Kalstein

Model YR0106

Mini Biosafety Cabinet

Instruction Manual

Thank you very much for purchasing our Model YR0106 Mini Biosafety Cabinet.

Please read the “Operating Instructions” and “Warranty” before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the “Warranty” at a hand place for future reference.


Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.

OUR SERVICES

Benefits and Support

In Kalstein France, we take care of the full satisfaction of our customers, that is why we provide value-added services of the highest level based on our experience.

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In any part of the world, receive your induction or training from our specialized team of engineers

Quick Response

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With more than 25 years growing with our customers, Kalstein's multiformat and modern content, is now present in more than 10 countries and increasing.

CONTENT

1. Unpacking, Installation, Debugging

Please firstly check if packing box is in good condition. If the packing box is damaged, please take photos.

1.1 Unpacking

Choose the proper unpacking method according to the actual situation.

For wooden box:

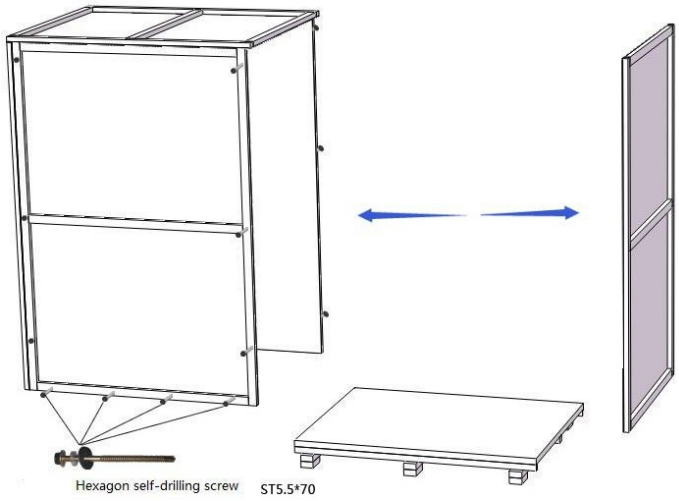
1) Method 1 Use M8 Wrench to unpack

Picture 1

2) Method 2 Necessary tools for unpacking: Electric drill with hexagon dead M8

Picture 2

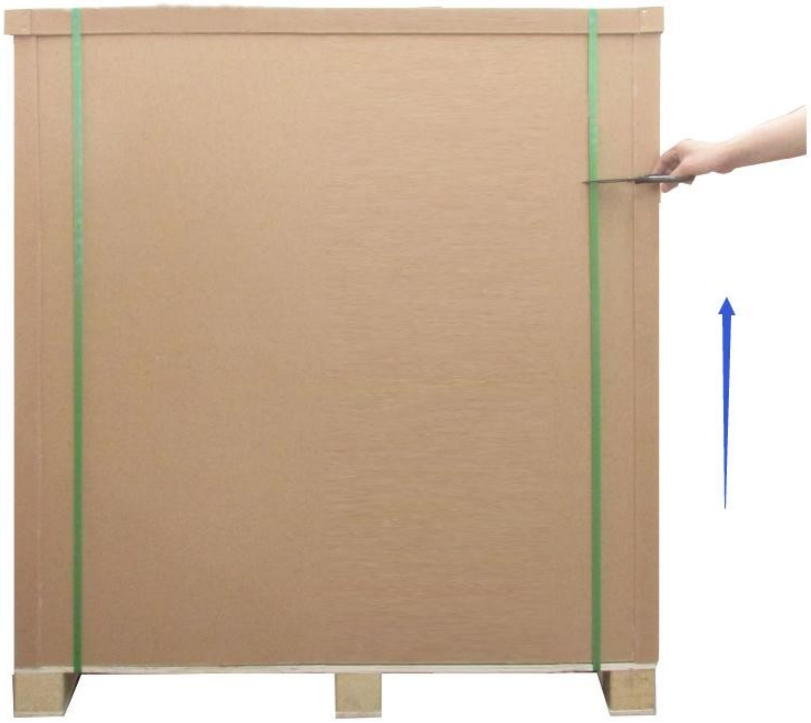
Rapid unpacking diagram (Picture 3). Disassemble the screws shown in the below Picture, then move the wooden pieces to right and left.



Picture 3

For carton box:

Using ordinary scissors to cut packing tape, take off the package cover, then move up the paper box body.



Picture 4

1.2 Accessories checking

Refer to the packing list and check the accessories.

