam outlet, connection into distributor system inside air handling unit. | 11 | Pipe chase (water supply line). See note 1. |
| 3 | External fused disconnect switch (2x, supplied by others) | 12 | Water supply line (supplied by others), minimum inner diameter 12 mm. See Note 4. |
| 4 | Pipe chase (drain lines). See Note 1. | 13 | Mounting bar (supplied – 2x for small unit, 3x for medium/large unit) secured to air handling unit. See Note 5. |
| 5 | Drain line (freeze protection valve), 9.5 mm I.D. See Note 2. | 14 | Mounting bracket (2x for small unit, 3x for medium/large unit) secured to back of humidifier |
| 6 | Drain line (main) – 30 mm I.D. See Note 2. | 15 | Pressure shock absorber (recommended, supplied by others) |
| 7 | Air gap funnel (supplied by others). See Note 3. | | |
| 8 | Water inlet filter accessory Z261 (supplied by others) | | |
| 9 | Shutoff valve (supplied by others) | | |

Installation notes

- Note 1:** Route all drain lines through a pipe chase (recommended). Seal the pipe chase to prevent rising steam from entering the bottom of the humidifier enclosure, and to isolate the unit from the pressure inside the building. Pipe chases are supplied by others.
- Note 2:** In cold climates all drain lines must be properly trace heated and insulated to prevent freezing.
- Note 3:** The air gap funnel should be located inside the building (recommended), as shown in [Fig. 5](#), and connected to a dedicated building drain (recommended) with a drainage capacity of at least 30 l/min for an EL-OC unit and an RS-OC unit – per steam cylinder. The drain line exiting the funnel should have a minimum inner diameter of 40 mm. The drain lines into the funnel must not touch the sides or bottom of the funnel. In large units, separate air gap funnels must be used for drain lines from each cylinder.
- Note 4:** The water supply line is connected to the device with a hose or tube with a G3/4" female thread. It is recommended to route the line through a pipe chase. In cold climates it must be properly trace heated and insulated to prevent freezing. To avoid pressure bumps, we recommend installing a pressure shock absorber in the water supply line.
- Note 5:** The supplied mounting bars must be installed on a reasonably flat vertical mounting surface on the air handling unit. The mounting surface must be stable and suitably reinforced (strength equivalent to 50x100 mm timber stud or 41x41x2.7 mm Unistrut® channel) to support the unit and reduce vibrations. Ensure that the mounting surface is capable of supporting the entire weight of the unit when it is in operation. Refer to [Table 8](#) for weight of the unit.

This mounting arrangement is advantageous because the steam piping is shorter, thus minimizing condensate losses and backpressure in the line. Do not install the Condair EL/RS Outdoor Humidifier in an environment where the unit is exposed to severe weather, or where the temperature drops below -20 °C. Bracing (supplied by others) will be required for units exposed to strong winds.

Refer to [chapter 5.3](#), and [chapter 5.4.3](#) for mounting details. Ensure the required clearance is maintained, refer to [Fig. 8](#). Observe all local and national installation codes. Condair is not responsible for any installation code violations.

The water supply and all drain lines must be properly trace heated and insulated to prevent freezing.

5.2.2 Installation Overview Mounting on Mounting Rack

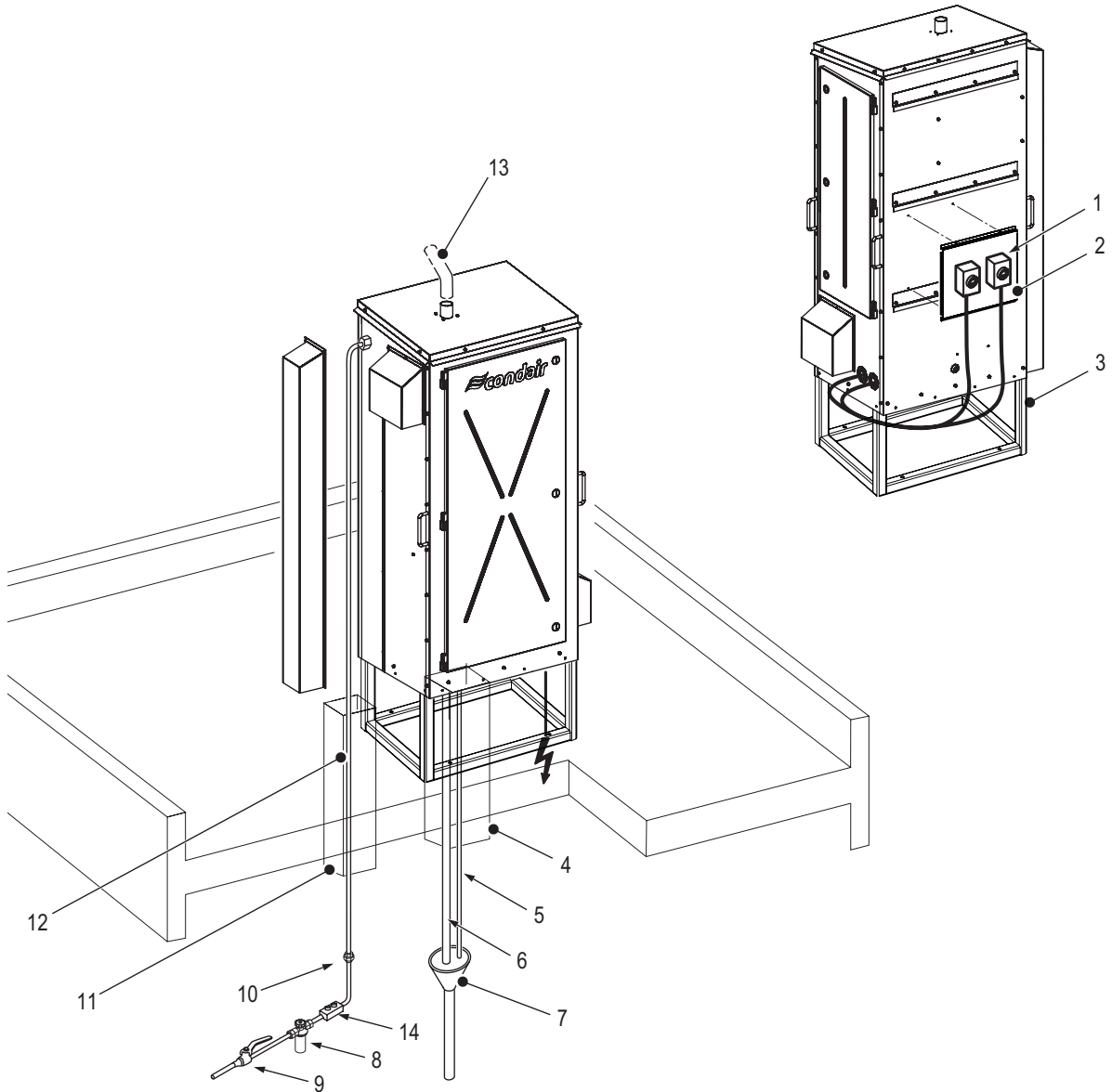


Fig. 6: Typical Installation on Mounting Rack (medium size unit shown)

- | | | | |
|---|---|----|--|
| 1 | External fused disconnect switch (2x, supplied by others) | 10 | Union fitting (supplied by others) |
| 2 | Disconnect mounting bracket (option: DC) | 11 | Pipe chase (water supply line) |
| 3 | Mounting rack (MR) accessory. See Note 4. | 12 | Water supply line (supplied by others), minimum inner diameter 12 mm. See Note 5. |
| 4 | Pipe chase (drain lines). See Note 2. | 13 | Steam line, must maintain a constant minimum upslope/ downslope of 15% (8.5°), and must be insulated |
| 5 | Drain line (freeze protection valve), 9.5 mm I.D. See Note 3. | 14 | Pressure shock absorber (recommended, supplied by others) |
| 6 | Drain line (main) – 30 mm I.D. See Note 3. | | |
| 7 | Air gap funnel (supplied by others). See Note 4. | | |
| 8 | Water inlet filter accessory Z261 (supplied by others) | | |
| 9 | Shutoff valve (supplied by others) | | |

Installation notes

- Note 1:** The mounting rack must be securely anchored to a hard level floor or a level rooftop that is capable of supporting the full operating weight of the humidifier and the mounting rack.
- Note 2:** Route all drain lines through a pipe chase (recommended). Seal the pipe chase to prevent rising steam from entering the bottom of the unit, and to isolate the unit from the pressure inside the building.
- Note 3:** In cold climates all drain lines must be properly trace heated and insulated to prevent freezing.
- Note 4:** The air gap funnel should be located inside the building (recommended), as shown in [Fig. 6](#), and connected to a dedicated building drain (recommended) with a drainage capacity of at least 30 l/min for an EL-OC unit and for a RS-OC unit – per steam cylinder. The drain line exiting the funnel should have a minimum inner diameter of 40 mm. The drain lines into the funnel must not touch the sides or bottom of the funnel. In large units, separate air gap funnels must be used for drain lines from each cylinder.
- Note 5:** The water supply line is connected to the device with a hose or tube with a G3/4" female thread. It is recommended to route the line through a pipe chase. In cold climates it must be properly trace heated and insulated to prevent freezing. To avoid pressure bumps, we recommend installing a pressure shock absorber in the water supply line.

When choosing this mounting arrangement, locate the humidifier as close as possible to the steam distributor to minimize condensate losses and backpressure in the line. Do not install the Condair EL/RS Outdoor Humidifier in an outdoor environment where the unit is exposed to severe weather or where the temperature drops below -20 °C. Bracing (supplied by others) will be required for units exposed to strong winds.

Refer to [chapter 5.3](#), and [chapter 5.4.4](#) for mounting details. Ensure the required clearances are maintained, refer to [Fig. 8](#). Observe all local and national installation codes. Condair is not responsible for any installation code violations.

The water supply and all drain lines must be properly trace heated and insulated to prevent freezing.

5.2.3 Installation Overview Mounting on Exterior Wall

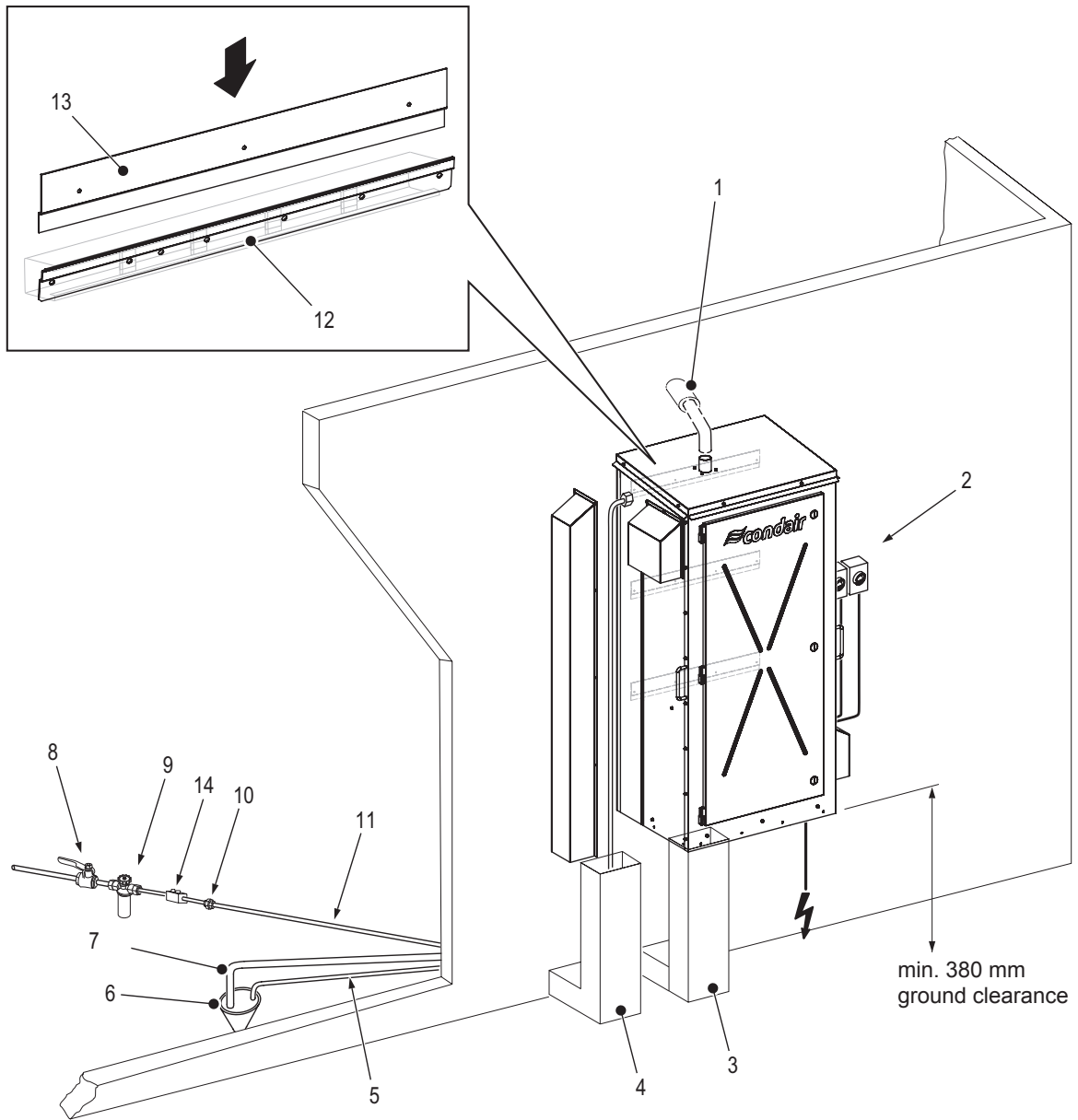


Fig. 7: Typical Installation on an Exterior Wall (medium size unit shown)

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Pipe chase (steam line) 2 External fused disconnect switch (2x, supplied by others) 3 Pipe chase (drain lines). See Note 1. 4 Pipe chase (water supply line) 5 Drain line (freeze protection valve), 9.5 mm I.D. See Note 2. 6 Air gap funnel (supplied by others). See Note 3. 7 Drain line (main) – 30 mm I.D. See Note 2. 8 Shutoff valve (supplied by others) 9 Water inlet filter accessory Z261 (supplied by others) | <ul style="list-style-type: none"> 10 Union fitting (supplied by others) 11 Water supply line (supplied by others), minimum inner diameter 12 mm. See Note 4. 12 Mounting bar (2x for small unit, 3x for medium/large unit) secured to an exterior wall. See Note 6. 13 Mounting bracket (2x for small, 3x for medium/large unit) secured to back of humidifier 14 Pressure shock absorber (recommended, supplied by others) |
|--|---|

Installation notes

- Note 1:** Route all drain lines through a pipe chase (recommended). Seal the pipe chase to isolate the unit from the pressure inside the building.
- Note 2:** In cold climates all drain lines must be properly trace heated and insulated to prevent freezing.
- Note 3:** The air gap funnel should be located inside the building (recommended), as shown, and connected to a dedicated building drain (recommended) with a drainage capacity of at least 30 l/min for an EL-OC unit and for a RS-OC unit – per steam cylinder. The drain line exiting the funnel should have a minimum inner diameter of 40 mm. The drain lines into the funnel must not touch the sides or bottom of the funnel. In large units, separate air gap funnels must be used for drain lines from each cylinder.
- Note 4:** The water supply line is connected to the device with a hose or tube with a G3/4" female thread. It is recommended to route the line through a pipe chase. In cold climates it must be properly trace heated and insulated to prevent freezing. To avoid pressure bumps, we recommend installing a pressure shock absorber in the water supply line.
- Note 5:** The supplied mounting bars must be installed on a reasonably flat vertical wall that is stable and suitably reinforced to support the unit and reduce vibrations. Ensure that the mounting surface is capable of supporting the entire weight of the unit when it is in operation. Refer to [Table 8](#).

When choosing this mounting arrangement, locate the humidifier as close as possible to the steam distributor to minimize condensate losses and backpressure in the line. Do not install the Condair EL/RS Outdoor Humidifier in an outdoor environment where the unit is exposed to severe weather or where the temperature drops below -20 °C. Bracing (supplied by others) will be required for units exposed to strong winds.

Refer to [chapter 5.3](#), and [chapter 5.4.5](#) for mounting details. Ensure the required ground clearance is maintained, refer to [Fig. 8](#). Observe all local and national installation codes. Condair is not responsible for any installation code violations.

The water supply and all drain lines must be properly trace heated and insulated to prevent freezing.

5.3 Site Requirements

The Condair EL/RS Outdoor Humidifier can be mounted on a suitably reinforced vertical surface on the air handling unit (AHU), on an external wall, or on a mounting rack on a level floor or rooftop. Humidifiers typically operate in the cold winter months and should be located where the risk of freezing is minimized, and where it is safe and convenient for maintenance personnel to service the unit. The length of the steam line should be kept as short as possible to minimize heat losses. In all cases consult national and local installation codes. Condair is not responsible for installation code violations.

IMPORTANT! The warranty does not cover damage to the humidifier caused by neglect or due to freezing.

