



## Ultrasonic Humidifier UHxxYD



### USER, INSTALLATION AND MAINTENANCE GUIDE

(for models up to 18 l/h)

*Read it before installing/using the machine!*

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Thanks for using this humidifier of our company. In order to let you experience the product swimmingly, detailed instruction is provided which you can find the product's introduction, usage and other information. Before using this product, please read the manual carefully, so that you can correctly use it. In case of any printing or translation error, we apologize for the inconvenience. As for the content change, we are sorry for no further notice. This manual applies to all UHxxYD series product of our company.

## 1 Safety measures

### 1.1 General measures

People who are not familiar with this type of equipment, or who have not read this manual carefully, should not be allowed to use the humidifier.

Your humidifier has been designed to be used with 230V 50 / 60Hz alternating voltage. Do not try to use the humidifier with a different type of voltage. Check that the mains voltage matches that of the humidifier.

Your humidifier must always be switched off before any maintenance operation.

All maintenance and repair operations must be carried out by the manufacturer, its Assistance Service or by qualified personnel.

Do not hide the humidifier air intakes (fans) and do not insert any objects into the openings.

### 1.2 Ground Connection

The first operation of each installation is the correct grounding of the equipment, following the regulations in force in the state and at the time in which the equipment is installed.

### 1.3 Thermo-hygrometric conditions of the installation.

Verify that the environmental conditions of the place where the installation is performed are always compatible with the needs of the product as required in this manual. Each Elsteam product cannot be installed exposed to atmospheric conditions or frost, except for different conditions explicitly expressed in countersigned documents.

### 1.4 Power supply

Elsteam equipment must be connected to the power supply, strictly following the regulations in force and the specifications recorded on the plates supplied with the equipment.

In particular, it is mandatory that the power supply lines are of the correct section and equipped with a standard disconnector with differential safety (life-saving) able to protect the user not only towards the apparatus, but also towards the installed power lines. .

### 1.5 Connection to hydraulic networks

Elsteam equipment may need to be connected to the water supply. In this case, it is necessary to strictly comply with the regulations in force and make sure that any breakages or water leaks resulting from the installation or from the appliance itself cannot cause damage to the environment or to third parties. Do not install the appliance above passageways or on dangerous or susceptible objects to damage and always provide suitable drainage systems capable of properly evacuating any leaking water. Should the appliance be installed

in the aforementioned areas, contact the seller to request an analysis against any water leaks.

## 1.6 Waste disposal



The Directive 2002/96 / EC of the European Parliament and the related national regulations impose the obligation not to dispose of WEEE as urban civil waste, but to arrange a special collection of the obsolete parts of the humidifier.

However, the buyer is entitled to return the disused humidifier to Elsteam srl in the event of the purchase of an equivalent humidifier. Elsteam will arrange for the disposal on its own or through its agents.

The disposal of electrical or electronic components in an abusive manner and not in compliance with current regulations entails sanctions.

## 1.7 Warranty

Elsteam S.r.l. recognizes on its products the legal guarantees in force at the time of sale of the product. Incorrect use and lack of maintenance lead to the automatic forfeiture of any form of guarantee.