YR0106 Packing List

Name	Quantity	Position
YR0106 Main Body	1	Wooden Pack
Power Line	1	Packing bag
Fuse Tube（5A）	1	Packing bag
UV Lamp（T5　8W）	1	Paper Pack
YR0106 User manual	1	File Packet
Test report	1	File Packet
Quality certification card	1	File Packet
Warranty Card	1	File Packet
Product acceptance certificate and installation report	1	File Packet
Training certificate	1	File Packet

1.3 Installation conditions and using environment

Biological safety cabinets should be placed in a position where there should be no opposing wall and far away from ventilation system and air conditioner vent, so as to avoid the airflow impact caused by ventilation system, air conditioner, door, window and even the personnel movement. Also, avoid blocking the local switch door entrance; avoid opposing and placing in the wall corner. There should be at least 300mm of the side of the safety cabinet for checking.

Working environment:

(1) Only is suitable for indoor;

(2) Ambient temperature: 15℃～35℃;

(3) Relative Humidity: ≤75%;

(4) Atmospheric pressure range: 70 kPa～106 kPa;

(5) Electrical parameters: Consistent with the rated voltage of the biosafety cabinet (See 2.1.4 technical parameter performance index);

(6) Power supply need to be grounded; (Judging method: testing the fire wire and the zero line of the power supply with multimeter, the fire wire to ground voltage should be grid voltage and the zero line to ground voltage should be 0, otherwise the power supply ground is bad);

1.4 Installation

a. Remove all the package materials;

b. Inspect the surface of main body to make sure whether there is scratch, deformation or uncorrelated things;

c. Check the accessories and documents according to the packing list.

d.Move the device to the final place for installation.

1.5 Checking after installation

First, make sure the Voltage and frequency to be same as logo showing, and then check the follows items with power on：

Checking Items	Normal situation
Fan running	Normally
Fluorescent lamp	Lamp lights after pressing button
UV Lamp	Lamp lights after pressing button
Display screen buttons	All buttons can be used

⚠ **If you have any questions, please contact the Engineer for the process of debugging, debugging methods in the after-sales service manual.**