Refer to [chapter 5.2](#) for the different ways the Condair EL/RS Outdoor Humidifier can be installed. To prepare the installation of the Condair EL/RS Outdoor Humidifier, ensure that the following site requirements are satisfied regardless of the mounting arrangement. Report any discrepancies to the site engineer.

Mounting

- Do not install the Condair EL/RS Outdoor Humidifier in an outdoor environment where the unit is exposed to severe weather, or where the temperature drops below -20 °C.
- Install the unit with consideration for the potential of strong winds. Install external bracing (supplied by others) for units exposed to strong winds. Improper installation may cause the unit to fall, resulting in damage, injury, or death. Comply with local regulations.

IMPORTANT! The warranty does not cover damage to the humidifier or property caused by strong winds.

- Allow adequate clearances around the humidifier for ease of maintenance. Refer to [Table 5](#) for minimum clearances. Observe all local and national installation codes. Condair is not responsible for any installation code violations.
- Ensure that the structure/surface onto which the humidifier is mounted is stable and suitably reinforced to support the full operating weight of the humidifier. Refer to [Table 8](#) for weights.

Steam and Condensate Lines:

- When choosing the location of the humidifier, install it as close as possible to the steam distributor to minimize heat loss through the steam line. The steam line can be connected directly to an AHU or routed through a pipe chase into the building.
- Ensure that the selected location permits proper routing of the steam and condensate lines. Refer to the Condair EL/RS manuals for details. The number of bends and the length of the line must be kept to a minimum so that the total system backpressure does not exceed 1.5 kPa.
- The steam line should be routed in such a way that it maintains a constant minimum upslope/downslope of 15% (8.5°).
- Provision must be made for condensate removal, and suitable care must be taken to ensure lines and trap do not freeze.

Water Supply

- To ensure proper functioning of the humidifier in cold climates, the water supply line to the humidifier MUST be properly trace heated and insulated to prevent freezing.

IMPORTANT! The warranty does not cover damage to the humidifier due to freezing.

- The water supply line to the device should have a minimum diameter of 12 mm and be equipped with a G 3/4" female thread for the connection to the device. The supply line should also have a shutoff valve and a union fitting inside the building for ease of maintenance.
- We recommend to install a pressure shock absorber in the water supply line.
- Refer to the Condair EL/RS manuals for water quality, filtration, temperature and pressure requirements.

Drainage

- All drain lines from the unit should empty into an air gap funnel (recommended) that is connected to a dedicated building drain (recommended) with a drainage capacity of at least 30 l/min for an EL-OC unit and for a RS-OC unit – per steam cylinder. The drain line exiting the funnel should have a minimum inner diameter of 40 mm. All drain lines from the humidifier can empty into a single air gap funnel. **Note:** In large units with two steam cylinders, separate air gap funnels must be used for drain lines from each cylinder.
- The drain line should be capable of handling water temperatures up to 93 °C. During normal operations the maximum temperature of discharge water is 60 °C.
- In cold climates all drain lines MUST be properly trace heated and insulated to prevent freezing.

IMPORTANT! The warranty does not cover damage to the humidifier due to freezing.

Power Supply

- The power supply to the humidifier should be sized according to the requirements described on the specification label on the unit. Refer to [Fig. 3](#) for the label location on the humidifier.
- Humidifiers WITHOUT the CVI option require separate fused disconnects switches for the heating voltage and control voltage. These fused disconnect switches MUST be located in the immediate vicinity of the unit.

5.4 Mounting the Humidifier

5.4.1 Location and Suggested Clearances

The location of the Condair EL/RS Outdoor Humidifier depends on the location of the steam distributor and the mounting arrangement. [Fig. 8](#) and [Table 5](#) show the suggested minimum clearances for ease of maintenance for any mounting arrangement. The clearance values in [Fig. 8](#) and [Table 5](#) are for reference only. Consult local and national installation codes. Condair does not accept responsibility for violations of the installation codes.

Note: Although an overhead clearance is not required for operation of the Condair EL/RS Outdoor Humidifier, adequate overhead clearance must be provided to permit installation of the unit.

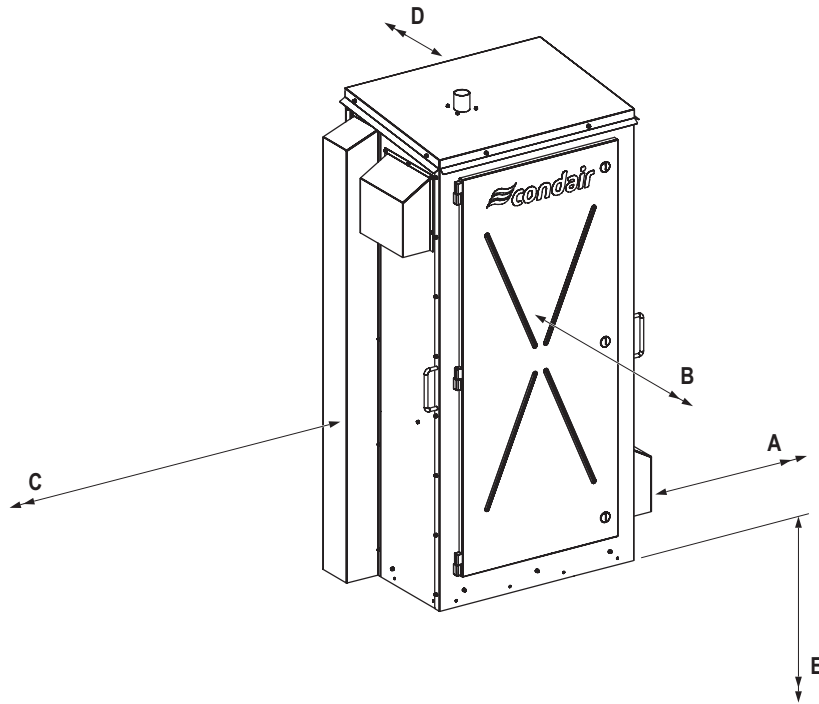


Fig. 8: Condair EL/RS Outdoor Humidifier Suggested Minimum Clearances

Table 5: Condair EL/RS Outdoor Humidifier Suggested Minimum Clearances

Housing Size	Condair Model	Suggested Minimum Clearances (mm)				
		Right Side "A"	Front "B"	Left Side "C"	Back "D" *	Ground/Roof "E" **
Small	EL-OC 5...15	914	914	914	300	380
Medium	EL-OC 20...45 and RS-OC 5...40	914	914	914	300	380
Large	EL-OC 50...90*** and RS-OC 50...80***	914	914	914	300	380

* Applies only to unit installed on a mounting rack.

** Minimum clearance. **Note:** In units operating in cold climates, the area around the unit must be kept clear of snow and ice accumulation to permit opening and closing of the front and side doors.

*** Units with two steam cylinders.

5.4.2 Pipe Chase Location

It is recommended that all external drain lines and water supply lines are routed through pipe chases. Refer to [Fig. 9](#) for the general locations and sizing of the pipe chases.

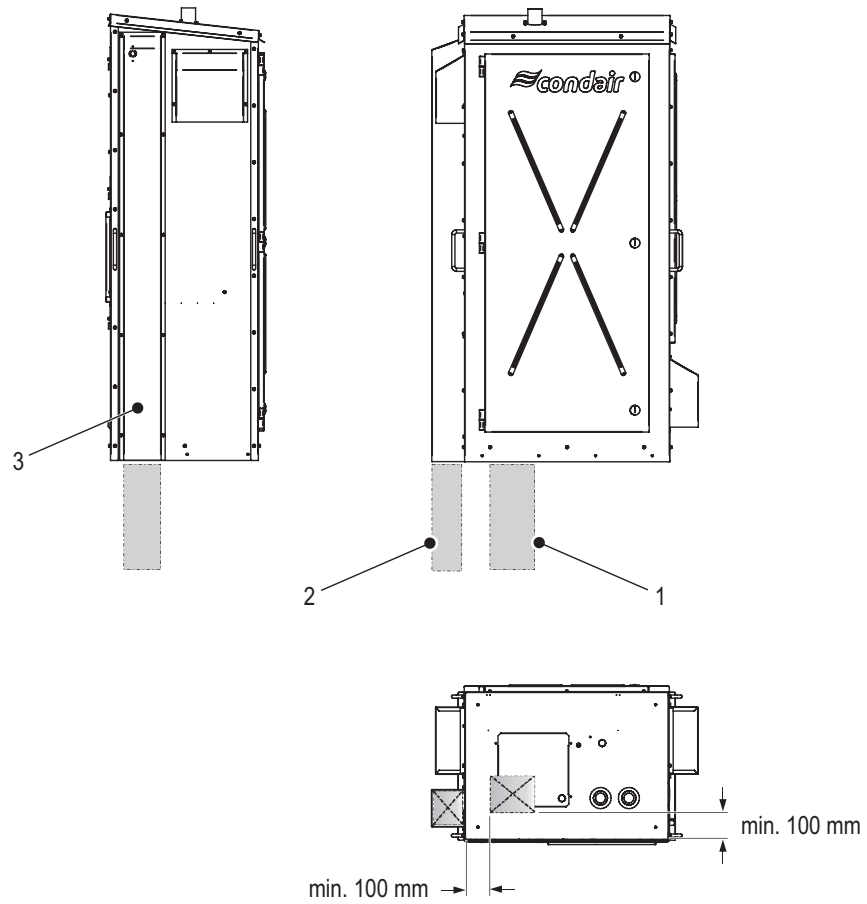


Fig. 9: Pipe Chase Location


Legend

- | | |
|--|--|
| <p>1 Pipe chase (drain lines) – sized, as required, to accommodate all drain lines</p> | <p>2 Pipe chase (water supply line) – sized to the same cross-sectional area as the shield (3) over the water line(s).</p> <p>3 Shield</p> |
|--|--|

5.4.3 Air Handling Unit Mounting

Refer to the installation overview in [Fig. 5](#) and required clearances in [chapter 5.4.1](#), then mount the humidifier on the air handling unit as follows:

1. Select a location where the unit is not exposed to severe weather, or where the temperature drops below -20 °C, or where strong winds may cause the unit to fall. External bracing (supplied by others) will be required for units exposed to strong winds.
2. Select a reasonably flat, vertical mounting surface on the air handling unit that is suitably reinforced to reduce vibrations, and is capable of supporting the full operating weight of the humidifier. Refer to [Table 8](#) for weights.
3. Mark the attachment points "A" and "B" at the desired position with the help of a level. Refer to [Fig. 10](#) and [Table 6](#).
4. Secure the mounting bars (at A) to the air handling unit with M6 bolts and flat washers (supplied by others). Ensure that the mounting bars are level, and tighten the bolts.
 - Small: 2 bolts/bracket (min)
 - Medium: 2 bolts/bracket (min)
 - Large: 3 bolts/bracket (min)
5. Install suitably sized pipe chases (recommended) for the drain lines and water supply line. Refer to [Fig. 9](#) for general locations and sizes. Pipe chases are supplied by others.
6. Remove the shipping straps, the packaging crate, and the foam spacers around the unit.

 **WARNING!**
Heavy object – risk of personal injury and damage to equipment!

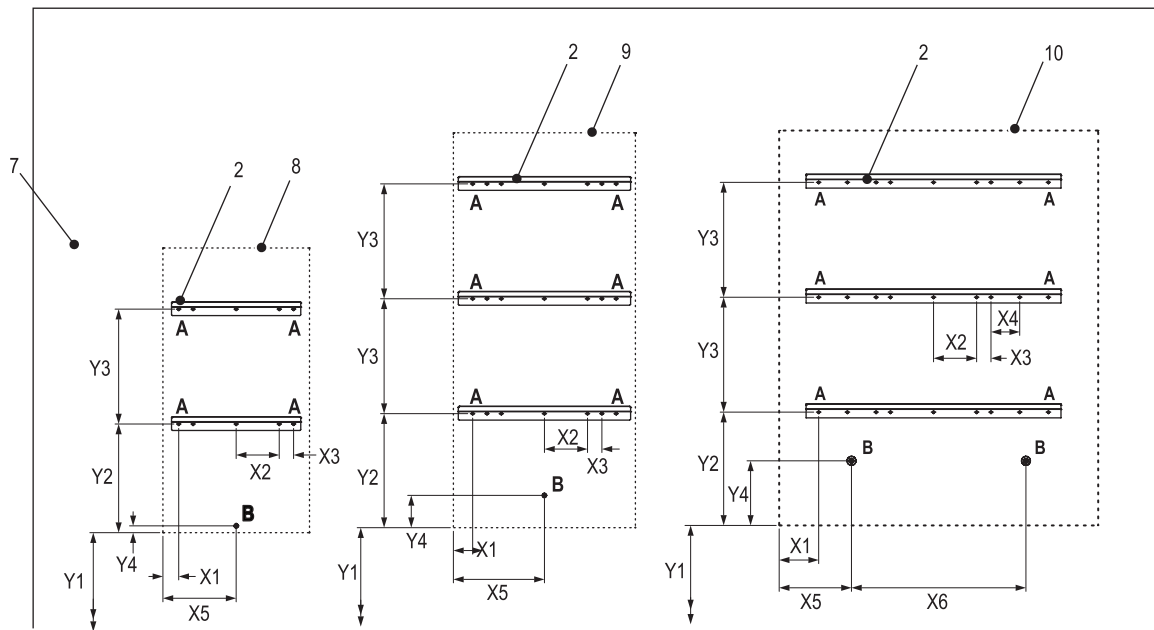
Prevention: While the unit is still attached to the shipping skid, raise the humidifier using a forklift or crane. Protect the unit from damage by tethers and other lifting equipment, and do not drop the humidifier.

7. Remove the shipping screws and the shipping skid from the bottom of the unit. Check the device for any damage to the paintwork (blank areas). Treat them with a suitable rust inhibitor (such as zinc spray or similar).
8. Carefully raise the humidifier into position and align the mounting brackets on the back of the humidifier with the installed mounting bars, as shown in [Fig. 10](#). Lower the humidifier onto the mounting bars, and ensure that the unit is seated properly and level.
9. Secure the humidifier to the mounting surface at attachment point(s) "B" with M8 bolt(s) and flat washer(s) (supplied by others). Tighten the bolt(s).

Table 6: Mounting Holes Spacin

Housing Size	Dimension in [mm]									
	X1	X2*	X3*	X4*	X5	X6	Y1**	Y2	Y3*	Y4
Small	56	152	51	–	259	–	381	384	406	24
Medium	68	152	51	–	322	–	381	401	406	114
Large	158	152	51	102	256	617	381	399	406	229

* Typical
 ** Minimum clearance



View -D-

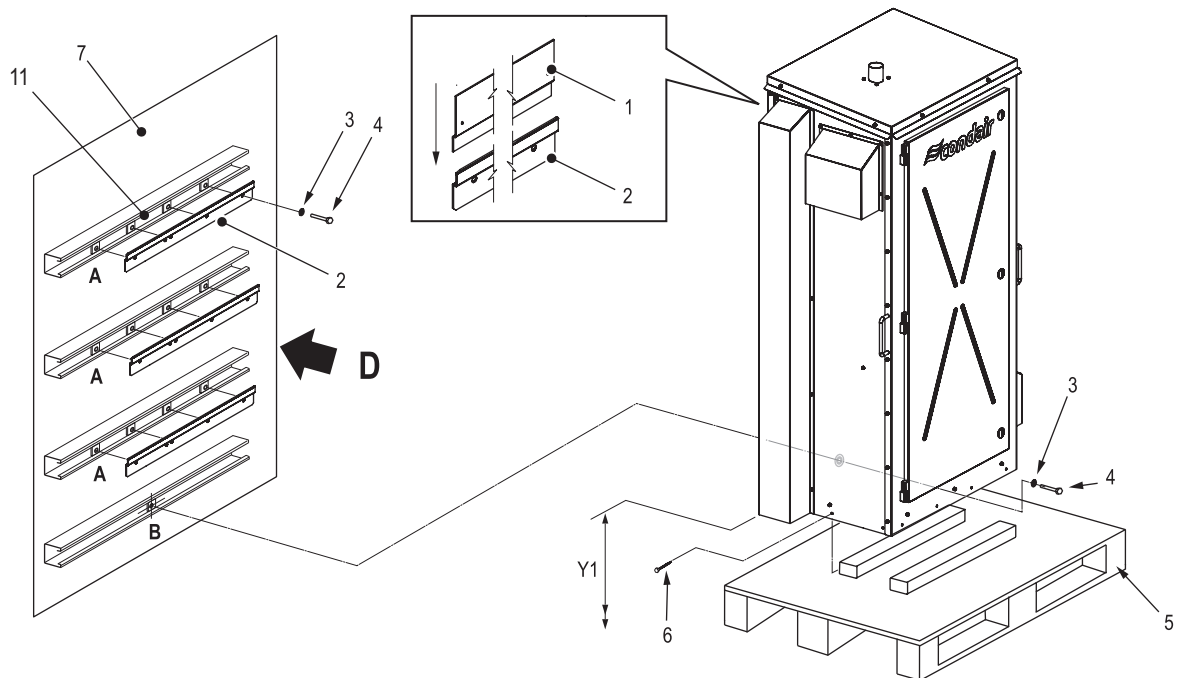


Fig. 10: Air Handling Unit Mounting

Legend

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Mounting bracket, attached to the humidifier rear panel (2x for small unit, 3x for medium and large unit) 2 Mounting bar, supplied (2x for small unit, 3x for medium and large unit) 3 Flat washer, M10 (supplied by others) 4 Bolt, M10 (supplied by others) 5 Shipping skid (representation) | <ul style="list-style-type: none"> 6 Screw (used for shipping) 7 Mounting surface, air handling unit 8 Outline of unit's rear panel – small size unit, reference 9 Outline of unit's rear panel – medium size unit, reference 10 Outline of unit's rear panel – large size unit, reference 11 Reinforcement for mounting surface (supplied by others) |
|--|---|

5.4.4 Installation on a Mounting Rack

Refer to the installation overview in [Fig. 6](#) and required clearances in [chapter 5.4.1](#), then install the humidifier on the mounting rack as follows:

1. Select a location where the unit is not exposed to severe weather, or where the temperature drops below -20 °C, or where strong winds may cause the unit to fall. External bracing (supplied by others) will be required for units exposed to strong winds.
2. Choose a suitable location for the mounting rack – either on a hard level floor or a level rooftop that is capable of supporting the full operating weight of the humidifier. Refer to [Table 8](#) for weight of humidifier and mounting rack. Locate the humidifier so that it is as close as possible to the steam distributor.
3. Install the mounting rack and anchor it securely to the floor or rooftop with suitable anchor bolts (supplied by others). Refer to [Fig. 11](#).