## 2 Working principle

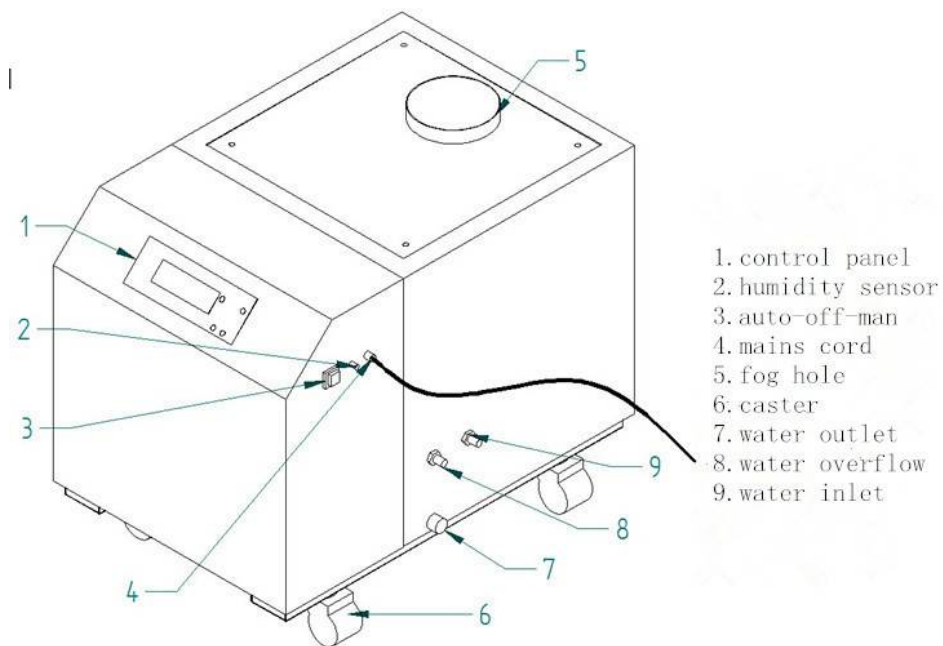
Ultrasonic humidifiers use a piezo-electric transducer to create a high frequency mechanical oscillation in a body of water. The water tries to follow the high frequency oscillation but cannot because of its comparative weight and mass inertia. Thus, a momentary vacuum is created on the negative oscillation, causing the water to cavitate into vapour. The transducer follows this with a positive oscillation that creates high pressure compression waves on the water's surface, releasing tiny vapour molecules of water into the air. This is an extremely fine mist, about one micron in diameter, which is quickly absorbed into the air flow. Since the mist is created by oscillation, not heat, the water temperature need not be raised. Ultrasonic humidifiers, therefore, can create instantaneous humidity, and don't have to wait for a heating element to boil the water. This precise on/off humidity control is the hallmark of ultrasonic humidifiers. In addition, unlike wet pad humidifiers, ultrasonic units can be of comparatively small size, and still produce significant amounts of vapour. When the sensors which pick up ultrasonic humidifier has decreased below a certain level of humidity of the air ultrasonic humidifier comes into operation. When, however, capture a high degree of moisture the cool mist humidifier is turned off. In this way is very simple to maintain a high degree of humidity within a room as the cool mist humidifier works automatically.

## 3 Features

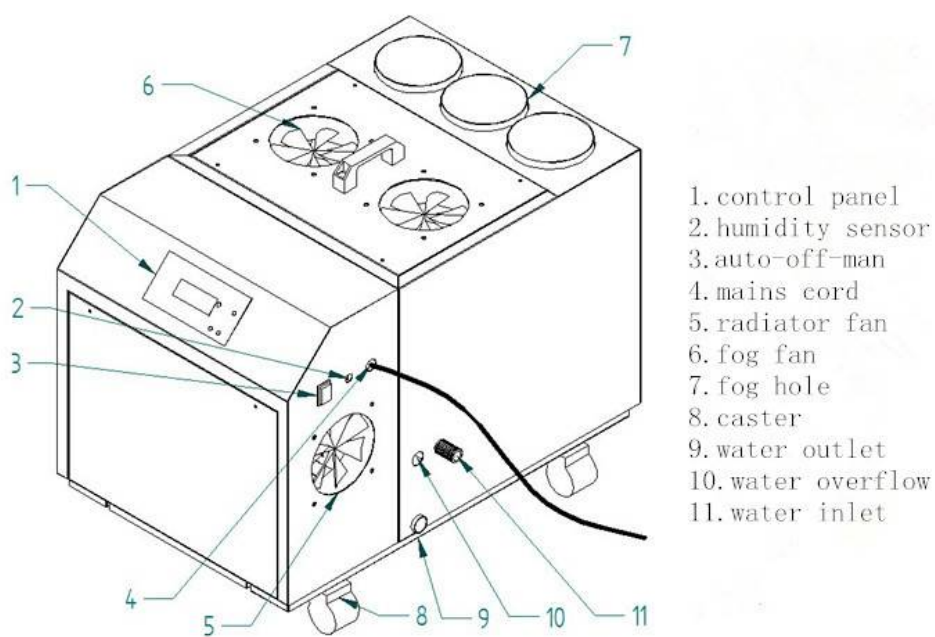
- Internal adopting integrated type ultrasound machine, no mechanical drive, no noise, producing certain negative ion and low failure rate and easy maintenance, the output fog droplets diameter is only 1-10  $\mu$ . The stainless steel body, powder coated, beautiful appearance, standard filling water mouth, switch and outlet water spill, including nozzle to be automatic filling water, automatic control water level;
- External ON/OFF controller (red wires)

