



VRDXL00001

Testata ventilante
Steam blower



MANUALE D'USO USER MANUAL

VRDXL00001

+030222195 - ITA - ENG

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CAREL Industries humidifiers are advanced products, whose operation is specified in the technical documentation supplied with the product or can be downloaded, even prior to purchase, from the website www.carel.com. Each CAREL product, in relation to its advanced level of technology, requires setup/configuration/programming to be able to operate in the best possible way for the specific application. Failure to complete such operations, which are required/indicated in the user manual, may cause the final product to malfunction; CAREL accepts no liability in such cases. The customer (manufacturer, developer or installer of the final equipment) accepts all liability and risk relating to the configuration of the product in order to reach the expected results in relation to the specific final installation and/or equipment. CAREL may, based on specific agreements, act as a consultant for the installation/commissioning/use of the unit, however in no case does it accept liability for the correct operation of the humidifier and the final installation if the warnings or suggestions provided in this manual or in other product technical documents are not heeded. In particular, as well as observing the above warnings and suggestions, the following warnings must be observed for correct use of the product:

- **DANGER OF ELECTRIC SHOCK:** the humidifier contains live electrical components. Disconnect the mains power supply before accessing inside parts or during maintenance and installation.
- **DANGER OF WATER LEAKS:** the humidifier automatically and constantly fills/drains certain quantities of water. Malfunctions in the connections or in the humidifier may cause leaks.

⚠ Important:

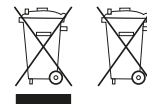
- Environmental and power supply conditions must conform to the values specified on the product rating labels.
- Only qualified personnel who are aware of the necessary precautions and able to perform the required operations correctly may install, operate or carry out technical service on the product.
- Only water with the characteristics indicated in this manual must be used to produce the spray.
- All operations on the product must be carried out according to the instructions provided in this manual and on the labels applied to the product. Any uses or modifications that are not authorised by the manufacturer are considered improper. CAREL declines all liability for any such unauthorised use.
- Do not attempt to open the appliance in any way other than described in the manual.
- Observe the standards in force in the place where the humidifier is installed.
- Keep the humidifier out of the reach of children and animals.
- Do not install and use the product near objects that may be damaged when in contact with water (or condensate). CAREL declines all liability for direct or indirect damage following water leaks from the humidifier.
- Do not use corrosive chemicals, solvents or aggressive detergents to clean the inside and outside parts of the

humidifier, unless specifically indicated in the user manual.

- Do not drop, hit or shake the humidifier, as the inside parts and the linings may be irreparably damaged.

CAREL adopts a policy of continual development. Consequently, CAREL reserves the right to make changes and improvements to any product described in this document without prior warning. The technical specifications shown in the manual may be changed without prior warning. The liability of CAREL in relation to its products is specified in the CAREL general contract conditions, published on the website www.carel.com and/or by specific agreements with customers; specifically, to the extent where allowed by applicable legislation, in no case will CAREL, its employees or subsidiaries/affiliates be liable for any lost earnings or sales, losses of data and information, costs of replacement goods or services, damage to things or people, downtime or any direct, indirect, incidental, actual, punitive, exemplary, special or consequential damage of any kind whatsoever, whether contractual, extra-contractual or due to negligence, or any other liabilities deriving from the installation or use of the product, even if CAREL or its subsidiaries/affiliates are warned of the possibility of such damage.


DISPOSAL




The humidifier is made up of metal parts and plastic parts. With reference to European Union directive 2012/19/EU issued on 4 July 2012 and related national legislation, please note that:


1. Waste Electrical and Electronic Equipment (WEEE) cannot be disposed of as municipal waste but must be collected separately so as to allow subsequent recycling, treatment or disposal, as required by law;
2. users are required to take Electrical and Electronic Equipment (EEE) at end-of-life, complete with all essential components, to the WEEE collection centres identified by local authorities. The directive also provides for the possibility to return the equipment to the distributor or retailer at end-of-life if purchasing equivalent new equipment, on a one-to-one basis, or one-to-zero for equipment less than 25 cm on their longest side;
3. this equipment may contain hazardous substances: improper use or incorrect disposal of such may have negative effects on human health and on the environment;
4. the symbol (crossed-out wheeled bin) shown on the product or on the packaging and on the technical leaflet indicates that the equipment must be disposed of separately at end-of-life;
5. if at end-of-life the EEE contains a battery, this must be removed following the instructions provided in the user manual before disposing of the equipment. Used batteries must be taken to appropriate waste collection centres as required by local regulations;
6. in the event of illegal disposal of electrical and electronic waste, the penalties are specified by local waste disposal legislation.


