

**homeSteam *elite* residential steam humidifier**



**Installation, Operating and Maintenance Manual**

**Read And Save These Instructions**

**CAREL**

## IMPORTANT WARNINGS



**BEFORE INSTALLING OR HANDLING THE APPLIANCE PLEASE CAREFULLY READ AND FOLLOW THE INSTRUCTIONS AND SAFETY STANDARDS DESCRIBED IN THIS MANUAL AND ILLUSTRATED BY THE LABELS ON THE MACHINE.**

This humidifier produces non-pressurized steam using electrodes immersed in the water contained in the plastic steam generator cylinder. The electrodes pass electrical current through the water, to produce steam.

The quality of the water used affects the ability of electrical current to pass through the water, so the appliance may be supplied with untreated water, **as long as this is drinkable and not demineralized**. (Use of softened water is not recommended.)

This appliance has been designed exclusively to directly humidify rooms or ducts, using the distribution system supplied. It is suitable for this purpose as long as: the installation, use and maintenance operations are carried out according to the instructions contained in this manual and on the labels applied internally and externally.

The conditions of the environment and the power supply voltage must comply with the specified values. All other uses and modifications made to the device which are not authorized by the manufacturer are considered incorrect. Liability for injury or damage caused by the incorrect use of the device lies exclusively with the user.

Please note that the machine contains powered electrical devices and hot surfaces. All service and/or maintenance operations must be performed by qualified personnel who are aware of the necessary precautions and are capable of performing the operations correctly. Disconnect the machine from the main power supply before accessing any internal parts. Local safety standards in force must be applied in all cases.

The humidifier is made up of metallic and plastic parts. All parts must be disposed of in accordance to local standards on waste disposal.

This product is warranted for 2 years from the date of installation, or 2 years and 1 month (see page 23 and warranty card) from the date of original shipment, whichever comes first. This warranty does not cover consumable parts, such as the steam cylinder. Full warranty information is on a separate registration card supplied with this appliance.

**WARNING:** Your humidifier requires water to operate. Do NOT mount it above materials or machinery that could be damaged if a leak occurs. Carel assumes no responsibility for consequential or inconsequential damage as a result of any leaks.

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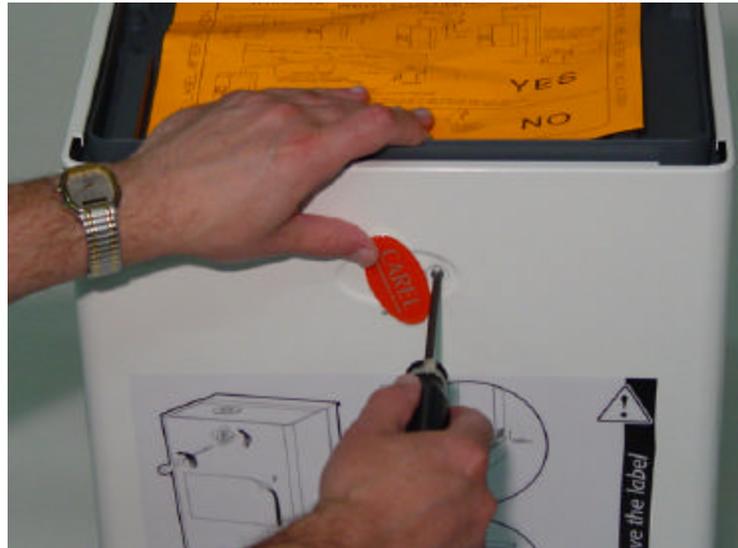
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# 1: Remove Humidifier From Box And Open

Twist orange Carel brand label on the front cover of the cabinet to uncover the hidden capture screw underneath the right side.

Remove capture screw using a phillips screwdriver. (take care not to lose the screw)

Lift cabinet front cover upward about 1" and then pull forward to remove.



Your *homeSteam* steam humidifier will consist of:

### For duct mounted applications:

- 1 - Steam humidifier unit
- 1 - Duct steam nozzle
- 6' - 7/8" ID steam hose
- 2 - Steam hose clamps
- 7' - 5/16" ID condensate hose
- 1 - Condensate hose clamp
- 1 - REHUMST wall/duct humidistat
- 1 - PC-301 air proving switch
- 3 - Screws and anchors
- 1 - Fill connector

### For room mounted applications:

- 1 - Steam humidifier unit with blower attached
- 1 - REHUMST wall/duct humidistat
- 3 - Screws and anchors
- 1 - Fill connector



### IMPORTANT: BEFORE beginning installation:

- Check for shipping damage to cartons. Mark the shipping waybill accordingly.
- Open cartons and check for any hidden damage. Mark the shipping waybill accordingly.
- Check packing slip to insure all items have been received. Notify Carel USA immediately of any shortages or damaged parts. **You must notify Carel USA within 5 working days of any shortages.**

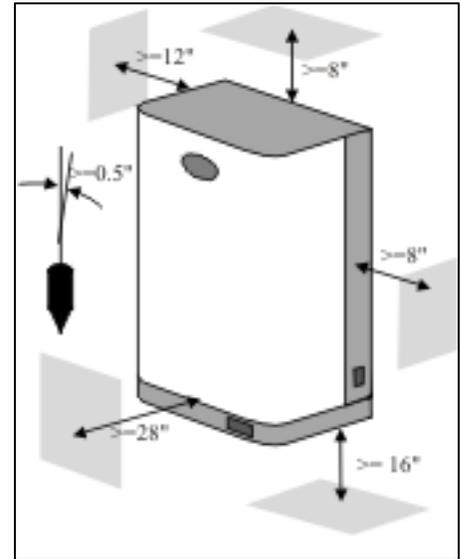
## 2: Mounting The Humidifier

### Positioning

The humidifier unit should be mounted as close as possible to the steam distributor nozzle or blower unit to minimize steam hose length and condensate losses.

The unit has been designed for wall-mounting, and the wall must be able to support the weight of the unit in normal operating conditions (See bottom of page).

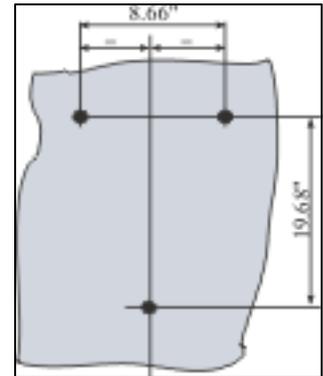
The metal cabinet of the humidifier heats up during operation, and the rear part in contact with the wall may reach temperatures of over 140°F. Make sure the humidifier is mounted level and plumb, and that the minimum clearances, as shown at right, are maintained to allow room for maintenance operations and ventilation.



