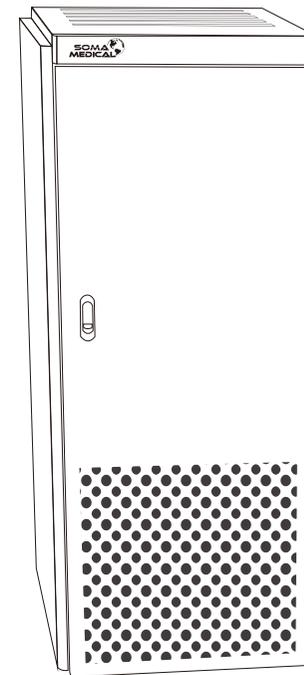




**Indoor Air Quality Assurance Total Solution Provider**

## **IAQA Infection Control Unit**

INSTRUCTION MANUAL



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Model: ICU 200

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## 17. Alarm Code

Code	Description	What to do (for engineering maintenance only)
Er01	Electrostatic	Check the Electrostatic or check the IN9 socket
Er02	Total working time is more than 9999 hours	Press the timer button for at least 10 seconds after maintenance is carried out.
dUSt	It's time to clean the filters	The filters need replacement. Press power button to cancel alarm. Press the timer button longer to delete the alarm after maintenance is carried out.
CH01	UV lamp #1 needs to be replaced	The related UV lamp needs replacement. Press power button to cancel alarm. Press the timer button longer to delete the alarm after maintenance is carried out.
CH02	UV lamp #2 needs to be replaced	
In01	Failure on UV lamp #1	Replace the UV lamp #1 or check the socket IN1
In02	Failure on UV lamp #2	Replace the UV lamp #2 or check the socket IN2

### Resetting of Alarm

When the total working hours of the filters expires, an alarm will buzz and the 'DUST' sign will be displayed, indicating the filters need to be cleaned.

If you do not wish to clean the filters, kindly do the following:

1. Press the power button to delay the warning alarm for 72 hours.
2. Press the timer button longer to remove the signal without having to do maintenance of the filters.

**Note:** Press the timer button longer after every maintenance procedure to disable alarm.

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- ⑥ Please do pull out the plug if any component is wet. Restart the machine after it is totally dried.
- ⑦ Do not spray any flammable and explosive materials (such as alcohol, gasoline) on the machine or use flammable materials to wipe the shell or any interior components, so as to prevent damage or fire.
- ⑧ To prevent malfunction or electric shock, please do not disassemble or refit the machine without authorization.
- ⑨ This machine should be operated under 5 ~ 40°C and relevant humidity  $\leq 80\%$ .
- ⑩ Do not put this machine in humid environment so as to avoid electricity leakage.
- ⑪ To avoid deformation, discoloration or accelerated aging, please do not put this machine under direct sun light.
- ⑫ Please avoid water seeping into the machine so as to prevent malfunction or electric shock.
- ⑬ To avoid malfunction or electric shock, only qualified maintainer can open the machine.
- ⑭ This machine should be operated with window and door closed. Do not use it in open environment or flammable and explosive place.

## 1、Features and Application

The product adopts pre-filter, electrostatic field, catalyst, negative ion, compound filter and other purifying technical principles to realize indoor air disinfection through multi-stage purification.

This product is applicable for air disinfection under class II and III hospital environment, such as general operation room, delivery room, infant room, premature infant room, cleaning area of supply room, intensive care unit (ICU), injection room, dressing room, therapeutic room, emergency room, laboratory and normal patient's room.

## 2、Specifications (Table 1)

Model	ICU 200
Applicable Room (m <sup>2</sup> )	60 <i>(subject to final conditions on site)</i>
Filtration efficiency(% for 0.5 $\mu\text{m}$ granular particle)	$\geq 50$
Ozone concentration (mg/m <sup>3</sup> )	$\leq 0.1$
Ambient temperature(°C)	5 ~ 40
Structure type	Mobile/Vertical

## 3、Technical parameter (Table 2)

Model	ICU 200
Maximum circular wind delivery (m <sup>3</sup> /h)	600
Noise [ dB(A) ]	50
Output power (VA)	$\leq 188$
Power supply	AC220V,50Hz

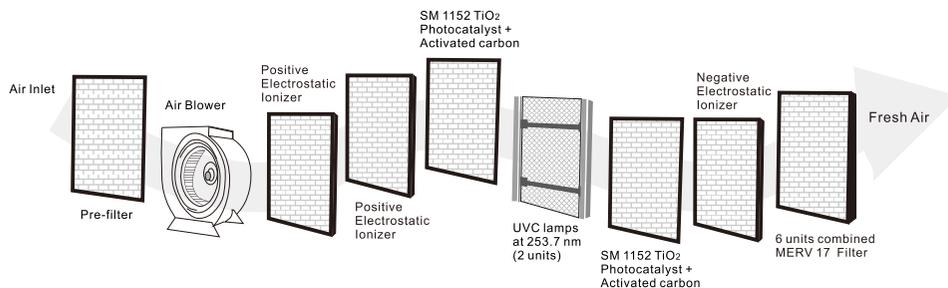
**IAQA Infection Control Unit**

**4、 Main Components**

It mainly consists of pre-filter, circulating fan, electrostatic filter, catalyst, compound filter, anion generator, chassis and controller

**5、 Disinfecting principle**

Indoor Air → Pre-filter → Air Blower → Positive Electrostatic Ionizer → Positive Electrostatic Ionizer → SM 1152 TiO<sub>2</sub> Photocatalyst + Activated carbon → UVC lamps at 253.7 nm (2 units) → SM 1152 TiO<sub>2</sub> Photocatalyst + Activated carbon → Negative Electrostatic Ionizer → 6 units combined MERV 17 Filter → Fresh Air



**Air Flow**

Contaminated/dirty air passes the pre-filter for initial filtration; then into the electrostatic filter, wherein the particulates and bacteria in the air are oxidized because of ionization; as bacteria cell walls are damaged resulting in the inability to replicate. The air continues to circulate and harmful gases are neutralized under the effect of photocatalyst. Being neutralized by ionization and photocatalyst, the particles and fine dust are absorbed by the combined filters and the indoor air is kept fresh.

**6、 Transportation**

This product must be placed horizontally, to avoid inclination and collision. Prevent product from damp and wet areas.

**16、 Safety notice**

Thank you for purchasing our IAQA Infection Control Unit. It is easily controlled by adopting the micro-electronics technique to help you finish your everyday sterilizing work and to provide clean purified air.

Meanwhile, for the sake of the safety, please read this User Manual carefully before using. Only by operating correctly according to the instructions can it avoid possible danger to people and damage to the machine.

**Possible damages caused by improper operations are divided into "warning" and "notice" in the instruction.**

**Warning signs**

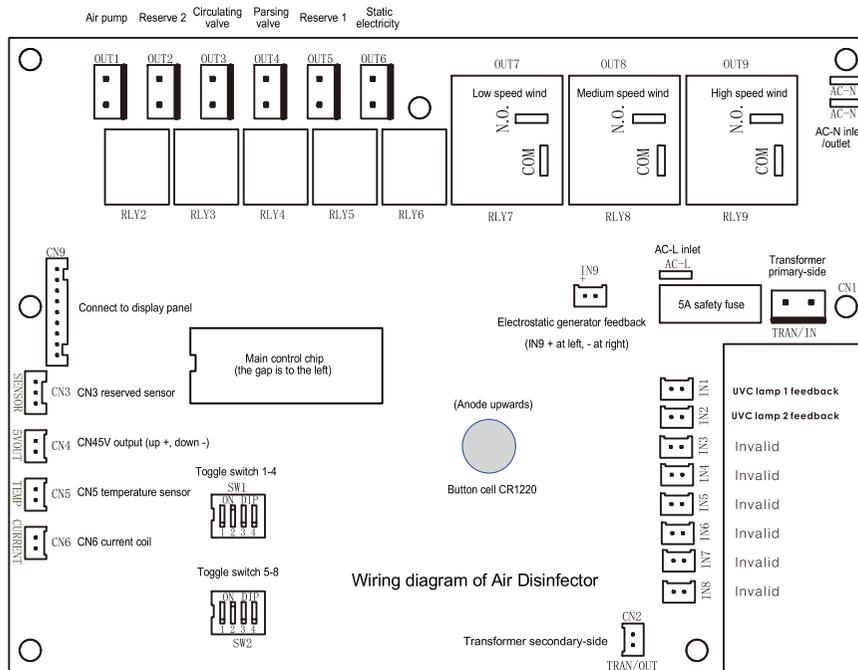
This represents harm to people and damage to properties may be caused by operating without following the instruction

