yuwell

Mesh Nebulizer

(Model: M102/M102T/M103/M103T/M105T)

Instruction Manual of Mesh Nebulizer



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Contents

I. Product Features.....01-04

II. Using and Maintenance.....05-27

III. EMC instruction.....28-36

Ⅳ. After-sales and Others.....37-38

Ⅰ. Product Features

I. Intended purpose

The Mesh Nebulizer is intended to be used to aerosolize liquid medication into gases, and is used with Disposable Nebulizers to the patient for breathing.

Ⅱ. Intended users

The Mesh Nebulizer should only be used by personnel who fully understand the instructions for using these equipment.

Ⅲ. Intended patient population

It is suitable for patients who need to aerosolize medications for inhalation.

Ⅳ. Product Features and Indexes

1	Power supply	3V ⎓ (−0.3V ,+0.3V) (two "AA" 1.5V alkaline batteries) Alternative: Power adapter; input: 100−240V~ 50/60Hz 0.2A; output: 5V ⎓1A
2	* Max nebulization rate	Approx 0.3ml/min (By weight loss，without Mouthpiece)
3	**Aerosol output rate	Approx 0.3ml/min
4	** Aerosol output	Approx 90%

5	** MMAD	Approx 3.9 μ m
6	**Cumulative particle mass： <2um： 2~5um： >5um ： **GSD :	<2um: Approx 10% 2~5um: Approx 60% >5um: Approx 30% **GSD: 1.6
7	*MMD	Approx 3.49 μ m
8	**Residual volume	Approx 0.1ml
9	Noise	Approx 45dB(A)
10	Vibrating frequency	Approx 113kHz
11	Battery Life	Not less than 1 h (two new “AA” 1.5V alkaline batteries used)
12	Net weight	M102T/M102:Approx 110g (excluding batteries) M103T/M103:Approx 110g (excluding batteries) M105T: Approx 100g (excluding batteries)
13	Dimension(approx)	M102T/M102: 62 mm (L) × 48 mm (W) × 125 mm (H) M103T/M103: 62 mm (L) × 42 mm (W) × 125 mm (H) M105T: 62 mm (L) × 42 mm (W) × 126 mm (H)

14. Classification based on the safety level when using flammable anesthetic mixture with air or flammable anesthetic mixture with oxygen or nitrous oxide: Non AP/ non APG equipment.

15. Type BF applied part (Disposable Nebulizers: mouthpiece、mask)

16. Protection Against Harmful Ingress of wateror particulate matter: IP22

17. Protection Against Electric Shock: Class Ⅱ ME Equipment,IN-

TERNALLY POWERED ME EQUIPMENT

18. Normal working condition:

18.1 Ambient temperature range: 5℃～40℃

18.2 Relative humidity range: 15%～93%

18.3 Atmospheric pressure range: 86kPa～106kPa

19. Transportation and storage environment restrictions:

19.1 Ambient temperature range: -40℃～+55℃

19.2 Relative humidity range: 10%～93%

19.3 Atmospheric pressure range: 70kPa～106kPa

20. Service life：5 years(expect for wearing consumable parts)

21. Software release version: 3

22. Contraindication: None

⚠**Warning:** When the ambient temperature is 20℃, the product needs to be placed for 4 hours or above from the lowest storage temperature or the highest storage temperature after use to normal use. Otherwise, abnormal usage may occur.

ⓘThe product should be stored in room with excellent ventilation and avoid violent vibration during transportation.

ⓘTransport should only be undertaken in the condition that halation devices disassemble from the main unit.

ⓘThe replacement of the battery cannot be operated by the patient. It can only be operated by the operator and cannot touch the patient when it is replaced.

⚠All parts of the device that are not serviced or maintained while in use with the patient.

⚠Waste shall be disposed of in accordance with relevant state

regulations on environmental protection; Inexperienced responsible party their local authorities must be contacted to determine the proper disposal of the waste where there may be a biological hazard Method of piece and attachment.

⃠Do not disassemble and modify the machine.Services shall be performed by qualified service personnel.

①If the performance of the Mesh Nebulizer is changed, contact qualified service personnel for technical support.

①Mesh Nebulizer must avoid heat source, fire source, wetness, and environments with excessively high or low temperatures.

①Lint, dust, pet hair, pests may cause blockage at the atomizer outlet, please check and clean it regularly.

