

# MINI NEB



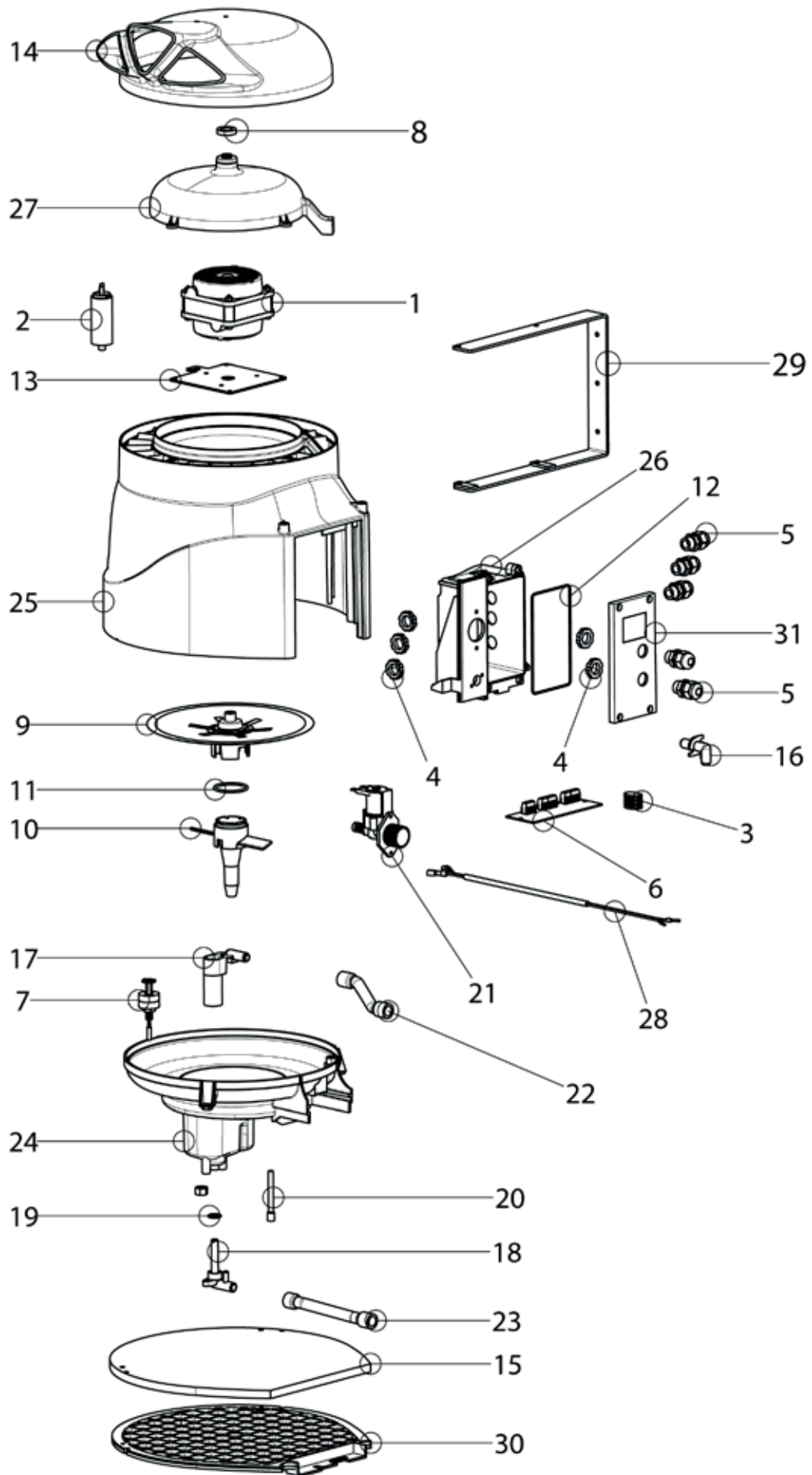
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Adiabatic humidifier

## F3005 - mini NEB

**READ AND SAVE THESE INSTRUCTIONS**





## F3005 - miniNEB

<i>Rif</i>	<i>Code</i>	<i>Description</i>
1	0010011	Electric motor
2	0060028	Capacitor 4 $\mu$ F, 470 V
3	0060205	Terminal block
4	0060287	Locknut PG9
5	0060310	Cable gland PG9
6	0070086	PCB terminal board
7	0070103	Level sensor
8	0080051	Gasket
9	0080333	Atomizing disk
10	0080336	Suction cone
11	0080337	Suction cone o-ring
12	0080347	Junction box o-ring
13	0080348	Electric motor bracket
14	0080349	Air diffuser
15	0080356	Air filter
16	0080436	Drain elbow
17	0080437	Siphon
18	0080438	Drain pipe
19	0080447	O-ring $\varnothing$ 12 internal
20	0090154	Breather pipe
21	0090969	Solenoid valve with flow control
22	0090981	Inlet hose
23	0090982	Outlet hose
24	0091115	Basin assembly
25	0091135	Main body assembly
26	0091136	Junction box assembly
27	0091137	Electric motor cover assembly
28	0091143	Solenoid valve cable
29	A020066	Wall bracket
30	A020070	Air filter grid
31	A020071	Junction box cover