- 
- High atomization efficiency (nearly 100%): producing small and even fog, quickly meeting the requirements of the relative humidity, saving water;
  - Droplet Size: Steam-size droplets. One micron droplets allow for immediate evaporation like steam. Competitive spray nozzle systems create up to 20 micron droplets, risking wetness on equipment and in ductwork.
  - Health: All dissolved liquids are removed from the water feeding into ultrasonic oscillators.
  - Energy Cost: Ultrasonic oscillators generate 1 micron size droplets for as little as 1/13 the price of steam. This can save thousands of dollars in annual operating costs. In addition, ultrasonic oscillators turn on and off instantly, while steam units preheat, using more electricity.
  - Maintenance: Since water is purified before entry into the ultrasonic humidifier, there is considerably less maintenance required of an ultrasonic system as opposed to steam.
  - RH Accuracy: Ultrasonic oscillators provide instant on/off of mist. As soon as the air strays from the relative humidity set point, an ultrasonic humidifier instantly turns on. Steam canisters have flush cycles that may shut down the humidifier for up to 15 minutes or more. Heating elements inside those systems take time to boil water to create humidity.

## 4 Parameter



**UH03YD**



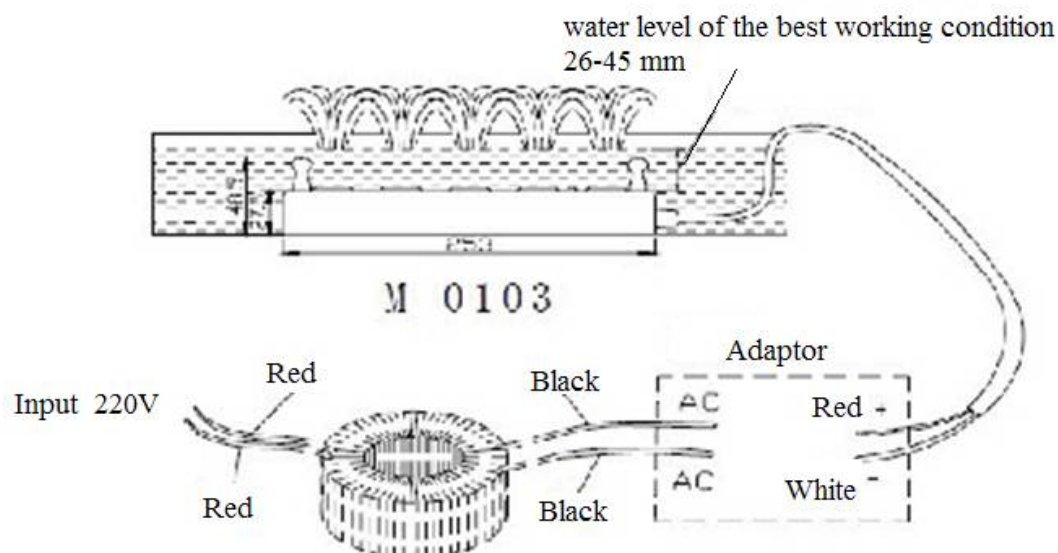
**UH15YD**

## 5 Characteristics

Models		UH-03YD	UH-09YD	UH-15YD	UH-21YD
FOG PRODUCTION					
Steam Capacity	[Kg/h]	3	9	15	21
Max pressure	[mm H2O/ bar]	9/0,0009	16/0,0016	16/0,0016	23/0,0023
External Connection	[mm]	110x1	110x2	110x3	160x2
FOG OUTPUT					
Number of distributors	[n]	1	2	3	2
Air Flow	mc/h	180	360	540	720
ELECTRICAL DATA					
Power	[kW]	0,3	0,9	1,5	2,2
Supply	[Vac, Hz]	230, 50			
Phases	[n]	1			
HYDRAULIC DATA					
Input Water Quality		Complies with the microbiological requirements defined for drinking water by the regulations in force in the area of use; the use of partially demineralized water is recommended to reduce the frequency of maintenance; the use of totally demineralized water is not allowed			
Input Water Conductibility	μS*cm	70 ... 1250 (not totally demineralized)			
Input Water Hardness	°Fr	5...50			
Input Water Pressure	[MPa/bar]	0...0,4/0...4			
Input Water Connection		M 1/2" GAS			
Drain Water Connection		F 1/2" GAS			
GENERAL DATA					
Dimensions	(WxHxD [mm])	600x330x500	640x420x500	640x550x500	700x600x500
Weight	[kg]	28	36	35	48
IP Protection	---	20	20	20	20
