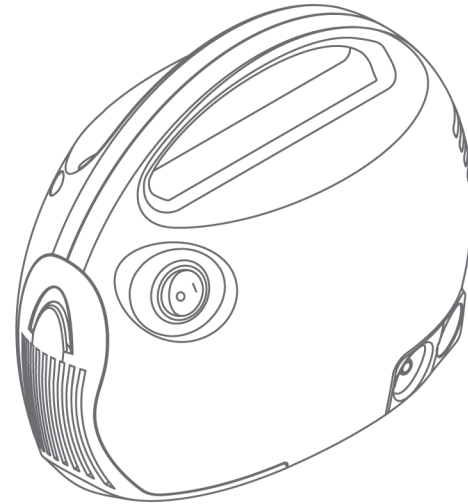


yuwell



403T
Air-compressing Nebulizer

User's Manual



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Please read the user's manual closely before using!

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I . Features

403T is the new type Air-compressing Nebulizer of our company. It is used for medicine atomization

I. Specifications

Supply: AC120V ± 10% AC220V ± 10% AC230V ± 10%
50Hz 60Hz

Max nebulizing rate: ≥0.2mL/min

Max pressure of pump: ≥0.15MPa

Fuse tube: T1.6AL 250V, Φ5 × 20 T3.15AL 120V, Φ3.6 × 11

Flowrate of pump: ≥10L/min

Noise: ≤60dB(A)

Input power: 200VA

G.W.: ≤1.5kg

Dimension: (19.5 × 9.8 × 16)cm

Mass median diameter(MMD): 3.9 μ m ± 25%

Percent of MMD < 5 μ m: >65%※

※Test condition temperature 20℃, Relative humidity: 53%, Test distance: 10cm away from atomizing outlet. Test solution: 0.9% physiological saline (Test result changes with different condition and solution)

⚠ **NOTE:** When storage temperature is below 5℃, please keep the equipment in normal working condition for at least 4 hours before using.

⊙ Never operate the machine in flammable, explosive gas environment.

▶ Electric classification: Class II, type BF application

Normal operation conditions:

Ambient temperature: 10℃~40℃

Relative humidity: 30%~75%

Atmospheric pressure: 86kPa~106kPa

▶ Work system: continuous operation.

II. Structure And Working Principle

The machine is assembled with oil free pump.
 Compact structure, portable, easy to operate and easy to carry.
 Working principle:

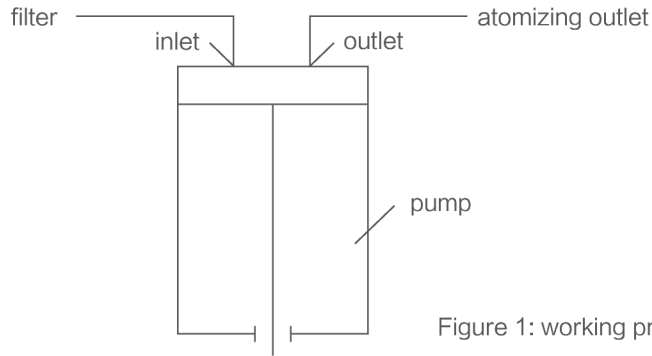


Figure 1: working principle

III. Electrical Rationale

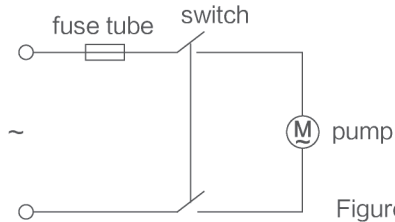


Figure 2: Electrical rationale

Electrical maintenance should be operated by specialist.

II. Operating & Maintenance

⚠ NOTE: Please read the user's manual closely before using!

I. Unpacking

Check for any obvious damage to the carton or its contents. If damage is evident, please notify the carrier or local dealer.