IMPORTANT! Ensure that the mounting rack is securely anchored to the floor or rooftop.

4. (Recommended) Cut suitably sized openings in the roof (if installing on a roof) and install pipe chases. Refer to [Fig. 9](#) for general locations.
5. Remove the shipping straps, the packaging crate and the foam spacers around the unit.



WARNING!

Heavy object – risk of personal injury and damage to equipment!

Prevention: While the unit is still attached to the shipping skid, raise the humidifier using a forklift or crane. Protect the unit from damage by tethers and other lifting equipment, and do not drop the humidifier.

6. Remove the shipping screws attaching the unit to the shipping skid.
7. Carefully lower the unit onto the mounting rack.
8. Seat the unit properly on the mounting rack, and ensure that it is level. Fasten the unit securely to the mounting rack using suitable M6 fasteners through all the pre-drilled holes in the base of the unit.

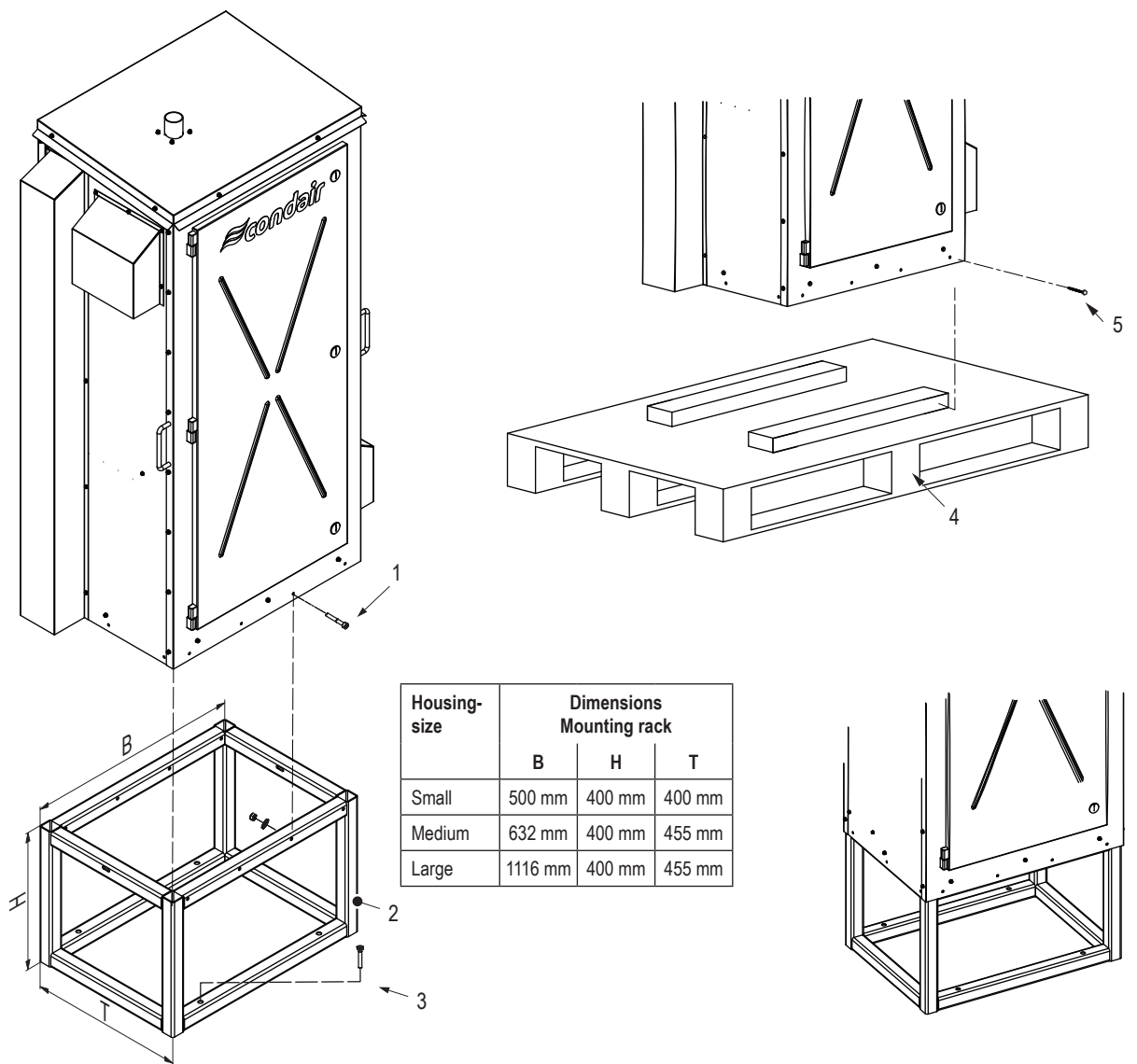


Fig. 11: Installation on a Mounting Rack

Legend

- 1 M6 fastener
- 2 Mounting rack
- 3 Anchor bolt (supplied by others)
- 4 Shipping skid (representation)
- 5 Screw (used for shipping)

5.4.5 Exterior Wall Mounting

Refer to the installation overview in [Fig. 7](#) and required clearances in [chapter 5.4.1](#), then install the humidifier on an exterior wall as follows:

1. Select a location where the unit is not exposed to severe weather, or where the temperature drops below -20 °C, or where strong winds may cause the unit to fall. External bracing (supplied by others) will be required for units exposed to strong winds.
2. Select a reasonably flat vertical mounting surface on a suitably reinforced exterior wall to reduce vibrations and is capable of supporting the full operating weight of the humidifier. Refer to [Table 8](#) for the weight.
3. Mark the attachment points "A" and "B" at the desired position with the help of a level. Refer to [Fig. 12](#) and [Table 7](#).
4. Secure the mounting bars (at A) to the mounting surface with M6 bolts and flat washers (supplied by others). Ensure that the mounting bars are level, and tighten the bolts.
 - Small: 2 bolts/bracket (min)
 - Medium: 2 bolts/bracket (min)
 - Large: 3 bolts/bracket (min)
5. Install suitably sized pipe chases (recommended) for the drain lines and water supply line. Refer to [Fig. 9](#) for general locations and sizes.
6. Remove the shipping straps, the packaging crate and the foam spacers around the unit.



WARNING!

Heavy object – risk of personal injury and damage to equipment!

Prevention: While the unit is still attached to the shipping skid, raise the humidifier using a forklift or crane. Protect the unit from damage by tethers and other lifting equipment, and do not drop the humidifier.

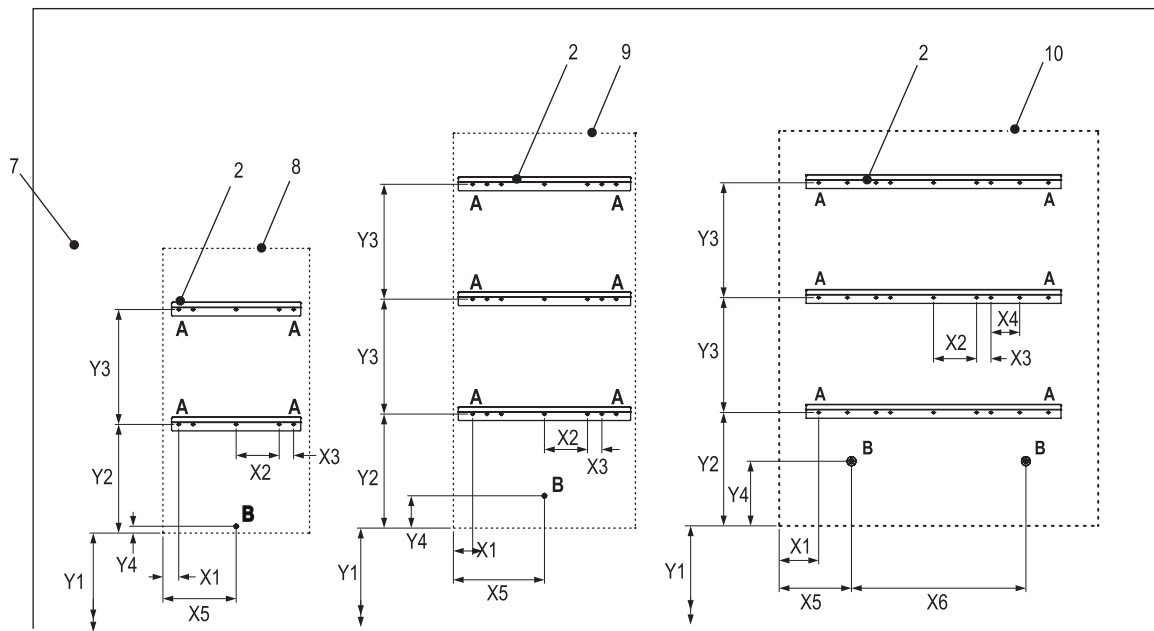
7. Remove the shipping screws and the shipping skid from the bottom of the unit.
8. Carefully raise the humidifier into position and align the mounting brackets on the back of the humidifier with the installed mounting bars, as shown in [Fig. 12](#). Lower the humidifier onto the mounting bars, and ensure that the unit is seated properly and level.
9. Secure the humidifier to the mounting surface at attachment point(s) "B" with M8 bolt(s) and flat washer(s) (supplied by others). Tighten the bolt(s).

Table 7: Mounting Holes Spacing

Housing Size	Dimension in [mm] (mm)									
	X1	X2*	X3*	X4*	X5	X6	Y1**	Y2	Y3*	Y4
Small	56	152	51	–	259	–	381	384	406	24
Medium	68	152	51	–	322	–	381	401	406	114
Large	158	152	51	102	256	617	381	399	406	229

* Typical

** Minimum clearance



View -D-

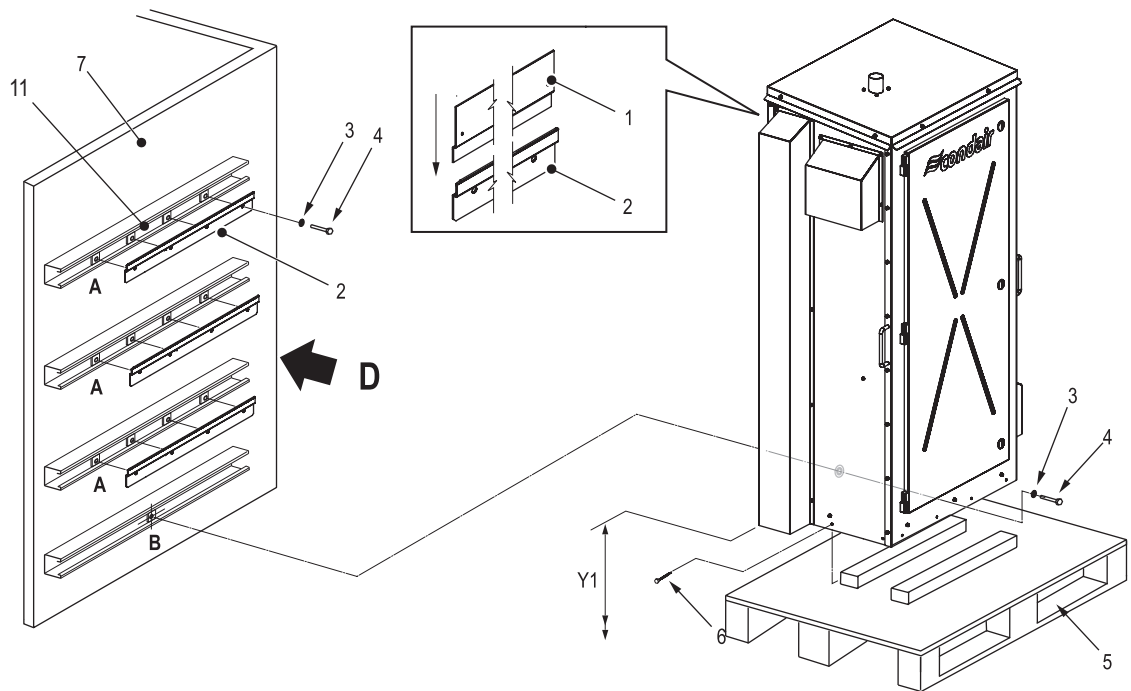


Fig. 12: Exterior Wall Mounting

Legend

- | | | | |
|---|---|----|--|
| 1 | Mounting bracket, attached to the humidifier rear panel (2x for small unit, 3x for medium and large unit) | 6 | Screw (used for shipping) |
| 2 | Mounting bar, supplied (2x for small unit, 3x for medium and large unit) | 7 | Mounting surface, external wall |
| 3 | Flat washer, M10 (supplied by others) | 8 | Outline of unit's rear panel – small size unit, reference |
| 4 | Bolt, M10 (supplied by others) | 9 | Outline of unit's rear panel – medium size unit, reference |
| 5 | Shipping skid (representation) | 10 | Outline of unit's rear panel – large size unit, reference |
| | | 11 | Reinforcement for mounting surface (supplied by others) |

5.4.6 Mounting Checklist

After mounting the humidifier, check the following:

- Unit mounted in an outdoor environment where it is not exposed to severe weather, or where the temperature drops below $-20\text{ }^{\circ}\text{C}$, or where strong winds may cause the unit to fall. External bracing (supplied by others) will be required for units exposed to strong winds.
- Adequate clearances maintained and in accordance with [chapter 5.4.1](#), and all local and national installation codes?
- Mounting surface stable and reinforced to reduce vibrations and support the full operating weight of the humidifier?
- Unit level?
- Unit fastened securely?

5.5 Steam Line Connections

5.5.1 Steam Line

The steam outlet is located on the top of the Condair EL/RS Outdoor humidifier. Refer to [Fig. 13](#).

Refer to the Condair EL/RS manuals for steam and condensate line routing, radius and connection details, as well as sizing and materials. The number of bends and the length of the line must be kept to a minimum so that the total system backpressure (backpressure in the line plus duct static pressure) does not exceed 1.5 kPa.

The steam lines can be routed to an air handling unit, or into the building through a pipe chase in the roof or exterior wall.

The steam line(s) must maintain a constant minimum upslope/downslope of 15% (8.5°), and must be insulated. A condensate trap must be installed at the lowest point in the steam line just after it exits the unit. The condensate line and trap MUST be trace heated to prevent freezing.

The steam line(s) MUST be insulated to minimize condensation and maximize efficiency.

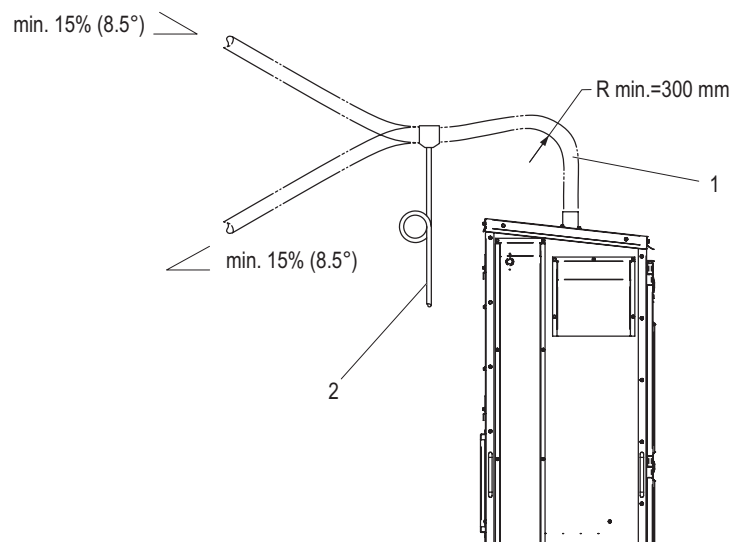


Fig. 13: Condensate Drain at Steam Exit

Legend

1 Steam line

2 Condensate trap (at lowest point in steam line)

5.5.2 Steam Connections Checklist

Check the following to ensure that the steam and condensate connections for the outdoor humidifier have been installed properly.