2. User Instructions

2.1 Functions

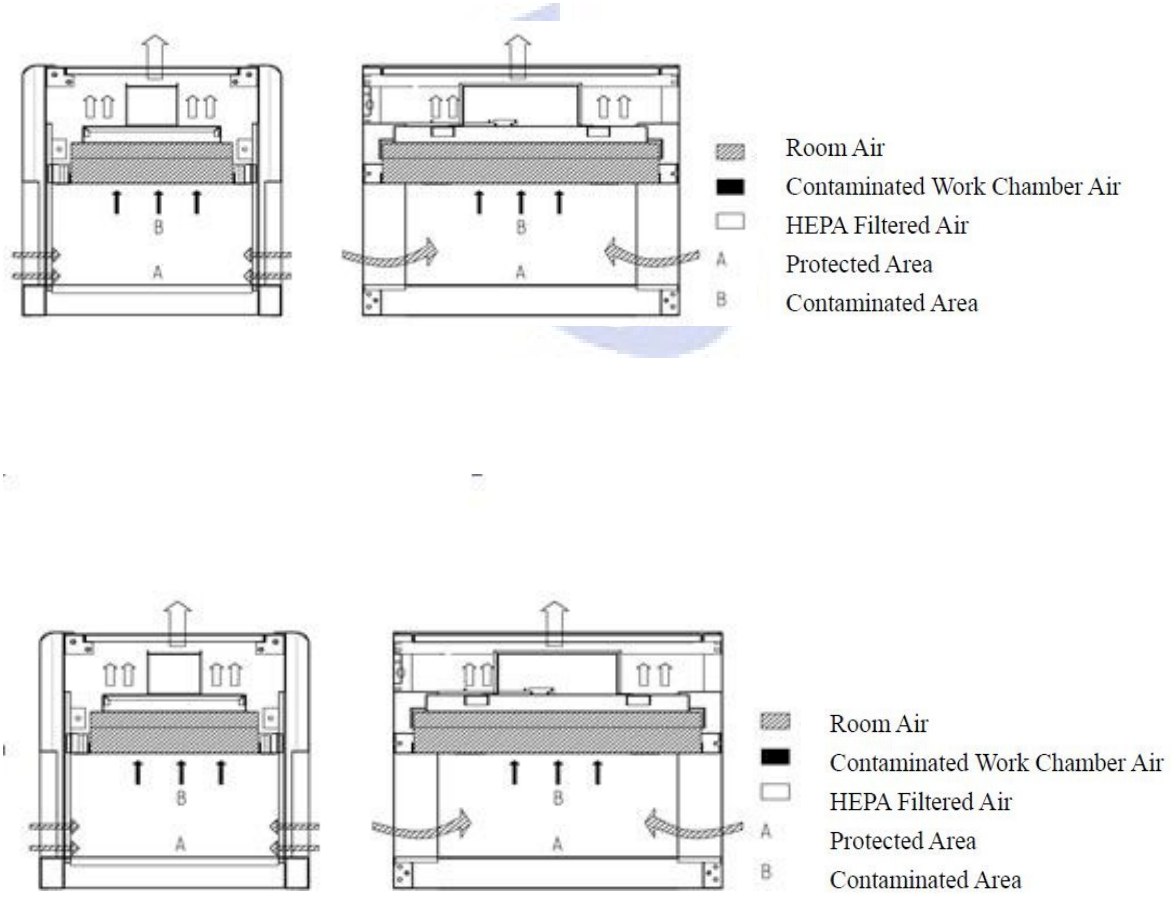
2.1.1 .1 Product Concept

The developments of medical technology enable people to improve the understanding of microbial protection and pay more attention to laboratory safety. Thus there are more requirements for laboratory equipment’ssafety while it is more complete and standard. Clinical laboratories of medical institutions and scientific research laboratory will produce aerosol particlesinevitably in the experimental operation, such as the mixing, stirring, grinding, crushing,

centrifugalof sample pretreatment, and carrier of inoculating loop burning, dirt high pressure heating exhaust can be generated aerosol. The Class I Biological safety cabinetcan adequately protect the harm caused by aerosol pollution, and effectively protect the personnel and environment.

It is negative pressureair inlet in front window of Class I Biological safety cabinetwhich can protect the operators and the exhaust air goes through HEPA filter which can protect the environment. The Class I Biological safety cabinetcan be placed on anywhere with it'ssimple and portable structure.

212 .2 Working theory/ Air flow pattern and protected area



Picture 5

213 .3 Protected objects

The Class I Biological safety cabinet are designed to protect the operator, the laboratory

environment andwork materials from exposure to infectious aerosols and splashes that may be generated when manipulating materials containing infectious agents, such as primary cultures, stocks and diagnostic specimens.

214 .4 TECHNICAL PARAMETERS

Model / Parameters	YR0106-1	YR0106
Power Supply AC	220V±10% 口	110V±10% 口
Frequency	50 Hz 口	60Hz 口
External Size(W*D*H)	550*480*505 mm	550*460*700 mm
Working Zone Size(W*D*H)	548*348*203 mm	480*340*370 mm
Consumption	≤100 W	≤100 W
UV Lamp Consumption	8W	8W
HEAP Filter	99.985%（Diameter:0.3μm）	
Noise	≤63dB（A）	≤63dB（A）
LED lamp Consumption	8W	8W
Inflow Velocity	≥0.5m/s	≥0.5m/s

Notes: (1) Our company has right for changing the products, if we need to change and re-design, please forgives us for not notifying you.

1）Illumination

The average illumination is no less than 350lux.

2）Electrical properties

The voltage increases to 1390V(AC) in 5s and keep for another 5s without breakdown.

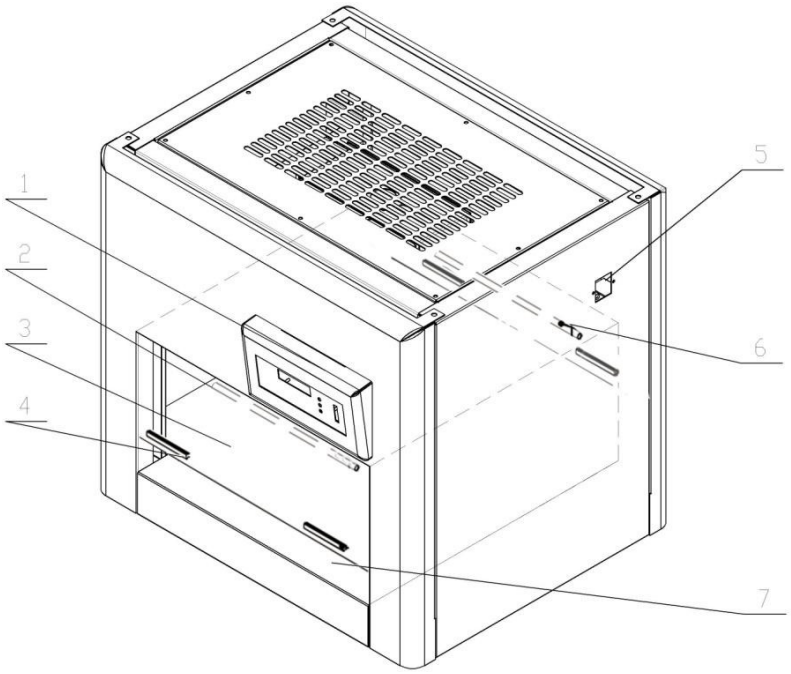
Grounding resistance ≤0.1Ω .

3) Vibration amplitude

The net vibration amplitude between frequency 10Hz and 10KHz is no more than 5μm(rms).

