



VSDU0A0003

Steam blower



USER MANUAL



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1. Introduction

1.1 Description

The blower for CAREL heaterSteam, humiSteam isothermal humidifiers distributes steam directly into rooms in structures that do not feature an air distribution system. The appliance can be installed on top of the humidifier or wall-mounted (using accessory kit P/N VSREM0003).

1.1.1 Models

P/N	Power supply	Maximum steam flow-rate (kg/h)
VSDU0A0003	24 Vac (supplied by humidifier)	18

Tab.1.a

1.1.2 Material supplied

Description	Qty
Steam hose (L = 300 mm, ID = 30 mm/1.18 in)	1
Condensate hose (L = 220 mm, ID = 9 mm/0.35 in)	1
Metal clamp for steam hose	2
Diameter adapter for 1.5-3 kg/h cylinders (ID from 22 to 30 mm/0.86 to 1.18 in)	1
Self-tapping screw for fixing to the humidifier cover	4

Tab.1.b

1.1.3 Accessories

P/N	Description
VSDREM0003	Wall-mounting kit (screws, anchors, 2 brackets, cable gland, steam hose fitting, base)
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.

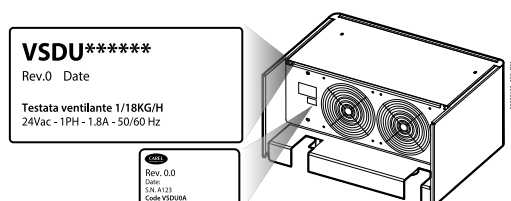


Fig.1.a

1.1.5 Dimensions - mm (in)

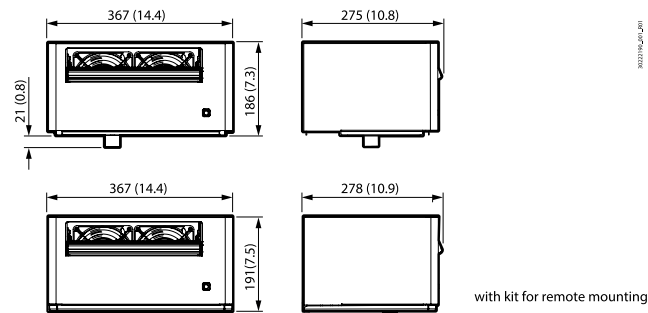


Fig.1.b

1.1.6 Structure

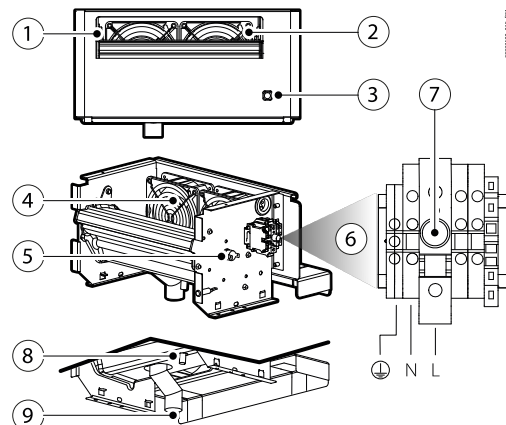


Fig.1.c

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 (Ø 30 mm - 1.18 in)

1.1.7 Operating principle

The blower is connected to the power terminals provided inside the humidifier and is powered even when the humidifier is off. 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.

1.1.8 Wiring diagram

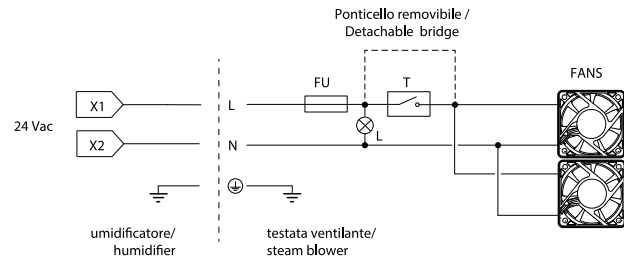


Fig.1.d

Key

FU	Fuse	FANS	Fans
T	Thermostat (Klixon)	L	Light

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.

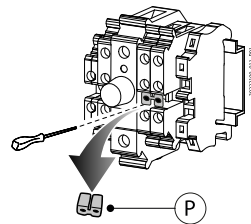


Fig.1.e

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 can be mounted on top of the humidifier 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.