①Prevent children from randomly pressing the switch.

If necessary, the circuit diagram and the necessary information for repair can be provided. If there are difficult problems in the mainte-nance of electrical lines, you can contact the manufacturer.

III. Structure Feature and Working Principle

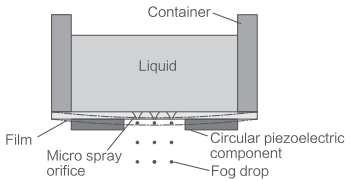


Fig. 1 Basic Principle of Mesh Nebulizer

With basic principle shown in Fig. 1, mesh nebulizer is composed of medication cup and spray sheet; of which, spray sheet is spliced with vibrating film and circular piezoelectric component. With the circular piezoelectric component, electric energy is converted into mechanical energy and ultrasonic vibration is generated; then vibration wave will press liquid in medication cup to atomize liquid through micro spray orifice on spray sheet; the fog will spray out from sprat sheet and onto mouthpiece or mask for inhaler use.

II . Using and Maintenance

In order to ensure the product can be correctly used, please read this Specification carefully and operate the product in strict accordance with this Specification. If any question, please contact supplier or manufacturer.

The patient is the intended operator, and the patient can be treated with the nebulizer on his or her own or with someone else. Both methods of use and maintenance are the same. Maintain the product in the storage environment specified in this manual.

I . Unpacking Inspection

Prior to installation and using, check if product appearance is intact and if variety and quantity of accessories attached are consistent with list of accessories behind this Specification. In case of shortage, please contact supplier or manufacturer timely.

II . Schematic Diagram for Parts Structure and Name of the Whole Machine

Mesh nebulizer is composed of main unit, medication cup module and inhalation device; of which, inhalation device consists of mouth-piece and mask.

1、Cup cover
2、Medication cup
3、Cup head
4、Spray sheet module
5、Medication cup module
6、Electrode
7、Indication Led
8、Mode Button
9、Switch
10、Main Unit
11、Battery Cover
12、PUSH key
13、Power jack
14、Mouthpiece
15、Mask
16、Inhalation device

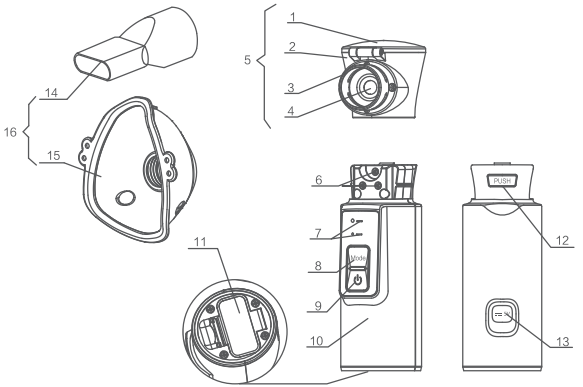


Fig. 2 M105T Schematic Diagram for Parts Structure

Part Name Description Applicable to M102/M102T/M103/M103T

1、Cup cover
2、Medication cup
3、Cup head
4、Spray sheet module
5、Medication cup module
6、Electrode
7、Main unit
8、Indicator LED
9、Switch
10、Battery cover
11、PUSH key
12、Mouthpiece
13、Mask
14、Inhalation device
15、Power jack