2.2 Product structure

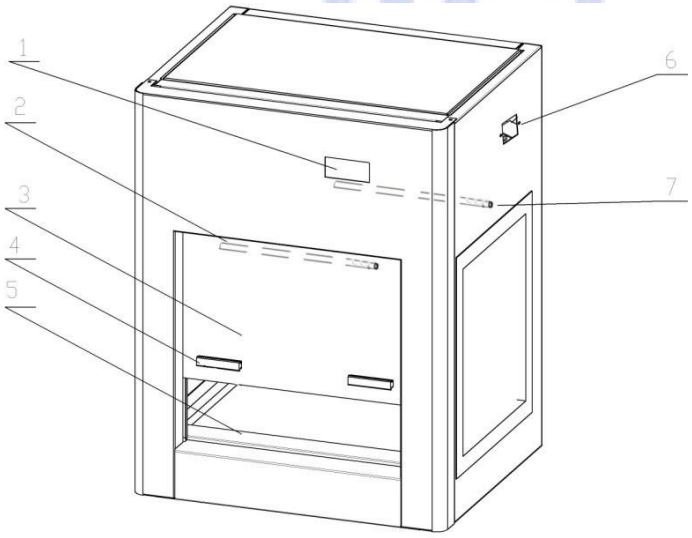
221 .1 Structural composition of YR0106-1 & YR0106



Picture 6

1 Control panel 2 LED Lamp 3 Front Glass Window 4 Doorknob

5 Power socket 6UV lamp 7 Work Surface



Picture 7

1 Control panel 2 LED Lamp 3 Front Glass Window 4 Doorknob

5 Work Surface 6 Power socket 7 UV lamp

222 .2 Structure introduction

1）Front Glass Window

The front glass doors use tempered glass, it less impact on human health when it burst. The front glass door drive system consists of a constant force spring, the front glass doors and other components.

2) Air Filtration System

During the experiment, the aerosol mixed external air enters the cabinet, which is filteredby the filtering system, and then the dust particles are filtered, the clean and non-polluted gas is discharged into the external environment at last. Filter system using HEPA (high efficiency air filter) filter, to ensure that the air at the outlet is clean.

⚠**Although the Class I biological safety cabinet is capable of ensuring the operator and the environment from harm, but it cannot ensure that samples will not be contaminated by the laboratory air, nor be completely ruled out the possibility of cross infection.**

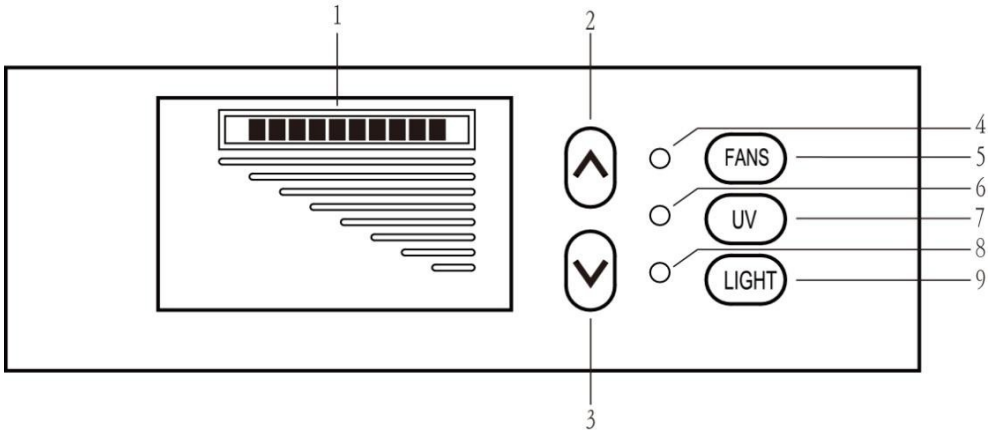
3）UV Light

UV lamp is inside work area. So UV lamp can well sterilize all space of work area.

4) LED Light

Illumination ensures enough light inside work room,LED lighting tube, located on the top of operational zone. It can make sure average illumination inside work area which meetsstandard requirements.

5）Control Panel



Picture 8

1 Air velocity 2 Increase Air Volume 3 Decrease Air Volume 4 Fan Indicator 5 Fan (FANS)

6 UV lamp Indicator 7 UV lamp (UV) 8 Fluorescent lamp Indicator 9 LED lamp (LIGHT)

a. Display

The working status of the equipment and operation can be seen on the display.

b. Soft touch button

BSC's main functions could be executed by touch-buttons.

LED lamp (LIGHT): To control LED lamp. The state of the lighting tube and the Light Indicator are changed once press the button each time.

UV lamp (UV): To control UV lamp. The state of the lighting tube and the UV lamp Indicator are changed once press the button each time.

Fan (FANS): To control fan working status. The state of the working and the Fan Indicator are changed once press the button each time.