### Mounting

The humidifier must be wall-mounted using three screws: two upper screws, for fastening the support bracket, and one lower, central screw, to fasten the unit into place. To the right is the template for the mounting holes.

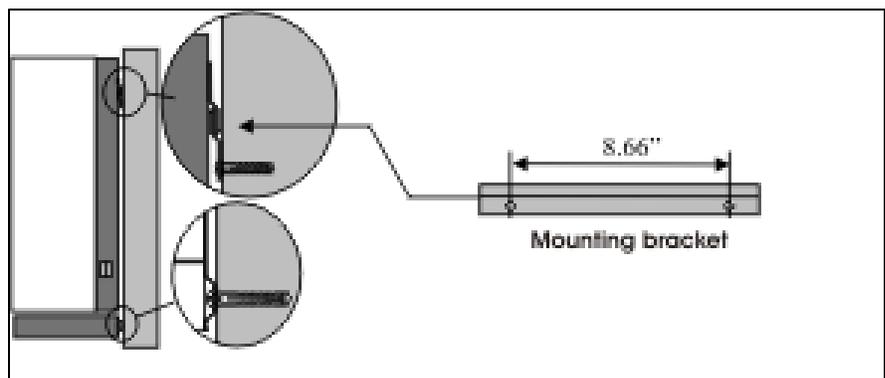
Fasten the bracket supplied with the humidifier to the wall (see below), **making sure that it is level**. If the unit is to be mounted to a block wall, use the plastic screw anchors (5/16") and screws (3/16" x 2") supplied.



Hang the humidifier on the bracket using the mating bracket located on the top edge of the back of the humidifier. Fasten the humidifier to the wall using the central hole in the rear part of the base; this can be easily reached from underneath the unit.

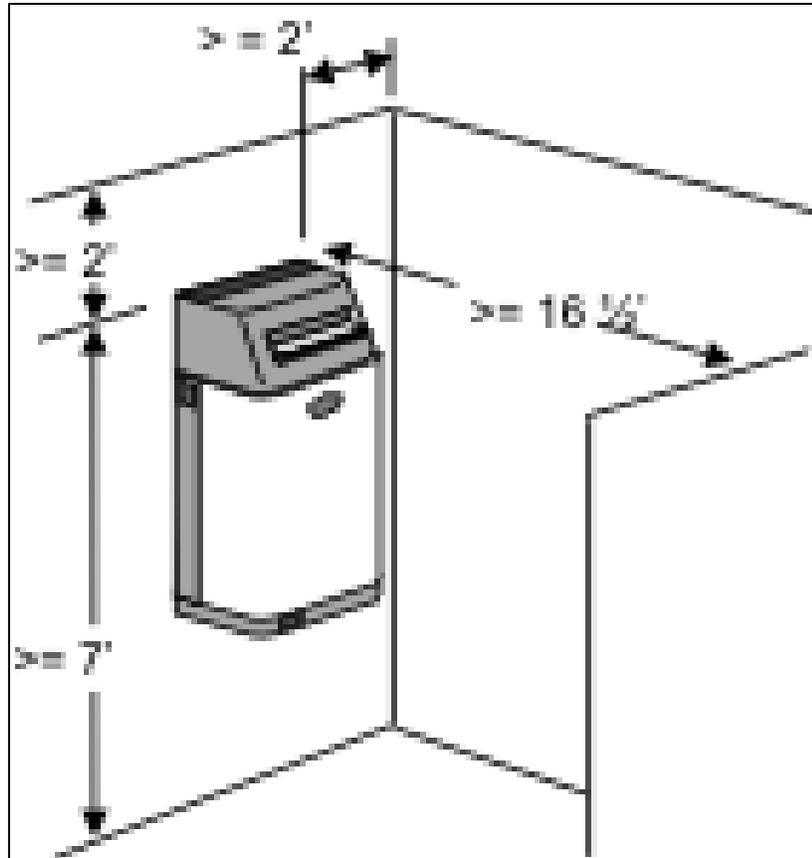
Height: 24-3/8"  
Width: 14-1/8"  
Depth: 10-1/4"

Weight dry: 29.7 lbs.  
Weight wet: 36.4 lbs.



### 3: Steam Distribution

#### Room Distribution

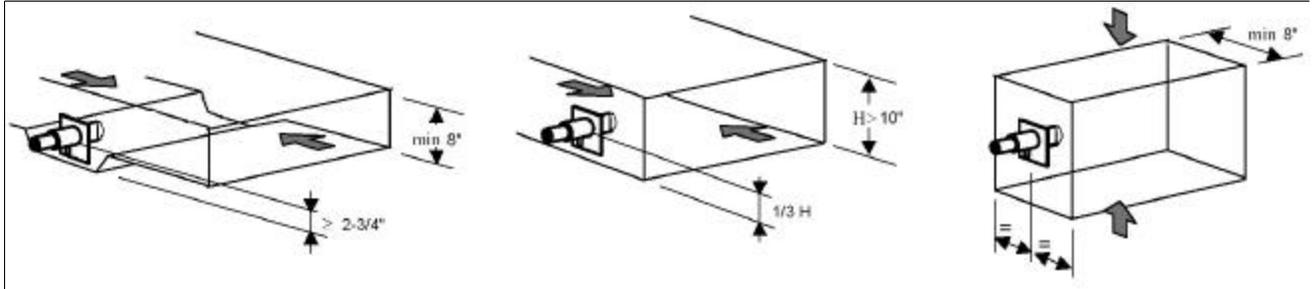


The room distribution unit is used to distribute the steam directly into the room, and is supplied premounted to the top of the humidifier.

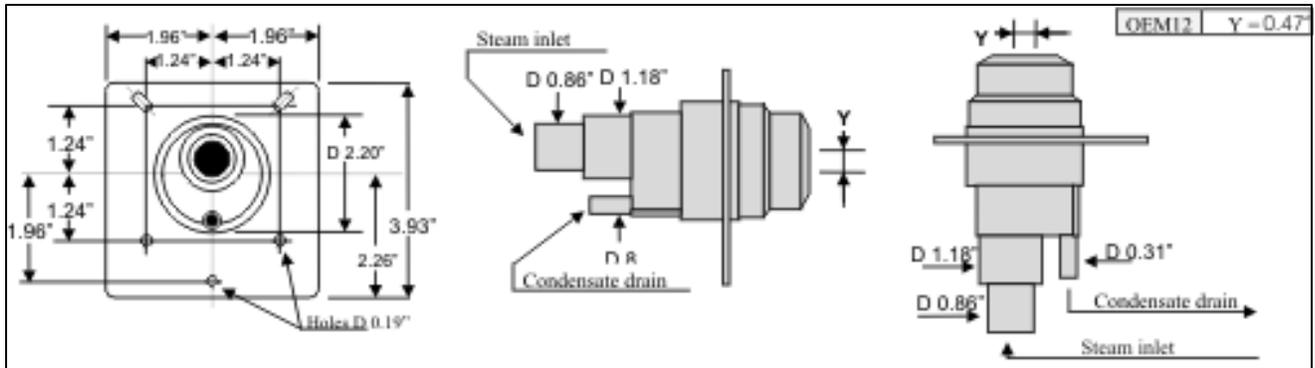
The drawing shows the minimum distances required to prevent humidified air from coming into contact with persons, or surfaces before the steam has been totally absorbed by the air.