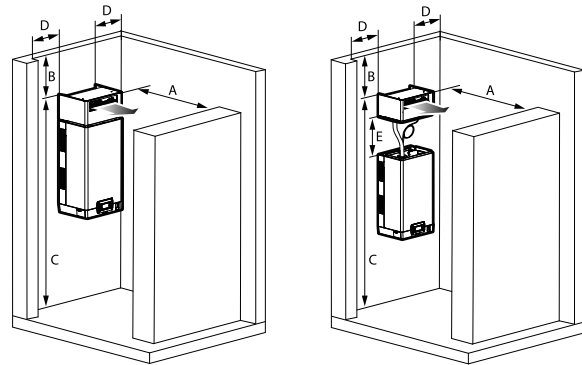


Fig.2.a

Ref.	Mounting (all dimensions in m[ft])	
	On top of the humidifier	Wall
A	>3[9.8]	>3[9.8]
B	>1[3.3]	>1[3.3]
C	ca. 2.1[6.8]	ca. 2.1[6.8]
D	>0.5[1.6]	>0.5[1.6]
E	-	≤4[13.1]

Tab.2a

🔍 **Notes:**

- dimension C 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. Alternatively, the condensate hose can be connected to the condensate drain tank located at the top of the humidifier;
- 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.

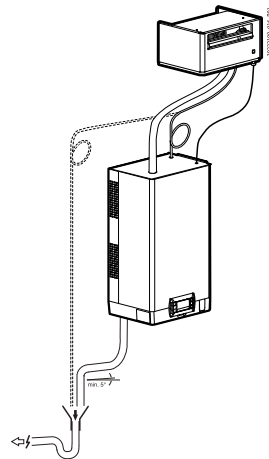


Fig.2.b

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.

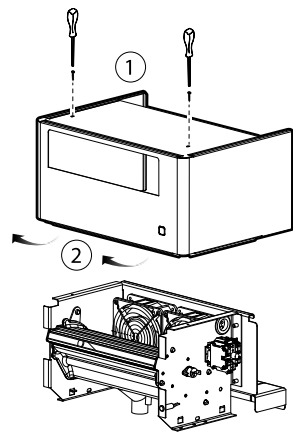


Fig.3.a

3.2 Assembly

3.2.1 Mounting on top of the humidifier

⚠ Important: install the humidifier in a horizontal position using a spirit level.

Procedure:

1. Remove the cover from the blower and the front and top of the humidifier;
2. Remove the caps (1) and (2) on the humidifier top panel;
3. Cut the steam hose (3) supplied to the right length and connect it to the fitting (4). To secure it, tighten the metal clamps (5) using a screwdriver;
4. Insert the condensate drain hose (6) to the fittings on the blower and the humidifier panel. To secure it, tighten the metal clamps (7);
5. Connect the two-wire cable ($\geq 1\text{mm}^2$, $L_{\text{max}} = 4\text{ m}$) from the humidifier to the blower. The terminals (9) are located in the humidifier electrical panel;
6. Make the electrical connections as specified in "Wiring diagram".
7. Mount the blower on the humidifier;
8. Insert the fixing screws (10);
9. Place the cover back on the blower.

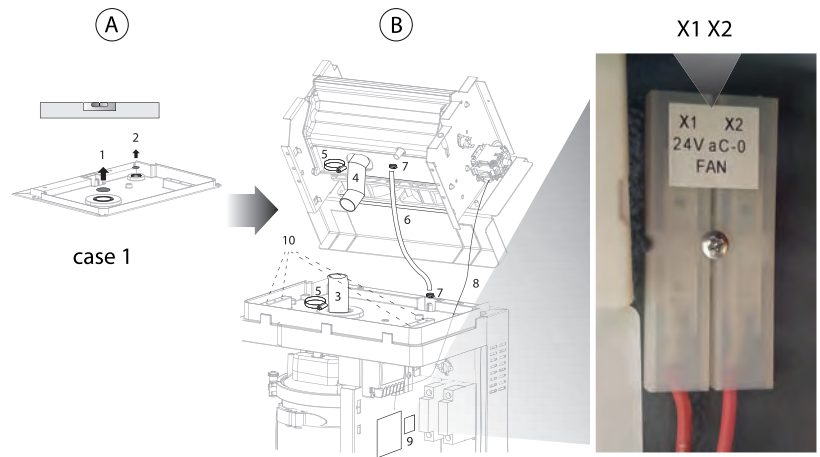


Fig.3.b

3.2.2 Wall-mounting

⚠ Important: mount the blower only on masonry walls.

Mounting the support and dimensions (mm)

Procedure:

- A. connect elements A and B to form the L-shaped bracket, as shown in the figure;
- B. fasten the bolts and nuts;
- C. connect the two brackets with the crossbar.

Secure the supporting structure to the wall using anchors through the two slots. Use a spirit level to check that the support is horizontal.