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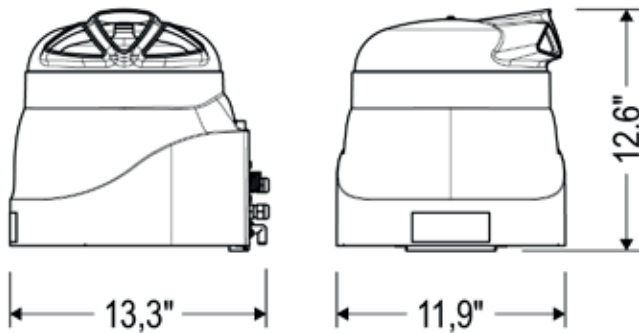
# 1 TECHNICAL FEATURES

## 1.1 Technical data table

Atomization Capacity (lbs/hour)	2.6
Power Supply	120 V, 50 Hz
Nominal Current (A)	0.12
Air Flow (cfm)	52
Feed Water Pressure (psi)	14.5 ... 145
Water Supply Tank Capacity (lbs)	0.12
Working Temperatures (°F)	+33.8 ... +95
Working Relative Humidity (%R.H. no condensing)	0% ...100%
Degree of protection	IP20

Tab. 1 - Technical data table

## 1.2 Weight and dimensions



Pic. 1 - Dimensions

Dry weight (lbs)	10.9
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Tab. 2 - Weight

# 2 INTRODUCTION

The Mini NEB is a centrifugal humidifier; meaning it atomizes water by using centrifugal force. It is engineered to be simple, safe, and effective. For the humidifier to function properly, it should have a permanent water connection and be fed either tap or fully demineralized water. The most common method of obtaining demineralized water is by reverse osmosis filtration (RO). **Please, follow these installation and maintenance instructions carefully in order to assure efficient and safe operation of your humidifier.**

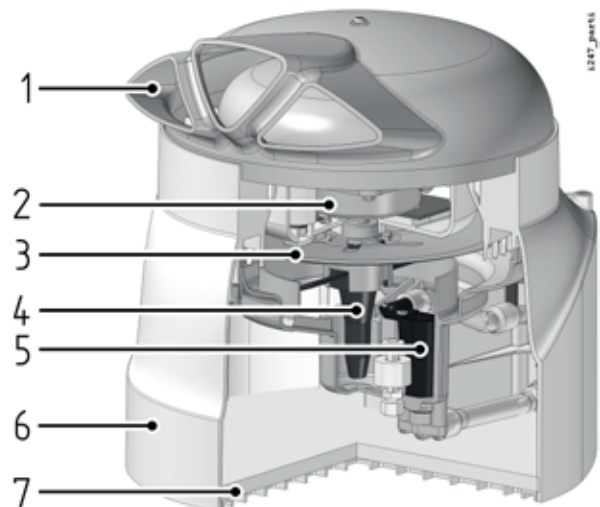
## 2.1 General safety rules

- » Before installing the unit OR performing any maintenance or inspection of the unit, be sure it is disconnected from the power supply.
- » Read all instructions before operating humidifier.
- » Keep humidifier free from obstructions to allow unit to

function properly.

- » The humidifier must be connected to an electrical supply that complies with local regulations. It is strongly recommended to plug the humidifier into a properly grounded receptacle. Ground fault receptacles are strongly recommended and may be required by local code.
- » This humidifier has been designed for air/water humidification only. Any other use for the product is prohibited and will void the product warranty. Do not use the unit for humidification of any chemicals, pesticides, or insecticides. Any use different than that described here is improper and potentially dangerous and harmful.
- » Humidistat is designed only for indoor use.
- » Monitor humidistat and fogger for initial cycles to ensure correct operation.
- » Keep these instructions in a safe place, near the humidifier for reference.

## 2.2 Main components



Pic. 2 - Main components

1 Air Diffuser	5 Drain Siphon
2 Electric Motor	6 Body
3 Atomizing Disk	7 Air Filter
4 Suction Cone	

Tab. 3 - Main components

## 3 INSTALLATION

### 3.1 Preliminary operations

Installation requirements:

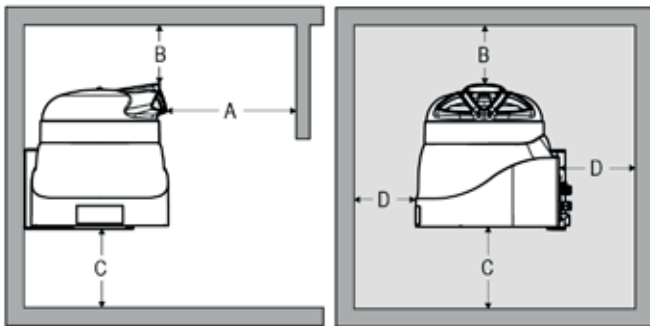
- » Electrical Power Supply 120 V / 60 Hz grounded and with protection devices. Ground fault receptacles are strongly recommended and may be required by local code.
- » Water supply connection
- » Water Drain connection