Air volume controller("∧" "∨"): Fan is working, touching "∧", the air flow is increase; touching "∨", the air flow is reduced.

6） Fuse protector

The equipment is equipped with main power fuse, waterproof socket fuse. They are located near the power cord's outlet. Fuse label is corresponding to the relevant specifications. Please refer to 3.5.1, replacement of fuse protector refers to 3.2.

7) Mechanical Glass Door Control

Front window controlled by constant force spring, glass window can be docked at any height, so that the front window can be controlled when power off.

8) Structure

a. Cabinet body is built of 1.0mm cold-rolled steel with anti-powder coating. Strong and steady.

b. Work area is fully made of 304 stainless steel which looks beautiful and with corrosion resistance performance.

c. The paneling of Operating area is used of metal with anti-powder coating.

d. Soft touch type control panel, easy to handle and beautiful appearance.

2.3 Instructions for Operation

231 .1 Normal Operation Notice

(1) Make sure input voltage is correct and stable. The rated load of main power socket should be higher than cabinet consumption. Plug must be well grounded;

(2) The weight of items placed in the cabinet should be no more than 15Kg/20*20 cm^2;

(3) No flame: No flame is allowed inside the cabinet. Using of fire will lead to airflow disorder, and filter damage.

(4) In order to avoid samples being sucked into the negative passage or the blower, do not place soft and slight samples (for example: soft tissue) on the surface during experiment;

(5) HEPA filter life: With the usage time increasing, dust and bacteria on the filter can lead to efficient filter pressure loss increases, when increases to wind speed cannot meet the requirements, must be timely contact with my company's service department, Please replace new HEPA filter, otherwise it will affect the safety performance of the equipment. The used filter should be processed as medical waste;

(6) There is a negative passage surrounding the work area, which is sealed strictly in the factory. The operator is not allowed to remove or loose screws of those parts. If necessary, please contact service personal;

(7) The maximum storage period is one year. If the period is more than one year, performance test should be done.

⚠ **Serious declaration: we will take no responsibility for risks caused by improper operation and man-made damages!**

232 .2 Operation Process

a. Connect the same power supply, as required of equipment;

b. Press POWER button, then check whetherthe following functions are available or not: LED lamp. UV lamp, Fan, Sockets, Front window up and down (refer to 2.2.1).

c. Before doing experiment, please sterilize the cabinet for more than 30 minutes by UV lamp;

⚠ (1) For safety of eyes and skin, people should leave room during the UV sterilization.

(2) UV lamp intensity should be tested regularly. If there is no test conditions, it should be replace when the UV timer on the display indicate the working time reaches to 600 hours.

d. The bottom edge of the glass door lift to the appropriate height. Then, turn on the fan, make sure the experiment should be started after fan working for at least 5mins;

⚠Please put the experimental supplies and apparatus into the cabinet in advance in order to guarantee the operation safety.

e. After finishing the experiment, please move the front window down to the bottom, and make sure to sterilize the cabinet by UV lamp for 30 minutes before turning off the cabinet.

24. Daily maintenance

Preparations before maintenance：Remove the things which placed in the cabinet

Preparing items: concentrated liquid soap, hot water ,clean water, a soft cotton cloth, dry cloth or towel, medical alcohol or other disinfectants, etc.

241. 1 Clean the working surface

Wipe the entire surface with a soft cotton cloth or towel soaked with concentrated liquid soap, then wipe up the soap with another cotton cloth or towel soaked with clean hot or warm water, and then wipe the surface with a dry cotton cloth or towel rapidly.

For the contaminated or dirty work surface or sump., use 70% medical alcohol or other disinfectant to wipe.

⚠Disinfectants used for wiping should not damage 304 stainless steel.

242. 2 Clean the external surface and front window.

Use soft cotton cloth or towel to wipe the surface with non-abrasive household cleanser.

243. 3 Overall maintenance period

We suggest comprehensive maintenance period is one year or 1000 working hours.

244. 4 Maintenance methods

1) Weekly or daily maintenance

   a. Disinfect and clean operating area（refer to 2.4.1）;

   b. Clean the external surface and front window around the operating area（refer to 2.4.2）;

   c. Check the various functions of equipment;

   d. Record this maintenance result;

2) Monthly maintenance

   a. Clean the external surface and front window.（refer to 2.4.2）;

b. Wipe the working table, inner wall surface of operating area (excluding the wind distributing grid of operating area) and the inner surface of glass door with 70 % medical alcohol or household bleach diluted 1:100 (i.e. 0.05% sodium hypochlorite). Then wipe again with sterile water in order to eliminate the rest chlorine.

c. Check the various functions of equipment;

d. Record this maintenance result;

3) Annual maintenance

a. Check the two conveyor belts of front window drive unit, and ensure that their tightness is coincident.

b. Check the UV lamp and fluorescent lamps.

c. Apply for testing the overall performance of cabinet on an annual basis to ensure the performance safety. User is responsible for testing costs.

d. Record this maintenance result.