II. Structure & Parts' Name

► Schematic diagram of 403T

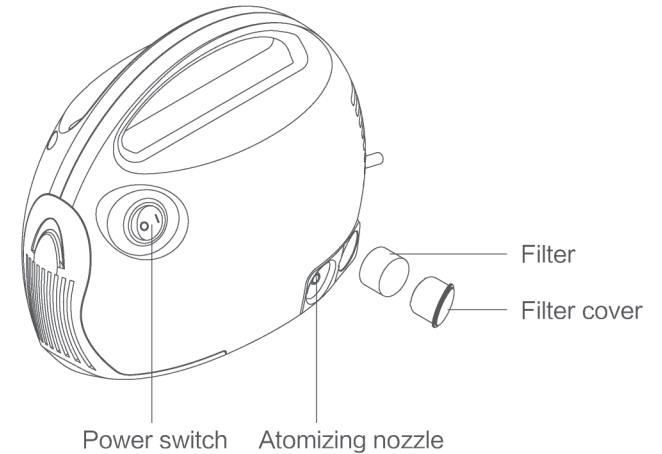


Figure 3: Schematic diagram of 403T

► Schematic diagram of atomizer

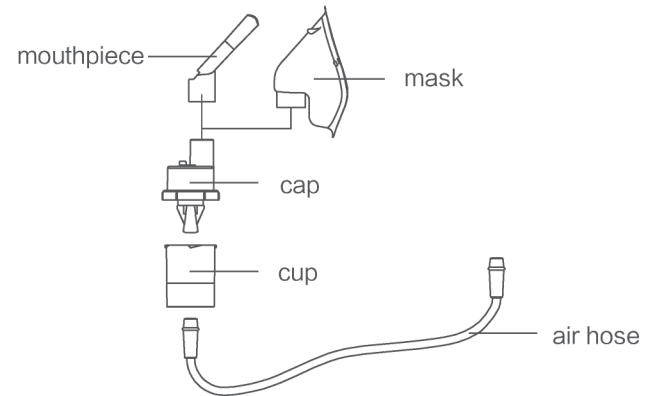


Figure 4: Schematic diagram of atomizer

III. Method Of Adding Medicine And Installation Of Atomizer

- ▶ Unscrew the cap of atomizing cup.
- ▶ Add proper quantity of medicine into the atomizing cup, be careful not to exceed the maximum water level.
- ▶ Screw the cap of atomizing cup.
- ▶ Connect the mouthpiece.

⚠ NOTE: Place the mouthpiece gently in mouth when treatment.

IV. Operating Steps

- ▶ Connect to the power supply.
- ▶ Turn on the machine.
- ▶ Connect the atomizing cup with the atomizing nozzle since the machine worked for 1~2minutes.
- ▶ Do the treatment with nebulizer as the doctor's advice.

V. After Use

- ▶ Remove the connecting tube and mouthpiece after turning off.
- ▶ Unscrew the cover of atomizing cup, pour out the remaining medicine liquid.
- ▶ Soak the connecting tube, mouthpiece, cover of atomizing cup and atomizing cup into warm water for about 15 minutes or rinse them with pure water.

Proper vinegar can be added into water.

⚠ NOTE: NEVER boil or wash these parts with boiling water in case of deformation.

ⓘ Dry these parts completely before reinstallation.

VI. Replace The Filter

- ▶ Replace the filter every three months. Dry it if found it is wet.
- ▶ Take out the filter from the top of machine.

VII. Maintenance

- ⓘ Do not fold the connecting tubes when stored.
- ⓘ Unplug the power plug if not use for a long time.
- ⓘ It should be stored far away from children.
- ⓘ Transportation and storage conditions:
 - Ambient temperature: $-40^{\circ}\text{C} \sim +55^{\circ}\text{C}$
 - Relative humidity: 10%~93%
 - Atmosphere pressure: 70kPa~106kPa

⚠ NOTE: Packaged products should be stored in well ventilated rooms without corrosive gases.

VIII. Cleaning

- ▶ Following cleaning instruction after each use will prevent any remaining medication in the tank drying, resulting in the device nebulizing effectively and also will help prevent infections.
- ▶ First make sure the power switch is in the off position, and then unplug the power cord from the power outlet. Unplug the tube from the air outlet, remove the mouthpiece(mask), unscrew the nebulizer kit and discharge remaining medication in medication tank.
 - 1, Medication tank, mask and mouthpiece
Rinse with clean water or immerse in warm water for 15 minutes to ensure hygienic cleaning. Add appropriate amount of vinegar in the water, and allow the parts to air dry in a clean environment.
 - 2, Main unit and air tube
Please wipe with moisturized cloth.
 - 3, Methods for expelling the moisture inside the air tube
 - a) Make sure the air tube is connected to the main unit.
 - b) Remove the air tube from the medication tank.
 - c) Turn on the compressor and pump air through the air tube to expel the moisture.

IX. Disinfecting

Make sure the parts are disinfected properly after each use. If there is pollution with the parts, please replace with new parts timely. For appropriate methods of disinfecting, please see the following two instructions:

- 1) Use a commercially available disinfectant. Please follow the instruction provided by the disinfectant manufacturer.
 - a) Disinfectant soaking should be in accordance with the time required in the instruction manual of disinfectant.
 - b) Rinse with clean warm water and allow to air dry in a clean environment.

⚠ Caution:

- Never clean with benzene, thinner or flammable chemical.
- 2) Rinse the parts with clean hot tap water, and parts may be boiled between 15 to 20 minutes. After boiling, carefully remove the parts, shake off excess moisture and allow to air dry in a clean environment.

⚠ Caution:

- Ⓢ Do not boil the air tube, mouthpiece, medication tank, air filter, or accessories to avoid heat deformation.
- Ⓢ After cleaning, all attachments must be dried and then stored in a clean environment.
- Ⓢ Discard any remaining medication in the medication tank.
- Ⓢ Please do not left any cleaning fluid residue in the medication tank after each use. Use fresh medication next time.

X. Air filter Replacement

















Typically, an air shall be replaced every three months. If the filter core has changed color, replace it with a new one.

⚠ Caution:

- Ⓢ Before use, make sure the air filter is properly installed. Do not block the air filter.

- Ⓢ Use only original air filter designed for this device. Do not operate without a filter.
- Ⓢ Do not attempt to wash or clean the filter. If you notice the air filter is wet, please replace with a new one, otherwise it may cause blockages.
- Ⓢ Check that the air filter is clean and free of dust before installation.

XI. Symbols

Symbol	Description	Symbol	Description
	Alternating current		Consult the manual
	Class II Equipment		Type BF applied part
	OFF (power, disconnection from the mains)		ON (power, connection to the mains)
	Refer to instructions manual (Background: Blue; Symbol: White)		Caution
	FRAGILE		KEEP UP
	KEEP DRY		Do not dispose of in domestic refuse
	Manufacturer		Date of manufacture
	Serial number		Recyclable

XII. Trouble Shooting Guide

Symptom	Probable reasons	Solution	Remark
Too noise	Filter has not installed	Install the filter	
Machine does not run	No power supply	Check the power plug	
	Fuse tube broke	Replace the fuse	

Symptom	Probable reasons	Solution	Remark
Machine is running but no fog comes out	The atomizer got deformed	Change a new atomizer	Change a new atomizer when have used 300 times
	The atomizer blocked		
	The atomizing cup haven't been installed correctly	Install it again	
	Medicine is used up	Add proper medicine liquid	
There are water drops in the tube	Added too much medicine or hasn't dry the tube after cleaning	Turn on the machine and unplug and plug the other side of tube with a finger to discharge the water drops	
Other problems should repaired by qualified personnel			

III. Other Attention Items

⚠NOTE: Please read the user's manual closely before using!

I . Accessories Lists

Nebulizer: 1pc

Atomizer: 1pc

Filter: 2pcs

User's manual: 1pc

Warranty card: 1pc

II . Radio Frequency Interference

- ▶ This product is suitable for using in hospitals, at home and in other buildings directly connected with low power supply.
- ▶ The frequency of the machines only works internally, it will not cause effect to other electronic devices or machine.
- ▶ The machine does not contain an electronic control circuit, it does not need to be texted about the electromagnetic interference.

III. Waste and residue Process

The processing of discarded main unit, accessories and other products should be instructions with the provisions of the local government.

Notification:

1. For machine damages and failures caused by improper use or failure to follow the instructions, the company shares no responsibility.
2. When the conditions of temperature, voltage, and product characteristics are not in line with defined indicator.
3. Product performance may vary with the characteristics of the medication(suspension or high viscosity).

The company reserves the rights to change the product technology and appearance. Please don't mind!

IV. EMC instruction

With the increased number of electronic devices such as PC's and mobile (cellular) telephones, medical devices in use may be susceptible to electromagnetic interference from other devices. Electromagnetic interference may result in incorrect operation of the medical device and create a potentially unsafe situation.

Medical devices should also not interfere with other devices.

In order to regulate the requirements for EMC (Electro Magnetic Compatibility) with the aim to prevent unsafe product situations, the EN60601-1-2 standard has been implemented. This standard defines the levels of immunity to electromagnetic interferences as well as maximum levels of electromagnetic emissions for medical devices.

Medical devices manufactured by our company conform to this EN60601-1-2:2015 standard for both immunity and emissions.

Nevertheless, special precautions need to be observed:

- ▶ The use of accessories and cables other than those specified by our company, with the exception of cables sold by our company as replacement parts for internal components, may result in increased emission or decreased immunity of the device.
- ▶ The medical devices should not be used adjacent to or stacked with other equipment. In case adjacent or stacked use is necessary, the medical device should be observed to verify normal operation in the configuration in which it will be used.
- ▶ Refer to further guidance below regarding the EMC environment in which the device should be used.

Table1 Guidance and manufacturer's declaration – electromagnetic emissions

Guidance and manufacturer's declaration – electromagnetic emissions		
The 403T Air-compressing Nebulizer is intended for use in the electromagnetic environment specified below. The customer or the user should assure that it is used in such environment.		
Emission test	Compliance	Electromagnetic environment-guidance
Conducted Emission CISPR 11	Group 1 Class A	The 403T Air-compressing Nebulizer uses RF energy solely for its internal functioning. Therefore, its RF emissions are very low and are not cause interference in proximity of any electronic appliances.
Radiated Emission CISPR 11	Group 1 Class A	The 403T Air-compressing Nebulizer is suitable for use in all establishments, including domestic and those directly connected to the public low-voltage power supply network that supplies building used for domestic purposes.
Harmonic Current Emissions IEC61000-3-2	Class A	
Voltage Fluctuations and Flicker IEC 61000-3-3	Complies	

Table 2 Guidance and manufacturer's declaration – electromagnetic immunity

Guidance and manufacturer's declaration – electromagnetic immunity
The 403T Air-compressing Nebulizer is intended for use in the electromagnetic environment specified below. The customer or the user should assure that it is used in such environment.

Immunity test	IEC 60601-1-2 Test level	Compliance level	Electromagnetic environment – guidance
Electrostatic Discharge IEC 61000-4-2	± 8 KV contact ± 15 KV air	No degradation of function	Floor should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrostatic fast transient /burst IEC 61000-4-4	± 2 KV 100 kHz repetition frequency	No degradation of function	Mains power quality should be that of a typical commercial environment or hospital environment.
Surge IEC 61000-4-5	± 1 KV line to line	No degradation of function	Mains power quality should be that of a typical commercial environment or hospital environment.
Voltage dips IEC 61000-4-11	0 % U _T ; 0.5 cycle At 0° , 45° , 90° , 135° , 180° , 225° , 270° and 315° q) 0 % U _T ; 1 cycle and 70 % U _T ; 25/30 cycles Single phase: at 0°	No degradation of function	Mains power quality should be that of a typical commercial environment or hospital environment. If the user of the portable phlegm suction unit 403T requires continued operation during power mains interruption, it is recommended that the product be powered from an uninterruptible power supply or battery.

Voltage interruptions IEC 61000-4-11	0 % U _T ; 250/300 cycle	No degradation of function	
Power-frequency magnetic field IEC 61000-4-8	30 A/m	No degradation of function	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: U _T is the A.C. mains voltage prior to application of the test level.			

Table 3 Guidance and manufacturer's declaration – electromagnetic immunity

Guidance and manufacturer's declaration – electromagnetic immunity			
The 403T Air-compressing Nebulizer is intended for use in the electromagnetic environment specified below. The customer or the user should assure that it is used in such environment.			
Immunity test	IEC 60601-1-2 Test level	Compliance level	Electromagnetic environment – guidance
Conducted RF disturbances IEC 61000-4-6	3V r.m.s. 150 kHz to 80 MHz	3V r.m.s.	The portable and mobile RF communication devices, including cables, must not be used closer to the 403T, than the separation distance calculated by the equation applicable to the transmitter frequency. Recommended separation distance d=1.2 √P d=1.2 √P 80MHz to 800 MHz d=2.3 √P 800 MHz to 2.7 GHz


Radiated RF disturbances IEC 61000-4-3	10 V/m 80 MHz-2.7 GHz 80%AM at 1kHz	10V/m	where P is the maximum nominal output voltage of the transmitter in watts (W) depending on the manufacturer of the transmitter and the recommended separation distance in meters (m). The intensity of the field from the fixed RF transmitters, as determined by an Electromagnetic study of the site ^{a)} , could be lower than the level of conformity of each frequency interval ^{b)} . It is possible to check for interference in proximity to devices identified by the following  symbol:
<p>NOTE 1: At 80 MHz and 800 MHz, the higher frequency is applied.</p> <p>NOTE 2: These guidelines may not be applicable in all situations. Electromagnetic propagation is influenced by the absorption and by reflection from buildings, objects and people.</p>			
<p>a)The field intensity for fixed transmitters such as the base stations for radiotelephones (mobile and cordless) and terrestrial mobile radio, amateur radio devices, radio AM and FM transmitters and TV transmitters can not be theoretically and accurately foreseen. To establish an electromagnetic environment generated by fixed RF transmitters, an electromagnetic study of the site should be considered. If the field intensity measured in the place where the device will be used surpasses the above mentioned applicable level of conformity, the normal functioning of the device should be monitored. If abnormal performance arises, additional measures such as changing the device's direction or positioning may be necessary.</p> <p>b)The field intensity on an interval frequency of 150 kHz to 80 MHz should be less than 3 V/m.</p>			

Table 4 Recommended separation distance

Recommended separation distance between portable and mobile RF communications equipment and the 403T			
The 403T Air-compressing Nebulizer is intended to operate in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of 403T can help prevent electromagnetic interference by keeping a minimum distance between the portable and mobile RF communication devices (transmitters) and 403T as recommended below, according to the maximum output power of the communications equipment.			
Maximum nominal output power of the Transmitter(W)	Separation distance according to frequency of transmitter in meter		
	150 kHz~80 MHz $d=1.2\sqrt{P}$	80 MHz~800 MHz $d=1.2\sqrt{P}$	800 MHz~2.7 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
<p>For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.</p> <p>NOTE 1: At 80 MHz and 800 MHz, the higher frequency is applied.</p> <p>NOTE 2: These guidelines may not be applicable in all situations. Electromagnetic propagation is influenced by the absorption and by reflection from buildings, objects and people.</p>			

All specifications and product configurations are subject to change without notification.