**The installation must comply with local safety regulations.**

### 3.2 Positioning

**The Mini NEB must be installed according to Pic. 3 in a horizontal position with the air filter facing the ground, with at least the minimal distance to allow proper air flow and dispersion of humidity. Any other positioning or shortened distances may compromise the performance of the humidifier.**

#### 3.2.1 Minimal distances



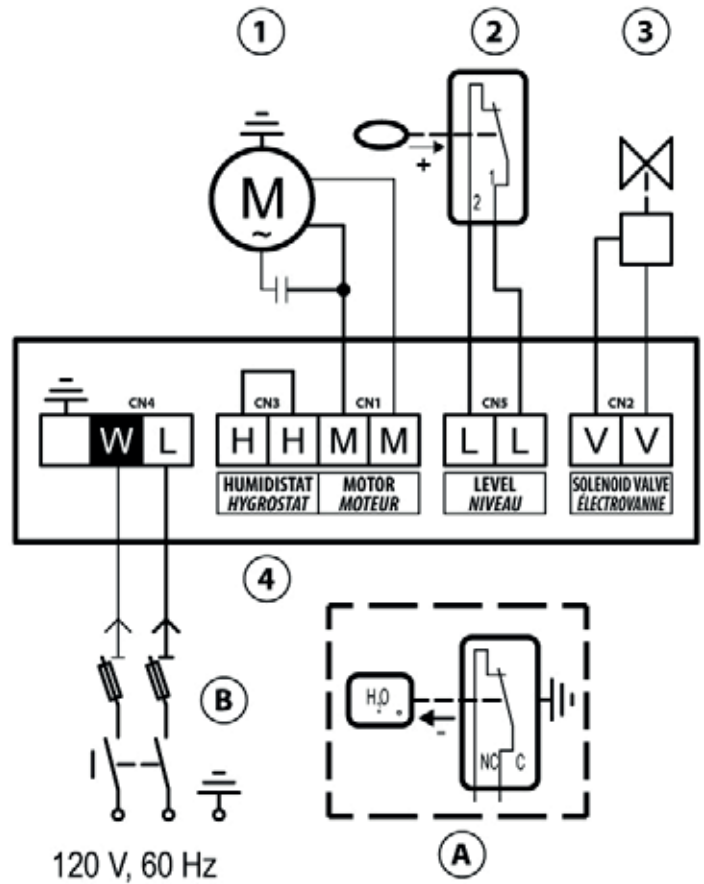
Pic. 3 - Positioning

	A	B	C	D
Minimal (ft)	6.6	1.6	1.6	2.6
Suggested (ft)	9.8	3.3	4.9	4.9

Tab. 4 - Minimal distances

### 3.3 Electrical connections

#### 3.3.1 Electrical wiring diagram



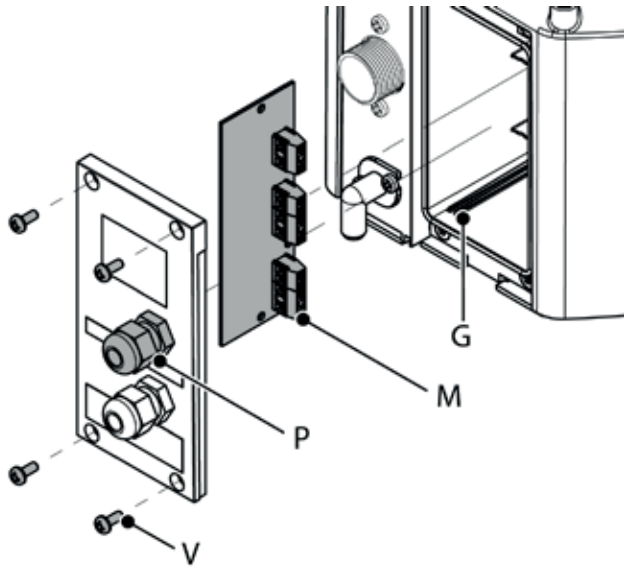
Pic. 4 - F3005 Wiring diagram

1	Humidifier motor	4	External Humidistat Bridge
2	Floating switch	A	External Humidistat 120 V, 60 Hz, 0.2 A (Not supplied)
3	Solenoid Valve	B	Line Protection (Not Supplied)

Tab. 5 - References

**The control and safety devices, that are to be fitted by the installer, must include an adequate disconnecting switch on both power supply lines.**