REGULATION					
Control	---	Internal with probe, Manual			

## 6 Attention matters

- The atomizing air contains very high moisture around the mouth, avoiding these atomizing air backflow inside the equipment, ensure straight pipe goes up 1.5m minimum requirements
- The best water level (as below)





## 6.1 Working conditions

<b>Surrounding temp. range</b>	1 - 40°C	<b>Water Pressure</b>	0 - 4 bar
<b>Surrounding RH level</b>	≤85%RH	<b>Water temp. range</b>	1 - 30°C
<b>Water quality</b>	<ul style="list-style-type: none"> <li>✓ Soften Clean water</li> <li>✓ Add the water filter</li> </ul>	<b>Surrounding</b>	<ul style="list-style-type: none"> <li>✓ No high temp. Source</li> <li>✓ No high intensity magnetic field</li> <li>✓ No much dust</li> </ul>

## 7 Regular failure and failure elimination

<b>Fault</b>	<b>Reason</b>	<b>Ways</b>
<b>Indicator light off</b>	<ul style="list-style-type: none"> <li>✓ No power;</li> <li>✓ Fuse blown;</li> <li>✓ Switch is off;</li> </ul>	<ul style="list-style-type: none"> <li>✓ Checking power supply;</li> <li>✓ Changing same fuse;</li> <li>✓ Turn switch on;</li> </ul>
<b>Don't feed water</b>	<ul style="list-style-type: none"> <li>✓ No water supply;</li> <li>✓ Magnetic valve is broken;</li> <li>✓ Master control board is broken;</li> </ul>	<ul style="list-style-type: none"> <li>✓ Checking the water supply pipe;</li> <li>✓ Changing magnetic valve;</li> <li>✓ Changing master control board;</li> </ul>
<b>No Mist but the light works</b>	<ul style="list-style-type: none"> <li>✓ Switch of atomizing is "0" position;</li> <li>✓ Voltage is low;</li> </ul>	<ul style="list-style-type: none"> <li>✓ Turn the switch of atomizing on "1" or "2";</li> <li>✓ Checking the supply voltage, voltage stabilizer is needed;</li> </ul>
<b>Water Spill from tank</b>	<ul style="list-style-type: none"> <li>✓ Master control board broken or the switch of water level broken;</li> <li>✓ Sundries block magnetic valve;</li> </ul>	<ul style="list-style-type: none"> <li>✓ Changing master control board or the switch of high water level;</li> <li>✓ Clean the magnetic valve;</li> </ul>
<b>Mist grows small or no</b>	<ul style="list-style-type: none"> <li>✓ Much scale in tank;</li> <li>✓ Atomizer is ageing;</li> <li>✓ Voltage is low;</li> </ul>	<ul style="list-style-type: none"> <li>✓ Clean water tank;</li> <li>✓ Changing or clean atomizer;</li> <li>✓ Checking the supply voltage, voltage stabilizer is needed; ;</li> </ul>