Warranty on materials: 2 years (from production date, excluding consumables).


Approval: the quality and safety of CAREL products are guaranteed by the ISO 9001 certified design and production system, as well as by the CE mark: 


Key to the symbols:


 Dangerous voltage.

 Caution, hot surface.







 Risk of burns due to contact with steam.

 **Important:** to bring critical issues to the attention of those using the product.

 **Note:** to focus attention on important topics; in particular the practical application of the various product functions.

 **Important:** this product is to be integrated and/or incorporated into the final apparatus or equipment. Verification of conformity to the laws and technical standards in force in the country where the final apparatus or equipment will be operated is the manufacturer's responsibility. Before delivering the product, Carel has already completed the checks and tests required by the relevant European directives and harmonised standards, using a typical test setup, which however cannot be considered as representing all possible conditions of the final installation.


main system switch to "off".

-  The humidifier and the blower can only be connected to the power supply after the installation operations have been completed and verified as having been carried out correctly, and the covers and panels have been installed and securely fastened.
-  The humidifier and the blower use hot steam for humidification. Exposure of the skin to the hot steam may cause severe burns. Wear personal protective equipment when working near steam.
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-  The system's components (including the humidifier cylinder and blower) can reach temperatures of up to 100°C during operation. Contact with hot surfaces can cause serious burns. Switch off the humidifier and allow it to cool down before starting any work on the system.
-  Ensure compliance with all national and local laws and regulations regarding the safety of low voltage equipment installations, requirements regarding installation of the steam and condensate drain lines, as well as the requirements for correct use of tools and personal protective equipment.
-  Only use this appliance for the purposes specified by the manufacturer. Do not modify or replace the components unless recommended by the manufacturer, as this may cause hazards for the user or third parties and/or damage to objects.

General warnings

- The blower and the humidifier can only be installed and serviced out by qualified personnel who have read and understood this manual and the humidifier manual. Knowledge and understanding of the contents of this manual is an essential requirement to protect personnel against any kind of danger, to prevent hazardous operation and to allow the unit to operate safely.
- All of the procedures described in this manual must be carried out by personnel who have been suitably trained and authorised by the customer.
- All personnel working with CAREL humidifiers and blowers must know and comply with all occupational health and safety regulations.
- The blower is intended exclusively for air humidification in the specified operating conditions.
- In order to operate the blower according to its intended use, all of the information contained in this manual and in particular the safety instructions must be scrupulously observed.
- This appliance can be used by children over the age of 8 and by persons with reduced physical, sensory or mental capabilities or lack of experience if they have been given supervision or instruction concerning use of the appliance in a safe way.
- Children must not play with the appliance.
- Cleaning and maintenance must not be carried out by children unless they are supervised by an adult.

Fundamental safety rules

-  Before carrying out any maintenance, disconnect the blower and the humidifier from the power supply by moving the



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1. Introduction

1.1 Description

The blower for CAREL heaterSteam, humiSteam, gaSteam isothermal humidifiers distributes steam directly into rooms in structures that do not feature an air distribution system. The appliance must be wall-mounted.

1.1.1 Models

P/N	Power supply	Maximum steam flow-rate (kg/h)
VVRDXL00001	230 Vac (mains)	45

Tab.1.a

1.1.2 Material supplied

Description	Qty
Y connection pipe for steam input	1
Steam hose (L = 350 mm/13.8 in, Ø 30 mm/1.2 in)	2
Metal clamp for steam hose	4
Cable gland + anchor kit	1

Tab.1.b

➤ **Note:** the "Y" connection pipe has input with ID 40mm (1.57in) and 2 outputs with ID 30 mm (1.18in).