## Duct Distribution

If a duct steam distribution nozzle is to be used, selected an accessible location on the duct, allowing at least 18" of straight duct (no elbows or obstructions) after the point where the nozzle will be installed and the clearances can be maintained as per the following drawings.



To mount the steam distributor nozzle, cut or drill a 2-1/2" hole in the duct. Apply caulk to the mounting plate of the nozzle. Attach the nozzle to the duct using 4 #10 by 1/2" drill point self-tapping sheet metal screws (not supplied). Nozzle must be level with condensate outlet to bottom.

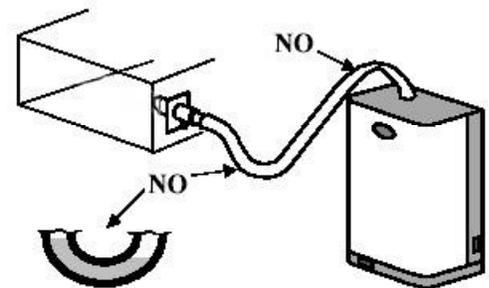


## Steam Hose Installation

The humidifier must be connected to the distributor nozzle using a the Carel hose supplied or other hose suitable for use with steam and condensate. The use of unsuitable tubing may cause weakening and cracking and consequently steam leaks.

**Installation of the steam hose is absolutely critical. 95% of all operational problems are traced back to improper hose installation.**

Steam must flow through the hose, and condensate must flow back. Avoid any kinks, sags or areas where condensate can become trapped as it will the impede the free flow of steam, putting pressure on the humidifier cylinder.



When the steam hose slopes up and away from the humidifier, it must have a minimum 20% slope to allow condensate to run back to the humidifier as shown below.

If the steam hose must slope down to the distributor nozzle, then the hose should rise above the humidifier, then turn gently and then have a 5% minimum downward slope to the distributor nozzle as below.

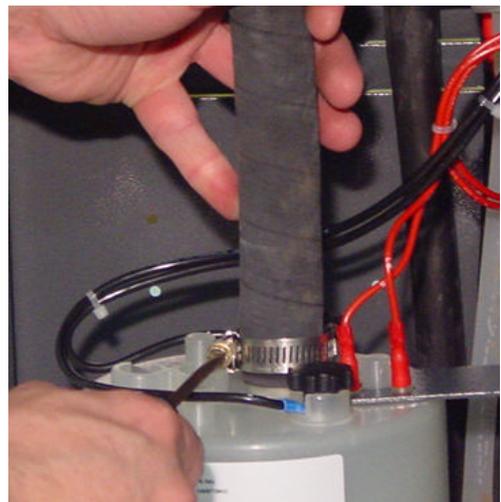


If necessary, support the steam hose using braces or other supports. **DO NOT try to pipe the steam to two different ducts or air handlers.**

The condensate hose should be trapped as shown in the two drawings above. This is to prevent steam from flowing through it. The condensate is wasted, either to the nipple on top of the humidifier, or to a separate drain. **DO NOT put condensate into the humidifier fill cup.**

Hose clamps are provided for the 7/8" I.D. steam hose as well as for the 5/16" condensate hose. **DO NOT reduce the size of the steam hose, use valves or otherwise restrict the free steam flow.**

**WARNING:** the length of the steam hose should be less than 12 feet.



## 4: Plumbing

### Connect Water Drain

The humidifier periodically drains some hot water to remove mineral buildup in the steam cylinder. This water is generally in the range of 140 to 200°F, so the drain piping must be CPVC or copper.

The drain line should be 1-1/4" diameter. Slip a 1 1/4" coupling over plastic drain outlet on bottom of humidifier shown at right.

A trap must be used in the drain line directly below the humidifier to prevent flash steam from rising into the humidifier unit and condensing on components.

**WARNING: Failure to install a drain trap as instructed will void the warranty.**

Instant maximum drain water flow = 0.40 gpm



### Connect Water Feed

A plastic and brass quick connect fitting is supplied for connection of the water feed line. This fitting includes a 1/4" O.D. compression fitting which mates to standard 1/4" O.D. plastic or copper tubing.

Inside the fill valve connection is a plastic strainer which must be removed for periodic maintenance. Make sure that your installation will allow the plastic fitting to be removed for maintenance.

**WARNING: Hand tighten only.**

**DO NOT USE DEMINERALIZED WATER.**

Instant maximum feed water flow = 0.30 gpm



## 5: Power Wiring

Feed power wiring through strain relief in bottom of humidifier and tighten around wiring cable.



Connect power wires into terminals N and L. A green/yellow ground terminal (which is also the chassis ground) is provided for connection of the ground wire.



Power supply		Rated specifications					
Mod.	Voltage (1) (V - Type)	current (2) (A)	power (2) (kW)	Steam output (lbs/hr)	wire size	power fuses (4) (A / type)	wiring diagram
003	230 - 1-N	10.4	2.40	7	12 AWG	15A / quick blow	See end of manual