**Notice mark**

Damage to machine caused by operating without following the instruction

- ① Please do not prolong or curve the power line to avoid fire, electric shock or other accident.
- ② This machine use power supply from power grid. Therefore there must be liable protective grounding before plugging in the power source socket (~ 220V, 50Hz) so as to avoid electricity leakage and personal injury.
- ③ Please hold the plug when pulling out the plug, in order to avoid electric shock .
- ④ Do not touch the plug with wet hand to avoid electric shock.
- ⑤ Please use prescriptive safety fuse Do not use steel wire or copper wire to replace fuse, so as to prevent malfunction or fire .

## 15. Wiring diagram



## 7. Installation

- The equipment should be installed in a horizontal service position after the indoor environment, devices, apparatuses and facilities are cleaned up.
- Installation
  - ▶ The equipment should be 20cm away from the wall.
  - ▶ There should be no obstructions at the air inlet or outlet and ensure that the air outlet is easily accessible for cleaning.
  - ▶ The equipment should be grounded and connected to a reliable power supply.
- Press "ON/OFF" on the backboard and the power is on when the "ON/OFF" indicator lights up. The machine shows "SOMA MEDICAL" and Time meaning the machine is ready.

Note, the initial time setting is of other foreign country, users are encouraged to reset the time by following the guideline.

## 8. Mark explanation

AC 220V 50Hz

Specification and model of fuse and its rated value: FΦ5x20—2A

I — represents ON and power connected; 0 — represents power OFF



Attention! Refer to attached file



Dangerous Voltage



Category 1 device



Layers of Stack



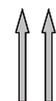
Protective Earthing



Anti-collision  
Handle with care

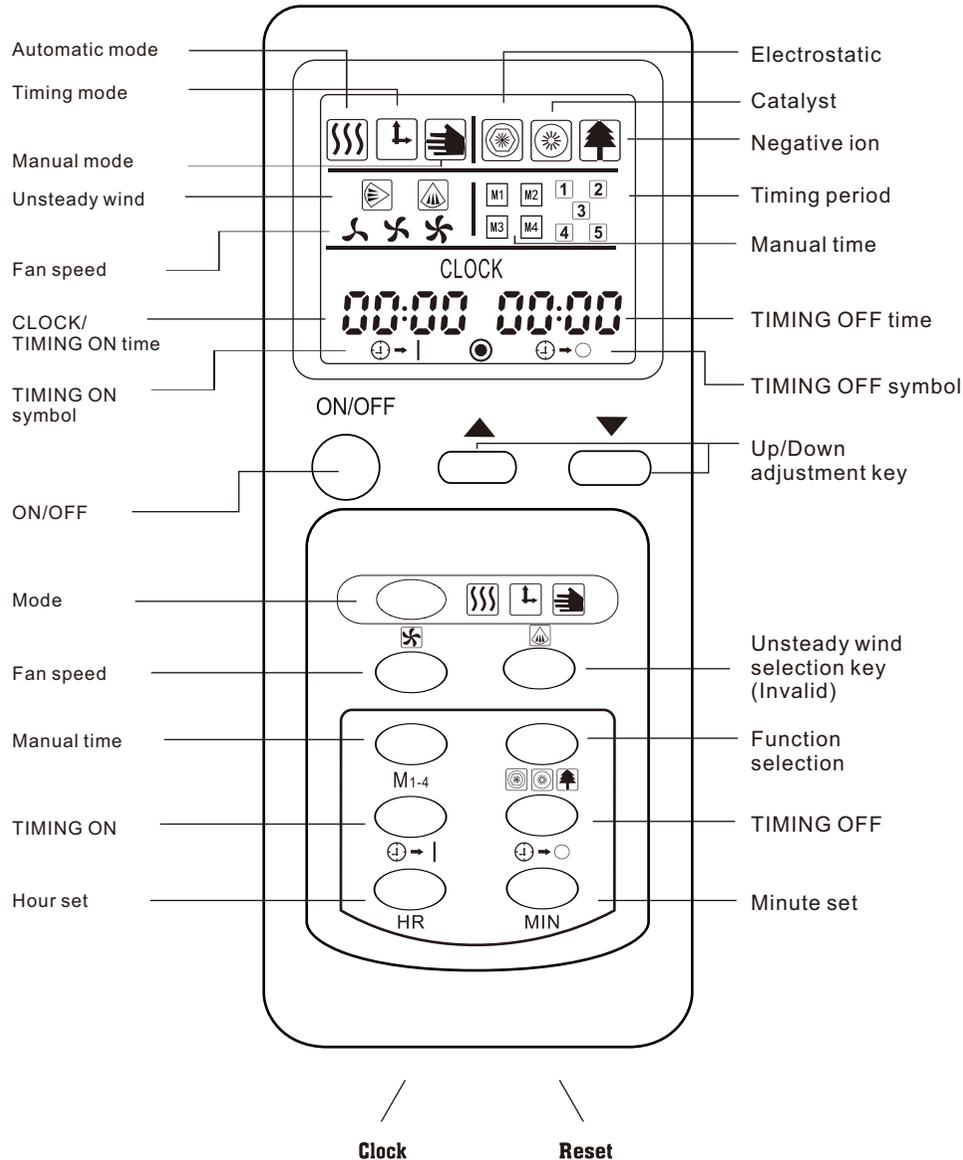


Rain and Snow  
Prevention



Upwards,  
Anti-inclination

### 9、Instruction and Application Method



Fault	Reason	Solution
The fan is not spinning	1. Power failure 2. The plug is not properly inserted 3. The fuse is faulty	1. Restart after power on 2. Insert the plug into the socket 3. Change faulty fuse
The Static electricity indicator is not on	Power supply fault	Close the static electricity and check the power
Small air flow in air outlet	1. The pre-filter is blocked by dust 2. The compound filter is blocked by dust	1. Clean the pre-filter 2. Clean or change the compound filter
The key of the touch screen is ineffective	Faulty connection	1. Turn off the switch and then press the ON/OFF to resume operation 2. Operate by remote controller

### 13、After sales service

1. The machine is shipped with maintenance and it enjoys free maintenance service one year from the date of purchase (except for consumables, such as filter, catalyst and so on).
2. Maintenance and component replacement: call your local distributor and provide them your full particulars.
3. The warranty does not involve the following situations: damage caused by improper use, improper voltage or operating without following the user's manual.

### 14、Attached file and Accessories

The machine should contain the following files and accessories when ex-warehouse:

1、 Medical Air Disinfector	-----	1 set
2、 User's manual	-----	1 copy
3、 Fuse (FΦ5x20—2A)	-----	2 strips
4、 Three core single phase power line(plug)	-----	1 strip
5、 Remote control	-----	1 unit

## 11、 Maintenance

### 1、 Maintenance alarm

The controller will automatically remind user to maintain the machine after it has complete 1000 hours. As a result, the "Cleaning time and Alarm" icon on the control panel enlightens.

Press any key to stop the alarm and press ON/OFF to eliminate fault after stopping the alarm. The system continues to operate after the fault is solved.

2、 Maintenance of pre-filter: clean it every 3 to 6 months under normal environment (it depends on the working environment and frequency). Open the chamber door to take out the pre-filter and put it into the neutral detergent container to soak for 30 minutes, and then rinse out by tap water, dry it and reset.

3、 Maintenance of electrostatic field: clean it every half year. Use cross screwdriver to loosen the bolt, lift down the sealing plate and take out the electric field to put it into the neutral detergent container to soak for 30 minutes, and then rinse out by tap water, dry it and reset.

4、 Maintenance of catalyst: check the air flow at the air outlet. If the air flow is small, take out the catalyst and vacuum the dust on the exterior of the filter with a vacuum cleaner, and then reset. Check the air flow at the air outlet again, if it is proper, continue to use it. If it does not meet the requirement, change the catalyst.

5、 Maintenance and reset of the device: insert the plug into the socket if there is no problem, press ON/OFF and watch whether the indicator is abnormal, then complete the maintenance.

## 12、 Common fault, reason and solutions

If the machine is faulty, please check the following chart, then turn off the power, unplug the unit and contact your local distributor.

### ( 1 ) Function keys on remote controller

ON/OFF: Power on and power off. The initial working mode when turn on the unit is Timing, Static, Catalyst, Negative ion are all on,

Fan speed is on the medium. And it shows the Timing mode and real time.

Mode: Manual, Auto and Timing mode adjustment. The initial mode is Timing.

Fan speed: Low, Medium and High speed adjustment under power on mode. The initial fan speed is medium.

Unsteady wind: (not available)

M1-4: Adjust among M1-M4 circle under manual mode.

Function: Static, catalyst and negative ion function adjustment. All is on initially.

Timing ON: Set 5 periods time to turn on the unit under Timing mode. It can be also used for checking the Timing ON time

Timing OFF: Set 5 periods time to turn off the unit under Timing mode. It can be also used for checking the Timing OFF time.

HR: Set hour in the time

MIN: Set minute in the time.

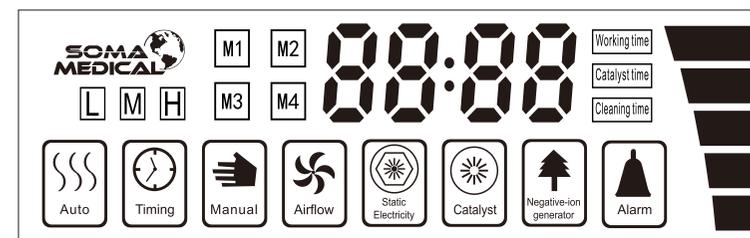
up/down: Adjust the time parameter.

CLOCK: Set the clock.

RESET: Reset for all settings.

### ( 2 ) Display interface and description

#### 1、 Display interface



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2、 Display interface and description

It shows  and real time when the power is connected before turning the unit on.

 shows working time and the real time.

 enlightened means Auto mode: the unit works for 90 minutes and then stops for 90 minutes circle.

 enlightened means Timing mode: the unit works during 5 working period which can be set manually.

 enlightened means Manual mode: the default is M1 which means the unit works for 1 hour then stop. M2 means it works for 2 hours then stop. M3 means it works for 3 hours then stop. M4 means it works for 4 hours then stop.

 enlightened means the unit is working.

 enlightened means the static electricity function is on.

 enlightened means the catalyst function is on.

 enlightened means the negative ion function is on.

 enlightened means the machine gets fault.

 enlightened means the total working time is over.

 enlightened means the catalyst working time is over.

 enlightened means the cleaning time is over.

 means the fan speed.

The 5 lines on the right means the 5 timing section.

- ④ When the catalyst has been used for more than 1000 hours, it will remind you to replace it, although this will not affect the normal operation of the machine.
- ⑤ Fault alarm of the catalyst: when no feedback signal is detected after the catalyst begins working, the alarm will go off.

10、 Precautions

- 1、 Do not switch off electric field, circulating fan and catalyst when the machine is working.
- 2、 It is better to disinfect for 1 or 2 hours under manual and timing mode, restart after 1 or 2 hours later.
- 3、  Notice: Timing setting is invalid when the machine is under manual mode. Touch key M or Timing are unavailable under the automatic mode.
- 4、 Do not incline or collide the machine when moving, avoid damaging the device.
- 5、 Open the door only after the power is cut off 1 minute later. Do not touch the entrance of the circulating fan.
- 6、 Use standard three-core single-phase attaching plug. Remove plug if machine is not in use for long period and cover it.
- 7、 This machine should be placed in the clean, dry environment without flammable and explosive materials and harmful chemical gases.
- 8、 Please remove plug when cleaning and maintaining. Use clean wet cloth to wipe the panel when cleaning and dry it immediately. No gasoline, solvent, pesticide and other chemical solvents are allowed since they will damage the machine.
- 9、  It means there is high voltage system inside. Only professionals can overhaul and maintain the machine.
- 10、 To ensure effectiveness of the product, the room should be kept clean all the time, namely sweep every day and regularly wipe the surface of the objects by disinfectant in the working environment.

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In time setting, "--:--" means cancelling this time setting. Timing control is divided into groups; if there is one time setting invalid or when the power-on time equal to the power-off time, the whole group will be invalid.

## (5) Testing function and Alarm

### 1、 Automatic time test function:

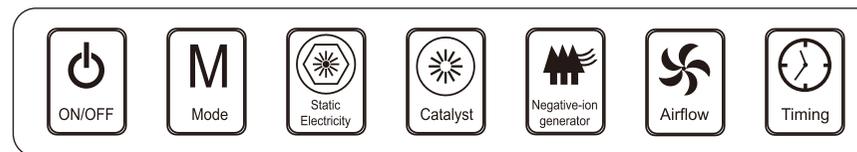
- ① Indication of total service time: check the total service time by pressing and holding down the 'Airflow' 'SOMA MEDICAL' is enlightened and display the total hour). When the running time reaches 9999 hours, it will stop working and the alarm indicates the machine has run into its duration of service.
- ② Filter screen cleaning indication: press 'Airflow' to check this time ( 'Airflow' is enlightened and displays the total hour). When the working hour reaches 1000 hours from the time it begins operating (or operating after the cleaned filter screen is reinstalled), it is time to clean the filter screen when 'dust' is shown. Although this does not affect the machine's normal running and this indication will disappear after user resets the accumulated hours. Press ON/OFF to cancel alarm, but it will indicate again after 72 hours of continuous working.
- ③ Indication of catalyst service life: press 'Airflow' to check this time (after 'Airflow' is enlightened, it shows which lamp is under checking). The machine is equipped with time meter. Therefore when the total working time of the catalyst reaches 1000 hours, the machine will indicate but it will not affect the machine's normal running. Press ON/OFF to cancel alarm, but it will alarm again after 72 hours of continuous working. Each catalyst corresponds to certain timing.

### 2、 Fault alarm

- ① Fault alarm of electrostatic field: when no feedback signal is detected after the electrostatic field begins working, the alarm will go off.
- ② When the service time exceeds 9999 hours, the machine will stop functioning and the alarm will go off indicating its service time is over.
- ③ After 1000 operational hours, the alarm will go off indicating it is time to clean the filter screen, however, this alarm has no influence on the normal operation.

## (3) Touch key Instruction

### 1、 Touch key Icon



### 2、 Touch key Explanation

- ① ON/OFF:
  - a. Press to power on and select timing mode; Press once more to power off;
  - b. Press to exit when under parameter setting mode or cancel the fault when there is a fault.
- ② Mode: shift among timing mode, manual mode and automatic mode.
- ③ Static electricity/Add:
  - a. Press to turn on/off electrostatic function when it powers on;
  - b. When under the parameter of adjusting the mode, add 1 to per parameter's value by every press; and for continuous rapid adjusting, press and hold for more than 1 second. The operations is available within 6 seconds after start up or change of mode and is locked 6 seconds after releasing the button.
- ④ Catalyst/Lock:
  - a. Press to open/close catalytic lamp under power-on mode;
  - b. Catalytic lamp operations is available within 6 seconds after start up or change of mode and is locked 6 seconds after releasing the button. Press and hold to lock or unlock.
- ⑤ Negative-ion generator/Terminate:
  - a. Press to start/stop negative-ion generating function while the machine is still under power-on mode.
  - b. Negative ion operation is available within 6 seconds after start up or change of mode and is locked 6 seconds after releasing the button. This will allow gradual adjustment of the parameters. To make a quick adjustment you need to press and hold the button for more than 1 second.

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## ⑥ Airflow:

- a. Press to adjust between low, medium and high speed after starting up.
- b. Enter parameter enquiry by pressing longer for 10 seconds, and go to next parameter inquiry by one more press. Exit by pressing ON/OFF or to the last parameter setting.

## ⑦ Timing:

Enter Timer operating selection by pressing TIMING longer under manual mode, the display shows 1:00 initially. Press TIMING to adjust the time among 1,2,3,4 hours. The time starts counting down after 5 seconds without any operation. When the time reach to 0, the unit automatically switch to the working mode of timing cycle.

**(4) Working mode and Operating instruction**

Press ON/OFF, the device is under timing mode; then press mode key to select working mode and wind set, ultraviolet ray (UVC ray), electrostatic filed or negative ion according to requirement.

There are three modes of working: timing→ manual→ automatic.



Wind speed and UV ray, electrostatic field and negative ion adjustments are not allowed while the machine is in operation mode. The device may start in low fan speed for 10 minutes after the unit is powered on, then it will change to normal operation.

**1、Automatic mode**

Press MODE button on the unit or on the remote to select automatic model under power-on status. The unit works 90 minutes and stops 90 minutes periodically.

**2、Manual mode****Operating on the unit:**

- ① Press "Mode" to select manual under power-on mode. The timer indicates 1:0 hour working time left (1 hour for disinfection).
- ② Disinfection time selection: 2~4 hours.  
Press "Timing" for ten seconds to enter the option of working hours Each time you press the "Timing", it will add 1 hour and then select disinfection time.

- ③ It will automatically switch to the working mode of timing cycle after the manual working time is finished.

**Operating on the remote:**

Press MODE on the remote to select manual under power-on mode. The display shows M1 on both the remote and the unit. It means that the unit will work for 1 hour then switch to working mode of timing cycle.

Press M1-4 to select M1-M4:

- M1: manual working time is 1 hour
- M2: manual working time is 2 hours
- M3: manual working time is 3 hours
- M4: manual working time is 4 hours

**3、Timing mode****Operating on the unit:**

Press MODE to select Timing under power-on mode, then set the ON time and OFF time. The unit will power on automatically everyday at the ON time and power off automatically at the OFF time everyday.

**Operating on the remote:**

The initial Timing section:

Section 1: 6:00--8:00	Section 2: 10:00--12:00
Section 3: 14:00--16:00	Section 4: 18:00--20:00
Section 5: 22:00--24:00	

Press TIMING ON, the display shows "1", Timing ON symbol and the initial time, then press UP/DOWN to adjust the time of Timing ON of section1.

Press TIMING OFF, the display show "1", Timing OFF symbol and the initial time, then press UP/DOWN to adjust the time of Timing OFF of section 1.

Press TIMING ON twice, the display shows "2", Timing ON symbol and the initial time, adjust the time of Timing ON of section 2 by the same way.

Press TIMING OFF twice, the display shows "2", Timing OFF symbol and the initial time, adjust the time of Timing OFF of section 2 by the same way.

Set the other section of Timing by the same way. (Pay attention to the Number on the display to avoid any confusion of the sections.)

After finish the setting, press ON/OFF button once to turn on the unit, the unit will work according to the Timing sections until turn the unit off.