1.1.3 Accessories

P/N	Description
1312368AXX	Condensate hose (ID = 9 mm/0.35 in)
1312365AXX	Steam hose (ID = 30 mm/1.18 in)
1312367AXX	Steam hose (ID = 40 mm/1.57 in)

Tab.1.c

1.1.4 Receiving/identification

After having received the appliance, check that the box is not damaged and all of the components have been delivered. Verify on the identification rating plate that the model is suitable for the required installation.

➤ **Note:** immediately report any damage to the carrier.

Store the appliance in a protected area in the conditions specified in the technical data table.

The appliance can be identified via the rating plate on the rear, which shows the part number, model, serial number and other information.

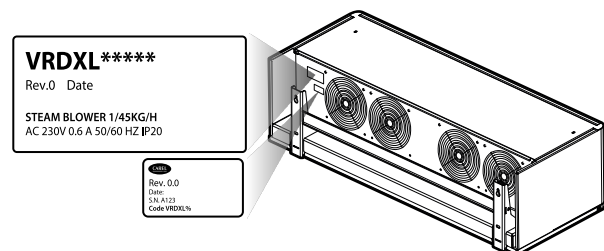


Fig.1.a

1.1.5 Dimensions - mm (in)

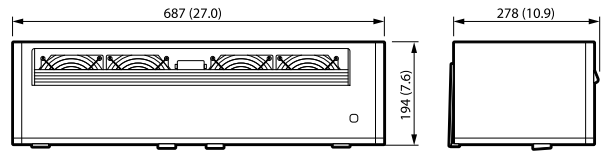


Fig.1.b

1.1.6 Structure

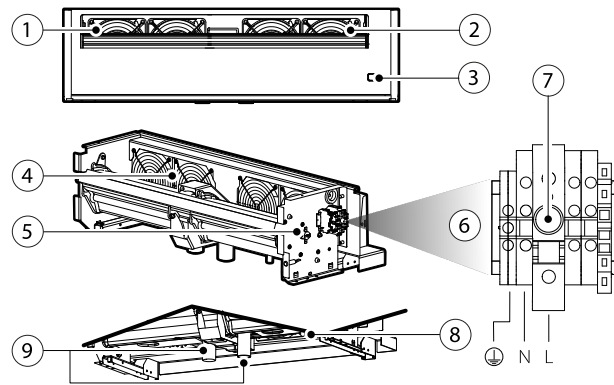


Fig.1.c

Ref.	Description
1	Steam outlet
2	Air outlet
3	Light
4	Fans
5	Thermostat (klixon)

Ref.	Description
6	Terminal block
7	Fuse holder
8	Condensate outlet fitting (Ø 9 mm - 0.35 in)
9	Steam hose fitting (2 X Ø 30 mm (1.18 in))

1.1.7 Operating principle

The blower is connected to the power supply. When steam enters the blower, after a certain time either the thermostat detects a temperature of 50°C or the output (terminal J19) on the c.pHC controller gives the signal and the fans are activated. The air, taken in from the rear, is mixed with steam before being delivered into the room, where it is easily absorbed. The blower features two different types of operating logic:

1. independent of the humidifier;
 2. managed directly by the humidifier (c.pHC). The controller delays blower activation for a set time. Deactivation can also be delayed to allow the blower to dry.
- ➔ **Note:** the 230 Vac power supply to the steam blower is supplied externally by a dedicated line. If the humidifier has to manage the steam blower (with c.pHC controller), use the J19 contact as in the following drawing.

1.1.8 Wiring diagram

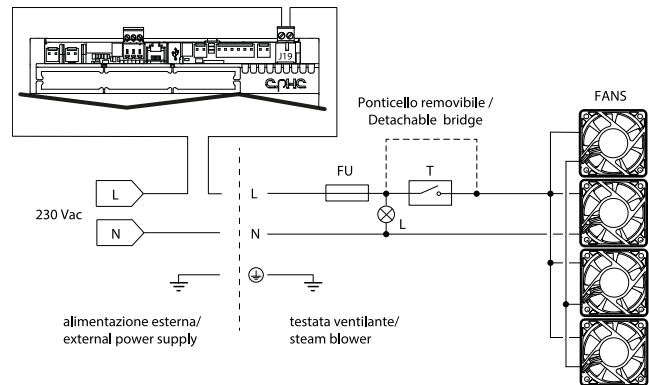


Fig.1.d

Key

FU	Fuse	FANS	Fans
T	Thermostat (klixon)	L	Light

➡ **Note:** use the previous drawing to supply in parallel up to 3 steam blowers. With 4 steam blowers, use an external relay (not supplied), managed by a 24 Vac command from the c.pHC controller. The 230 Vac power supply to the 4 steam blowers remains external.

Removing the jumper

➡ **Notes:**

- if the humidifier is not fitted with the c.pHC controller, remove the jumper. The blower will be activated by the built-in thermostat;
- for the list of humidifiers where the jumper must be removed, see the following table.

Unscrew the screws to remove the jumper P.

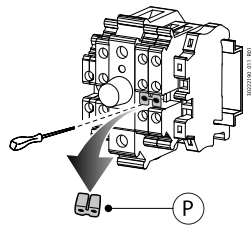


Fig.1.e

The blower leaves the factory with the jumper inserted (= blower managed by the c.pHC controller on the humidifier).

HUMIDIFIERS ON WHICH THE JUMPER MUST BE REMOVED

Part number	Humidifier model
UR*****1/2	UR up to revision 2
UE*****1	UE up to revision 1
UG*****1/2/3	UG up to revision 3

2. Preparing for assembly

The blower must be mounted on the wall and connected to the humidifier via the steam hose.

The maximum length of the steam hose is 4 m.

➔ **Note:** observe the minimum distances shown in the following figures to prevent the flow of humidified air from coming into contact with people, electrical equipment, false-ceilings and cold surfaces before the steam is totally absorbed by the atmosphere.

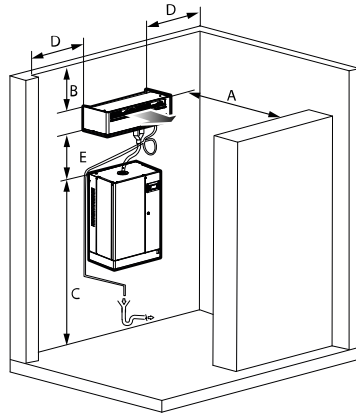


Fig.2.a

Mounting (all dimensions in m[ft])	
Ref.	Wall
A	>5[16.4]
B	≥2[6.5]
C + E	≥ 2.1[6.8]
D	>0.5[1.6]
E	≤4[13.1]

Tab.2.a

Notes:

- dimension C+E can be lower if it is not possible to transit in front of the blower unit;
- see the humidifier manual for details on positioning.

2.1 Requirements

2.1.1 Steam hose

Follow these instructions when installing the steam hose:

- only use hoses supplied by CAREL; hoses made from other materials may adversely affect operation of the system;
- the steam hose must be secured by supports (clamps, brackets) so that it does not bend and does not weigh on the humidifier. A hot hose is more likely to bend;
- the minimum radius of curvature of the steam hose is 5 times the inside diameter;
- the steam hose must have a minimum slope in order to drain condensate back to the humidifier; in any case, always install a condensate drain at the lowest point on the steam hose;
- minimise the length of the steam hose so as to reduce heat loss. Avoid the formation of pockets or traps where condensate may accumulate;
- choking (due to bends or twisting of the hose) can cause excessive back-pressure in the humidifier cylinder when the unit is operating and consequently sudden steam outlet.

⚠ Important:

- do not install a stop valve in the steam hose;
- when installation is complete, flush the steam line to remove any contaminants and processing

residues.

- exposure of the skin to a jet of hot steam may cause severe burns;
- do not over-tighten the hose clamps (max. torque=180 N-cm).