## 8 Operation












### 8.1 Control panel description

- 1) Auto-off-Man:
  - **Auto** : auto control. Use of provided probe and internal controller
  - **Off** : unit stops working;
  - **Man** : manual control.
- 2) Power: Press "power", to turn on/off humidifier;
- 3) Set: Press "Set" to set the humidity and cleaning-time;
- 4) +,-: Press "+/-" to set the humidity value and time;














Figure 1 - Control panel

### 8.2 Operations

- Connect power supply, and set the humidity sensor, turn Auto, the LCD screen displays the ambient humidity: press , the screen displays  and the Run indicator illuminates; press  twice,  disappears and the Run indicator is off. The fan will continue to work for 30 seconds. If you turn the Auto/Man to the middle, the fan stops working immediately.
- Connect power supply, turn the Auto/Man to Man, the LCD screen no display, press  to start the machine and the Run indicator illuminates; press  twice to stop the machine and the Run indicator is off. If turn the Auto/Man to the middle, the fan stops working immediately.
- In AUTO mode, when the ambient humidity is higher than the set humidity, the machine is standby; when the ambient humidity is lower than the set humidity, the machine starts working automatically;
- In AUTO mode, press  to set the humidity, press + - to set the required humidity, no pressing for 5 seconds the data will be saved;
- In AUTO mode and humidifier not working, press button  to go to clock setting. Press button  and  to modify values;
- Press  twice to enter the cleaning mode, when the clock on the screen flashes, press + ,the machine will stop working after 150 hours to remind that it is time to clean; press - cancels the set. No pressing for 5 seconds the data will be saved;

In AUTO mode (internal controller and humidity probe)

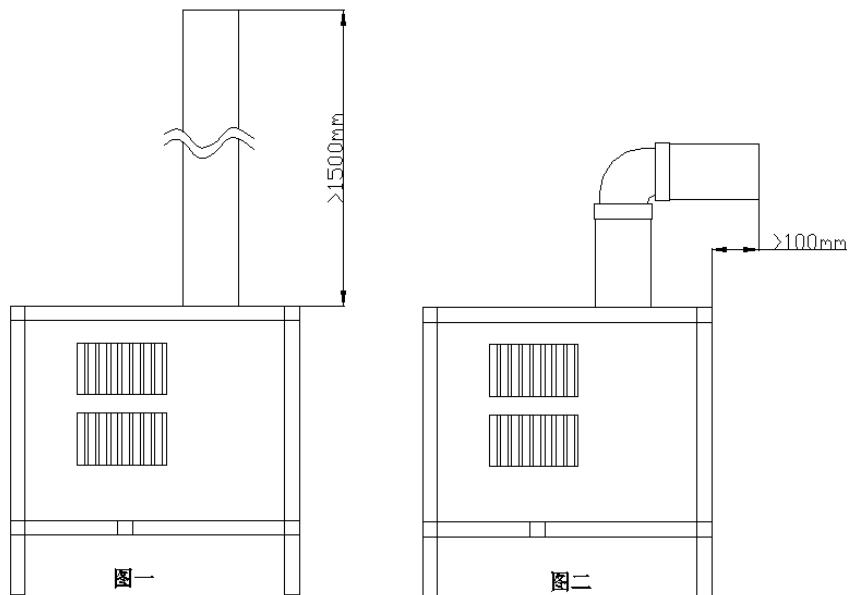
Humidifier not working		
buttons  and 	Modify Set-Point	
button  long period	Cambio umidità letta	Taratura ?
button  2 times	Clock set-up	
Humidifier working (RUN)		
button  and 	Modify Set-Point	
button  long period	Cambio umidità letta	Taratura ?
button  1 time	Clock set-up	
button  2 times	ON TIMER (modify with arrows, + hours, - minuts)	
button  3 times	OFF TIMER (modify with arrows, + hours, - minuts)	
button  4 times	Remove TIMER	