## 6: Controls Wiring

### Mount The REHUMST Humidistat

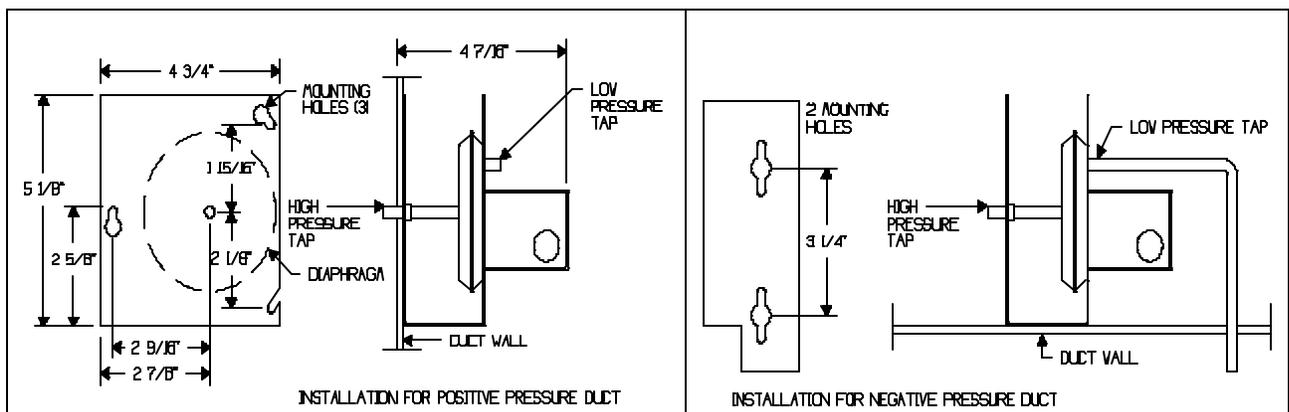
**Wall Mounting:** Located on an inside wall at a convenient height. Remove cover from back plate and punch out wiring knockout on mounting plate. Place backplate on wall and mark two mounting holes. Drill  $3/16$ " holes and insert drywall anchors. Drill  $1/2$ " diameter hole for control wires and pull wires through access hole and backplate. Mount backplate securely to wall. Connect control wires to Terminals #2 and #3. Reinstall front cover and knob.

**Duct Mounting:** Locate on side of return air duct at a convenient height. Remove cover from back plate and punch out wiring knockout on mounting plate. Remove control module from front of plate and mount on reverse side. Place backplate on duct and mark two mounting holes. Cut out section of duct to allow control module to pass through. Connect control wires to Terminals #2 and #3. Secure the backplate to the duct. Reinstall front cover and knob.

For pictures please see paper included with humidistat.

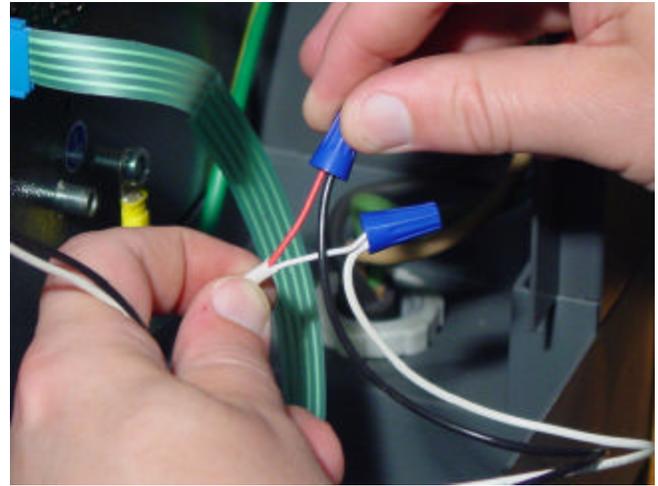
### Mount the PC-301 Air Proving Switch

Mount the airflow switch in the supply or return duct using the screws supplied. Mount the device so that the diaphragm is in a vertical position. Drill a  $7/16$ " hole in the side of the duct and connect the supplied tubing to the high pressure tap on the airflow switch and then run it through the drilled hole in the duct. Put no more than 2" of tubing into the duct. Caulk around the tubing where it enters the duct. The low pressure tap is left open to atmosphere. Reverse the taps if on the return duct. (See drawing below)



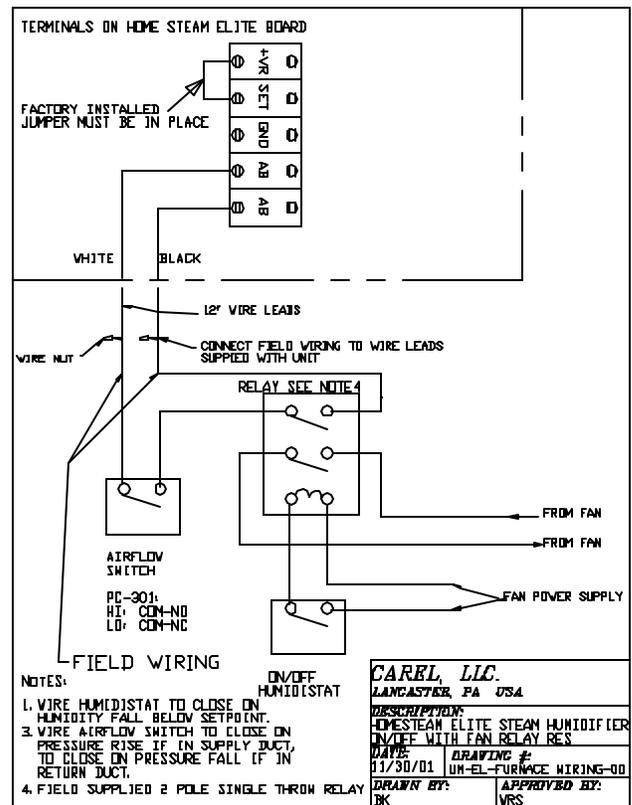
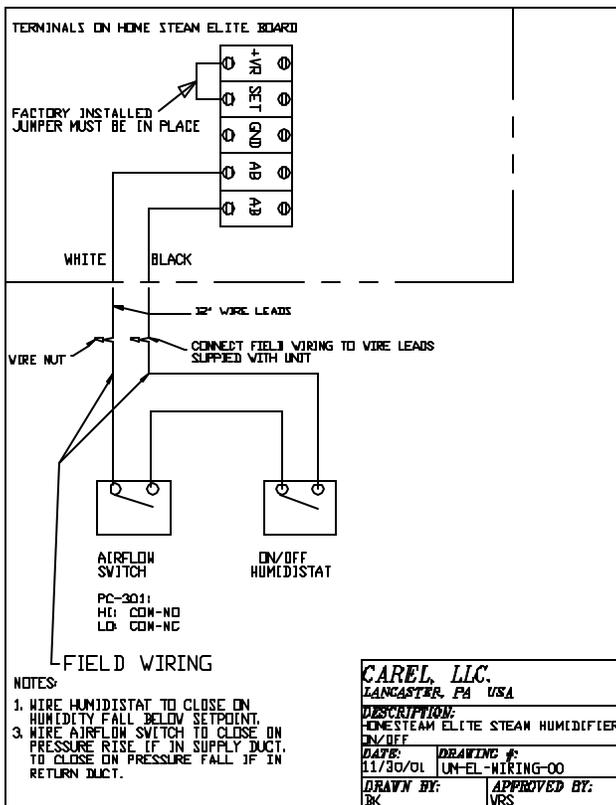
## Wire The Controls

Two pigtail wires are provided inside the electrical compartment of the humidifier. These are the low voltage controls connection for the humidistat and airflow switch.



To make the homeSteam elite operate, it is only necessary to complete the circuit between these two wires through the proper controls. The drawing below is the standard wiring.