2.1.2 Condensate hose

Follow these instructions when installing the condensate hose:

- the condensate hose may be filled with hot water or steam: contact with the skin can cause serious burns;
- connect the hose to a drain in accordance with national and local regulations in force;
- the condensate hose must have a minimum downward slope and must flow into a 200 mm high drain trap: the drain trap must be at least 300 mm below the connection to the blower.
- condensate drains must be installed at all the lowest points and wherever the drain line goes from horizontal to vertical. The drain line must be connected to a "T" connector and have a minimum downward slope. The drain trap must be at least 300 mm below the connection.
- make sure that the condensate drain lines are not blocked;
- do not over-tighten the clamps on the condensate hose.

⚠ Important: before starting the humidifier, fill the drain traps with water.

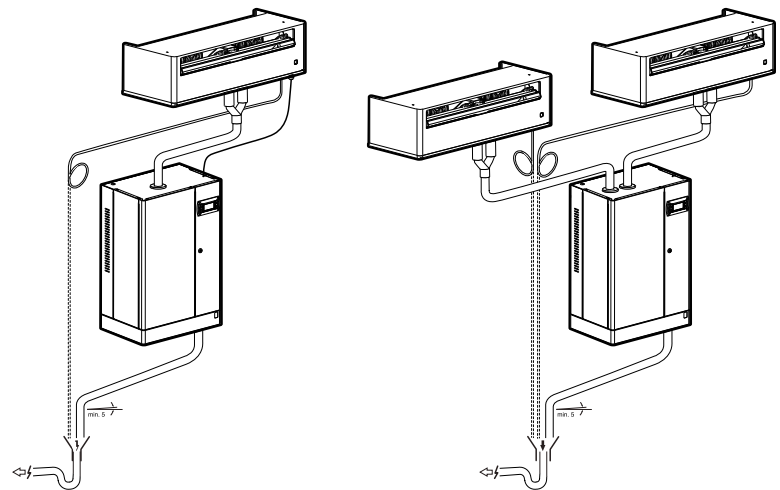


Fig.2.b

3. Assembly

3.1 Preliminary operations

3.1.1 Removing the cover

For steam blower installation or maintenance, remove the cover from the appliance as described below:

1. Disconnect the blower from the power supply;
2. Unscrew the two fixing screws placed on the top of the cover;
3. Pull the cover up by slightly turning it forward to release it.

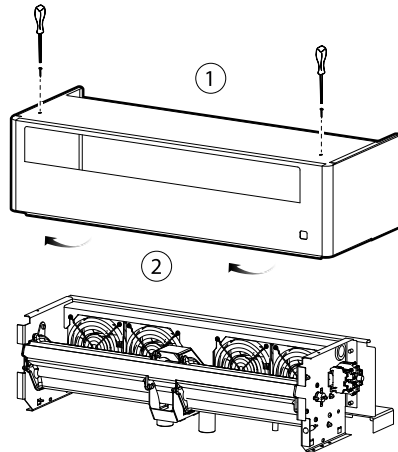


Fig.3.a

3.2 Assembly

3.2.1 Wall-mounting

⚠ Important: mount the blower only on masonry walls.

Fixing the blower to the support

Procedure:

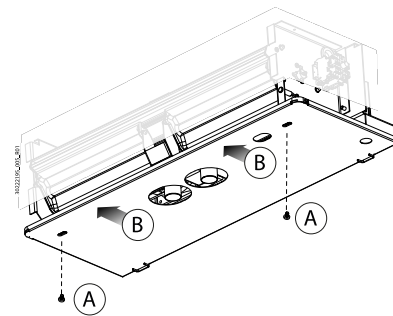


Fig.3.b

1. Remove the cover (see previous paragraph). Unscrew the screws (A) and remove the bottom panel (B).

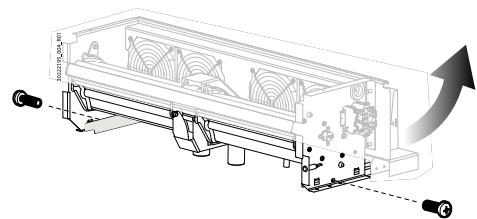


Fig.3.c

2. Remove the screws and extract the support from the blower.

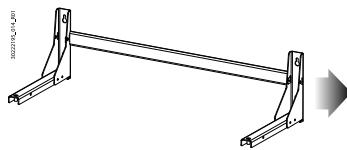


Fig.3.d

3. Make the holes in the wall to fix the support.

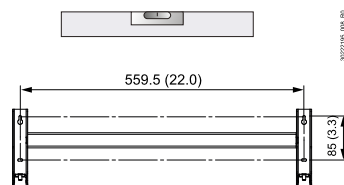


Fig.3.e

4. Use a spirit level for mounting

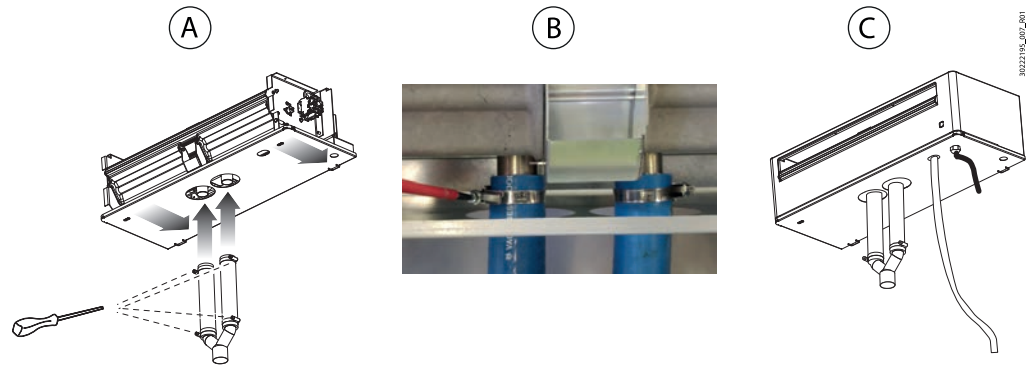


Fig.3.f

5. Fix the blower to the support and then mount the bottom panel (A), tighten the metal clamps to fix the steam hoses (B) and then condensate hose. Connect the power supply cable to the terminal block. At the end mount the cover (C) again.

➔ **Note:** install the steam hose, the condensate hose and the power cable following the steps described in the previous paragraph and the notes in chap. "Preparing for assembly".

4. Maintenance and spare parts

4.1 Components

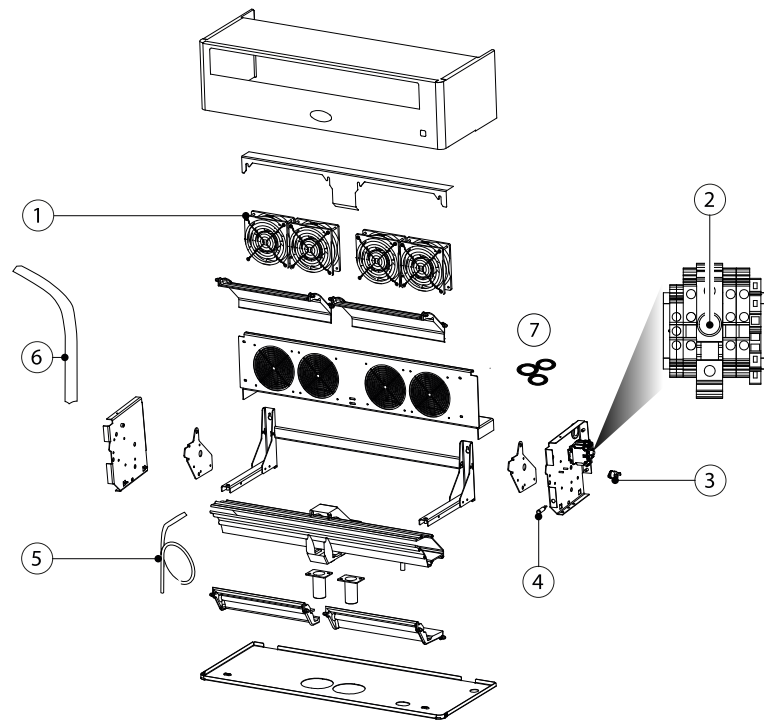


Fig.4.a

No.	Description	Spare part no.
1	Fan 230 V	VRDXLFAN01
2	Fuse 800 mA T	VRDXLFUS01
3	Thermostat (klixon)	VSDCLX0003
4	Light 230 Vac	VRDXLLUX01
5	Condensate hose	1312368AXX
6	Steam hose (Ø 40 mm/1.57 in)	1312367AXX
7	Gasket kit	VSDGUAR000

Tab.4.a

4.2 Component replacement

🔧 **Note:** Maintenance on the humidifier must be carried out by CAREL Technical Service or professionally qualified personnel.

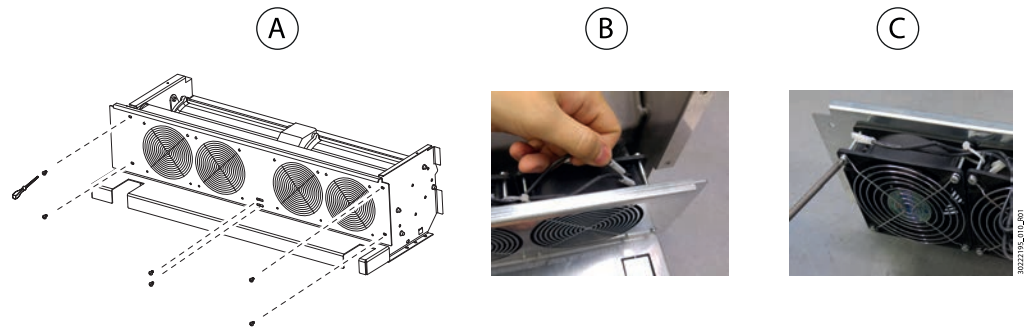
⚠️ **Important:** before proceeding:

- disconnect power to the humidifier by turning the main system switch to OFF;
- remove the cover from the blower (see the previous paragraph);
- replace the faulty component;
- once having completed maintenance, reassemble the components by working in reverse to the steps described above.

4.2.1 Fan

After having removed the blower cover (see chap. "Assembly"):

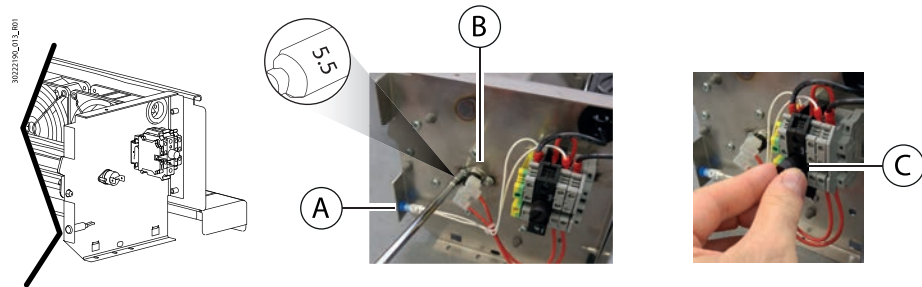
- remove the screws that secure the rear panel with the slits;
- unplug the electrical connectors;
- unscrew and remove the screws to replace the fan (paying attention to the rear grilles).
- reassemble everything following the opposite process.


Fig.4.b

4.2.2 Light/thermostat/fuse

After having removed the blower cover (see the previous paragraph), for replacement proceed as follows:

- light (A): press the tabs at the side to remove it, disconnect the wires from the terminal block;
- thermostat (B): disconnect the electrical connectors and unscrew the fixing nuts using a socket wrench;
- fuse: unscrew the fuse holder (C).