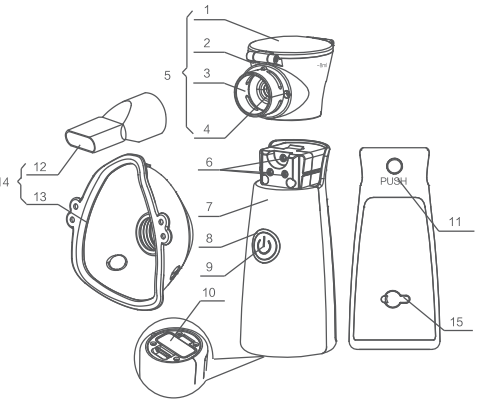


Fig. 3 M102T Schematic Diagram for Parts Structure

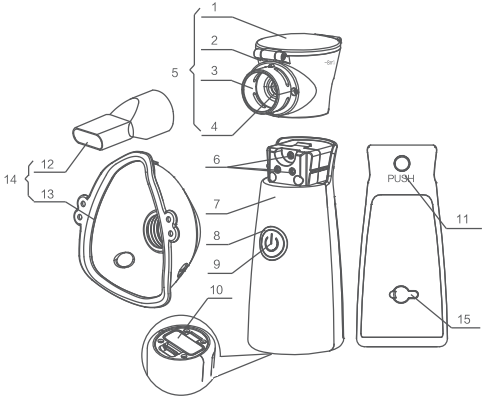


Fig. 4 M102 Schematic Diagram for Parts Structure

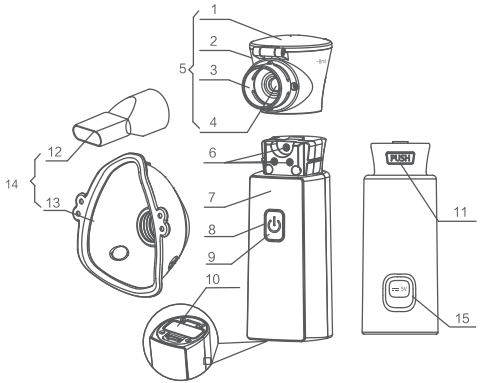


Fig. 5 M103T Schematic Diagram for Parts Structure

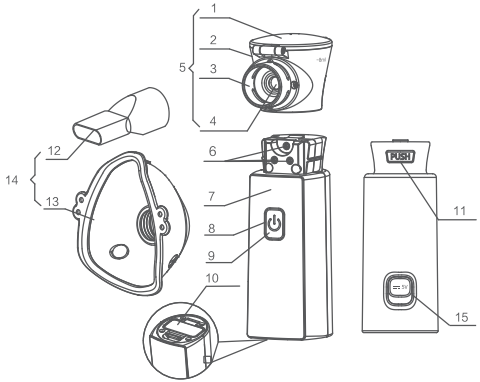


Fig. 6 M103 Schematic Diagram for Parts Structure

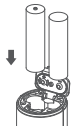
III. Using Method of Mesh Nebulizer

1. Bottom up main unit of nebulizer, open battery cover and mount battery.

1). Open battery cover.



2).Mount battery as per polarity sign.



3).Close battery cover.



ⓘDo not mix different types of batteries together.

ⓘWhen indicator LED (yellow LED) flicks, it means battery level is about to run out; at this time, replace alkaline battery as soon as possible.

ⓘWhen indicator LED (yellow LED) constantly on, it means battery level is about to run out and nebulizer fails to spray fog; at this time, replace alkaline battery immediately.

Take battery out if external power adapter is used for power supply.

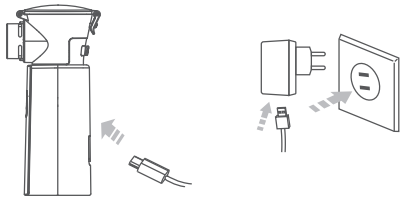
ⓘTake battery out if nebulizer is not used for a long time.

ⓘClose the battery cover immediately after replacing the battery.

ⓘPatient can contact M103&M103T LED indicator and battery cover within 10 minutes. The maximum temperature on M103&M103T LED indicator and battery cover is not more than 48℃ based on maximum ambient 40℃ during normal operation.

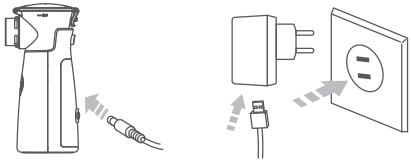
2. M105T Power-on

Connect the power source for charging as shown below.



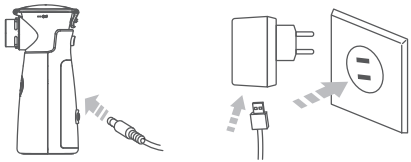
3. M102 Power-on

Connect the power source for charging as shown below.



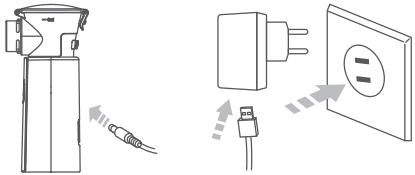
4. M102T Power-on

Connect the power source for charging as shown below.



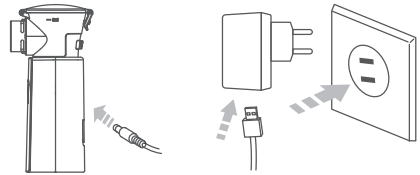
5. M103 Power-on

Connect the power source for charging as shown below.