⚠When doing maintenance, please pay attention to cut off the power, so as to avoid electric shock!

245 .5 Storage conditions

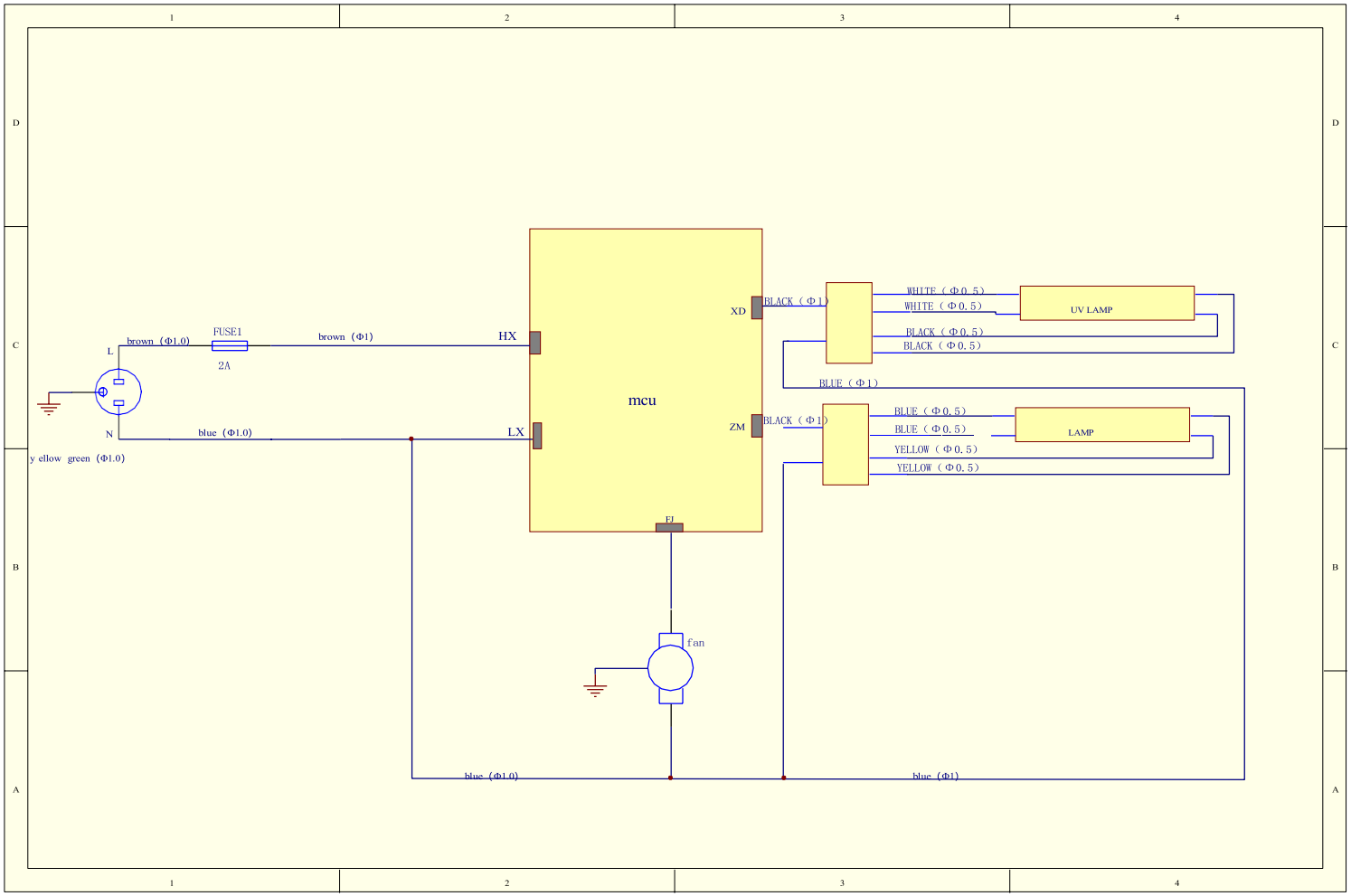
Safety cabinet should be stored in a relative humidity no more than 75%, the temperature is below 40℃, in the warehouse with good ventilation performance, no acid, no alkali and no other corrosive gases, storage period shall not exceed one year, safety cabinet for more than a year needs to unpacked and checked. Only the tested and qualified safety cabinet can be sold.