### 3.3.2 Cabling



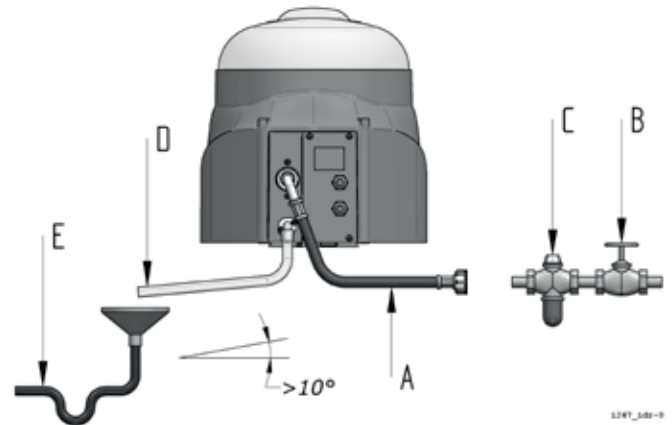
Pic. 5 - Cabling

**If installing your own power cord, use only a three prong grounded cord with minimum 16 gauge wire.**

Referring to Pic. 6:

- » To install a power cord, first remove the cover from the electrical connection box on the rear of the humidifier by unscrewing the four screws V. A Phillips head screwdriver is needed.
- » Unscrew the grey cap at the end of the power cord holder P. Slide the cap first down the end of the power cord then insert power cord through the hole of the power cord holder. Do not fully tighten the cap until proper slack and distances inside the power box have been set.
- » Carefully remove the electronic board M from the box by gently pulling it directly backwards. It should slide out from the slots G.
- » Connect all three wires—phase, neutral, ground— to the first three terminals on the circuit board. Match white to white, black to black, and green to green.
- » Put the electronic board back into electrical connection box by sliding it back carefully into the slots G.
- » Close the electrical connection box and reinsert the four screws into their proper holes. Verify enough slack is in the box and then tighten down the cap on the power cord holder to secure the cord in place and also prevent moisture from entering the electrical connection box.

### 3.4 Hydraulic connections



Pic. 6 - Hydraulic connections

The installation of the humidifier requires 2 water connections— one to feed the humidifier (water supply hose) and one for draining (drain hose). Both are included with your humidifier.

#### 3.4.1 Water Supply Hose

The water supply hose has 3/4" diameter fittings at both ends. Connect the end that is "L" shaped to the male fitting at the rear of the humidifier. Tighten firmly and plumber's tape can be used to reduce any leaking. The other end should be connected to your water supply, which should also have a 3/4" male fitting. It is possible to use reducers to take the hose diameter down from 3/4" to 1/4" in order to use 1/4" tubing instead of 3/4".

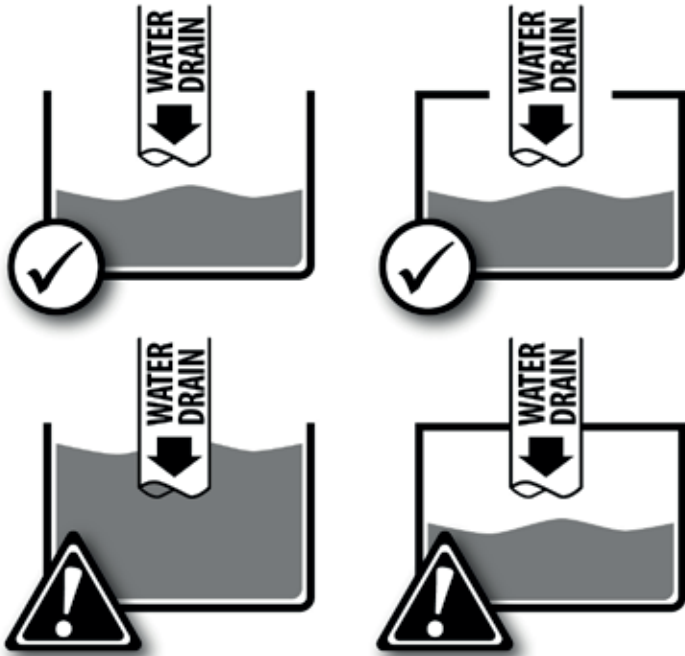
**IMPORTANT! Water Quality.** *The use of water that has gone through the process of reverse osmosis (RO) water filtration is HIGHLY recommended to reduce calcium carbonate sediment occurring in the area being humidified, as well as helping keeping the humidifier clean and free from sediment blockages.*

#### 3.4.2 Drain Hose

The drain hose should be installed by sliding it on to the water discharge port of the humidifier—which is located below the water inlet male fitting. A longer hose can be used; just make sure it has an internal diameter of 3/8".

**IMPORTANT! -Drain Hose Placement.** *The drain hose must be hung down from the humidifier's installed location at a very minimum angle of 10° in order to assure the water will drain correctly. The hose should hang as straight down as possible. Make certain there are no kinks, bottlenecks, or elbows in the hose to prevent water from draining out of the hose. In addition, the end of the drain hose should be kept free from blockage and 1) NOT placed below the water's surface in the drain and 2) NOT placed in a closed container that will have sufficient pressure to keep the water from draining out of the hose (See*

Pic. 8).