6. M103T Power-on

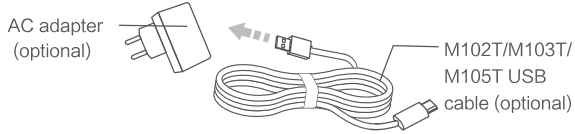
Connect the power source for charging as shown below.



⚠ Except the power adapter supplied by the manufacturer as spare parts, using any unspecified accessories or power adapter may cause increasing emission or decreasing immunity of the instrument.

⚠ Please use only the authorized Yuwell AC adapter (output DC 5V 1A). If you need to use a AC adapter, you can contact the local dealer for consultation about the relevant information.

7. AC adapter and USB cable.

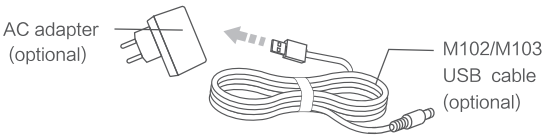


AC adapter:

INPUT: 100-240V~ 50/60Hz 0.2A MAX

OUTPUT: 5V ⎓ 1A

MFR: Dongguan Shilong Fuhua Electronic Co., Ltd.
EU Model: UE05LV4-050100SPA



AC adapter:
INPUT: 100-240V~ 50/60Hz 0.2A MAX
OUTPUT: 5V ⎓ 1A
MFR: Dongguan Shilong Fuhua Electronic Co., Ltd.
EU Model: UE05LV4-050100SPA

ⓘPlease disconnect the plug of adapter with mains when you need to safely terminate operation of ME EQUIPMENT.

ⓘPlug of adapter is used as the isolation from supply mains and shall position the ME EQUIPMENT so that it is convenient and easy to operate the disconnection device.

ⓘThe AC adapter cable may cause accidental strangulation in infants.

⃠Do not touch the battery cover during the atomization process.

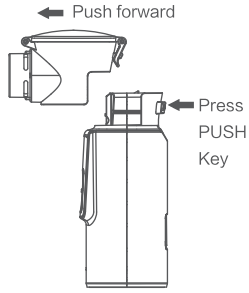
ⓘPatient can contact LED indicator and battery cover within 10 minutes. The maximum temperature on LED indicator and battery cover is 46℃ based on maximum ambient 40℃ during normal operation.

8. Remove medication cup module from the nebulizer.

Press PUSH key behind the main unit downwards, push medication

Press PUSH key behind the main unit downwards, push medication cup towards main unit and remove medication cup module.

ⓘUpon removing medication cup module from nebulizer, push medication cup module after confirming PUSH key is pressed indeed, for fear of nebulizer damage.



⃠Do not insert finger or other foreign matters from nozzle or touch spray sheet, for fear of nebulizer damage.

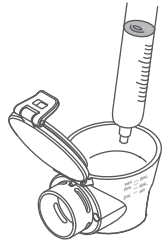
9. Inject liquid into medication cup.

Open cup cover and inject liquid into medication cup according to the figure; after that, tighten cover.

ⓘVolume of liquid added should be 2mL at least and 8 mL at most.

ⓘChoose liquid type, dose and using method according to doctor’s instruction.

ⓘTighten cover of medication cup after injecting liquid, so as to avoid liquid leakage.

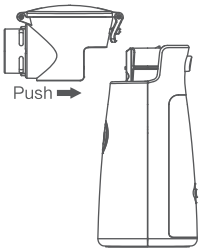


⃠Do not shake nebulizer violently or carry nebulizer with liquid or other fluid in medication cup.

Follow doctor’s instructions in case of using high-concentration and

high-viscosity suspending and volatile liquid.

10. Put medication cup module back in nebulizer and confirm the installation is excellent.



①Confirm medication cup module is well mounted (it will be buckled after slight "clatter" sound is given off); ensure electrode is excellently connected, so as to spray normally.

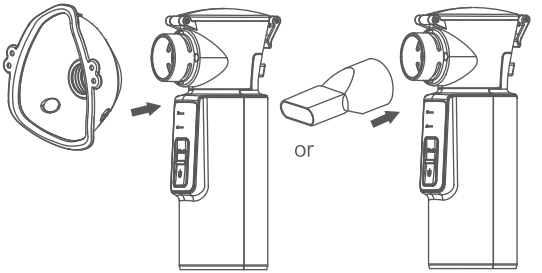
①Ensure cleanness of main unit and medication cup; if not, nebulizer may not work well.