2.5 Replacement parts list

YR0106 replacement parts list

Number	Name	Specification
CAB-01	Fuse	5A
CAB-02	Lamp holder T5	LG5-01A
CAB-03	UV Lamp	T5 8W
CAB-04	LED Lamp	T5 4W
CAB-05	UV lamp ballast	1*TL5-8W
CAB-06	Non-separationfilter	480*280*50
CAB-07	Activated carbon filter	480*280*30
CAB-08	Control panel	The ten section column
CAB-09	Front window	496*470*5
CAB-10	Side window	310*360*5
CAB-11	Constant force spring	0.9kg constant force spring, nylon jacket, nylon jacket baffle
CAB-12	Transformer	Output 12V/0.3A
CAB-13	Fan	FH190

2.6 Wiring diagram



Picture 9

3. Trouble shooting and Labels

3.1 Common faults & solution

Please confirm whether the power is connected or not, whether the power cord isobvious damaged or not, whether the fuse is good or not, and whether the power locks are in the open state or not before the fault diagnosis.

Faults	Check parts	Measures
LED lamp doesn't work	Lamp tube	Replace it
	Circuit	Check it
	Control panel	Replace it
UV lamp doesn't work	Lamp holder	Check if tube and lamp holder is connected securely
	Lamp tube	Replace it
	Lamp ballast	Replace it
	Circuit	Check it
	Interlock	Check whether blower and lamp are closed
	Control panel	Replace it
Button doesn't work	Control panel	Make sure the power connects well and the fuse is well
		Check if the button is broken
		Make sure the connecting wire is connected well
		Replace it
Blower doesn't work	Blower	If blower is broken, change it
	Circuit	Check it
	Control panel	Replace it
No electricity in equipment	Power supply	Check power supply connects well
	Power wire	Check whether power wire has obvious damage
	Fuse	Check if the fuse is good
	Transformer	Check whether the transformer works normally
	Control panel	Replace it
Display doesn't work	Connection winding displacement	Check it
	Display screen	Check it
	Control panel	Replace it

⚠NOTES

(1) The above electrical parts must be operated by a qualified electrician in safety

conditions (cutting off power supply). The other parts are not allowed to remove; otherwise the user should take responsibility by them;

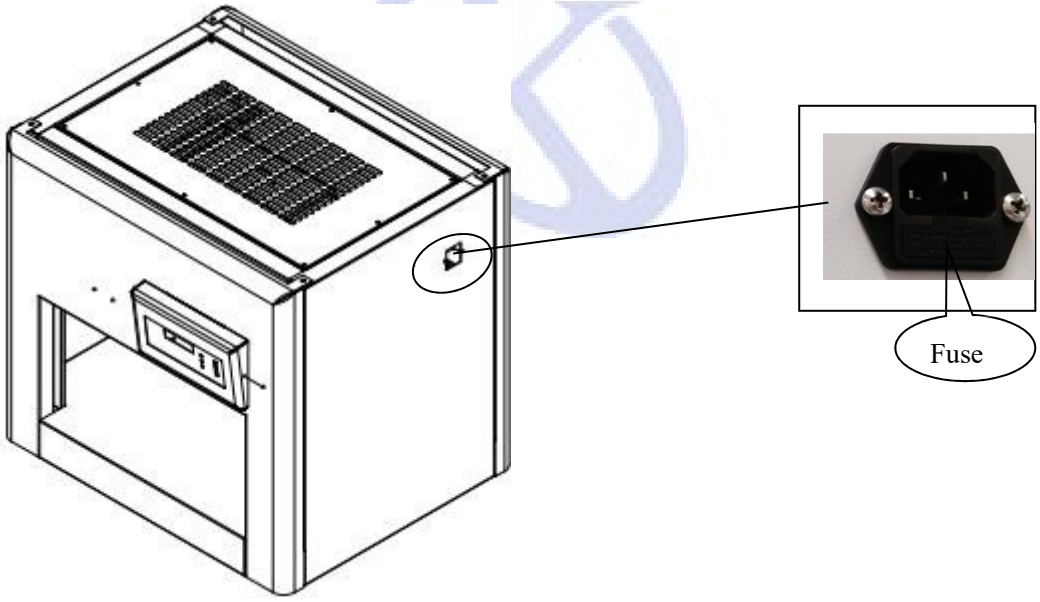
(2) When other failures occur, and the operator can't solve, please notify our maintenance department immediately. For your safety, please do not maintain equipment by yourself;

(3) The maintenance of this equipment is undertaken by trained and recognized technicians;

(4) If you need to order parts, contact the agent or our technical service department, and please indicate the model and serial number of the cabinet purchased.

3.2 Replace the fuse

The fuses are F5A Φ5*20 mm。When replace them, turn off the power and disconnect plug, use a Phillips screwdriver counterclockwise pressing screwed fuse holder, remove the fuse out and replace a new fuse, and then clockwise pressing screwed fuse holder (refer to Picture 10).



Picture 10

3.3 Replace LED Lamp

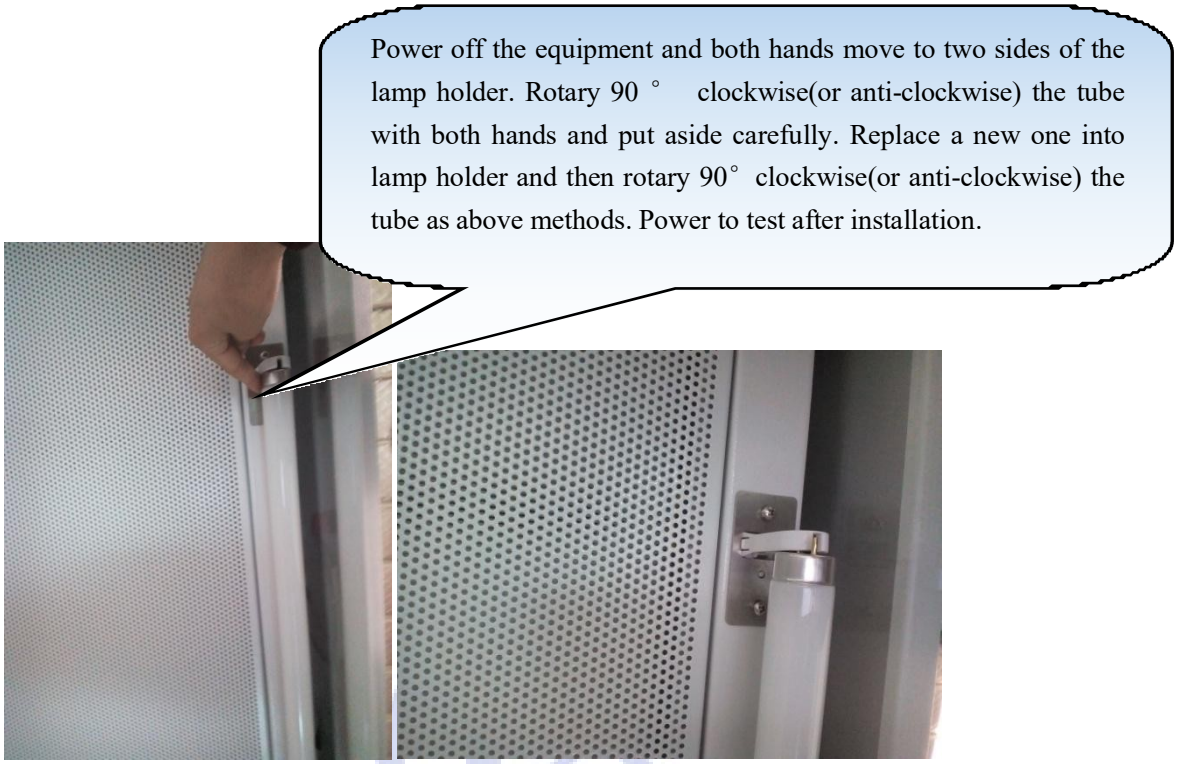
When replacinglights, make sure that the power is off。 Open the front window,Then remove the unplug the right side LED stand plug, remove the LED lamp. After replacing a new LED lamp, inserted into the LED stand plug.The replacement measurement please refer to picture 11.The position of fluorescent lamp is in front of operation area.(Refer to Picture6&7)

Picture 11

3.4 Replace the UV lamp

UV lamp should be replaced regularly according to the frequency of use, when using UV lamps reach to the time of 600 hours, we recommend to replace the lamp.In order to achieve good disinfection effect, it is recommended that you regularly test the UV intensity, you can use the UV intensity test card to confirm whether you need to replace the UV lamp.When

replacing, first make sure the power is off, and then screw the bulb 90 °and take it off, then take the correspondence type of lamp, and put it to the lamp holderand screw 90 °in reverse direction.



Picture 12

3.5 5 Label Description

351 .1 Fuse label

When voltage is 110V±10%，the fuse label is as below：

F5AL

When voltage is 220V±10%，the fuse label is as below：

F5AL 250V

352 .2 Ground label

Picture 13

4. Warranty

1) Warranty is 12 months from EX-factory date (excluding consumable accessories, UV and LED lamp, fuse).
2) We will take no responsibility for risks caused by improper operation and man-made damages.
3) After the expiration of warranty, our company is also responsible for repairs, but the corresponding maintenance cost should be charged.
4) Life time of biologicalsafety cabinet is 8 years from production date on the label.
5) We can provide equipment drawings and necessary technical data for maintenance companies or personnel trained by our company.

Warranty declaration: One-year Warranty, Life-long Maintenance