If you desire for the humidifier to activate the heating fan whenever there is a call for humidity, then use the wiring scheme in the drawing below.



terminal	function	electrical specifications
+VR	input signal from humidistat	external N/O contact; $R_{max}=50 \Omega$ ; $V_{max}=10Vdc$ ; $I_{max}=1mAcd$
SET		
AB	remote enabling input	external N/O contact; $R_{max}=50 \Omega$ ; $V_{max}=24Vdc$ ; $I_{max}=10mAcd$
AB		

## 7: Start-Up And Shut-Down

### Important Warnings:

- Before starting, check that the humidifier is in perfect condition, that there are no water leaks and that the electrical parts are dry;
- Do not connect power if the humidifier is damaged or even partially wet;
- When installation is completed, flush the supply tubing for several minutes by piping water directly into the drain, without sending it into the humidifier. This will eliminate any scale or construction dirt that may cause foam when boiling.

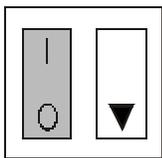
### Before starting the humidifier, check the following:

- The water, electrical and steam distribution connections have been made according to the instructions contained in this manual;
- The water shut-off valve to the humidifier is open;
- The external main power fuses or breakers are installed and intact;
- All wiring connections to the unit and inside the unit are tight;
- The pigtail control wires are connected properly to the humidistat and air flow switch and that these are both closed indicating a demand for humidity and air flow in the duct;
- The steam hose is clear and properly sloped;
- The condensate return hose from the distributor is installed, trapped and open to drain;
- The drain tubing is correctly connected, trapped and open to drain;

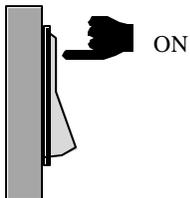
### First start-up

When first starting the unit with a clean empty cylinder, the humidifier will operate using a special startup routine designed to concentrate the minerals in the water for maximum efficiency. If the water is very good (low mineral content) this process may take up to several hours before the full rated production of steam is reached.

### Starting the unit

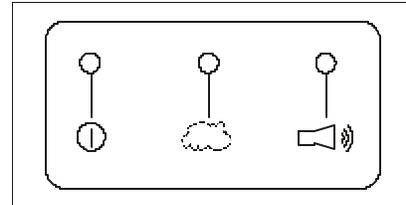


On the right side, rear of the humidifier cabinet are two rocker switches. One is marked I and O; this is the On/Off switch (I=On, O=Off). Next to it is the manual drain switch.



To start the humidifier, simply press the top of the On switch (I). If the unit does not start operating, then check the control devices wired between the pigtail control wires to be sure they are closed, completing the control circuit.

Once started, the LEDs on the control panel at the bottom front of the humidifier will glow to indicate operation



LED	Position	Means
Green	Left	Power on
Yellow	Center	Humidification in progress
Red	Right	Signals and alarms. These are indicated by specific flashes.

### Sequence Of LED Flashes On Start-Up

On start-up the humidifier performs a sequence of flashes of the LEDs on the front panel. Please note that the green LED remains on for the entire time the machine is on, irrespective of the operating status. The sequence consists of the following operations:

1. Power connected: the yellow and red LEDs remain off for 1 second;
2. Initialization: the yellow and red LEDs flash a number of times to indicate the version of the program that the board is configured with; this occurs once each time the machine is started;
  - a. First the yellow LED - the number of flashes indicates the tens (0=no flash);
  - b. Then the red LED - the number of flashes indicates the units (0=no flash);  
**example:** version 1.1: 1 flash of the yellow LED, then 1 flash of the red LED;
  - c. Once the sequence of flashes corresponding to the unit is completed, the LEDs remain off for 3 seconds, followed by the start of operation.
3. Operation: the humidifier starts operation; the yellow LED indicates that production is in progress, as shown by the following table:

Yellow LED	Production
Off	0%
1 flash	1% to 19%
2 flashes	20% to 29%
3 flashes	30% to 39%
...	...
9 flashes	90% to 99%
Always on	100%

**Remark:** the transient production is signalled by short flashes: on and off twice in 1 second; each sequence of flashes repeats continuously and, between one sequence and the next one, the yellow LED stays off for 3 seconds.

### Indication Of An Alarm

When an alarm occurs, the red LED starts to flash. The number of the flashes followed by a pause indicates specific alarms. See **ALARMS, TROUBLESHOOTING**.

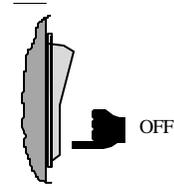
### Shut-Down

During seasonal shut-down or shut-down for maintenance, the humidifier should be placed out-of-service.

If during a shut-down **the cylinder needs to be emptied**, (which is recommended for seasonal shut down) press the drain button (down arrow) and hold until the water has been completely emptied, before disconnecting power from the unit.

In the event of a malfunction of the drain valve, the cylinder can be emptied by lifting it from the bottom connection and slowly pouring the water into the drain pan.

- Press the bottom of the On/Off rocker switch (O) and check that the LEDs on the display panel are all out.
- open the main power switch to the humidifier;
- close the water shut-off valve to the humidifier.

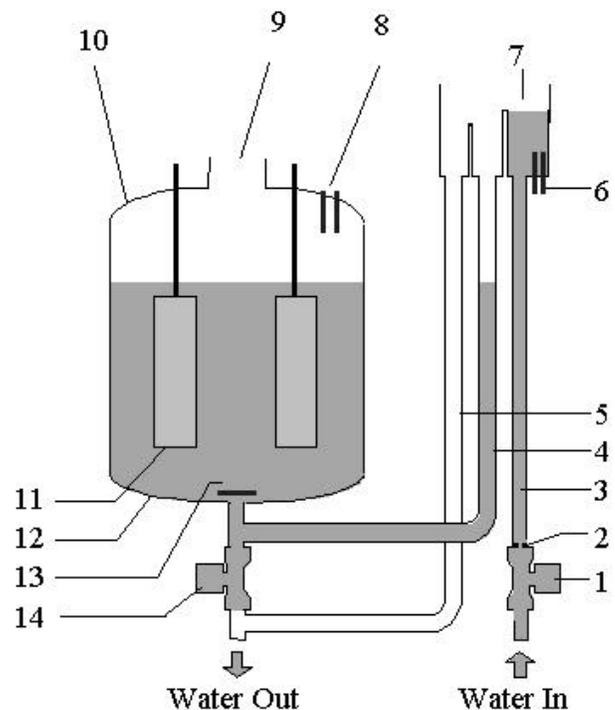


## 8. Operating Principle And Other Functions

### Operating principle

On a call for humidity, a power contactor closes and sends power to the electrodes (11) in the plastic cylinder (10). After a short delay, the fill valve (1) opens and water flows into the fill cup (3 to 7), covering the conductivity probes (6).