**Water outlet: Must be close while working. It can be open while you clean it machine.**

**Water inlet:** Water pressure range 0~4kg/cm, avoid 100µm granules. Hardness less 5. Watering from the mist outlet is not advisable, the reason is the control board will not acquire the precise water level.

**Fuse:** Avoiding device overload, and further breakdown. Do not change the large capacity fuse pipe randomness.

**Power supply:** 220V/50Hz(±2Hz), the ground line must be connected. The total fluctuation≥1.2\*Rating power



## 9 Applications

Printing;	Cleanrooms;
Tobacco;	Tea Production;
Timber;	Crop Storage;
Data Centres;	Explosives;
Paper;	Mushroom Growing;
Respiratory Illness;	Food Manufacturing;
Art&Antiques;	Medical Device;
Automotive;	Electronics;
Cold Stores;	Hatcheries;
Textiles;	HVAC System;
Hospital;	Concert Halls/Organs;
Office;	Etc.
Pharmaceuticals;	
Abattoirs;	

## 10 Installation

Reasonable pipeline, preventing leakage. When is in a larger area, small fog mouths can be drilled in pipe (same as figure 2). The pipe way showed in figure 3 is banned

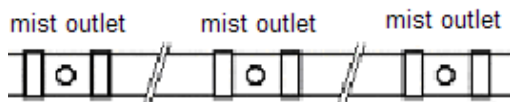


Figure 2

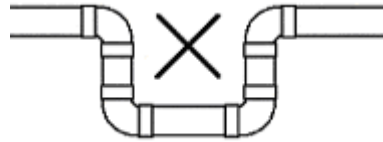
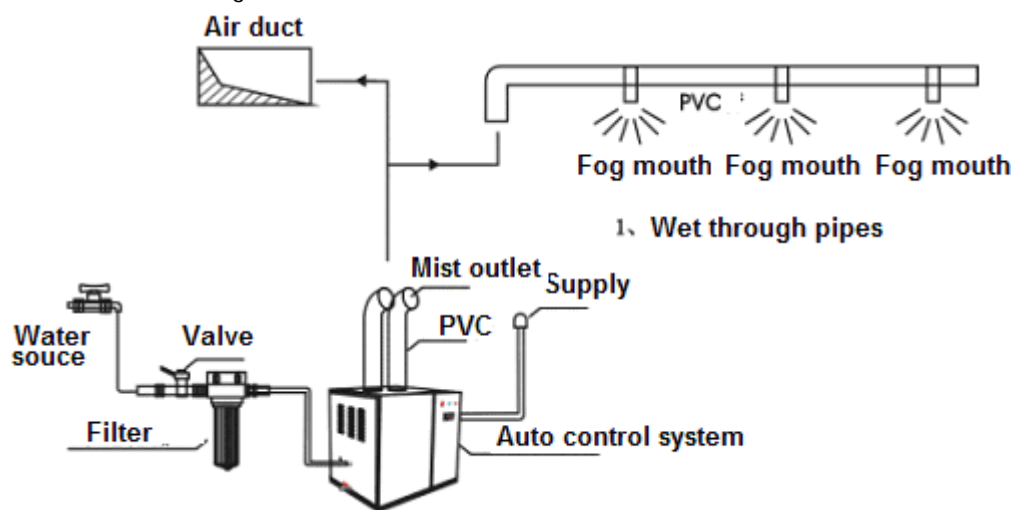
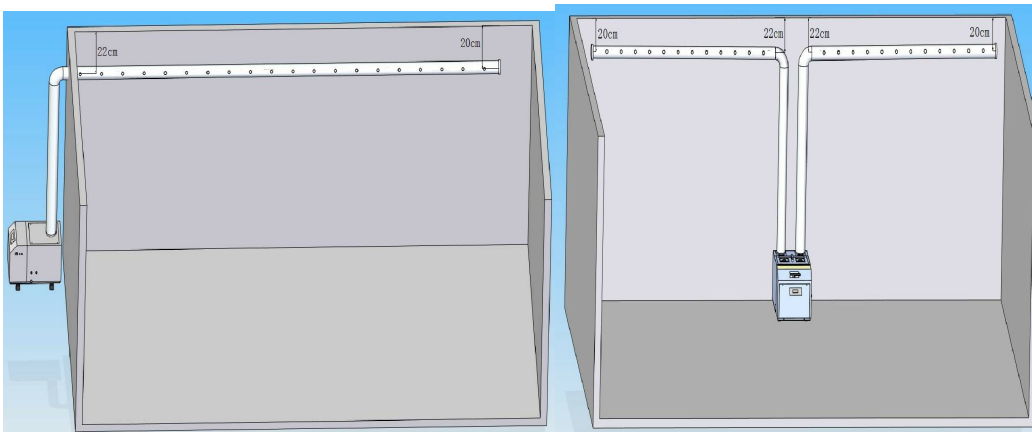