Steam Line

- Total system backpressure does not exceed 1.5 kPa?
- Steam line maintain constant minimum upslope of 15% (8.5°)? Condensate trap installed at the lowest point in the steam line just after it exits the unit? Condensate line and trap trace heated?
- Steam line sized correctly, and does not exceed maximums specified in the Condair EL/RS manuals?
- Minimum bend radius of 300 mm for steam hose, or 5x internal diameter for rigid pipes maintained?
- Steam line does not reduce in diameter except at the steam distributor? Condensate line installed just before the restriction?
- Steam lines do not merge except at the steam distributor through a Condair adapter?
- Steam line does not sag or kink? Supported adequately? Condensate trap installed at all low points in line?
- If a steam hose is used, is it attached securely with clamps? Clamps secure without crushing steam line?
- Allowances for thermal expansion during operation, and shortening of the hose due to aging taken into consideration?
- Steam line properly insulated?
- Steam line purged?

Condensate Lines

- Condensate drain water temperature meet local code requirements?
- Condensate lines installed at all low points, and at horizontal -to-vertical transitions in the steam line?
- Condensate lines in the steam line always connect to full-size "T" connectors?
- Condensate traps have a minimum loop height of 200 mm and installed at least 300 mm below the "T" connector or steam distributor?
- All condensate lines have a constant minimum downslope of 15% (8.5°)?
- Condensate lines free of kinks?
- Condensate lines purged?
- Condensate traps primed with water?

5.6 Water Connections

Refer to [chapter 5.2](#) for the overall routing of water and drain lines for each mounting arrangement. Also refer to [chapter 5.3](#) and the Condair EL/RS manuals for the water supply and drain requirements.

5.6.1 Water and Drain Lines

Connect the water supply and drain lines as described below. Refer to [Fig. 14](#).

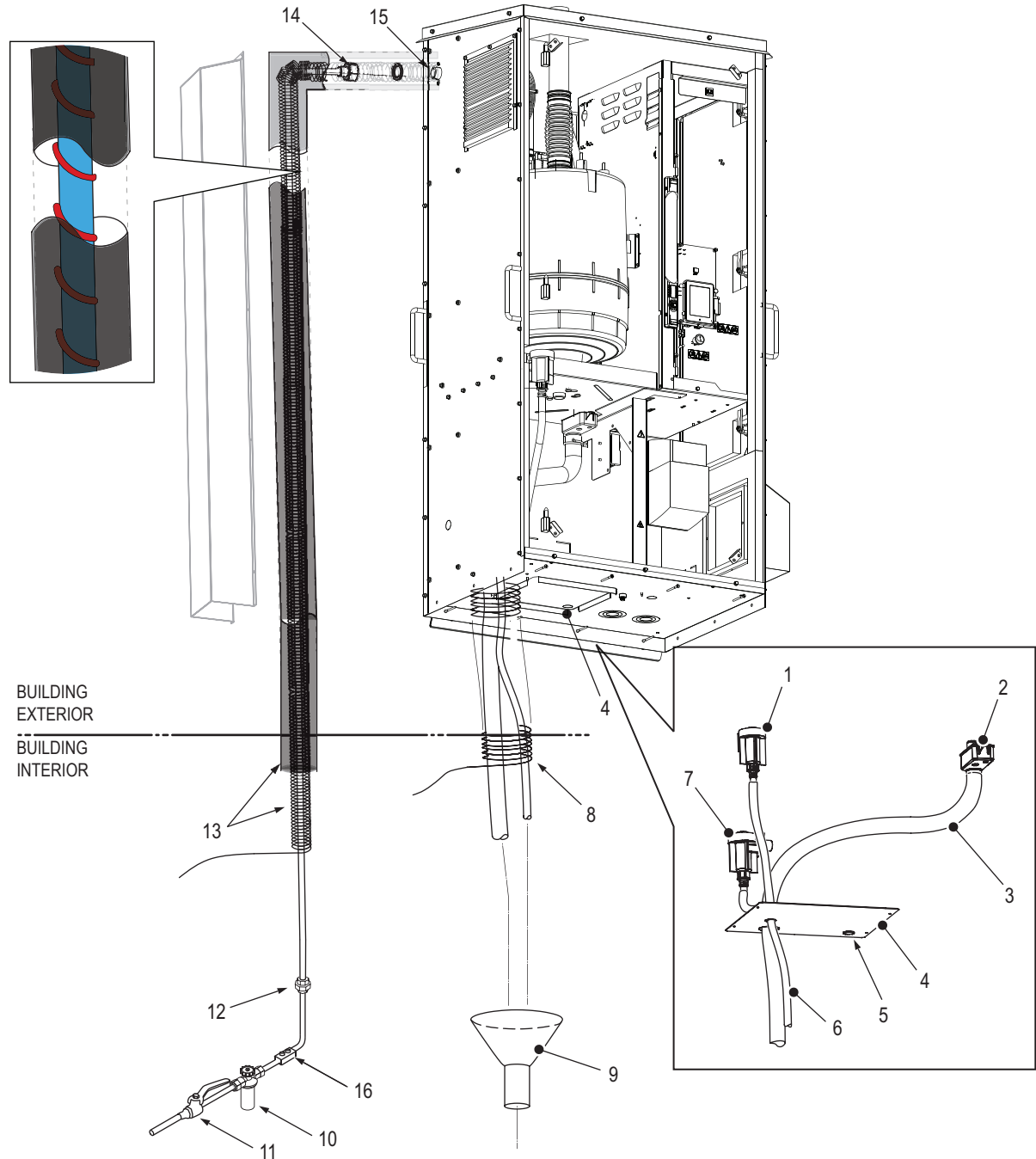


Fig. 14: Water Supply and Drain Connections (medium size EL-OC unit shown)

Note: Front door and some sheet metal removed from the figure for clarity.

Note: Trace heating and insulation should extend to the cabinet.

Legend:

- | | | | |
|---|--|----|--|
| 1 | Mechanical freeze protection valve (Position for EL-OC and RS-OC without scale tank) | 9 | Air gap funnel (supplied by others) |
| 2 | Drain cup | 10 | Water inlet filter accessory Z261 (supplied by others) |
| 3 | Drain hose, 30 mm I.D. (supplied) | 11 | Shutoff valve (supplied by others) |
| 4 | Bottom panel | 12 | Union fitting (supplied by others) |
| 5 | Knockout (spare) | 13 | Trace heating and insulation (supplied by others) |
| 6 | Drain hose, 9.5 mm I.D. (from mechanical freeze protection valve) | 14 | Water supply line, minimum inner diameter 12 mm (supplied by others) |
| 7 | Mechanical freeze protection valve (Position for RS-OC with scale tank) | 15 | Inlet, fill valve (3/4" BSPP plastic threads) |
| 8 | Trace heating and insulation (supplied by others), install over valves and fittings, up to cabinet | 16 | Pressure shock absorber (recommended, supplied by others) |

Water Supply Line

- The water supply must be installed to local plumbing codes.
- For ease of maintenance, ensure that a water shutoff valve and union fitting are installed in the supply line (inside the building), as close as possible to the humidifier.
- The water filter must be installed on the inside of the building as close as possible to the humidifier.
- The water supply line to the device should have a minimum diameter of 12 mm and be equipped with a G 3/4" female thread for the connection to the device.
- 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.
- Route the water supply line through a pipe chase to the unit (recommended). In cold climates, install trace heating and insulation to prevent the line from freezing.



CAUTION!

Risk of damage to the plastic threads of the fill valve!

Prevention: Hand-tighten the water line to the fill valve.

- Connect the water supply line to the fill valve and hand-tighten.

Drain Lines

- Ensure that the air gap funnel is located inside the building (recommended), and connected to a dedicated building drain (recommended) with a drainage capacity of at least 30 l/min for an EL-OC unit and for a RS-OC unit – per steam cylinder. The drain line exiting the funnel should have a minimum inner diameter of 40 mm. In large units, separate air gap funnels must be used for drain lines from each cylinder.
- All drain lines described below should be as short as possible, and routed through a pipe chase (recommended). Drain lines must have a constant minimum downslope of 15% (8.5°), and empty into the funnel without touching its sides or bottom.
- Connect the drain hose (30 mm inner diameter, supplied) to the humidifier's drain connector with a hose clamp and feed the open end through the large pre-lasered knockout in the base plate down into the air gap funnel (see [Fig. 14](#)).
- Feed the open end of the drain hose (9.5 mm inner diameter) connected to the mechanical freeze protection valve (1 or 7) through the small pre-lasered knockout in the base plate down into the air gap funnel (see [Fig. 14](#)).

- In cold climates, install trace heating and insulation to prevent the drain lines from freezing.
- All drain lines must be installed to local plumbing codes.

Upon completion of the water and drain connections, perform the following:

- To ensure that the IP55 rating of the unit is maintained, seal all gaps around the drain lines where they pass through the bottom panel in the unit.

IMPORTANT! Seal all pipe chases to prevent any rising steam from entering the bottom of the unit, and to isolate the unit from the pressure inside the building.

- Disconnect and flush the water supply and drain lines to clear out any debris in the lines. Check the strainer in the fill valve to ensure it is clear of all debris, Refer to the Condair EL/RS manuals for details. Reconnect the lines.

5.6.2 Water Connections Checklist

Check the following to ensure that the water connections for the outdoor humidifier have been installed properly.

- Water and drain lines installed to local plumbing codes?
- Shutoff valve and union fitting installed in supply line?
- Water supply piping minimum 12 mm diameter, and routed through a pipe chase to the unit (recommended)?
- Pressure shock absorber installed in the water supply line (recommended)?
- Water inlet filter accessory installed in the water supply line (inside the building) close to the humidifier?
- Water supply surge-free and pressure regulated to 2-10 bar?
- Water supply temperature 1-25 °C for EL-OC unit, and 1-25 °C for RS-OC unit?
- Cold potable drinking water only (not RO or DI) for EL-OC unit?
- For EL-OC unit, is conductivity of the water 125-1250 µS/cm?
- All drain lines routed through the bottom panel in the unit to the air gap funnel?
- All gaps around the drain lines sealed where they pass through the bottom panel in the unit?
- Drain lines have a constant minimum downslope of 15% (8.5°) to funnel without touching its sides or bottom?
- Drain lines from large humidifiers empty into separate air gap funnels before connecting to the building drain?
- Air gap funnel(s) connected to a dedicated building drain (recommended) with a drainage capacity of at least 30 L/min for an EL-OC and RS-OC unit – per steam cylinder?
- Drain line exiting the air gap funnel minimum 40 mm in diameter?
- If the unit is installed in a cold climate, are the water supply and drain lines trace heated and insulated?
- All pipe chases sealed to isolate the unit from pressure inside the building?
- All water leaks are sealed?
- Supply and drain lines flushed to remove all debris? Strainer in the fill valve clear of all debris?

5.7 Electrical Connections



DANGER!
Risk of electric shock!

The Condair EL/RS Outdoor humidifier is mains powered. Live parts may be exposed when the doors are open. Touching live parts may cause severe injury or even death.

Prevention: All electrical work must only be performed by a licensed electrician or a Condair technician. The humidifier must be connected to the mains only after all installation work has been completed, checked for correct workmanship, and the doors are closed and fastened securely.



CAUTION!
Electrostatic discharge (ESD)!

The electronic components inside the humidifier are sensitive to electrostatic discharge (ESD).

Prevention: Take appropriate measures to protect the electronic components inside the unit against damage caused by electrostatic discharge (ESD). Refer to IEC 61340.

- All wiring must be performed by a licensed electrician or a Condair technician in accordance with national and local codes.
- Ensure that power supply voltage and current ratings match the requirements shown on the specification label. Refer to [Fig. 3](#).
- Two weatherproof fused disconnect switches (supplied by others – one for heating voltage and the other for control voltage supply) must be installed external to the unit to permit power interruption for service/maintenance. The fusing for heating voltage must not exceed the maximum circuit protection indicated on the specification label.

IMPORTANT! In order to maintain the IP55 rating of the unit, DO NOT mount the disconnect switches, or any other component, directly on the outdoor enclosure of the unit. Such installations may permit entry of moisture into the unit and cause heat loss, and will void the warranty.

For units secured to the optional mounting rack, an optional disconnect mounting bracket (option: DC) can be installed on the rear of the unit to which the disconnect switches can then be secured. Refer to [Fig. 15](#).

- All electrical cables MUST enter the side or bottom of the unit through minimum IP55-rated cable glands (supplied by others) to ensure that the IP55 rating for the unit is maintained. Knockouts are available on the side and bottom of the unit for routing the cables into the unit. Refer to [Fig. 15](#).

Note: Knockouts for the small unit are located on the left side of the unit.

- Route the power cable into the electrical cabinet and connect it to the main contactor (K1) – for details, refer to [Fig. 15](#). **Note:** If terminal heating voltage is used, connect the power cable to the optional terminal block (option: THV). Refer to the Condair EL/RS installation manuals for connection details.
- For all other electrical connection details (including internal control voltage (option: CVI), and low voltage control wiring) refer to the Condair EL/RS installation manuals.

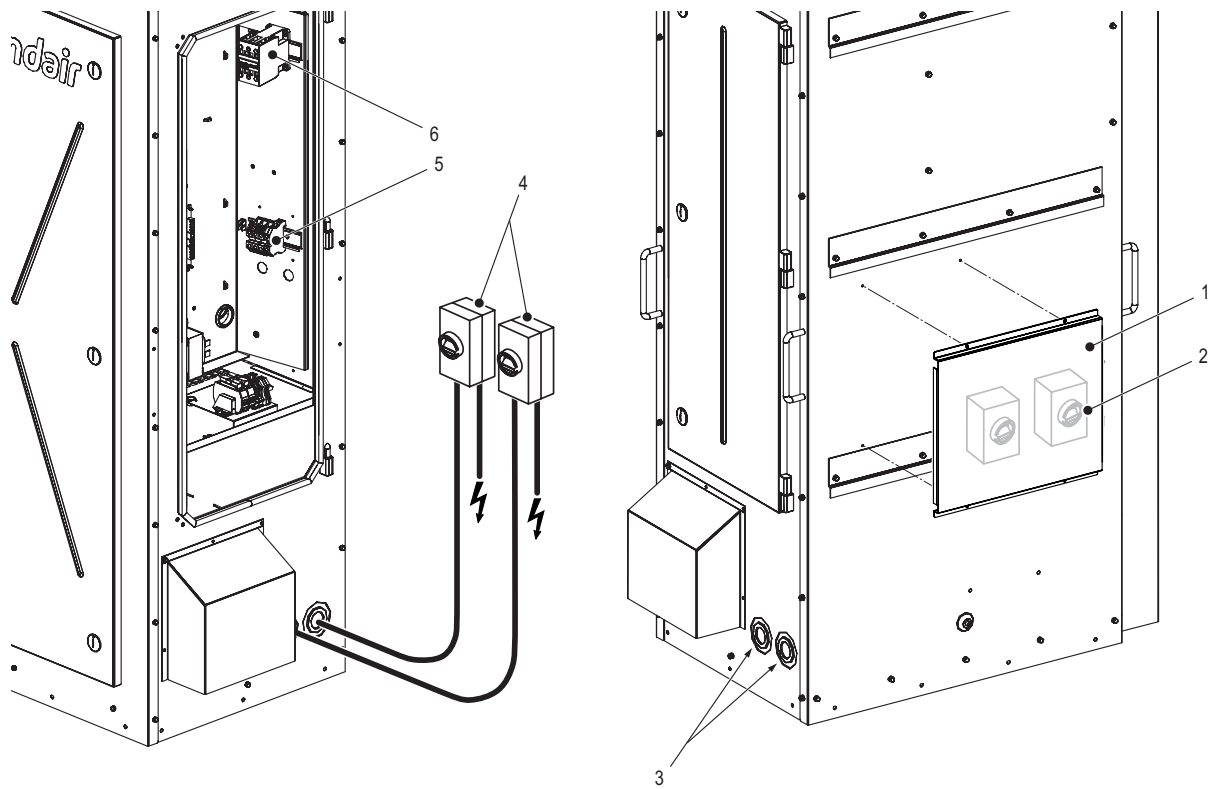


Fig. 15: Condair EL/RS Outdoor Humidifier Power Connection

Legend

- | | |
|--|--|
| <p>1 Disconnect mounting bracket (option: DC) – for unit installed on a mounting rack</p> <p>2 External disconnect switch (2x, supplied by others) – optional location for unit installed on a mounting rack</p> <p>3 Knockout for routing power cable</p> | <p>4 External disconnect switch (2x, supplied by others) – location for unit installed on an air handling unit or a vertical wall</p> <p>5 Terminal heating block (option: THV)</p> <p>6 Main contactor (K1)</p> |
|--|--|