The controller reads the water conductivity and remembers it. Water then flows through the tubing (4) and into the bottom of the cylinder (12) by gravity. As it rises over the electrodes (11), electric current begins to flow through the water and the water warms. Eventually the water begins to boil into steam, which exits the cylinder (9) into the steam hose and then into the air duct. The steam output is directly proportional to the amount of electrode covered by water. If the amperage rises too high, the controller will open the drain valve (14) and drain off some water. As water is boiled off, the fill valve (1) will open and replace it. As water is boiled off, mineral will begin to build up in the cylinder so periodically the controller will open the drain valve (14) and drain some of the mineral laden water away and replace it with fresh water. If the water rises too high, or foaming occurs, this is detected by the cylinder full electrodes (8).



### Anti-foam procedure

Some types of supply water foam during operation. When the humidifier detects the presence of foam, a special drain/fill procedure is activated to eliminate the foam. The procedure consists of repeated draining, and in more critical situations complete draining of the cylinder.

### Automatic draining of the cylinder for extended shut-down

If the humidifier remains powered but there is no call for humidity for a period of more than 7 days, the water contained inside the cylinder is completely drained. This function prevents the corrosion and rusting of the electrodes.

## 9. Alarms, Troubleshooting

Alarms are indicated on the front display panel by a sequence of flashes of the red alarm LED. In the event of more than one alarm, these are indicated in sequence. Even if no longer active, the alarm status continues to be displayed by the flashing of the LED and the operation of the humidifier is stopped while the alarm is still present. To clear the inactive alarms, the humidifier must be turned off, and then on again. **Active alarms cannot be reset by restarting the machine.**

**LED flash modes:** slow flashes - 1 flash every 2 seconds; quick flashes - 2 flashes per second; the signals are repeated continuously, and the LED stays off for 3 seconds between one signal and the next.

Display	Causes	Solution	Action
2 quick flashes red LED	Current overload in the electrodes; probable fault in the electrodes or water temporarily too conductive (especially on re-start after a brief pause)	Drain part of the water and re-start	Total shut-down
3 quick flashes red LED	High level is indicated but no amperage draw is present	With the machine off and disconnected from the main power supply, check the condition of the cylinder and the electrical connections	Total shut-down
2 slow flashes red LED	End of cylinder life	Turn the machine off and replace the cylinder	Signal only
3 slow flashes red LED	No water	Check that the supply water tubing to the humidifier and the internal tubing are not blocked or bent and that there is proper pressure; Check the operation of the supply valve; Check that the steam outlet does not have excessive back-pressure, preventing the flow of water into the cylinder by gravity; Check that the steam outlet hose is not choked or that there are pockets of condensate	Total shut-down
4 slow flashes red LED	Excessive reduction in steam output	End cylinder life or alternatively water with excessive foam	Total shut-down
5 slow flashes red LED	Drain malfunction	Check the water drain circuits and the correct operation of the drain valve	Total shut-down
6 slow flashes or 3 quick flashes red LED	Internal memory error	Contact the Dealer	Total shut-down
9 slow flashes	Cylinder full with humidifier off-duty	Turn off the machine and check whether the full electrovalve leaks or there is some condensate entering the cylinder from the steam distributor	Total shutdown

# Installation, Operating and Maintenance Manual

## Troubleshooting table

Problem	Causes	Solution
<b>The humidifier does not turn on</b>	<ol style="list-style-type: none"> <li>1.No electrical power;</li> <li>2.On/Off switch of the humidifier in Off position (O);</li> <li>3.Improper connection;</li> <li>4.Blown fuses;</li> <li>5.Transformer fault;</li> <li>6.Humidistat or air flow switch not closed</li> </ol>	<ol style="list-style-type: none"> <li>1.Check the external fuses and breakers and for power at the humidifier;</li> <li>2.Turn the On/Off switch On (I);</li> <li>3.Check that the power wires are properly inserted in the terminal block;</li> <li>4.Check the condition of fuses f1/f2/f3;</li> <li>5.Check that the voltage across the secondary winding of the transformer is 24vac</li> <li>6. Jump out airflow &amp; humidistat</li> </ol>
<b>The humidifier does not start operation</b>	<ol style="list-style-type: none"> <li>1.Humidistat or air flow switch open;</li> <li>2.The humidistat has not been connected correctly;</li> <li>3.Humidistat fault</li> </ol>	<ol style="list-style-type: none"> <li>1.Fix or replace humidistat or air flow switch;</li> <li>2.Check the external wiring</li> </ol>
<b>The humidifier fills with water without producing steam</b>	<ol style="list-style-type: none"> <li>1.Too much backpressure in steam hose;</li> <li>2.Cylinder drain screen blocked;</li> <li>3.Lime scale in the fill cup;</li> <li>4.Drain valve malfunction</li> </ol>	<ol style="list-style-type: none"> <li>1.Check that the steam outlet pipe is not bent or choked;</li> <li>2.Clean the filter;</li> <li>3.Clean the fill cup;</li> <li>4.Check for the presence of 24vac at the drain electrovalve and/or replace drain electrovalve</li> </ol>
<b>Breaker opens</b>	Circuit breaker is under-rated	Check that the thermal-magnetic overload switch is rated for a current of at least 1.5 times the rated current of the humidifier
<b>The humidifier wets the duct</b>	<ol style="list-style-type: none"> <li>1.The distributor is not installed correctly;</li> <li>2.Humidifier over-sized;</li> <li>3.Humidifier active when the fan in the duct is off</li> </ol>	<ol style="list-style-type: none"> <li>1.Check that the steam distributor is installed correctly;</li> <li>2.Change humidifier model;</li> <li>3.Check the connection and condition of the airflow switch</li> </ol>
<b>The humidifier wets the floor below</b>	<ol style="list-style-type: none"> <li>1.The humidifier drain is blocked;</li> <li>2.The supply water or overflow circuit has leaks;</li> <li>3.The steam outlet pipe is not properly fastened to the cylinder</li> </ol>	<ol style="list-style-type: none"> <li>1.Clean the drain in the bottom tank;</li> <li>2.Check the entire water circuit;</li> <li>3.Check the fastening of the pipe clamps on the steam outlet</li> </ol>

## 10. Maintenance And Spare Parts

### Replacing The Cylinder

**WARNING: the cylinder may be hot. Allow it to cool before touching it or use protective gloves.**

To access the cylinder:

- Completely drain the water contained in the cylinder (see **Shut-down**);
- Turn the humidifier off and open the external disconnect;
- Open and remove the cover (see **Removal and reassembly of the front cover**);
- Remove the steam hose from the cylinder outlet;
- Disconnect the electrical connections from the power and high level electrodes;
- Unlock the cylinder from its holding arm and lift it up to remove it;
- Insert the new cylinder in the humidifier by performing the previous operations in reverse. (Make sure electric connection is tight, failure to do so may cause equipment damage, fire, or bodily injury.)

