ENG

VRDXL00001

Steam blower

USER MANUAL

Index

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.

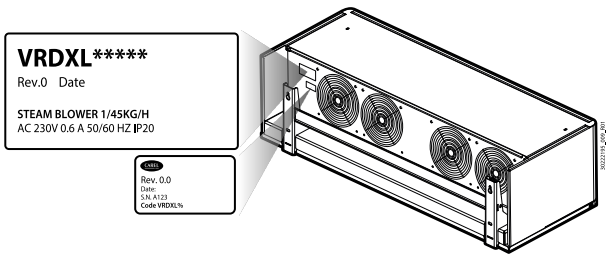

Fig.1.a

1.1.5 Dimensions - mm (in)

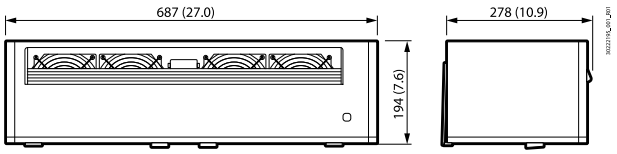

Fig.1.b

1.1.6 Structure

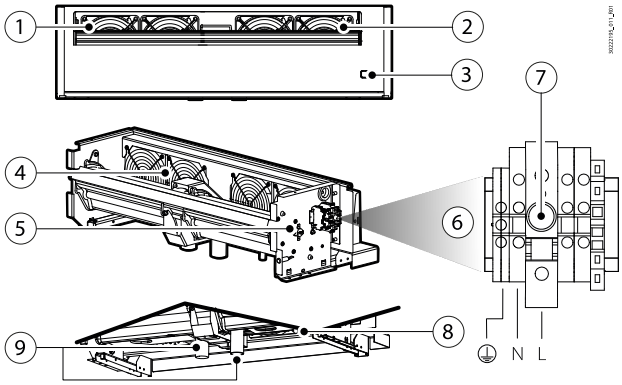

Fig.1.c

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

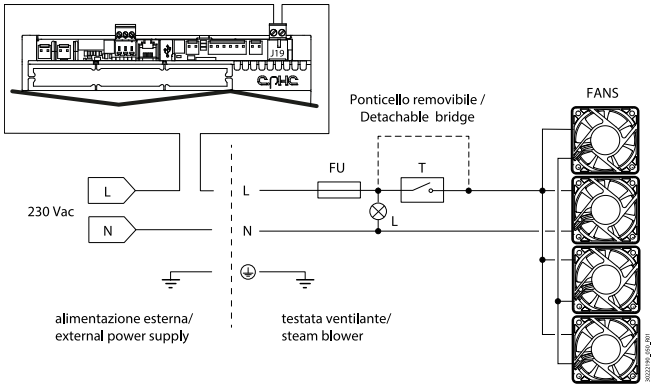

Fig.1.d

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.

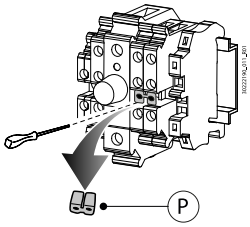

Fig.1.e

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 or 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.

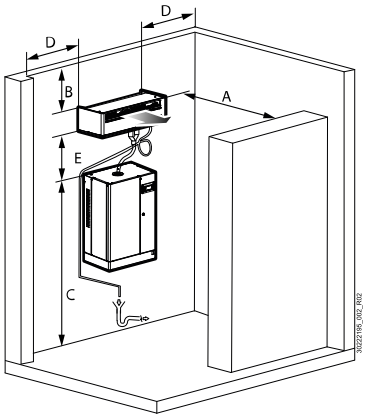

Fig.2.a

	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.

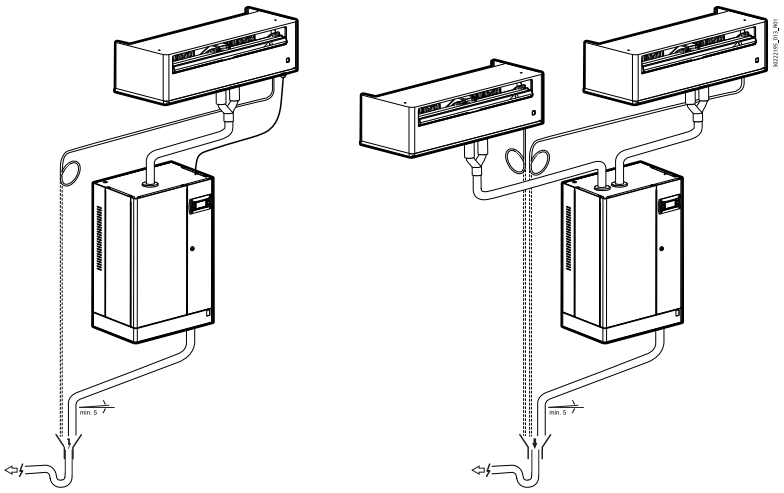

Fig.2.b

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.