11. Mouthpiece and mask installation.

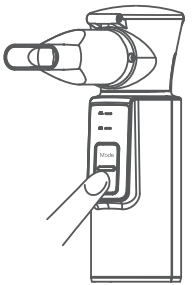
①Before using the mask or mouthpiece for the first time, please clean it with water and dry it first.

①Use mask and mouthpiece recognized by us, besides attached and sold product.

①The recommended atomization time is 1min ≤t < 10min.



12. Press the switch to start nebulizer and begin inhalation.



Press the switch



13. Mode selection(Applicable to M105T)

Two modes:high and low nebulization rate(initial status).Please press "Mode" to switch nebulization rate according to treatment need.

① Nebulizer will be automatically shut down when there is no liquid or other fluid in medication cup.

① Once the liquid is run out and does not contact spray sheet, some soft high-frequency sound will be generated and the nebulizer will be shutdown automatically.

① With difference of liquid feature, nebulizer cannot be automatically shut down when part of liquid is run out; at this time, it is required to press the switch to shut down nebulizer, for fear of spray sheet damage.

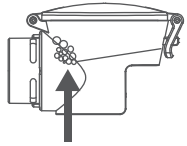
① When liquid is about to be run out, user is suggested to slightly incline positive surface of nebulizer towards himself or herself (user), so that remaining liquid can contact spray sheet for nebulization.

① After pressing the switch, nebulizer will spray fog normally after passing through a short starting stage (below 2s).

① Do not cover air hole with hands or other objects when mask is used in inhalation.

① Steadily hold nebulizer with hands during inhalation. There is a small air hole on medication cup cover; do not cover it with hands or other objects, for fear of influence on normal fog spray.

① For parts of liquid, there will be lots of foams gathering near to spray sheet in medication cup during nebulization, which can easily damage spray sheet due to its unloaded vibration. At this time, press the switch to shut down nebulizer; shake it gently and then press the switch again to restart, as shown in figure below.



Possible foam gathering area

14. Power off.

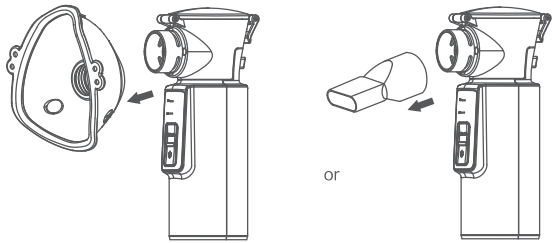
① Nebulizer will be automatically shut down when liquid is run out.

① Where it is required to stop nebulizer during inhalation, press the startup switch to power off, and indicator LED (blue) of nebulizer will be off.

IV. Cleaning and Maintenance after Using

1. Cleaning residual liquid

1). Remove mouthpiece or mask from medication cup.



2). Open medication cup cover and then pour out the remaining liquid.

3). Inject a small amount (2mL–5mL) of purified water into medication cup and then tighten cup cover. Shake medication cup gently to entirely dissolve residual liquid in purified water.

4). Open dosing cover, pour out solution in the cup and inject a small amount (2mL–5 mL) of purified water again.



5). Press startup switch continuously until indicator LEDs flicker on an alternate basis; at this time, nebulizer will enter washing mode and spray out purified water, so as to remove residual liquid on spray sheet.

ⓘ Remove the batteriesand pull out external power adapter prior to cleaning and maintenance.

ⓘ Since medication cup module is consumptive part, it is beyond our warranty. In general, service life of medication cup is half a year (three times or 30 min every day under normal temperature). The actual service life will vary with drug type.

ⓘ Residual liquid, if hard to be removed, can be cleaned with boiled hot water or for many times.

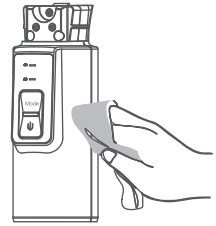
ⓘ Clean residual liquid after using every day; if not, spray sheet of nebulizer will be blocked and nebulization effect will be affected.

ⓘ Cleaning mode is only used in spray sheet cleaning after nebulization and should not be used in normal liquid inhalation.