### Maintenance Of The Other Hydraulic Components

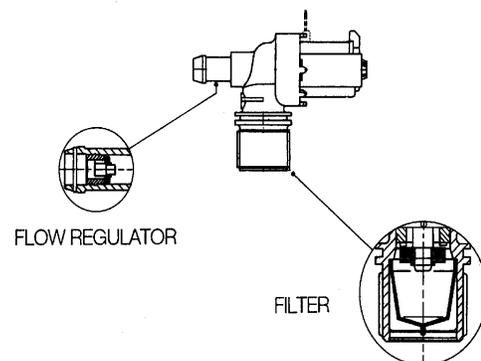
#### WARNINGS:

- **When cleaning the plastic components do not use detergents or solvents;**
- **Scale can be removed using a solution of 5% phosphoric acid and then rinsing with water (Lime-A-Way or CLR may also be used).**

The steam humidifier has just one part that requires periodical replacement: **the steam production cylinder**. This operation is necessary when mineral deposits that form inside the cylinder prevent the sufficient passage of current. This situation is displayed by the control with an alarm signal. The frequency of this operation depends on the supply water: the higher the content of mineral, the more frequently the cylinder will need replacing.

### Cleaning The Fill valve

After shutdown and removal of the steam cylinder, shut off the water supply to the humidifier, disconnect the water supply and remove the fill valve from the humidifier. Remove the inlet strainer by reaching up into the fill valve inlet with a pair of needle nose pliers and pulling out the strainer by its tab. Clean the fill valve and inlet strainer using the same solution as used to clean the steam humidifier, but **DO NOT** soak the solenoid coil in fluid. Reinstall the fill valve.



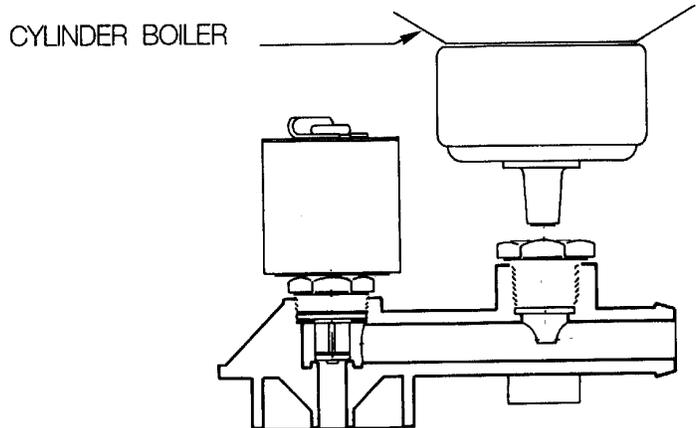
**WARNING: When cleaning the fill valve, do NOT poke or probe flow regulator with any object which may enlarge the orifice. The flow regulator must meter water flow precisely or shortened cylinder life may result.**

# Installation, Operating and Maintenance Manual

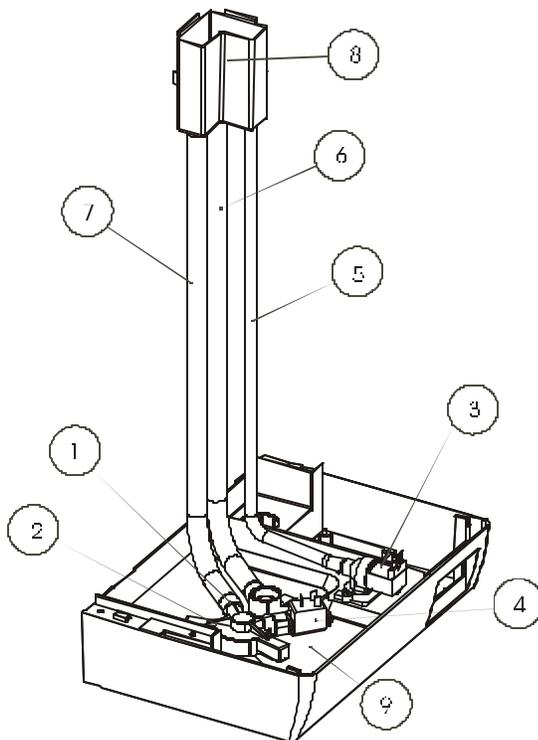
## Cleaning The Drain Valve

Remove the drain valve group and disassemble it. Clean all parts in the same way as the fill valve, reassemble and reinstall.

After cleaning and reassembly, restart your humidifier according to the Startup Instructions contained in this manual.



## Hydraulic Parts



No.	Description
1	Fastening o-ring for s/d (supply - drain) manifold
2	Supply/drain manifold
3	Water fill valve
4	Drain valve
5	Fill cup supply hose
6	Cylinder supply hose
7	Overflow hose
8	Fill cup with conductivity probes
9	Base / drain pan

**See spare parts list on page 20**

Clean the drain pan and fill cup of any deposits and check that the water flows freely from the fill cup to the drain.

Check that there are no blockages or solid particles and that the conductivity measuring electrodes are clean. Remove any impurities and rinse.

## Fuses in the auxiliary circuits

The dimensions of these are 10.3x38 mm and are contained in cartridge-type fuse holders; to check the condition of the fuses, check continuity using a tester. Use fuses with the settings indicated in the following table.