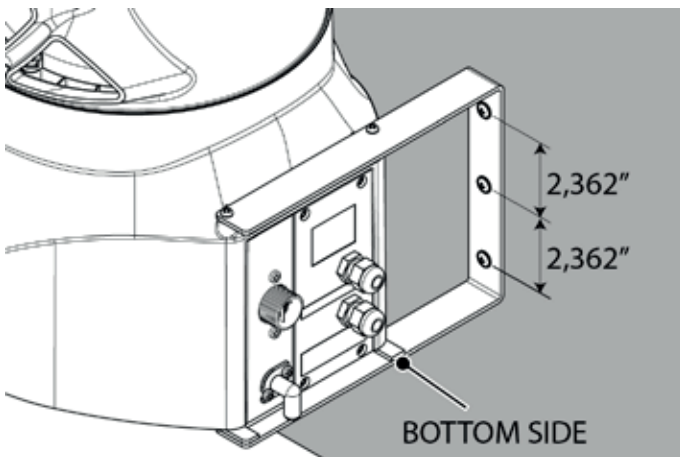
Pic. 7 - Drain hose placement

**WARNING!** Any failure in the drainage can cause water dripping from the humidifier.

### 3.5 Installation

The Cuoghi Mini NEB humidifier can be installed in one of two ways: Mounting on the side of a wall or Hanging from a ceiling. Hardware for both is provided with your humidifier

#### 3.5.1 Wall installation



Pic. 8 - Wall mounting bracket and holes on the wall

Use the supplied metal bracket with screws to install the humidifier to a wall (see Pic. 9). Use the bracket as a template in order

to determine screw placement.

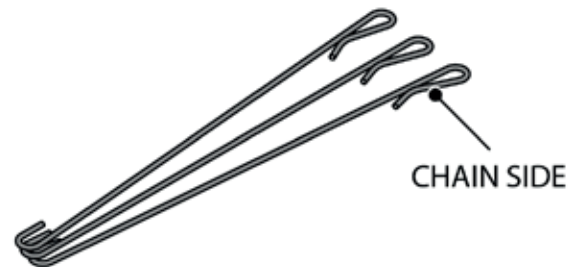
- » Drill three 1/4" diameter holes as in Pic. 9.
- » Insert screw anchors into holes. Fasten bracket to the wall and confirm mounting is solid.
- » Loosely attach bracket to rear of Cuoghi Mini NEB using the four included screws.
- » Once installation is confirmed to be solid and secure, tighten four screws attaching bracket to rear of humidifier.

#### IMPORTANT:

- **Observe minimal distances in Par 3.2 when wall mounting the Cuoghi Mini NEB.**
- **Make sure bracket is completely horizontal before drilling holes.**
- **Be certain the wall is able to sustain the weight of the humidifier (10.9 lbs). If drilling through drywall, it is highly recommended to screw into the studs behind the wall or to use wall anchors**

#### 3.5.2 Ceiling installation

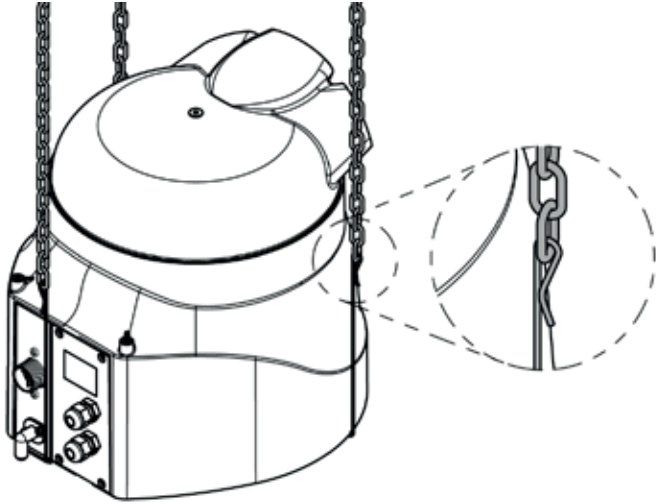
Use the three supplied hooks along with chain (not included) to hang the Cuoghi Mini NEB humidifier from the ceiling.



Pic. 9 - Hooks

- » Observe minimal distances in Par 3.2 when hanging the Cuoghi Mini NEB.
- » Predetermine where the three support chains will be attached to the ceiling in order to keep the chains as vertical as possible.
- » Choose a chain material that can both sustain the weight of the humidifier as well as to not be adversely affected by humidity.
- » Attach the three supplied hooks to the bottom of the Cuoghi Mini NEB.





Pic. 10 - Installation with hooks and chains

## 4 STARTUP, CONTROL, TURN OFF

### 4.1 Checks

- » Check both water connections (water supply and water drain). Will water be adequately supplied? Can the waste water drain quickly and easily?
- » Check electrical connections. Is the unit plugged in? Is a humidistat or similar control wired to the humidistat connections (H-H) on the electronic control board?
- » Is the electrical connection area completely water free and is the back cover plate securely screwed down?
- » Is the air filter installed at the bottom of the unit?
- » Is the water supply (tap) turned on, supplying water to the unit?
- » Is the fogging head at the top of the unit positioned outward and away from a wall or piece of equipment?
- » Is the unit installed observing the minimal distances in Par. 3.2.