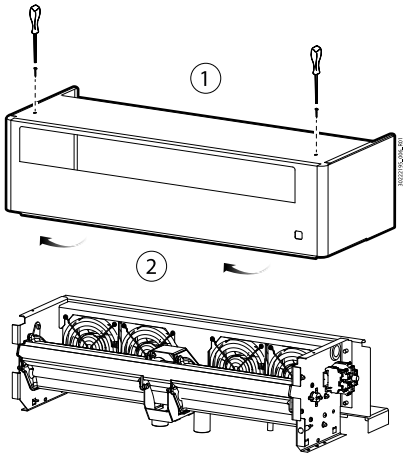

Fig.3.a

3.2 Assembly

3.2.1 Wall-mounting

⚠ **Important:** mount the blower only on masonry walls.

Fixing the blower to the support

Procedure:

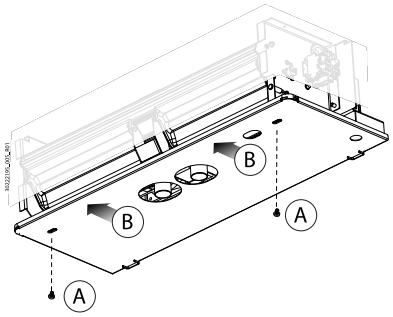

Fig.3.b

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

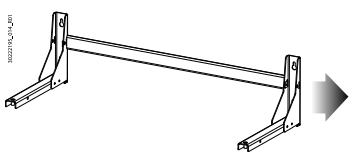

Fig.3.d

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

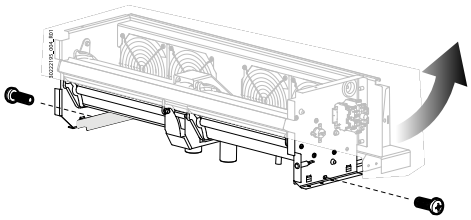

Fig.3.c

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

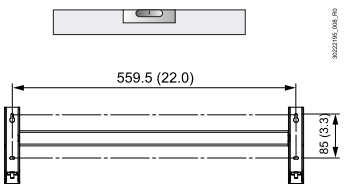

Fig.3.e

4. Use a spirit level for mounting

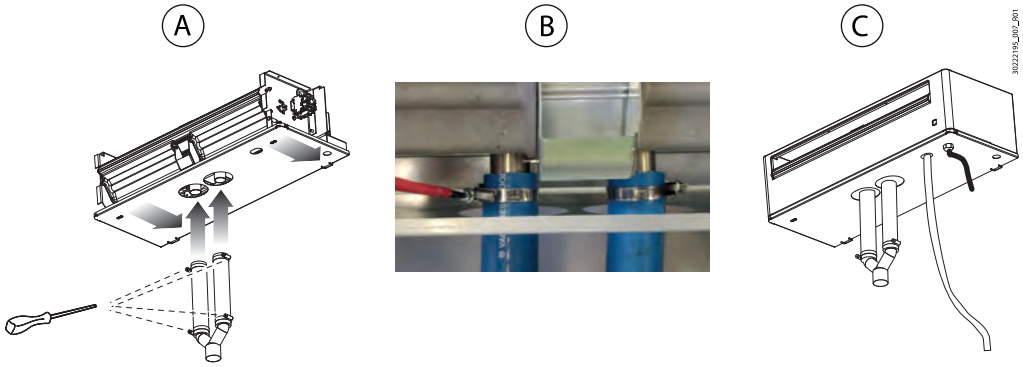

Fig.3.f

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

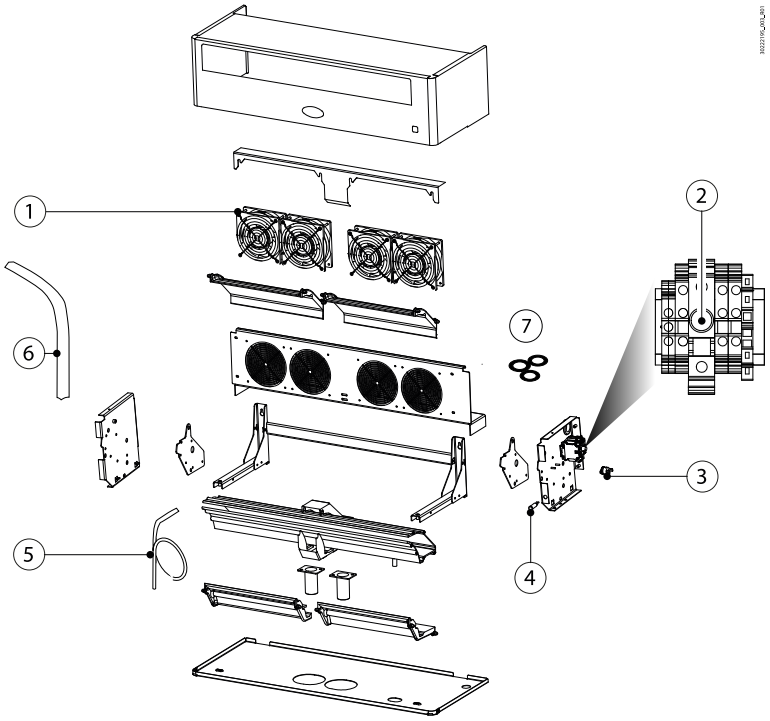

Fig.4.a

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"):

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

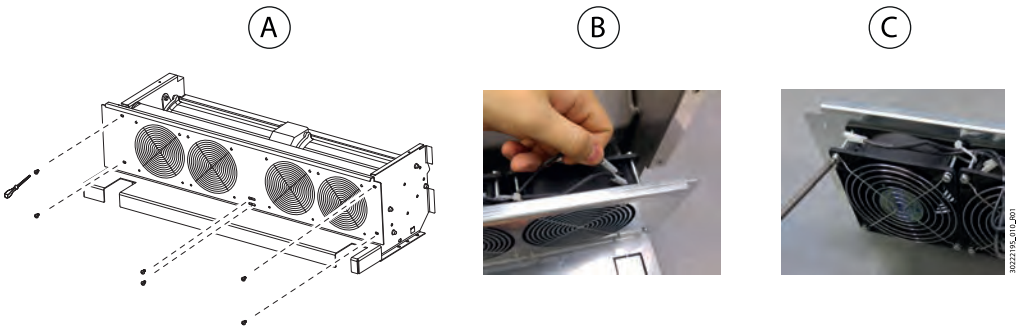

Fig.4.b

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).

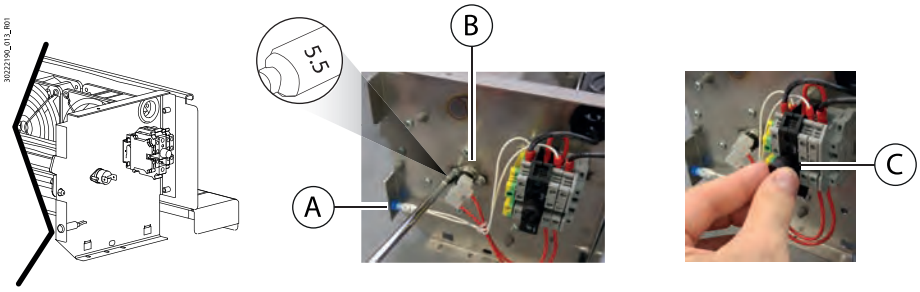

Fig.4.c

4.2.3 Troubleshooting

Problem	Cause	Solution
The fan is not working	• The fan is only activated when the humidifier generates steam • The blower is not powered • Faulty fan	• 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	• Steam line installed incorrectly, not enough steam reaches the blower • Thermostat stuck • The blower is not powered • Faulty fuse	• 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	• Blower not mounted perfectly horizontally • Rear air intake blocked	• 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 (m3/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 ø 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 (≤18kg/h)		1	1	1	1	1	1	1	1						
VRDXL00001 (≤45kg/h)										1	1	1	2	2	4

Tab.5.a

		heaterSteam										
humidifier outlet ø 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 (≤18kg/h)		1	1	1	1	1						
VRDXL00001 (≤45kg/h)							1	1	1	2	2	2

Tab.5.b

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

Tab.5.c

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

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