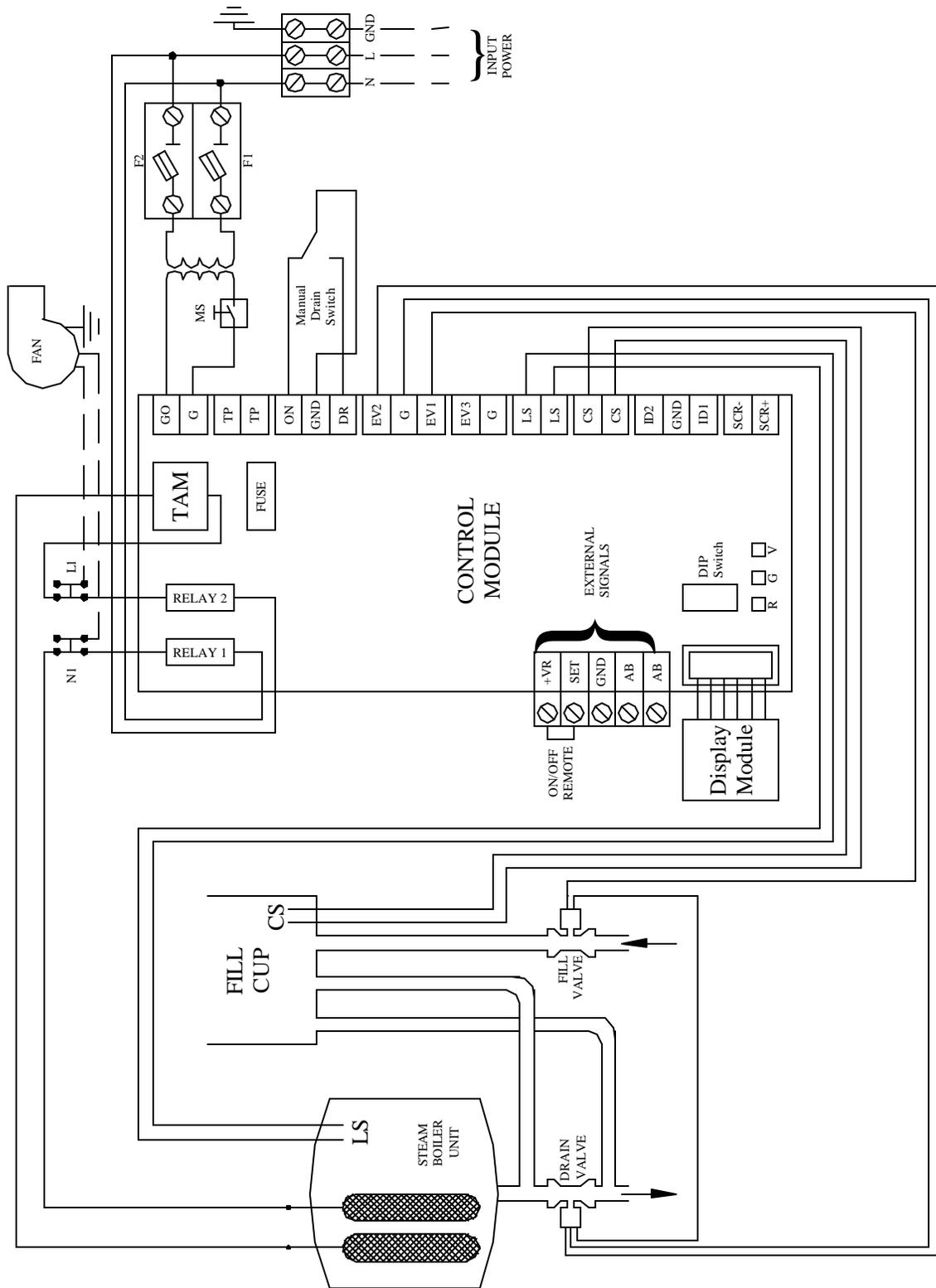
<b>Fuses 1- 2</b>	1A fast-blow
<b>Fuse 3 *</b>	2A slow blow

\* 5 x 20 mm, only on the control board.

## Spare parts

Description	Code
Fill Cup	18C453A008
Drain Valve	13C476A050
Internal tubing kit	UEKT0000S
Steam Cylinder	BL0S1F00H0
208-230/24 power transformer	09C481A003
Control board with LED support panel	UMCC000000
Fill Valve	KITVC00006

# 11. Wiring Diagram



## 12. Technical Specifications

Model	KITUM3CDRD Duct Kit	KITUM3CDRF Fan Kit
rated power supply voltage (Vac)	230	
steam connection ( $\phi$ inches)	7/8"	
steam outlet pressure limits (inches w.c.)	0 to 8" w.c.	
operating conditions	temperature 34 to 104 °F, humidity 10 to 60% RH	
storage conditions	temperature 14 to 158 °F, humidity 5 to 95% RH noncondensing	
index of protection	IP20	
auxiliary voltage / frequency (V - Hz)	24 Vac, 50/60 Hz	
maximum auxiliary power (VA)	25 VA	
instant steam production (1) (lbs/hr)	7 lbs/hr	7 lbs/hr
power consumed at rated voltage (kW)	2.40 kW	2.40 kW
duct steam nozzle	High temperature plastic	N/A
steam hose	High temperature EPDM	
water pressure	15 to 150 psi	
water conductivity	125 to 1250 micromhos	
room blower unit air volume	N/A	100 CFM
room blower unit power consumption	N/A	30 Watts
room blower unit noise level	N/A	50 dBA

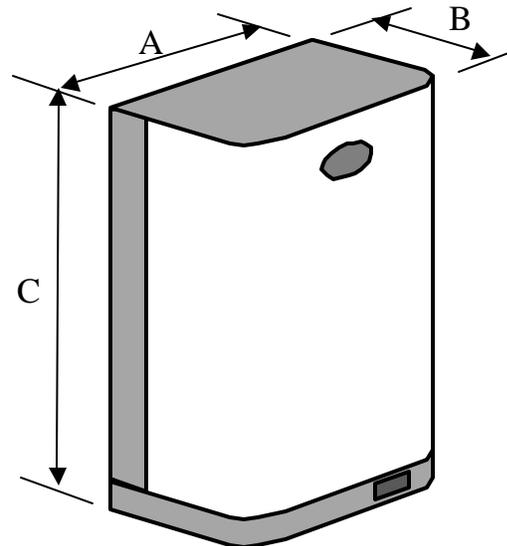
(1) the average steam production is affected by factors such as: ambient temperature, water quality, steam distribution system

### Dimensions and weights

	A	14-1/8"
	B	10-1/4"
	C	24-3/8"
	packaged	40 lbs.
	empty	29.7 lbs.
	Wet *	36.4 lbs.

\*: in normal operating conditions,  
filled with water

blower	add 9" high add 10 lbs.
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# Installation, Operating and Maintenance Manual

## **LIMITED WARRANTY**

All products manufactured by Carel USA are warranted to the original purchaser to be free from defects in materials and workmanship in the course of normal and reasonable use for a period of 2 years from the date of installation or 2 years and 1 month from the date of original shipment, whichever comes first, so long as the product has been installed and operated in accordance with all appropriate manuals and wiring diagrams.

Any product or part that is found to be defective will, at the option of Carel USA be replaced or repaired. Carel USA reserves the right to inspect any part or installation before replacing or repairing defective parts. After startup of the product, labor for repairs or replacement of parts is not covered by this warranty. Replacement of routinely replaceable parts such steam cylinders and gaskets are not covered by this warranty.

Carel USA assumes no liability for consequential or inconsequential damage, or damage due to negligence or improper use. Under the terms of this warranty, the original purchaser may have certain legal rights and other rights which may vary from state to state.



homeSteam elite



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