### 4.2 Start up

- » Power the unit on and, if equipped with a humidistat, turn the humidistat DOWN to a level that will trigger the humidistat to CLOSE the main switch at the H-H terminals.
- » The unit should start immediately, and after a few seconds, it will start atomizing water.
- » Check both water connections both for leaks and to make sure the unit will discharge water properly through the drain tube.

### 4.3 Turn off

- » To turn the unit off, either disconnect the power supply or, if equipped with a humidistat, turn the humidistat UP to a level that will trigger the humidistat to OPEN the main

switch at the H-H terminals.

- » The humidifier will slow down and the water inside the unit will fall back down to the water basin and trigger the siphon, where it will be discharged through the drain hose.

**IMPORTANT! After shutting down the humidifier, wait at least 30 seconds to allow the waste water to be completely discharged, otherwise the siphon may not completely close and water will be continuously discharged through the drain hose when the unit is then powered back on.**

## 5 MAINTENANCE

### 5.1 Introduction

The Mini NEB is designed to perform efficiently and to provide problem free performance for a long time. However, regular maintenance is needed in order to keep the unit running efficiently, cleanly, and safely.

**IMPORTANT: How frequently maintenance needs to be performed is determined by two factors: 1) The environment in which the humidifier operates and 2) the quality of the water supply. However, it is recommended that the unit be examined for possible maintenance at least every 30 days!**

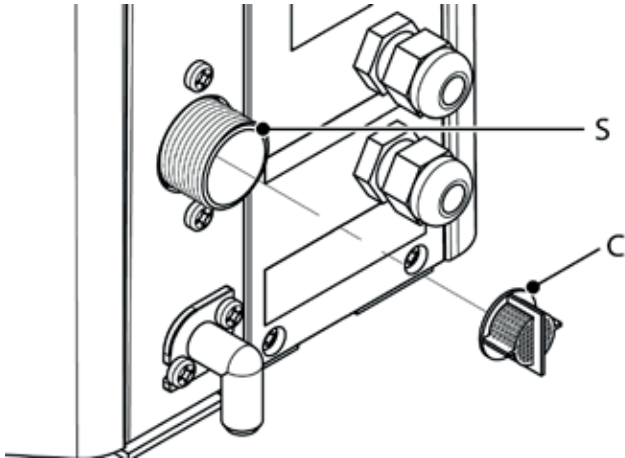
**BEFORE PERFORMING ANY MAINTENANCE TO THE HUMIDIFIER MAKE SURE THAT:**

- **THE UNIT IS COMPLETELY POWERED OFF AND IS UNPLUGGED FROM ANY POWER SUPPLY.**
- **THE MACHINE HAS COMPLETELY STOPPED.**
- **THE WATER SUPPLY HAS BEEN COMPLETELY TURNED OFF**

### 5.2 Inspection and cleaning of the water feed solenoid valve

The water feed solenoid valve is fitted with an inlet filter that must be periodically checked and cleaned.

To access the filter, unscrew remove the water supply hose: the filter C is located inside the threaded bush S of the solenoid valve.

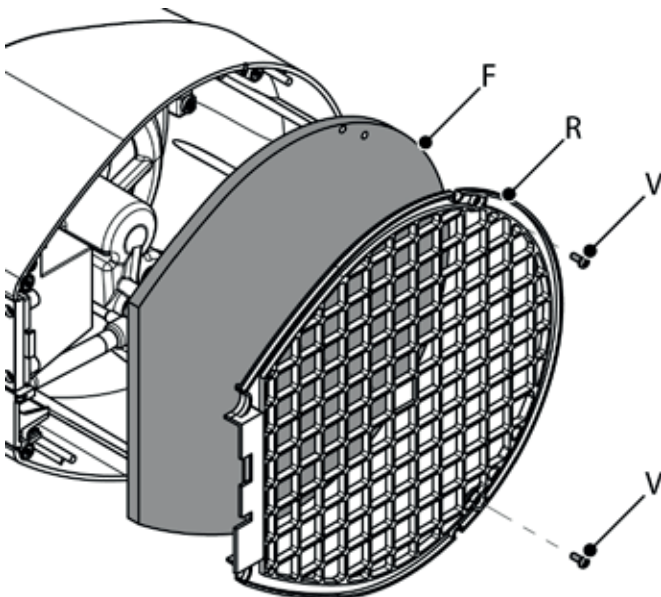


Pic. 11 - Solenoid valve

If cleaning becomes too frequent, it is advisable to install a cartridge filter on the water supply line (see: paragraph 3.4 - Hydraulic connections)