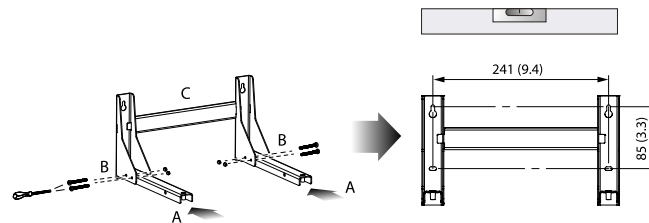


Fig.3.c

Fixing the blower to the support

Procedure:

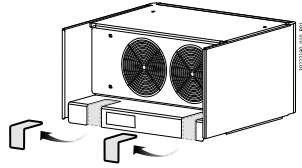


Fig.3.d

1. Remove the knock-outs

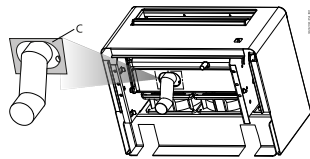


Fig.3.f

3. cut the insulating panel (C) to remove the screws from the steam hose fitting

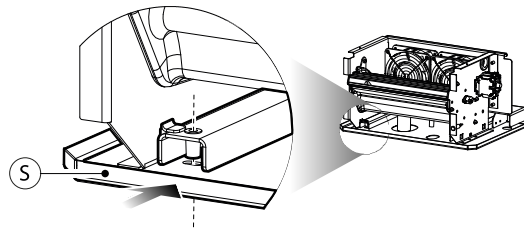


Fig.3.h

5. Slide the support S fully in

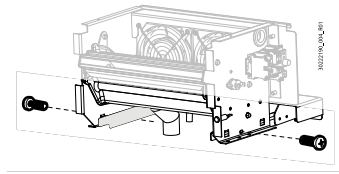


Fig.3.e

2. Insert the L-shaped brackets into the holes and place the blower on the support. Secure it using the screws

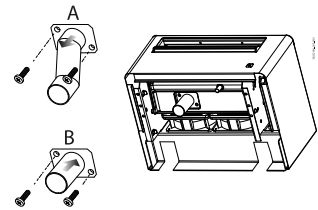


Fig.3.g

4. Replace the curved fitting (A) with the straight fitting (B)

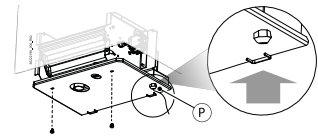


Fig.3.i

6. Tighten the fixing screws to the threaded inserts. Fit the cable gland P.

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

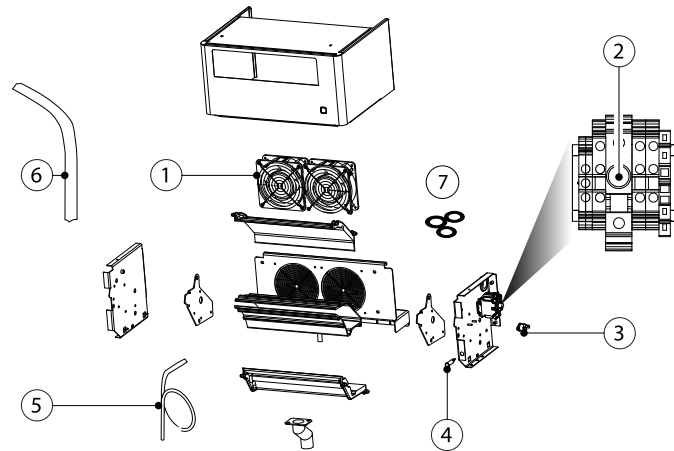


Fig.4.a

No.	Description	Spare part no.
1	24 V fan	VSDFAN0003
2	2A T fuse	VSDFUS0003
3	Thermostat (Klixon)	VSDCLX0003
4	Light	VSDLUX0003
5	Condensate hose	1312368AXX
6	Steam hose (Ø30 mm/1.1 in)	1312365AXX
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.

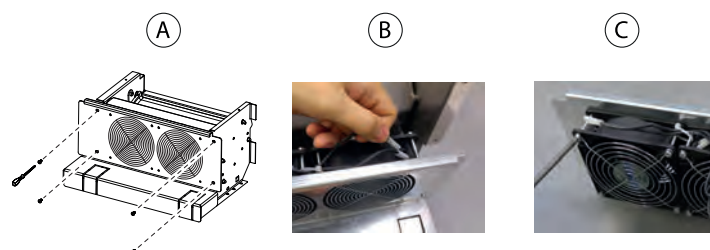


Fig.4.b

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).

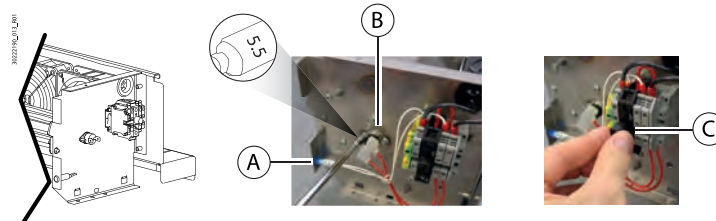


Fig.4.c

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~)	24 Vac (+ 5%, -10%), 50/60 Hz
Steam inlet ϕ (mm)	30
Condensate drain ϕ (mm)	9
Maximum steam flow-rate (kg/h)	18
Ingress protection	IP20
Storage temperature/humidity (°C)	-10... +70 / 10...80 rH% non-condensing
Nominal power (W)	46
Nominal air flow rate (m ³ /h)	288
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)	367 x 274 x 190 (14.4 x 10.7 x 7.4)
Weight (kg)	6
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.