5.7.1 EL Outdoor Cabinet Wiring Diagrams

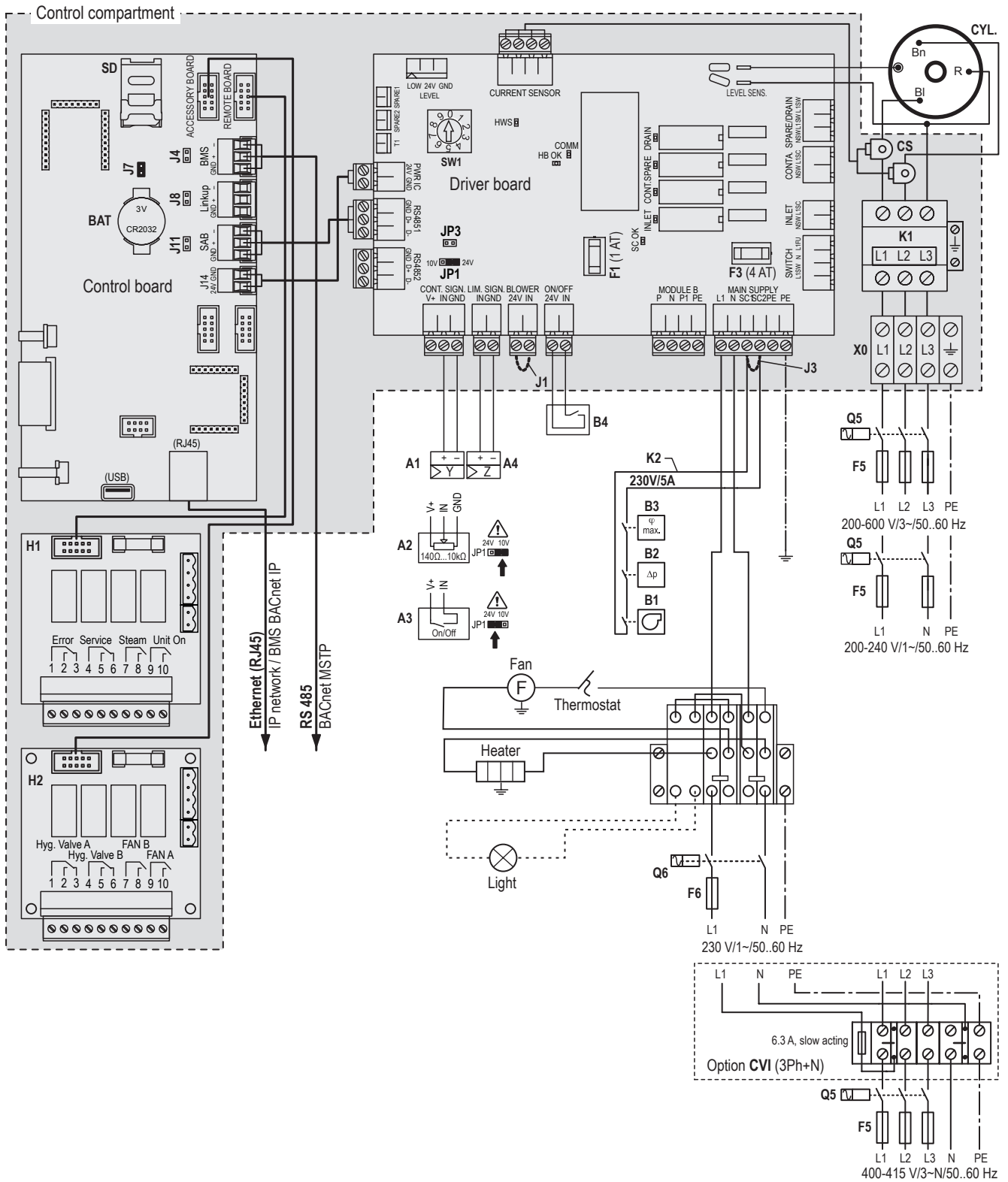


Fig. 16: Small and Medium EL Unit Wiring Diagram

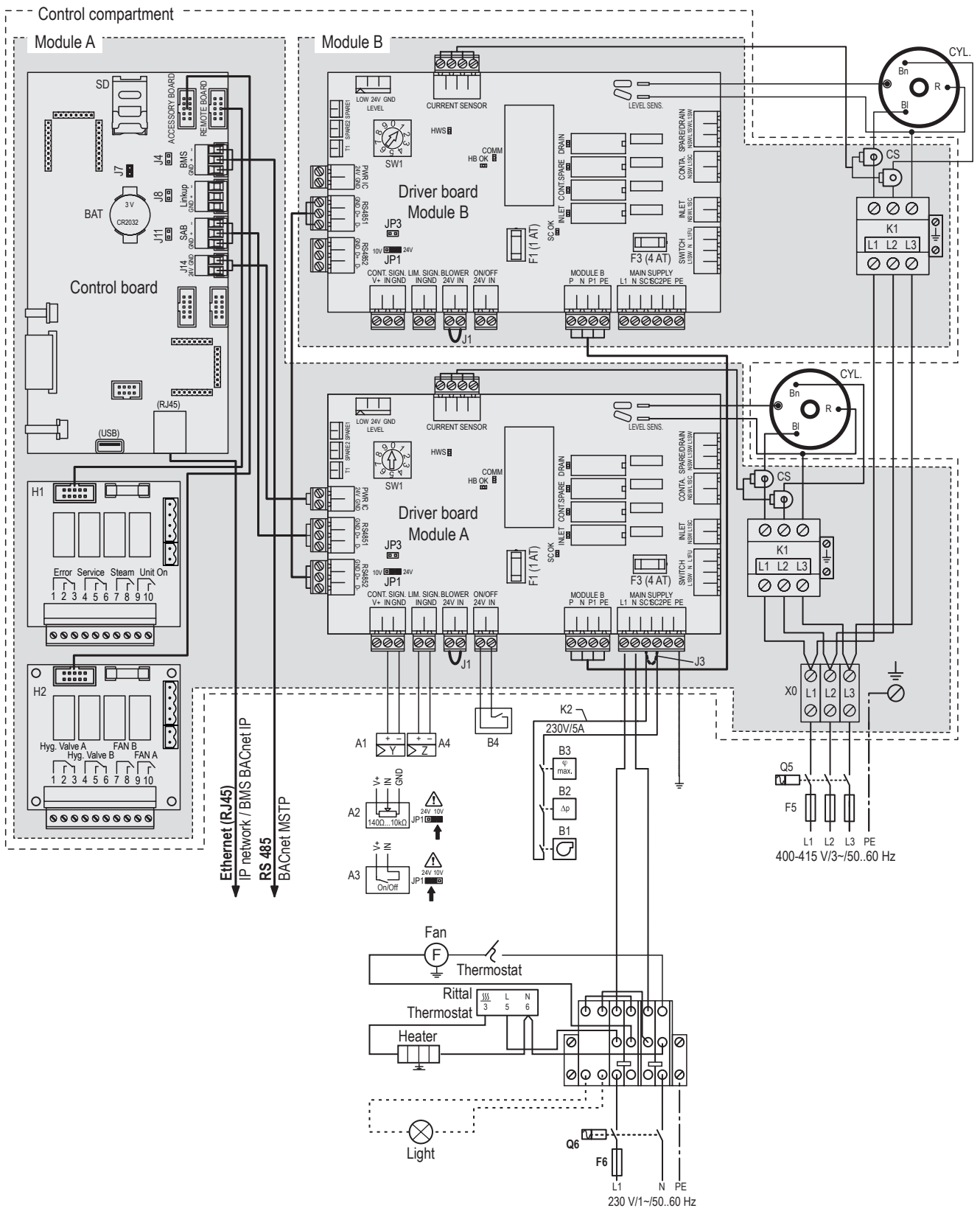


Fig. 17: Large EL Unit Wiring Diagram

Legend

A1	Continuous humidity controller (active) or humidity sensor	H1	Remote operating and fault indication (option)
A2	Ohmic humidity controller (passive), set jumper JP1 to 10 V	J1	Accessory board (option) for the control of an external fan of the AHU as well as the optional external valve for the water supply line flushing
A3	On/Off humidity controller, set jumper JP1 to 24 V	J3	Jumper wire, if blower pack safety loop is not connected
A4	Limiter signal	J4	Jumper wire, if no monitoring devices are connected to SC1 and SC2
B1	Ventilation interlock	J7	Jumper for activating Modbus or BACnet MSTP communication via RS 485 interface J6. If jumper is not in place, no communication will take place through the RS 485 interface
B2	Airflow monitor	K1	Mains contactor (heating voltage) module A / module B
B3	Safety humidistat	K2	External safety circuit (230 V / 5 A)
B4	External enable contact	Q5	External electrical isolator heating voltage supply
CS	Current sensors	Q6	External electrical isolator control voltage supply
F1	Internal fuse driver board 24 V supply (1 A, slow acting)	SW1	Rotaryswitch Module identification (Module A-0, Module B-1)
F3	Internal fuse driver board 230 V supply (4 A, slow acting)	THV	Terminal Heating Voltage supply (option)
F5	External fuse heating voltage supply (see table in the installation manual)		
F6	External fuse control voltage (max 10 A, slow acting)		

5.7.2 RS Outdoor Cabinet Wiring Diagrams

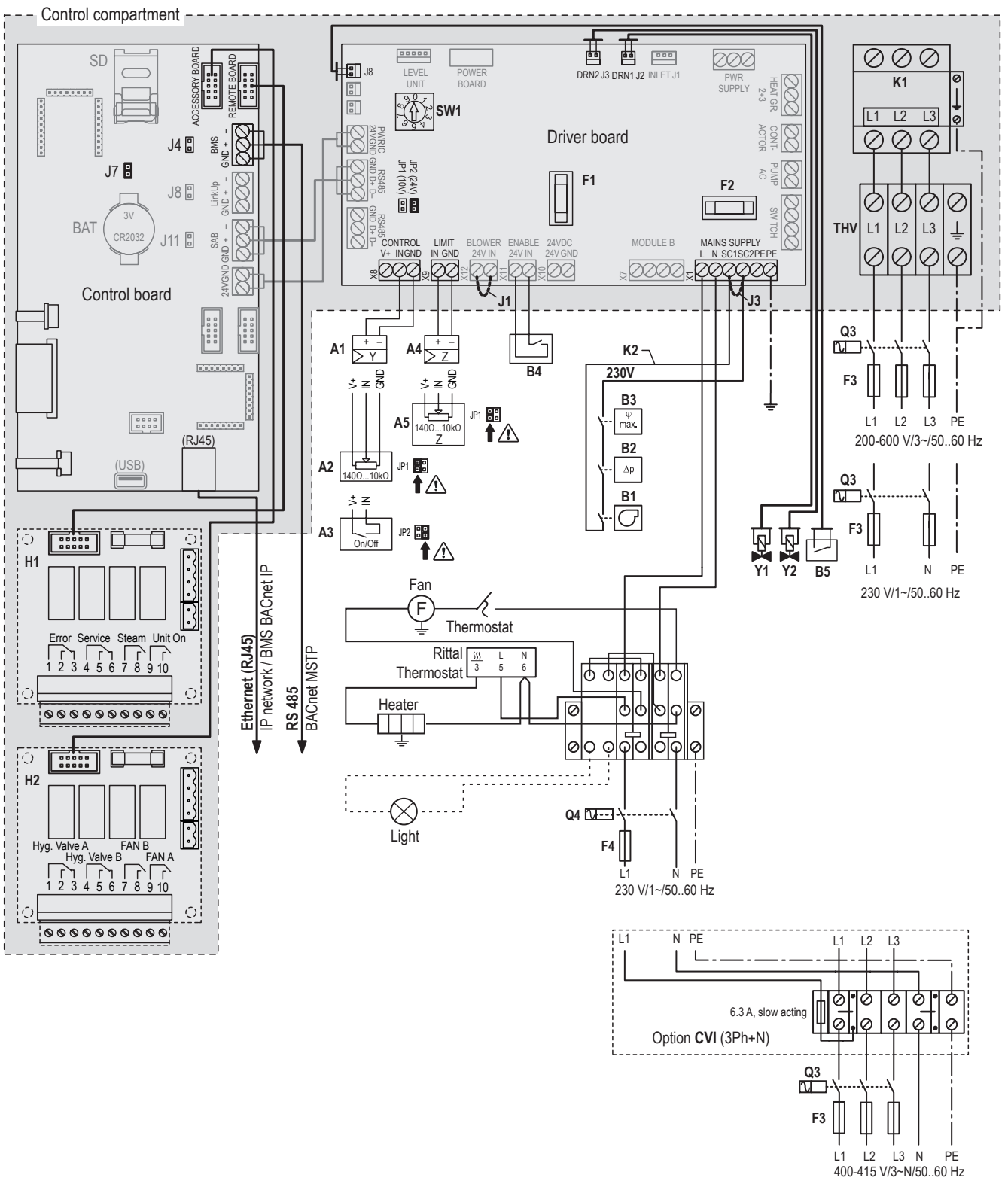


Fig. 18: Small and Medium RS Unit Wiring Diagram

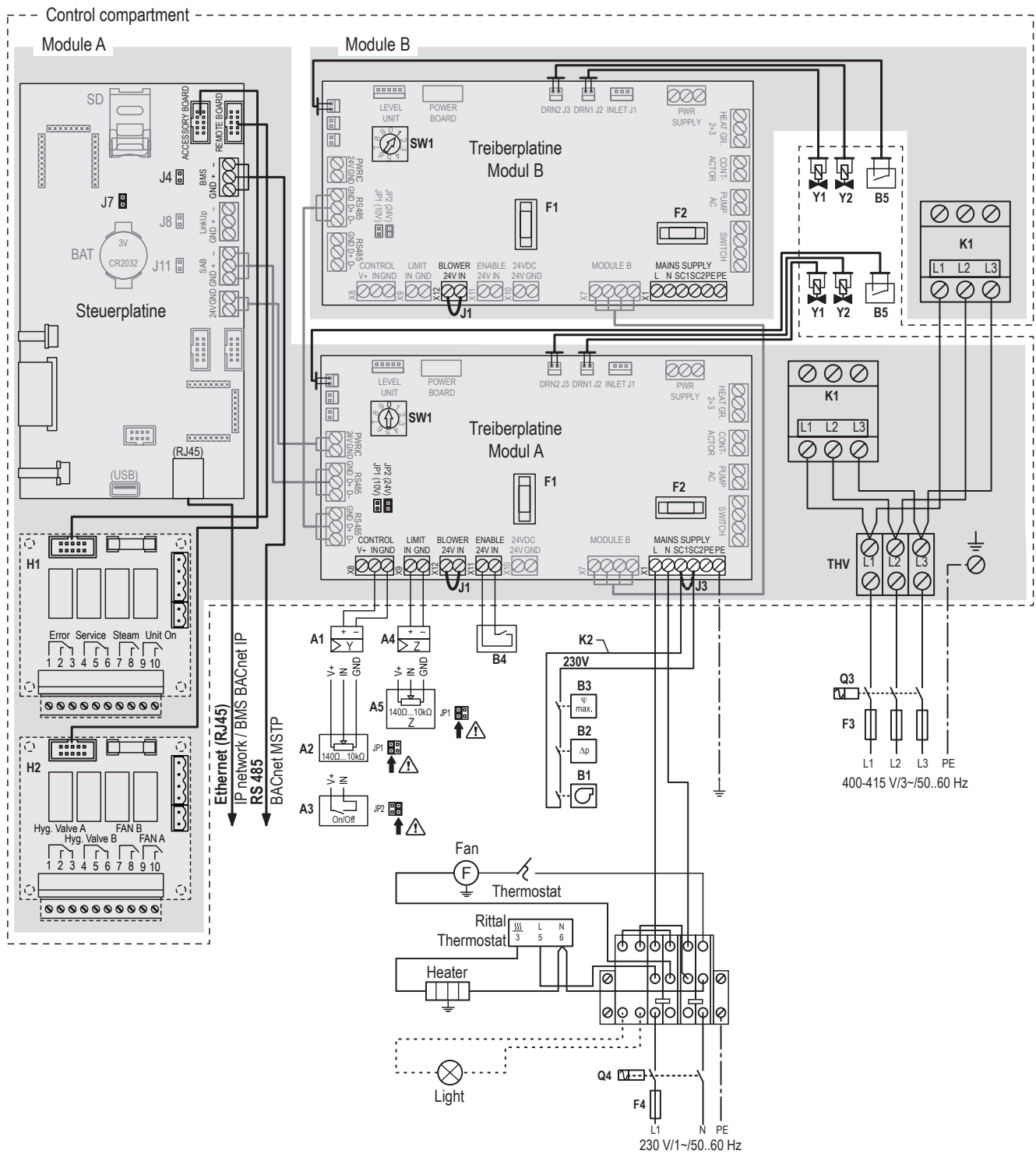


Fig. 19: Large RS Unit Wiring Diagram

Legend

A1	Continuous humidity controller (active) or humidity sensor	J1	Jumper wire, if blower pack safety loop is not connected
A2	Ohmic humidity controller (passive), set jumper JP1 and remove jumper JP2	J3	Jumper wire, if no monitoring devices are connected to SC1 and SC2
A3	On/Off humidity controller, set jumper JP2 and remove jumper JP1	J4	Jumper for activating the terminating resistor for Modbus network (Jumper must be connected if Condair RS is the last unit in the Modbus network)
A4	Limiter signal	J7	Jumper for activating Modbus or BACnet MSTP communication via RS 485 interface J6. If jumper is not in place, no communication will take place through the RS 485 interface
A5	Ohmic limiter controller, set jumper JP1 and remove jumper JP2	K1	Mains contactor (heating voltage) module A / module B
B1	Ventilation interlock	K2	External safety circuit (safety humidistat, airflow monitor, etc.
B2	Airflow monitor	Q3	External main switch heating voltage supply
B3	Safety humidistat	Q4	External main switch control voltage supply
B4	External enable contact	SW1	Rotary switch Module identification (Module A - 0, Module B - 1)
B5	External drain contact	THV	Terminal Heating Voltage supply (option)
F1	Internal fuse 24 V supply (1 A, slow acting)	Y1	Drain water cooling valve
F2	Internal fuse 230 V supply (6.3 A, slow acting)	Y2	Total drain valve
F3	External fuse heating voltage supply (see table in the installation manual)		
F4	External fuse control voltage (max 10 A, slow acting)		
H1	Remote operating and fault indication (option)		
H2	Accessory board (option) for the control of an external fan of the AHU as well as the optional external valve for the water supply line flushing		

5.7.3 Electrical Connections Checklist

Check the following to ensure that the electrical connections for the humidifier have been installed properly:

- Power supply meet the voltage and current requirements shown on the specification label ([Fig. 3](#))?
- Power supply uses weatherproof fused disconnect switches? Fusing for heating voltage rated for maximum circuit protection indicated on the specification label? Disconnect switches installed external to the unit, and NOT directly attached to unit?
- All electrical cables enter the bottom or side of the unit through minimum IP55-rated cable glands?
- All wiring done according to the wiring diagrams and instructions in this manual?
- Electrical installation meet the applicable national and local codes?