2. Cleaning

1). Main unit: Wipe stains on main unit gently with wet gauze; then wipe main unit with new gauze to make it dry.

2). Clean electrodes on main unit and medication cup module, so as to ensure reliable connection between medication cup module and main unit.



⃠ Do not use volatile liquid (e.g. benzene, gasoline or diluent) to wipe nebulizer.

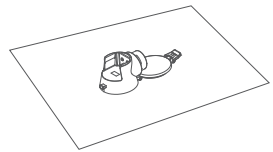
⃠ Do not deliberately touch electrodes on main unit and medication cup module with cotton swab or other articles, for fear of electrode falling.

ⓘ Remove batteries prior to parts cleaning. If power adapter is used, pull off power adapter off from socket after powering off.

The patient can't try to touch Mesh.

3). Medication cup module: Wash medication cup module with purified water.

4). Wipe cleaned part with new gauze and place the part in clean place to fully dry it in the air.



⃠ Do not use tissue paper or other cloth to wipe medication cup module, for fear of failure of fog spray due to residual paper scraps

or cloth entering medication cup.

⃠ Do not make cotton swab or other articles touch spray sheet.

⃠ Except for purified water, do not use any other detergent or tap water to clean medication cup or other parts.

5). Place all parts of nebulizer in storage bag.

ⓘ The product should be purchased and used under the direction of doctor.

⃠ Do not place nebulizer, whether in downtime or operation state, in place where children or mentally ill people can reach. Children or mentally ill people should not use the product unless supervised by adult.

ⓘ Nebulizer can be used by multiple persons, but accessories (mask and mouthpiece) having contact with human body must be used only by one person, for fear of cross infection. Where multiple persons use one main unit and multiple accessories, the accesso-ries used should be kept separately with main unit.

ⓘ Accessories (mask and mouthpiece)Recommended for single use

⃠ Do not disassemble main unit or try to repair main unit.

⃠ Do not store nebulizer with liquid or water in medication cup.

ⓘ Prevent main unit and medication cup module from falling or being strongly impacted.

ⓘ Do not poke nebulizer with pinhead or other sharp object.

ⓘ Do not expose main unit and other parts to extreme high or low temperature or direct sunlight.

ⓘ The product is not applicable to respiratory anesthesia system or respiratory system; do not drive any gas.

ⓘ If any discomfort or abnormality occurs, stop using the unit immediately.

Precautions and warnings listed here are for the proper and safe use of the product so as to prevent any harm or damage to the user or other people.

The contents of warnings and precautions are as follows:

Symbol	Content
⚠ Warning	Indicates that there is a risk of personal injury or property damage when misused
ⓘ	ⓘ The mark indicates mandatory (things that must be observed). Specific compulsory contents are in or around ⓘ, in words or pictures. Left symbol means “general compulsory”.
⃠	⃠ The mark indicates prohibition (things that are not allowed). Specific forbidden contents are in or around ⃠, in words or pictures. Left symbol means “general prohibition”

V. Symbols Regarding Safety Requirement of the Machine and Meaning Concerned

Symbol	Meaning	Symbol	Meaning
	Upward		KEEP DRY
	Standby		Fragile
	Class II equipment		Alternating current
	Recyclable		Direct current
	Date of manufacture		Manufacturer

PUSH	Press	SN	Serial number
	Refer to instructions manual		Type BF Applied Part
IP22	Protected against solid foreign objects of 12.5 mm ϕ and greater. Protection against vertically falling water drops when ENCLOSURE tilted up to 15°		
CE 0123	CE marking and notify body number		
MR	MR Unsafe: An item which poses unacceptable risks to the patient, medical staff or other persons within the MR environment.		
LOT	Batch code		
UDI	Unique identification of medical devices		
MD	Medical device		
	Waste from electrical and electronic equipment (WEEE)		
	General warning sign		