**WARNING: do NOT run the humidifier without the water filter C.**

### 5.3 Air filter cleaning



Pic. 12 - Air filter disassemble

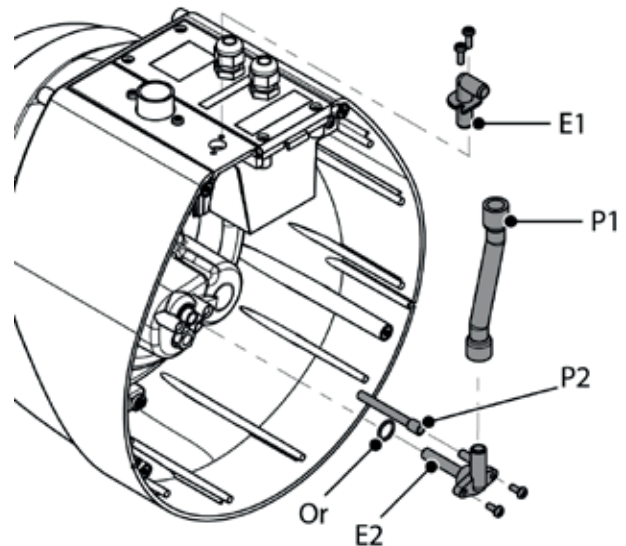
The air filter will need to be cleaned periodically as dirt and dust will accumulate in the filter and reduce the incoming air flow which will lower the overall efficiency of the humidifier. How often the air filter needs to be cleaned depends on the air quality and the environment in which the humidifier operates.

To clean the air filter:

- » Disassemble the filter assembly by unscrewing the two screws “V” that keep the plastic screen “R” in place.
- » Remove plastic assembly and mesh air filter.
- » Clean the air filter media first by vacuuming, then by rinsing upside down with water and a household detergent.
- » Let the air filter media dry naturally; do not ring or squeeze it. Reassemble all of the pieces; carefully checking that the air filter media is correctly positioned in the plastic assembly and then re-tighten down with screws.
- » Air filter media must be completely dry before reinstallation and starting the humidifier.

**IMPORTANT! Never run the humidifier without the air filter assembly.**

### 5.4 Basic cleaning of the drain

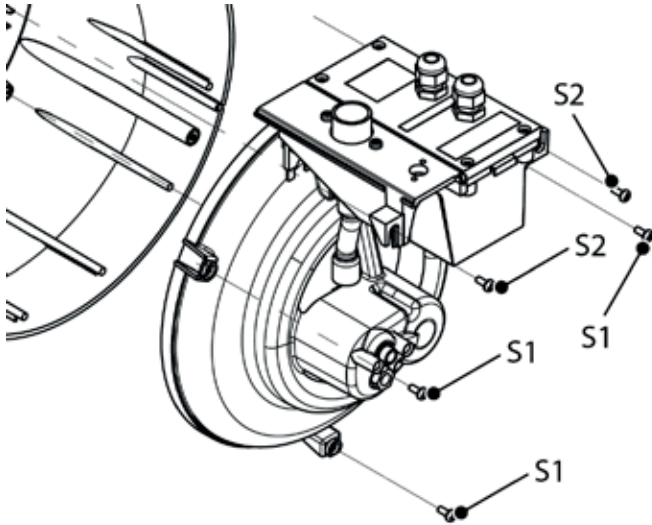


Pic. 13 - Parts to be cleaned

- » Remove the grid and the air filter.
- » Remove and clean the plastic elbows E1 and E2, the pipes P1 and P2.
- » Reassemble all the parts and remember to place the o-ring Or in the plastic elbow E2.

### 5.5 Advanced cleaning (to be performed as needed or monthly)

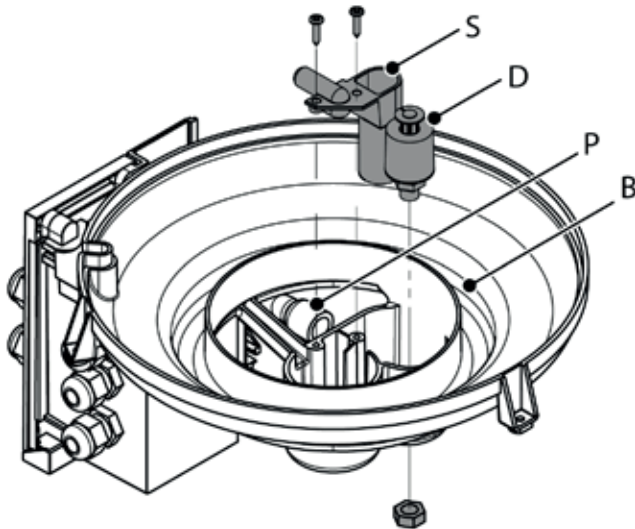
- » Remove the three screws S1 that fix the basin to the main body.
- » Remove the two screws S2 that fix the electric box to the main body.
- » Remove together the basin and the electric box from the main body.



Pic. 14 - Advanced cleaning of the basin

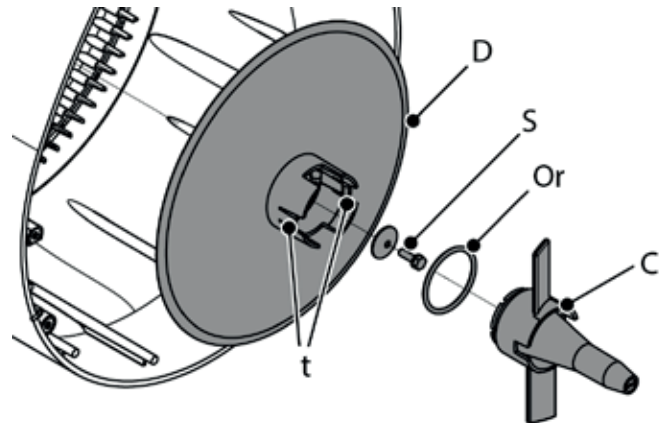
Remove any dirt that can reduce or stop the flow of water.

- » Disconnect the tube **P**.
- » Remove and clean the syphon **S**.
- » Remove and clean the float **D**: the float cannot be completely removed because of the wire. Handle and clean it gently, check that the float can move up and down freely.
- » Clean the entire basin **B**, taking care to remove the dirt from the area surrounding the siphon and the float.



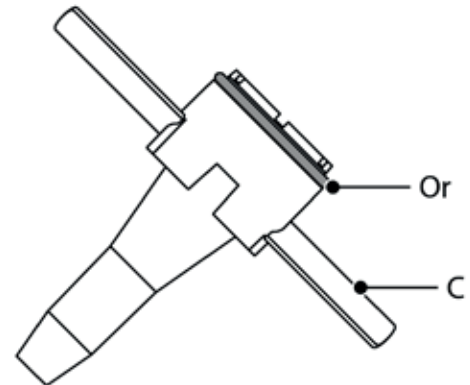
Pic. 15 - Advanced cleaning of the parts

## 5.6 Cleaning of the cone and the disk



Pic. 16 - The cone and the disk

- » Remove the cone **C** by releasing the two tabs **t**: remove the cone **C** from the top and gently pulling it up and down until the two tabs release and the cone eases out.
- » The black gasket **Or** of the cone remains on the bottom of the disk: gently pry it out and check that it is not damaged. If it's compromised; it must be replaced.
- » Remove the screw **S** and the disk **D**.
- » Clean the cone and the disk, remove any dirt that can reduce or stop the passage of the water.



Pic. 17 - The cone and its gasket

To assemble the cone follow carefully the following instructions.

- » Fix the disk to the motor with its screw and washer: do not overtighten the screw too much or you can damage the disk.
- » Place the black gasket back on the cone **C**; wet it with water before placing back on the cone.
- » Click the cone back in its slots and check it's in the right position before snapping it in. This is can be tricky: do not rotate or pull the cone because this will slip the gasket out of place. Push down the cone gently until you hear the click of the two tabs **t** (Pic. 17).

## 6 STORAGE

### 6.1 General notes

- » Store the machine in a room with a temperature between
- » 14 °F and 140 °F.
- » When the machine is stored in the box, keep the box vertical and upright.
- » Do not stack other boxes on top.

### 6.2 Checklist to be made before storing unit and then resuming service

#### 6.2.1 Before putting unit into storage

- » Disconnect all electrical connections and shut off water feed.
- » Cover the machine to protect it from dust. The original box works well for this.

#### 6.2.2 Resuming Service

- » Check the air filter and clean it if necessary.
- » Check that the float is working correctly, gently slide it up and down, seeing if there is any debris to cause resistance and check that the fan and disk assembly rotates freely.
- » Open the water supply tap.
- » Check that all electrical connections are connected safely per the instructions.

## 7 PROBLEMS AND SOLUTIONS

### 7.1 The humidifier doesn't start

POSSIBLE CAUSES	SOLUTIONS
The power supply is interrupted	Check the electrical connections, starting from the electrical control box to the internal box of the humidifier
The start capacitor is burned	Substitute the capacitor with a new one

### 7.2 Air comes out from the air outlet but not nebulized water

POSSIBLE CAUSES	SOLUTIONS
Water does not arrive to the basin	Check that the water supply tap is opened. Check that the water feed solenoid valve filter is not obstructed, and that the hoses are correctly fitted and unobstructed. Finally, check that the floating switch inside the basin is free to move correctly.
The fan cone extremity is obstructed	Clean the cone from the impurities and dirt inside.

### 7.3 The Humidifier continuously discharging water

POSSIBLE CAUSES	SOLUTIONS
The siphon is dirty	When dirt accumulates inside the siphon, it is possible that the siphon is triggered during normal operation. Disassemble and clean the siphon completely (see: par. 5.3 Inspection and Cleaning of the Discharge Siphon)
The machine is installed not vertically	Check that the machine is installed as described on par.3.2 Positioning.







**CUOGHI LLC**

135 Brandywine blvd, suite A  
Fayetteville, GA, 30214  
[info@cuoghillc.com](mailto:info@cuoghillc.com)  
[www.cuoghillc.com](http://www.cuoghillc.com)