6 Operation and Maintenance

6.1 General

The Condair EL/RS Outdoor humidifier must be commissioned and operated only by personnel who are well qualified and properly trained to commission the Condair humidifier. It is the customer's responsibility to verify the qualifications of personnel.

6.2 Commissioning

The unit must always be commissioned for the first time by a service technician from your Condair representative, or by personnel who are well trained and authorized by the customer.

The steps are in the following order:

1. Inspect the mounting of the outdoor steam humidifier (see [chapter 5.4.6](#)).
2. Inspect the steam and condensate line connections (see [chapter 5.5.2](#)).
3. Inspect the water and drain connections (see [chapter 5.6.1](#)).
4. Inspect the electrical connections (see [chapter 5.7.3](#)).
5. Flush the water supply and drain lines.
6. Make sure that the steam cylinder is seated properly in its base.
7. Configure the controls and the Condair EL/RS Outdoor humidifier.
8. Wire the unit to a remote monitoring system, and verify that it is functional.
9. Conduct performance tests, including control and monitoring devices.
10. Fill out the commissioning protocol documents.

6.3 Operating the Unit

The outdoor unit operates in the same manner as the Condair EL/RS indoor humidifier. Refer to respective Condair EL/Condair RS operation and maintenance manual for details.

6.4 Inspections During Operation

Regularly inspect the following when the unit is in operation:

- Inspect the water supply line, drain and steam connections for any leaks.
- Ensure that the drain lines are not blocked or kinked, and empty into the air gap funnel (recommended inside the building).
- Check the unit and other system components have not shifted from their mountings, and are fastened securely.
- Visually check for any damage to the electrical wiring.
- Visually check the heating wires and insulation around the water and drain lines for damage.
- Inspect the outdoor enclosure heater and fan for buildup of dirt and pollen, and ensure that the air intake and exhaust shrouds are free of all blockages.
- Check the Home screen on the unit for maintenance or alarm messages. **Note:** The remote fault board can also be used to remotely monitor the unit for maintenance or alarm messages.
- Check that the doors on the unit are closed and fastened securely.
- In units operating in cold climates, keep the area around the unit clear of snow and ice accumulation to permit opening and closing of the front and side doors.

7 Maintenance

7.1 General

To ensure proper performance and long operating life of the Condair EL/RS Outdoor humidifier, Condair recommends inspection of the appliance and installation at least once a year by a qualified service person.



DANGER!
Risk of electric shock!

The Condair EL/RS Outdoor Humidifier is mains powered. Live parts may be exposed when the door panels are opened. Touching live parts may cause severe injury or even death.

Prevention:

Shut down the Condair EL/RS Outdoor Humidifier properly and disconnect power to the unit before performing any maintenance work on the unit. Refer to the respective Condair EL/Condair RS operation and maintenance manual for proper shutdown procedure.

Only qualified personnel should perform maintenance or repairs on the unit.

DO NOT service the unit while standing on wet or icy surfaces, or in wet weather.

Observe all other safety precautions described in [chapter 2](#), as well as the respective Condair EL/Condair RS operation and maintenance manual.

During cold weather, all maintenance on the unit must be performed in a heated service tent.

The maintenance items discussed in this section are **in addition** to those listed in the Condair EL/Condair RS operation and maintenance manual. Refer to the respective Condair EL/Condair RS operation and maintenance manual for other maintenance requirements.

IMPORTANT! Damage caused by use of non-approved parts is not covered by warranty. Use only original Condair replacement parts.

7.2 Heater and Fan

- Use a vacuum cleaner or compressed air to remove all dirt and pollen from the heater and fan. Ensure that the fan spins freely.
- Replace the filter media in the exhaust fan. Refer to [chapter 8](#).
- Replace the filter media in the intake shroud.
- Ensure that the air intake and exhaust shrouds are not clogged with animals, nesting materials or other foreign matter.

7.3 Steam Cylinder

- For EL-OC units, replace or clean the steam cylinder. For RS-OC units, service the steam cylinder when the service reminder appears on the touchscreen display. Refer to the respective Condair EL/Condair RS operation and maintenance manual for cleaning/replacement procedures.

7.4 Cleaning

In addition to cleaning the heater, fans and shrouds, use compressed air to remove all dust and pollen from inside the control cabinet and plumbing cabinet in the unit.

7.4.1 Scale Management (RS-OC Units only)

- Depending on the water supply quality, empty the scale collection tank(s) in the RS-OC unit periodically – at the very minimum, twice every year or humidification season.
- Every third time the scale collection tank is cleaned, disassemble and clean the steam cylinder and heating elements. Refer to the Condair RS operation and maintenance manual.

Note: The procedure for removing the steam cylinder is the same as on the indoor units (the full drain valve is standard). Disconnect the freeze protection drain hose connection and remove the tank. Refer to [Fig. 20](#). The steam cylinder can now be removed for cleaning.

IMPORTANT! Ensure that the freeze protection drain hose is reconnected after installing the scale collection tank, and the spigot on the tank is in the Open position.

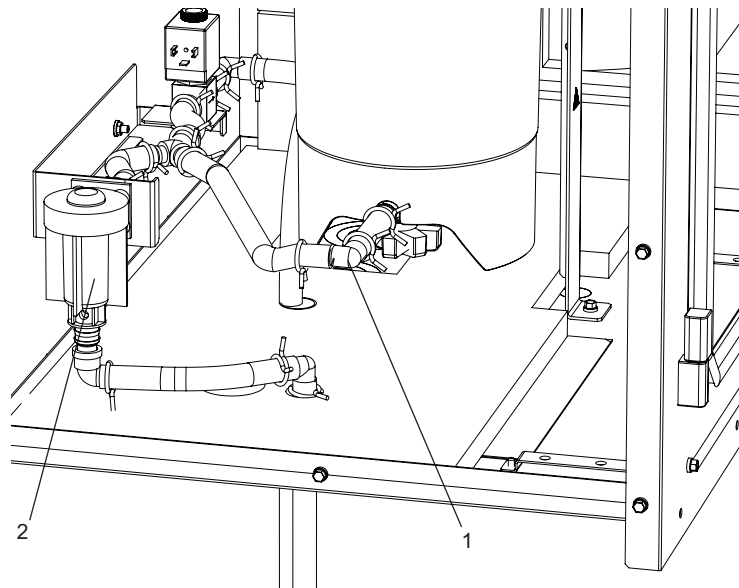


Fig. 20: Drain Hose Connection – RS-OC with Scale Tank

Legend

1 Freeze protection drain hose

2 Freeze protection valve

7.4.2 Restarting After a Freeze-up

In the event of a freeze-up, inspect then restart the unit as follows:

1. Inspect all hoses, fittings, valves and seals for cracks or damage. Contact your Condair representative to order replacement parts. Check all connections after replacing damaged parts.
2. Inspect the water supply line and all drain lines and ensure that the trace heating is working and the insulation around the piping is undamaged.
3. Ensure that the condensate lines and traps are not ruptured. Prime the condensate traps.
4. Power up the humidifier. The heater will automatically turn on and begin to warm up the humidifier enclosure. Once the temperature inside the enclosure has risen to the appropriate level, the unit will automatically resume normal operation.

8 Spare Parts List

The spare parts for the Condair EL/RS Outdoor humidifier is listed in this section. Refer to [Fig. 21](#), [Fig. 22](#) and [Fig. 23](#).

For all other spare parts refer to the respective Condair EL/RS Spare Parts List.

Condair EL/RS Outdoor Humidifier

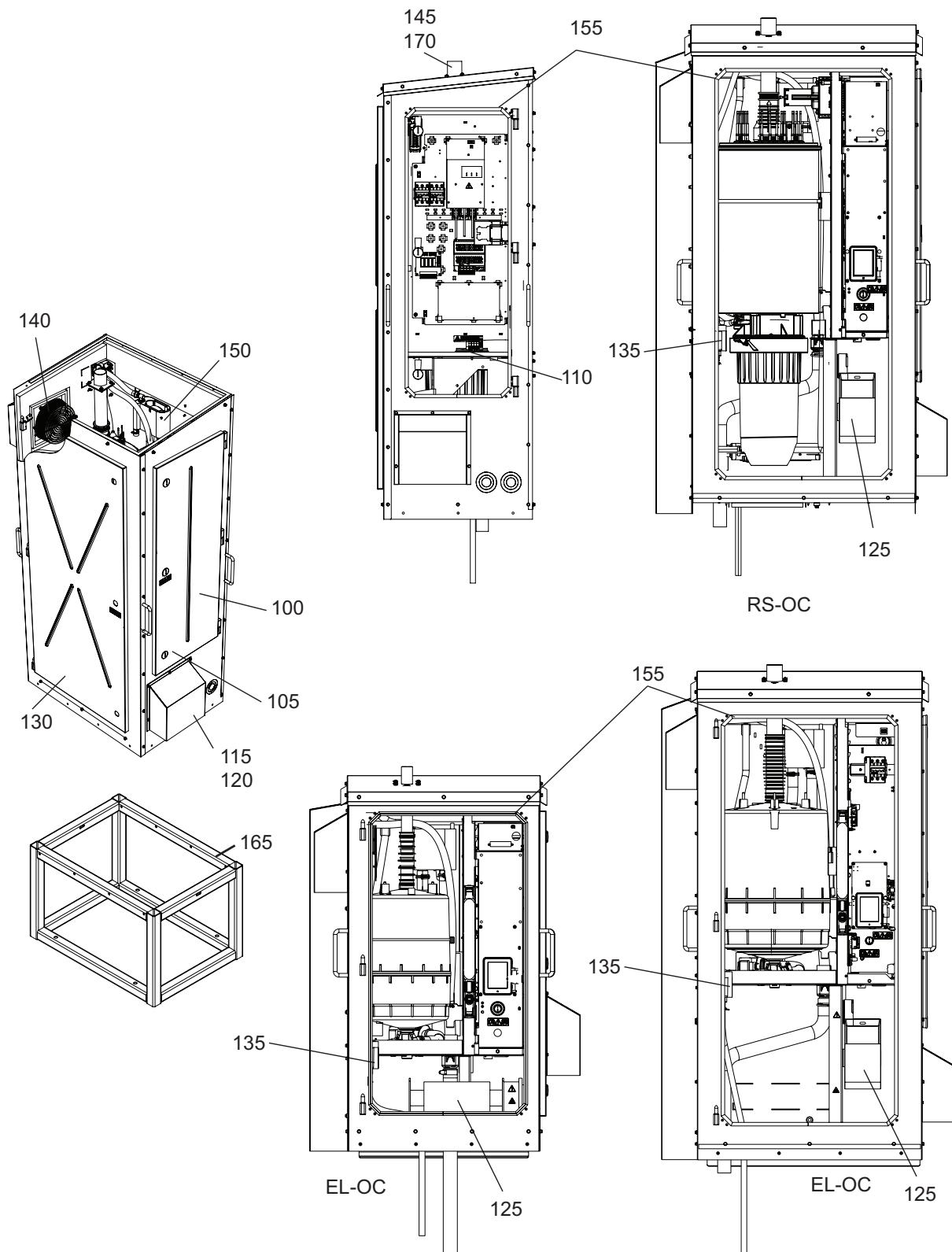


Fig. 21: Condair EL/RS Outdoor Humidifier

Parts List – Condair EL/RS Outdoor Humidifier

Item No.	Item Description	Details	Quantity	Condair Part Number
100	SP, Electrical Door, SM, EL OC Kits consist of: Door assembly, insulation, latches, hinges and mounting hardware	Small	1	2592279
	SP, Electrical Door, SM, RS OC	Small	1	2592280
	SP, Electrical Door, MD-LG, EL RS OC	Medium/Large	1	
105	SP, Door Latch, EL RS OC Kit consists of: Cam latch (qty. 3)	All	1	2589542
110	SP, Thermostat, EL RS OC (refer to Fig. 23 for details) Kit consists of: Thermostat, STC-100 (qty. 1) Screw (qty. 2)	All	1	2589538
115	SP, Intake Filter, EL RS OC (refer to Fig. 23 for details) Kit consists of: Filter, IP54, 172 mm (qty. 1) Screw (qty. 8) Washer, lock (qty. 8) Washer, flat (qty. 8)	All	1	2590794
120	SP, Filter (media only), EL RS OC (qty. 5) (refer to Fig. 23 for details)	All	1	2590795
125	SP, Heater, EL OC Kit consists of: Heater, 250W (qty. 1) Thermostat (qty. 1) Screw (qty. 4)	Small	1	2589533
	SP, Heater, RS OC EL OC Kit consists of: Heater, 800 W (qty. 1) Thermostat (qty. 1)	Small/Medium/Large Medium/Large	1	2589534
130	SP, Plumbing Door, SM, EL OC Kits consist of: Door assembly, insulation, latches, hinges and mounting hardware	Small	1	2590321
	SP, Plumbing Door, MD, EL RS OC	Medium	1	2590322
	SP, Plumbing Door, LG, EL RS OC Kit consists of: One left door and one right door	Large	1	2590323
135	SP, Freeze Protection, EL RS OC (refer to Fig. 23 for details) Kit consists of: Valve, freeze protection, FP-45 (qty. 1) Adaptor, hose barb (qty. 1) Elbow (qty. 1) (mounting hardware included)	Small/Medium Large	1 2	2590796
	140	SP, Exhaust Fan, EL RS OC (refer to Fig. 23 for details) Kit consists of: Fan assembly (fan, guard, filter, and screws) Screw (qty. 8) Washer, Lock (qty. 8) Washer, flat (qty. 8)	All	1
145	SP, Steam Exit Gasket, EL OC 5-8, 22 mm (refer to Fig. 23 for details) Kits consist of: Gasket (qty. 2)	Small	1	2590800
	SP, Steam Exit Gasket, EL OC 10-15, 30 mm	Small	1	2590793
	SP, Steam Exit Gasket, EL RS OC, 45 mm	Medium/Large	1	2590801
150	SP, Fill Cup, RS OC (refer to Fig. 23 for details) Kits consists of: Assembly, fill cup (qty. 1) – includes fill cup, hoses, gasket, fitting, spring clamps	Small/Medium Large	1 2	2589535
	SP, Fill Cup, EL OC Kit consists of: Assembly, fill cup (qty. 1) – includes fill cup, hoses, gasket, fitting, spring clamps	Small	1	2589536
		Medium	1	2589537
Large		2		

Note: Refer to [Table 1](#) and [Table 2](#) for details of the humidifier sizes.