Figure 3

Installation drawing:

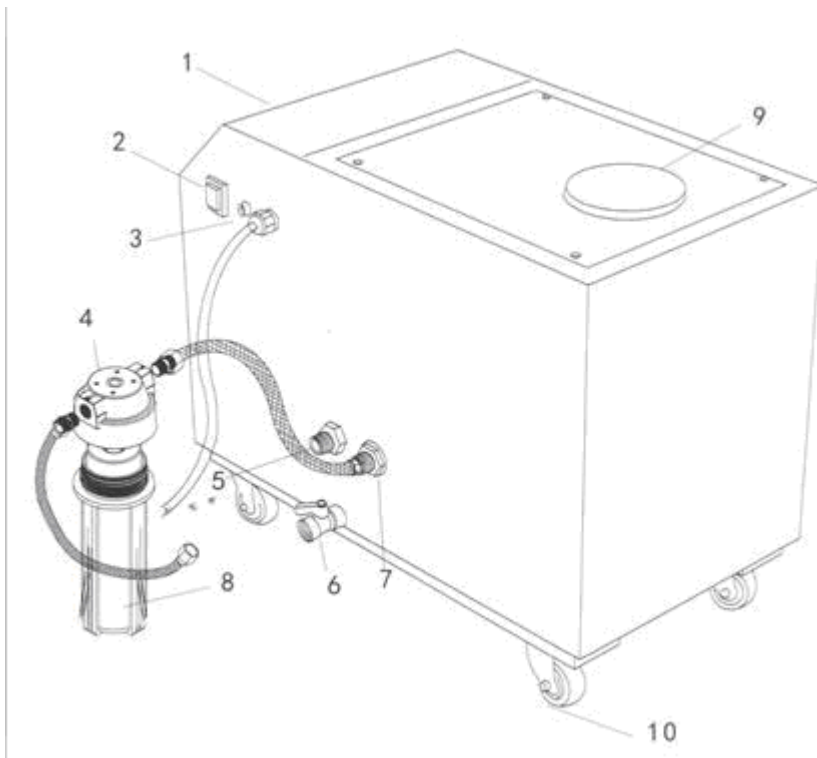


Examples:

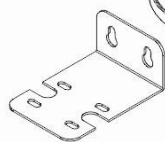




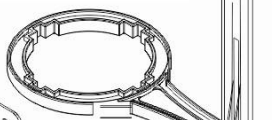
## 11 Annex list



## Annex list

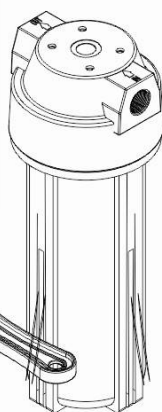
Mounting  
Bracket

1pc



Wrench

1pc

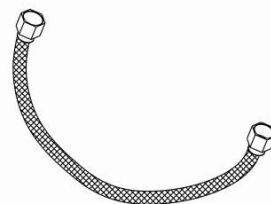


Filter device

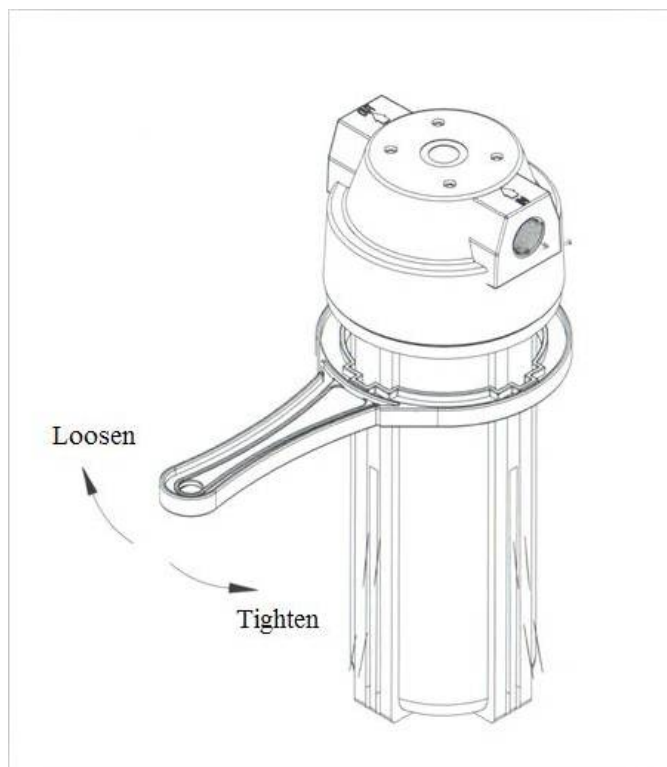
1pc

Filtering  
core

1pc



0.5m metal soft pipe



Pay attention to the direction of the water flow when installing the filter.

The filter body must be in a vertical position, using the bracket provided

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## 12 Maintenance

To ensure high quality atomized humidifying effects, check status and clean the machine regularly. Interval may vary depending on the water.

- Piezo Crystal Cleaning
  - Open cover, using soft cloth or brush clean atomization device (Do not scratch atomization device as well as water level induction switch, the home detergent cannot be used), removing the scale, then wash using clean water;
  - While cleaning check not to put water into the circuit board side.
  - Close cover
- Water filter (if installed)
  - Open the cover of filter;
  - Removing dirt from filter;
  - Close it again.
- Filter may also be replaced
- Case
  - Should the case be full of lime, use a solution with light concentration of Citrix acid (5-6% dilution)

## 13 Important notes

IN NO EVENT SHALL OUR COMPANY OR THE SUPPLIER BE LIABLE TO YOU OR ANY OTHER PARTY FOR ANY DIRECT INDIRECT GENERAL SPECIAL INCIDENTAL CONSEQUENTIAL EXEMPLARY OR OTHER DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT INCLUDING WITHOUT LIMITATION DAMAGES FOR INJURY LOSS OF PROPERTY BUSINESS PROFITS BUSINESS INTERRUPTION OR FROM ANY BREACH OF WARRANTY EVEN IF OUR COMPANY OR SUPPLIER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES IN NO CASE SHALL OUR COMPANY OR SUPPLIERS LIABILITY EXCEED THE AMOUNT YOU PAID FOR THE PRODUCT

Specifications designs and dimensions subject to change without prior notice



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## 14 Contacts

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