VI. Common Fault Analysis and Troubleshooting

Fault	Cause Analysis	Troubleshooting
Too small volume of spray	Medication cup module is not assembled correctly	Restart after medication cup module is reassembled
	Liquid is used up or does not contact spray sheet for longer than 10s	Incline the positive surface of nebulizer to the user and make liquid contact spray sheet
Too small volume of spray	Spray sheet is blocked	Clean medication cup according to operation instructions; change a new cup if the fault is not removed through cleaning
	The electrode of main unit or medication cup is dirty	Restart after cleaning electrode
After power on, the blue power indicator LED flashes to off	Medication cup module is not assembled correctly	Restart after medication cup module is reassembled
	Medication cup has no liquid or liquid is used up	Inject liquid
	Liquid does not contact spray sheet for longer than 10s	Incline the positive surface of nebulizer to the user and make liquid contact spray sheet
	The electrode of main unit or medication cup is dirty	Restart after cleaning electrode
Blue power indicator LED is not on or nebul–izer does not work	Reverse connection of battery anode and cathode	Reinstall battery according to operation instructions

	Too low battery power	Restart after changing a new battery
Blue power indicator LED is on but nebulizer does not work	Indicator LED (blue LED) is always on and battery power is insufficient	Restart after changing new batteries.
	The electrode of main unit or medication cup is dirty	Restart after cleaning electrode
Power indicator LED is on but nebulizer does not work	Spray sheet is dirty or seriously blocked	Clean medication cup according to operation instructions; change a new cup if the fault is not removed through cleaning
Nebulizer powers off automatically while it is operating	Medication cup module is not assembled well and therefore becomes loose in usage process	Restart after reassembling medication cup
	Medication cup has no liquid or liquid is used up	Inject liquid again
	Liquid does not contact spray sheet for longer than 10s	Incline the positive surface of nebulizer to the user and make liquid contact spray sheet
	Nebulizer is shaken or vibrated seriously when using it	Hold nebulizer by hands stably when using it
	Fault of medication cup	Change a new medication cup

Nebulizer cannot power off automatically	The electrode of main unit or medication cup is dirty	Power off nebulizer to clean electrode
	Fault of medication cup module	Change a new medication cup module
Liquid leakage	Medication cup module is damaged or sealing silica gel becomes aged	Change a new medication cup module

III. 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 IEC 60601-1-2:2014+AMD1:2020 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 YUWELL conform to this IEC 60601-1-2:2014+AMD1:2020 standard for both immunity and emissions. Nevertheless, special precautions need to be observed:

●Refer to further guidance below regarding the EMC environment in which the device should be used.

⚠Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the [Mesh Nebulizer], including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result."

●The use of accessories and cables other than those specified by YUWELL, with the exception of cables sold by YUWELL as replacement parts for internal components, may result in increase demission or decreased immunity of the device.

●The medical devices should not be used adiacent 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.

Mesh Nebulizer is suitable for Home healthcare environment.

Table1 Guidance and manufacturer's declaration – electromagnetic emissions

Guidance and manufacturer's declaration - electromagnetic emissions		
The Mesh 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.		
Emissions Test	Compliance	Electromagnetic environment-guidance
Conducted Emission CISPR 11	Class B Group1	The Mesh 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	Class B Group1	The Mesh 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 IEC 61000-3-2	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 Mesh 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
Electrostatic Discharge IEC 61000-4-2	Air Discharge: ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV (Direct) Contact Discharge: ± 8 kV (Direct/Indirect)	Air Discharge: ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV (Direct) Contact Discharge: ± 8 kV (Direct/Indirect)
Electrostatic Fast Transients /Burst IEC 61000-4-4	± 2.0kV 5/50ns, 100kHz	± 2kV 5/50ns, 100kHz
Surges IEC 61000-4-5	± 0.5kV, ± 1kV (Line-to-line) ± 0.5kV, ± 1kV, ± 2kV (Line-to-ground) 1.2/50us	± 0.5 kV, ± 1 kV (Line-to-line)
Voltage Dips IEC/EN 61000-4-11	0 % U_T; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle and 70 % U_T; 25/30 cycles Single phase: at 0°	0 % U_T; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle and 70 % U_T; 25/30 cycles Single phase: at 0°
Voltage Interruptions IEC/EN 61000-4-11	0 % U_T; 250/300 cycle	0 % U_T; 250/300 cycle
Power-frequency Magnetic Field IEC/EN 61000-4-8	30 A/m 50 Hz or 60 Hz	30 A/m 50 Hz or 60 Hz
Note: U_T is the A.C. mains voltage prior to application of the test level.		