Fig.4.c

4.2.3 Troubleshooting

Problem	Cause	Solution
The fan is not working	<ul style="list-style-type: none"> • The fan is only activated when the humidifier generates steam • The blower is not powered • Faulty fan 	<ul style="list-style-type: none"> • Check power supply • Check fuse • Make sure that the humidifier is operating and humidity production is required
The fan is not working but the humidifier is generating steam	<ul style="list-style-type: none"> • Steam line installed incorrectly, not enough steam reaches the blower • Thermostat stuck • The blower is not powered • Faulty fuse 	<ul style="list-style-type: none"> • Make sure that the steam hose is not bent • Drain trap installed correctly and not blocked • Verify that when the thermostat is closed there is electrical continuity • Check the humidifier connection cable
Blower sprays droplets of condensate	<ul style="list-style-type: none"> • Blower not mounted perfectly horizontally • Rear air intake blocked 	<ul style="list-style-type: none"> • Check

Tab.4.b

5. Technical specifications

Description	Value or range
Power supply (V~)	230 Vac (+ 5%, -10%), 50/60 Hz
Steam inlet ϕ (mm)	(2 x) 30
Condensate drain ϕ (mm)	9
Maximum steam flow-rate (kg/h)	45
Ingress protection	IP20
Storage temperature/humidity (°C)	-10... +70°C / 10...80 rH% non-condensing
Nominal power (W)	120
Nominal air flow rate (m ³ /h)	576
Sound level (open field at maximum speed and a distance of 1 m) (dB)	50
Operating temperature/humidity (°C/rH%)	1... 50°C / 10...80 rH% non-condensing
Dimensions (mm/in)	687 x 278 x 194 (27.0 x 10.9 x 7.6)
Weight (kg)	9,5
CE conformity: Directives: 2014/35/EU, 2014/30/EU	IEC 60335-1, Edition 5.2 dated 2016-05 IEC 60335-2 98: 2002 (Second edition) + A1: 2004+A2: 2008 IEC 60335-1 2010 (Fifth edition) incl. Corr 1: 2010 and Corr2: 2011+ A1: 2013
UL conformity:	UL 998/CSA C22.2 No 104-R1999

5.0.1 Humidifier connection tables

		humiSteam													
humidifier outlet ϕ mm	--->	22/30 (0.9"/(1.2"))		30 (1.2")						40 (1.6")			2x 40 (1.6")		4x 40 (4x 1.6")
humidifier capacity kg/h	--->	1	3	5	8	9	10	15	18	25	35	45	65	90	130
humidifier	--->	UE001	UE003	UE005	UE008	UE009	UE010	UE015	UE018	UE025	UE035	UE045	UE065	UE090	UE130
VSDU0A0003 (≤ 18 kg/h)		1	1	1	1	1	1	1	1						
VRDXL00001 (≤ 45 kg/h)										1	1	1	2	2	4

Tab.5.a

		heaterSteam										
humidifier outlet ϕ mm	--->	30 (1.2")					40 (1.6")			2x 40 (1.6")		
humidifier capacity kg/h	--->	2	4	6	10	13	20	27	40	53	60	80
humidifier	--->	UR002	UR004	UR006	UR010	UR013	UR020	UR027	UR040	UR053	UR060	UR080
VSDU0A0003 (≤ 18 kg/h)		1	1	1	1	1						
VRDXL00001 (≤ 45 kg/h)							1	1	1	2	2	2

Tab.5.b

		gaSteam		
humidifier outlet ϕ mm	--->	2x 40 (1.6")		4x 40 (4x 1.6")
humidifier capacity kg/h	--->	45	90	180
humidifier	--->	UG045	UG090	UG180
VSDU0A0003 (≤ 18 kg/h)				
VRDXL00001 (≤ 45 kg/h)		1(*)	2	4

Tab.5.c

(*) use a "Y" pipe cod. UEKY40X400 to route the two steam outputs into the same pipe with ϕ 40 mm.

CAREL INDUSTRIES S.p.A. - Headquarters

Via dell'Industria, 11
35020 Brugine - Padova (Italy)
Tel. (+39) 049.9716611
Fax (+39) 049.9716600
email: carel@carel.com - www.carel.com

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