Condair EL/RS Outdoor Humidifier

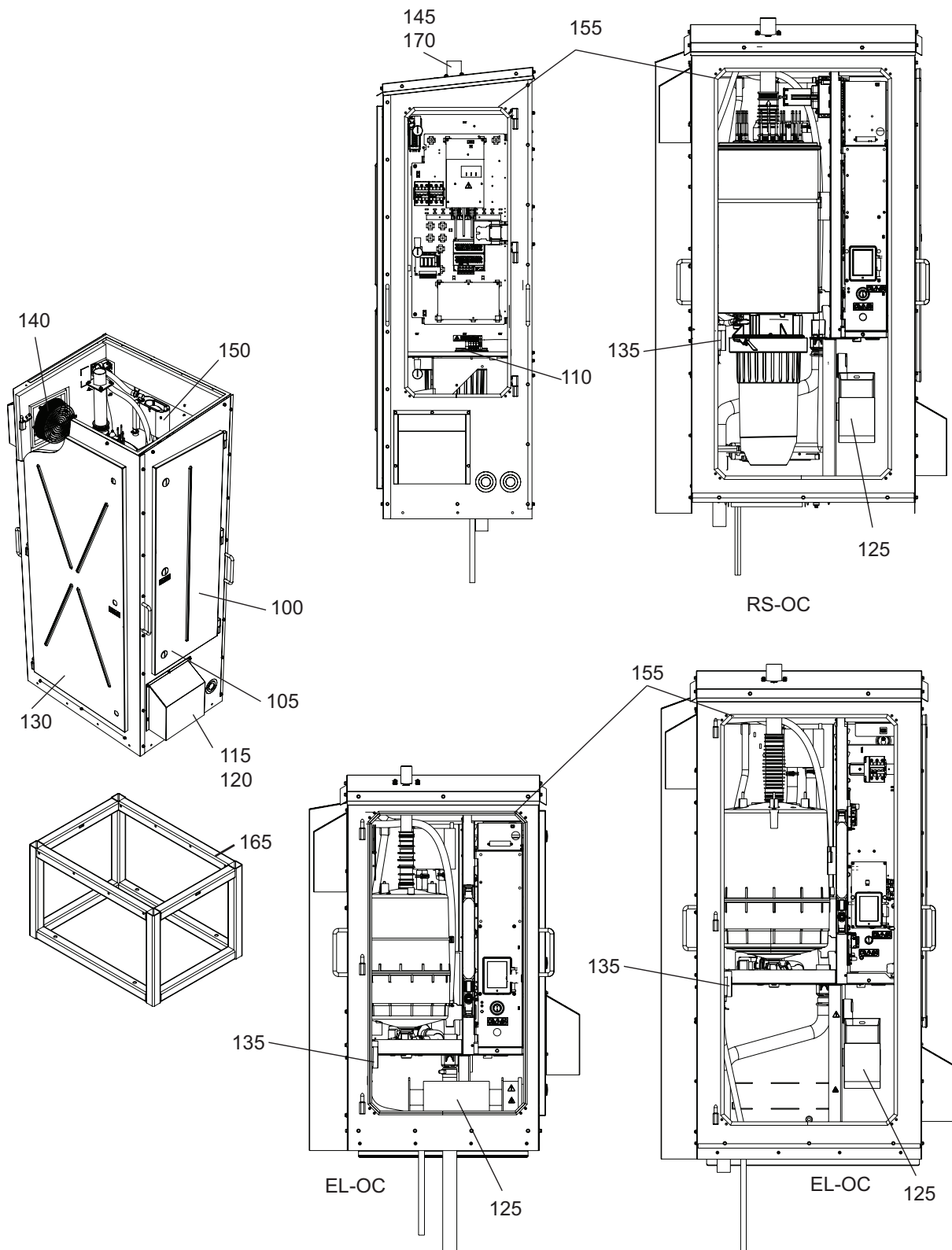


Fig. 22: Condair EL/RS Outdoor Humidifier, continued...

Parts List (continued...) – Condair EL/RS Outdoor Humidifier

Item No.	Item Description	Details	Quantity	Condair Part Number
155	SP, Gasket, Door, EL OC Kit consists of: Seal, rubber, push-on-edge trim, bulk, 2.45 m Seal, rubber, push-on-edge trim, bulk, 2.10 m	Small	1	2590797
	SP, Gasket, Door, EL OC Kit consists of: Seal, rubber, push-on-edge trim, bulk, 3.30 m Seal, rubber, push-on-edge trim, bulk, 2.40 m	Medium	1	2590798
	SP, Gasket, Door, RS OC Kit consists of: Seal, rubber, push-on-edge trim, bulk, 3.30 m Seal, rubber, push-on-edge trim, bulk, 2.40 m	Small/Medium	1	2590798
	SP, Gasket, Door, EL RS OC Kit consists of: Seal, rubber, push-on-edge trim, bulk, 3.53 m Seal, rubber, push-on-edge trim, bulk, 3.30 m Seal, rubber, push-on-edge trim, bulk, 2.40 m	Large	1	2590799
160	SP, Mounting Kit, EL OC (mounting hardware not included) Kit consists of: Bracket, outdoor wallmount (qty. 2)	Small	1	2592281
	SP, Mounting Kit, MD, EL RS OC (mounting hardware not included) Kit consists of: Bracket, outdoor wallmount (qty. 3)	Medium	1	2592282
	SP, Mounting Kit, LG, EL RS OC (mounting hardware not included) Kit consists of: Bracket, outdoor wallmount (qty. 3)	Large	1	2592283
165	SP, Mounting Rack, EL OC (accessory) Kit consists of: Rack, mounting (includes screws, nuts, and washers) (qty. 1)	Small 500 mm (W) x 400 mm (H) x 400 mm (D)	1	2590629
	SP, Mounting Rack, EL RS OC (accessory) Kit consists of: Rack, mounting (includes screws, nuts, and washers) (qty. 1)	Medium 632 mm (W) x 400 mm (H) x 455 mm (D)	1	2590630
		Large 1116 mm (W) x 400 mm (H) x 455 mm (D)	1	2590631
170	SP, Steam Exit, EL OC 5-8, 22 mm Kit consists of: Steam Exit (qty. 1) Gasket (qty. 1) Washer (qty. 4) Screw (qty. 4)	Small	1	2592274
	SP, Steam Exit, EL OC 10-15, 30 mm	Small	1	2592275
	SP, Steam Exit, RS OC 5-10, 45 mm	Small	1	2592278
	SP, Steam Exit, EL RS OC, 45 mm	Medium/Large	1	2592276
	SP, Steam Exit, RS OC, Pressure Port, 45 mm	Medium/Large	1	2592277
N/S	SP, Hose Kit, RS OC Kit consists of: Hose assembly (includes drain hoses, freeze protection hoses, level cup hoses, and clamps; does NOT include primary drain hose) (qty. 1)	Small/Medium Large	1 2	2589539
	SP, Hose Kit, EL OC Kit consists of: Hose assembly (includes drain hoses, freeze protection hoses, and clamps; includes primary drain hose) (qty. 1)	Small	1	2589540
	SP, Hose Kit, EL OC Kit consists of: Hose assembly (includes drain hoses, freeze protection hoses, and clamps; does NOT include primary drain hose) (qty. 1)	Medium Large	1 2	2589541
N/S	SP, Controlboard with touch panel (coated) EL OC		1	2595732
N/S	SP, Controlboard with touch panel (coated) RS OC		1	2595735
N/S	SP, Driverboard (coated) EL OC		1	2595734
N/S	SP, Driverboard (coated) RS OC		1	2595736
N/S	SP, Print for safety level control coated RS OC		1	2595737
N/S	SP, Print for level control coated RS OC		1	2595738

N/S Not shown

Condair EL/RS Outdoor Humidifier

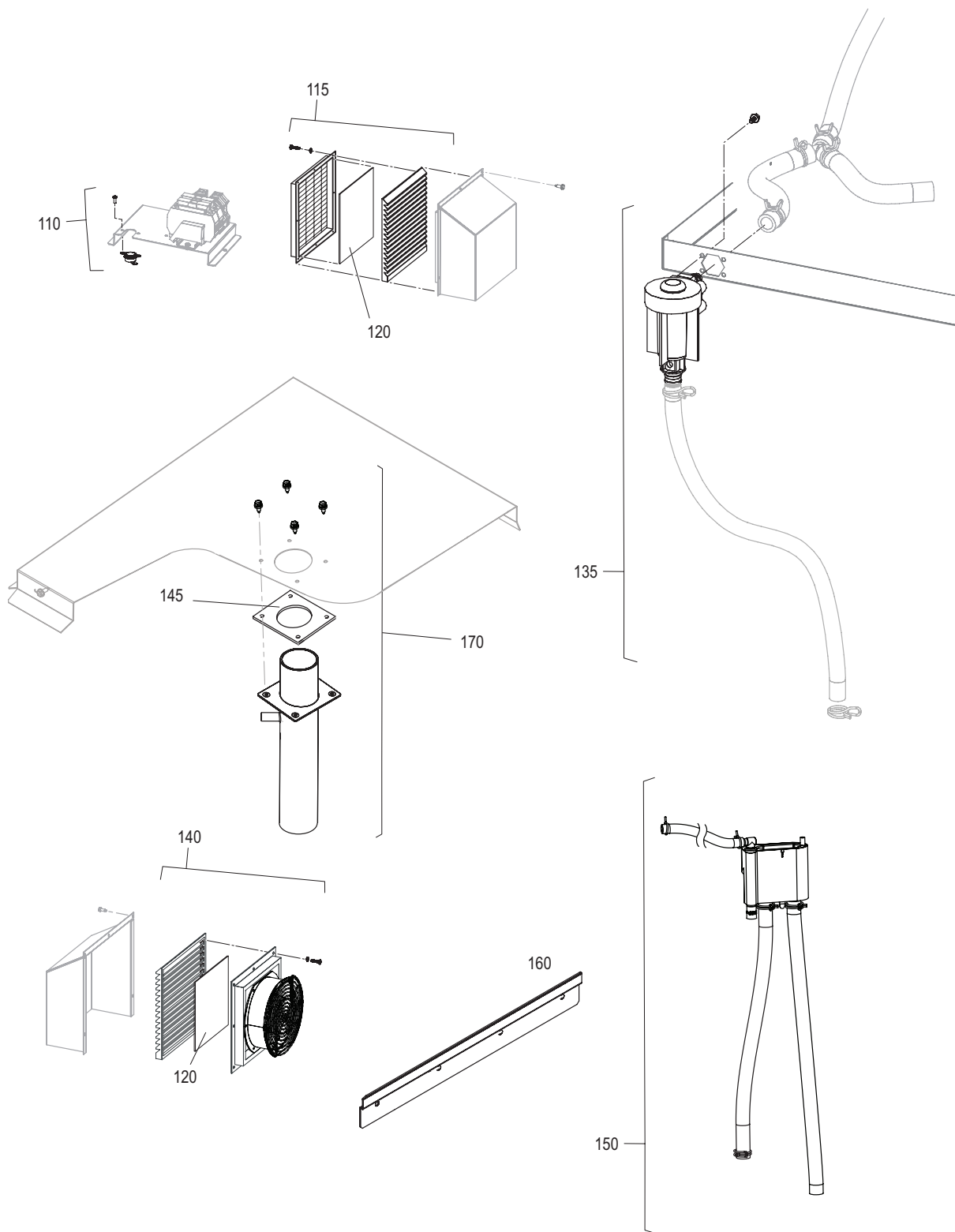


Fig. 23: Condair EL/RS Outdoor Humidifier – Kit Details

Note: Greyed out items are not a part of the kits.

9 Decommissioning

9.1 General

Strictly follow all instructions in this chapter when the Condair EL/RS Outdoor humidifier needs to be removed from service, for disposal or long-term storage.

Personnel Qualifications

Decommissioning of the Condair EL/RS Outdoor humidifier must be performed by a qualified service technician authorized by the customer. It is the customer's responsibility to verify qualifications of the personnel.

Safety

Decommissioning of the Condair EL/RS Outdoor humidifier will require personnel to access the inside of the control and plumbing cabinets in the humidifier, which may expose personnel and equipment to safety hazards.

Observe all safety precautions described in [chapter 2](#), as well as the safety precautions described in the respective Condair EL/Condair RS operation and maintenance manual.

9.2 Removal from Service for Disposal or Long-term Storage

To remove the Condair EL/RS Outdoor humidifier from service (for disposal or long-term storage):

1. Drain the steam cylinder (and the scale tank on the RS-OC unit), and shut down the humidifier. Refer to the respective Condair EL/Condair RS operation and maintenance manual. Follow all safety precautions.
2. Disconnect and remove the power supply from the Condair EL/RS Outdoor humidifier. Refer to [chapter 5.7.1](#) and [chapter 5.7.2](#) and the wiring diagrams in the Condair EL/Condair RS manuals.
3. Disconnect and remove the control signal inputs from the humidifier.
4. Disconnect the steam and condensate lines, and empty out all fluids.
5. Disconnect the water and drain connections to the humidifier.



WARNING!

Heavy object – risk of personal injury and damage to equipment!

Prevention: Use a forklift or crane to lift unit. Protect the unit from damage caused by tethers and other lifting equipment.

6. Carefully remove the humidifier from its mounting surface.
7. Cap the pipe chases (if used for the humidifier).
8. If the Condair EL/RS Outdoor humidifier is to be put into long-term storage, store the humidifier in its original packaging inside a protected area that meets the following requirements:
 - Room temperature: 5 to 40 °C
 - Room humidity: 10 to 75% RH
9. If disposing the Condair EL/RS Outdoor humidifier, refer to [chapter 9.3](#).

9.3 Disposal/Recycling

The Condair EL/RS Outdoor humidifier should not be disposed of in domestic waste, and should only be disposed of in accordance with local regulations at authorized collection facilities. If you have any questions, contact the appropriate local authorities or your local Condair representative.

10 Product Specifications

10.1 Performance Data

Refer to the respective Condair EL/RS Operation and Maintenance manual for the performance data.

10.2 Operating Data

The following data pertains to the Condair EL/RS Outdoor humidifier. Refer to the respective Condair EL/RS Operation and Maintenance manual for additional operating data.

Protection class	
Protection class housing	IP55

10.3 Weights

Table 8: Condair EL/RS Outdoor Humidifier Weights

Housing Size	Condair Model	Weight (kg)		
		Net	Operating	Mounting Rack (Weight added with rack)
Small	EL-OC 5...8	56	60	16
	EL-OC 10	56	65	
	EL-OC 15	56	72	
Medium	EL-OC 20...45	78	107	18
	RS-OC 5...10	81	94	
	RS-OC 16...40	86	111	
Large	EL-OC 50...90*	116	173	25
	RS-OC 50...80*	157	208	

* Units with two steam cylinders

10.4 Dimensions

All dimensions and values are in millimeters. Drawings not to scale.

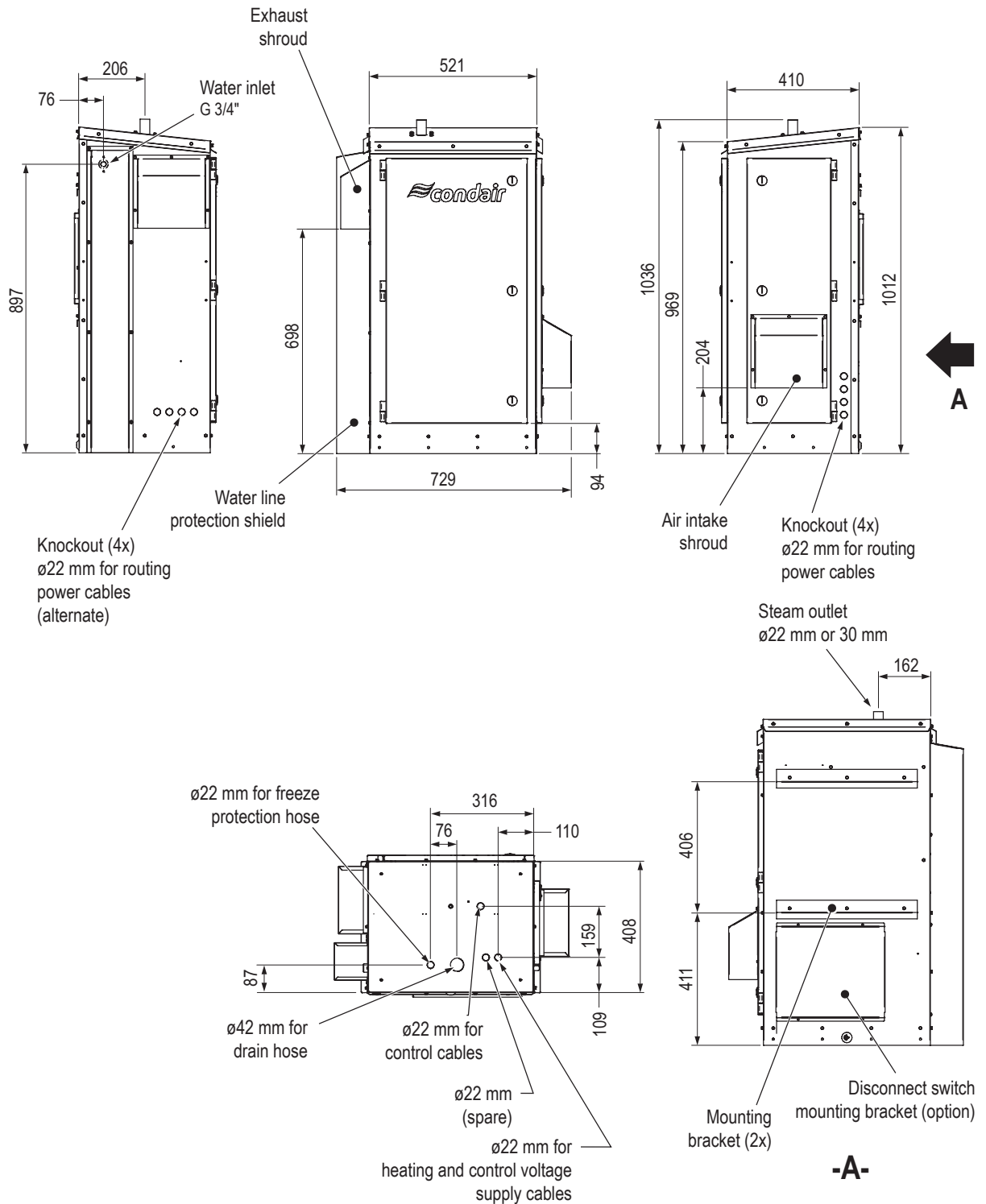


Fig. 24: Condair EL/RS Outdoor Steam Humidifier, Small Housing (EL-OC 5...15)

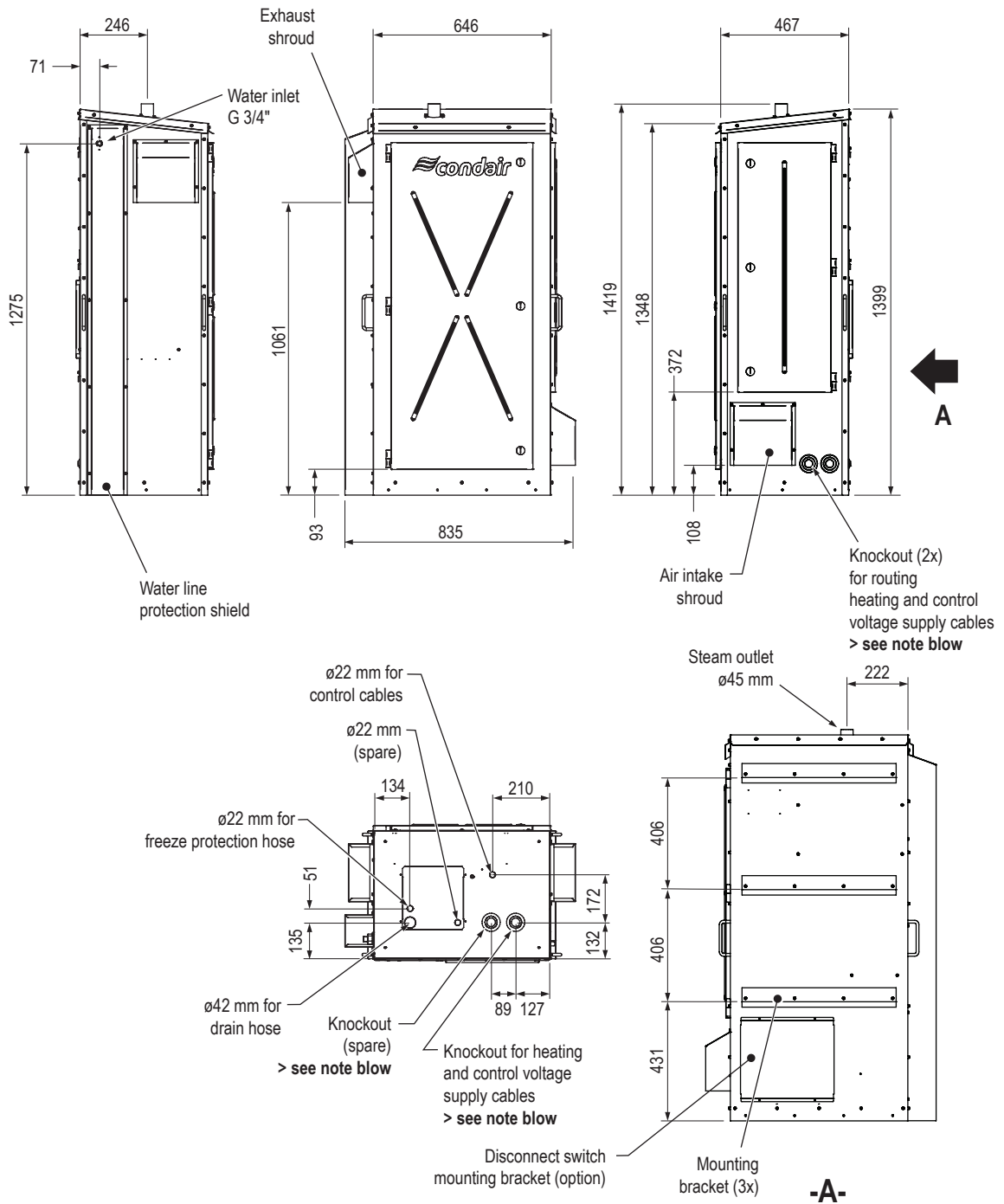


Fig. 25: Condair EL/RS Outdoor Steam Humidifier, Medium Housing (EL-OC 20...45 and RS-OC 5...40)

Note: The heating voltage and control voltage supply cables enter the unit through multi-diameter knockouts with the following hole sizes: 29 mm, 45 mm and 64 mm.

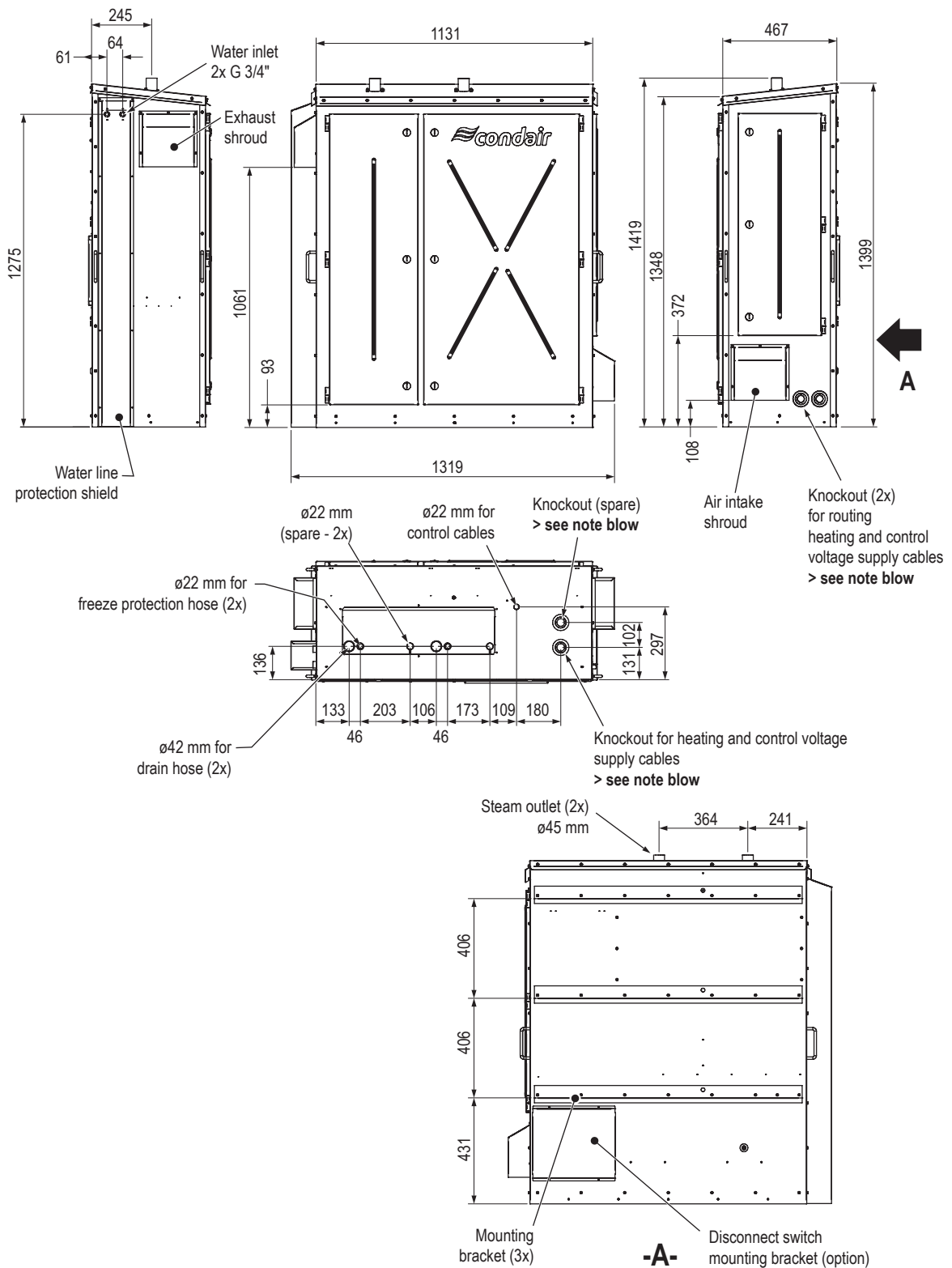
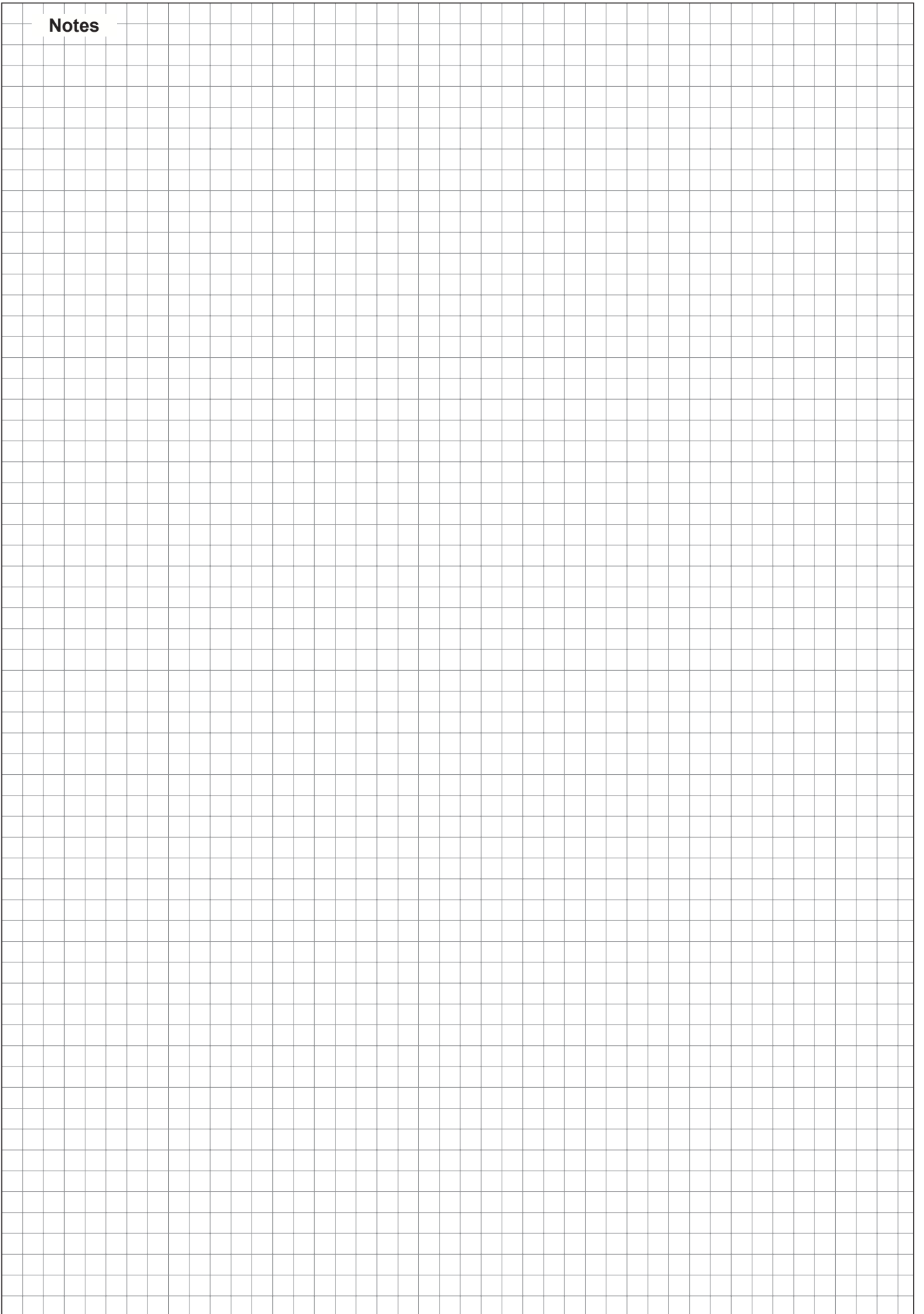


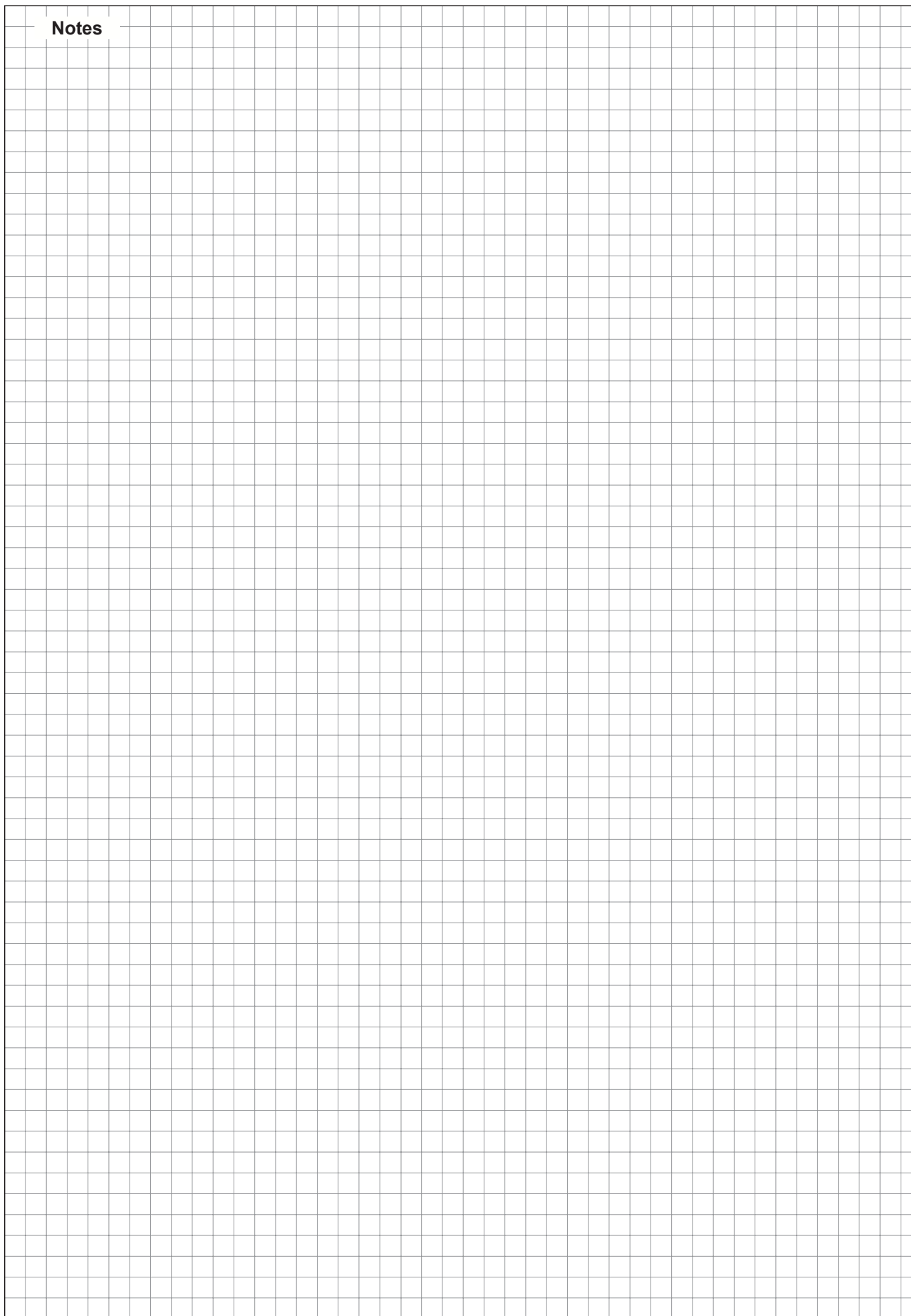
Fig. 26: Condair EL/RS Outdoor Steam Humidifier, Large Housing (EL-OC 50...90 and RS-OC 50...80 (units with two steam cylinders))

Note: The heating voltage and control voltage supply cables enter the unit through multi-diameter knockouts with the following hole sizes: 29 mm, 45 mm and 64 mm.

Notes



Notes



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CH94/0002.00

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The Condair logo, consisting of a stylized wave symbol to the left of the word 'condair' in a bold, lowercase, sans-serif font.