Table 3 Guidance and manufacturer’s declaration – electromagnetic i-mmunity

Guidance and manufacturer’s declaration – electromagnetic immunity			
The Mesh 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 Disturban-ces IEC/EN 61000-4-6	150kHz-80MHz, 80%, 1kHz	3 V/m 0.15 MHz – 80 MHz 6V in ISM and amateur radio bands between 0.15 MHz and 80 MHz 80% AM at 1 kHz	The portable and mobile RF communication devices, including cables，must not be used closer to the Mesh Nebulizer, than the separation distance calculated by the equation applicable to the transmitter frequency. Recommended separation distance $d=1.2\sqrt{P}$ $d=1.2\sqrt{P}$ 80 MHz – 800 MHz $d=2.3\sqrt{P}$ 800 MHz – 2.7 GHz 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
Radiated RF Disturban-ces IEC/EN 61000-4-3	10 V/m, 80 %, 1kHz, AM, 80 MHz – 2,7 GHz;	10 V/m, 80 %, 1kHz, AM, 80 MHz – 2,7 GHz;	
			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:

Note1: At 80 MHz and 800 MHz, the higher frequency is applied.
Note2: These guidelines may not be applicable in all situations. Electro-magnetic propagation is influenced by the absorption and by reflection from buildings, objects and people.

Table 4 Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment

Test frequency (MHz)	Banda) (MHz)	Service[a)]	Modulation	MMUNITY TEST LEVEL(V/m)
385	380 to 390	TETRA 400	Pulse modulation [b)] 18 Hz	27
385	430 to 470	GMRS 460, FRS 460	FM [c)] ± 5 kHz deviation 1 kHz sine	28
710	704 to 787	LTE Band 13,17	Pulse modulation [b)] 217 Hz	9
745				
780				
810	800 to 960	GSM800/900, TETRA 800, iDEN 820,CDMA 850,LTE Band 5	Pulse modulation [b)] 18 Hz	28
870				
930				
1720	1700 to 1990	GSM 1800;CDMA 1900;GSM1900 DECT;LTE Band 1, 3,4,25;UMTS	Pulse modulation [b)] 217 Hz	28
1845				
1970				
2450	2400 to 2570	Bluetooth,WLAN, 802.11 b/g/n,RFID 2450, LTE Band 7	Pulse modulation [b)] 217 Hz	28
1720	5100 to 5800	WLAN 802.11 a/n	Pulse modulation [b)] 217 Hz	9
1845				
1970				

If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1m test distance is permitted by IEC61000−4−3.

[a)]For some services, only the uplink frequencies are included.
[b)]The carrier shall be modulated using a 50%duty cycle square wave signal.
[c)]As an alternative to FM modulation, the carrier may be pulse modulated using a 50%duty cycle square wave signal at 18 Hz. While it does not represent actual modulation, it would be worst case.

Table 5 Test specifications for ENCLOSURE PORT IMMUNITY to proximity magnetic fields

Test frequency	Modulation	IMMUNITY TEST LEVEL(A/m)
30 kHza)	Pulse modulation [b] 2, 1 kHz	8
134, 2 kHz	Pulse modulation [b] 50 kHz	385

[a] This test is applicable only to ME EQUIPMENT and ME SYSTEMS intended for use in the HOME HEALTHCARE ENVIRONMENT.
[b] The carrier shall be modulated using a 50%duty cycle square wave signal.
[c] r.m.s., before modulation is applied.

IV. After-sales and Others

This user manual can also be used as technical specification.

II. Packing List (Including Attachments)

Attachment	Quantity
Medication cup module	1
Battery	2
Instruction manual	1
Power cord	1

If there is any need for parts and accessories, please contact the supplier.

⚠It is recommended to use the Mesh Nebulizer with Mask，Mouth piece.

Information for accessories:

Production Name	Disposable Nebulizers
Model	NZ180801
Manufacturer	Huizhou KaiyiTechnology Co., Ltd.

III. Waste and Residue Treatment

The waste main unit and accessories shall be treated by conforming to the requirements of local government.

NOTE:

1. Please read through this Manual carefully before using the product.
2. The Company bears no liabilities for the machine damage and faults caused by improper use or failure in operating as per this Manual.
3. The main unit may not be operated if the temperature, voltage and product characteristics are different from the indicators specified.
4. Poduct performance may vary along with the liquid characteristics (suspension or high viscosity).
5. See the external package label or certificate for the date of production.
6. The picture is only for reference，please make the object as the standard.

Notes: