Kalstein®

Fume Hood YR(E)

Model Series YR0102-4

Instruction Manual

Thank you very much for purchasing our Fume Hood YR(E) Model Series YR0102-4.

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.

Preface

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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”within touch for future reference.

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

Disclaimer

Kalstein shall not be liable for any equipment failure or damage, or for any direct or indirect damagethat may occur during the use of the equipment.

1.Malfunction or damage due to violation of the instructions, precautions, and intended use of thismanual.

2.Malfunction or damage caused by repair or alteration of the other company. 3.Malfunction or damage

caused by use instruments of other company at the same time.

4.Malfunction or damage caused by operating environment not corresponding to the specifiedoperating environment (power conditions, installation environment, etc.).

5.Malfunction or damage caused by natural disasters such as earthquakes and floods.

6.Malfunction or damage caused by the company unaware of the movement or transfer (transport)after installation.

Content

1. Unpacking, Installation and Debugging

Please firstly check whether the packing box is in good condition. If the packing box is damaged,please take photo sand contact the freight carrier. Kalstein and its dealers are not responsible for shipping damages

1.1 Unpacking of Main Body

Choose a proper unpacking method according to the actual situation.

1.1.1. For wooden box

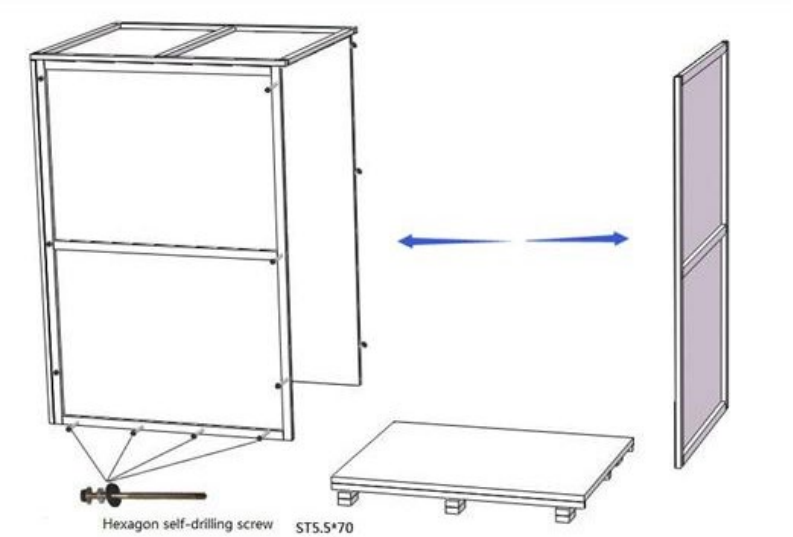
a) Necessary tools for unpacking: M8 wrench

Picture 1

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

Picture 2

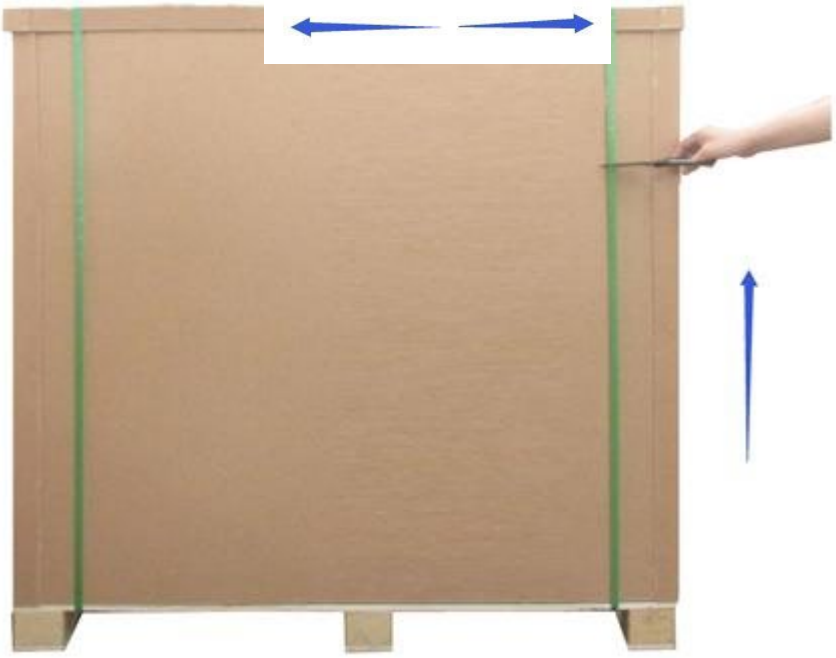
Quick unpacking procedures (Picture 3). Remove the screws shown in thediagram below, then move the wooden pieces to right and left.



Picture 3

1.1.2. For cartoon box

Use scissor to cut the packing tape, take off the package cover, then move up the boxbody.



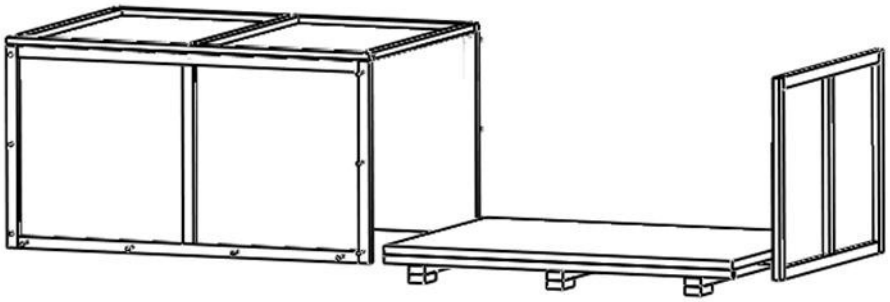
Picture 4

1.2 Unpacking of Base Cabinet

Choose a proper unpacking method according to the actual situation.

1.2.1 For wooden box

Please refer to the main body unpacking method (of wooden box) in the previous pages,use M8 electric drill or M8 wrench to remove the screws and unpack the box.



Picture 5

1.2.2 For cartoon box

Please refer to the main body unpacking method (of carton box) in the previous pages,use scissor to cut the packing tape, take off the package cover and move up the box body.

Picture 6

1.3 Accessories Checking

Main body box:

No.	Items	Quantity
1	Main body	1 unit
2	User manual	1 pc
3	Certification of quality	1 pc
4	Inspection report	1 pc
5	Fuse (5A)	1 pc
6	Fuse (10A)	1 pc
7	Stainless steel hexagon socket head cap screw M10×20 Stainless steel hexagon nut M10 Stainless steel flat washer 10 and spring washer 10	4 sets

8	PP water sink with accessories	1 set
9	Water tap	1 pc
10	Gas tap(optional)	1 pc
11	power cable	1 pc
12	Allen wrench	1 pc

Base cabinet box:

No.	Items	Quantity
1	Base stand	1 unit
2	Exhaust duct	1 pc
3	Duct clamp	2 pc

1.4 Environment requirements

a) Only applicable to indoor operation
b) Environment temperature: 15℃~35℃
c) Relative humidity: ≤75%
d) Pressure range: 70 kPa~106 kPa

Electrical requirements

a) Electrical parameters: consistent with the rated voltage and rated frequency ofthe Fume Hood (See 2.1.4 Technical parameters)

Power supply need to be grounded (Judging method: test the live wire and the neutral wire of the main socket with multimeter. The voltage between live and ground should equal to the voltage of local electrical grid, and the voltage between neutral wire and ground should be zero, otherwise thepower grounding is bad)

1.5 Installation

A. Remove all the package

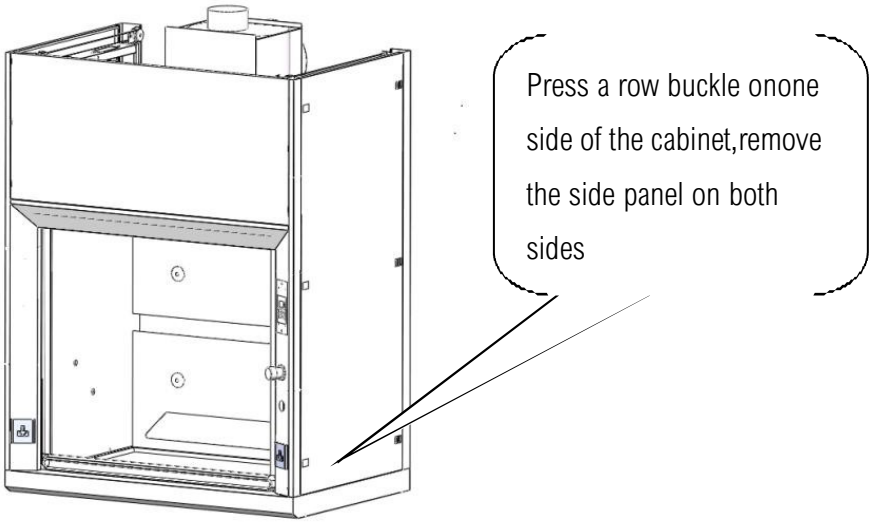
B. Check the surface of the base cabinet and the main body to make sure there is no scratch and deformation

C. Check the items according to the packing list of instruction

D. Keep the equipment close to the installation place

E. Make sure the voltage frequency is the same as the required power supply on the label.

F. Press a row buckle on one side of the cabinet, remove the middle panel from both sides.



Picture 7

Connect base cabinet with main body

a) Put the base cabinet in an appropriate location, open the caster wheel brake,place main body on the base cabinet. Make sure each side is in alignment.

b) Make sure the main body and base cabinet are stable enough to prevent sideslip.Open the doors of the base cabinet and take out the components from the accessory bag

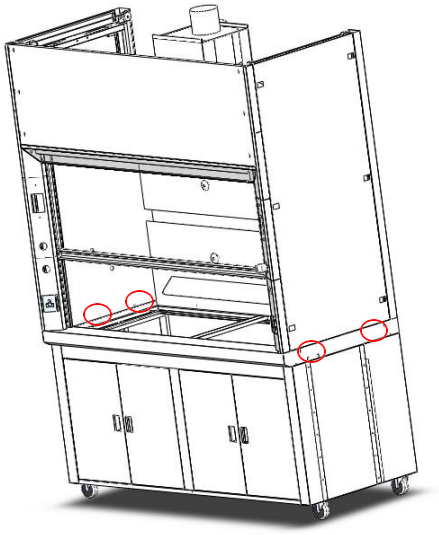
Stainless steel hexagon socket head cap screw M10×20

Stainless steel hexagon nut M10

Stainless steel flat washer 10 and spring washer 10hex nutsM10

As shown in figure 8, connect the base cabinet with the main body and tightenthem, then put the middle panel on the original position.

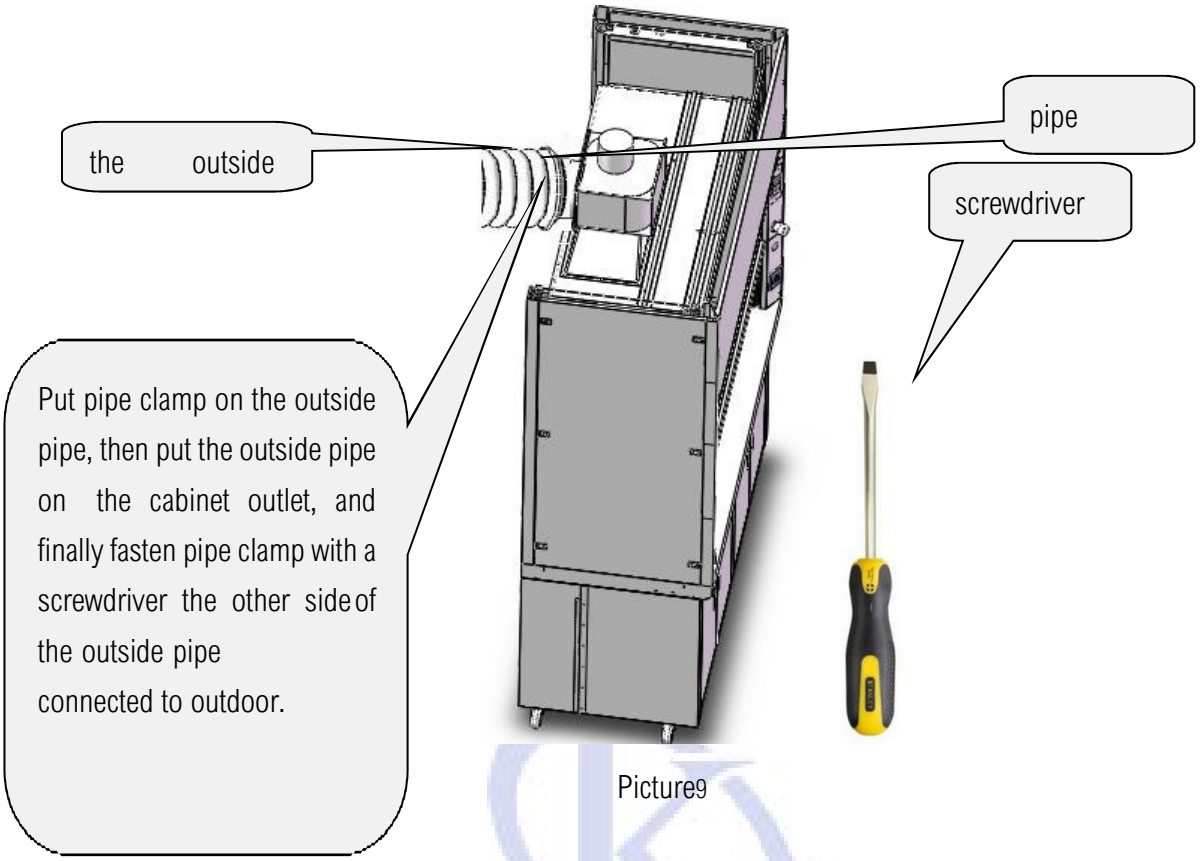
Insert the hexagon socket head capscrews (M10×20) into the holes at the bottom of the main body (refer to the Picture 9). These screws should pass through the main body and the base



Picture 8

c) Installed water tank corresponding mounting holes on the panel, then connect sink pipe in the base cabinet (water tank connected to the sewage pipe has been completed in factory) with laboratory sewage pipe; If equipped with water tap, gas tap, connect their pipes with lab pipe.

d) As shown in figure 9, take pipe clamp and the outside pipe, put pipe clamp onthe outside pipe, then put the outside pipe on the cabinet outlet, and finally fastenpipe clamp with a screwdriver, connect the other side of the outside pipe to outdoor.



Picture9

1.6 Inspection after Installation

Refer to this table and follow the instruction in 2.3.2, check the following items afterpowering on the Fume Hood.

Checking Items	**Normal working status**
Power status	Equipment could be powered on/switched off when press the power button
Fan	Runs normally after pressing the fan button, speed could be adjusted by pressing the adjusting button
Front window	Front window could be moved smoothly by pressing the UP and DOWN buttons
Fluorescent lamp	Lamp lights up after pressing button
Socket	Use multimeter to test voltage output after pressing the socket button

NOTE: Please contact Kalstein technical department or agent for inspection or trouble shooting when problems could not be solved. Methodology of trouble shooting is stated in theAfter-sale Service Manual.

2. User Instructions

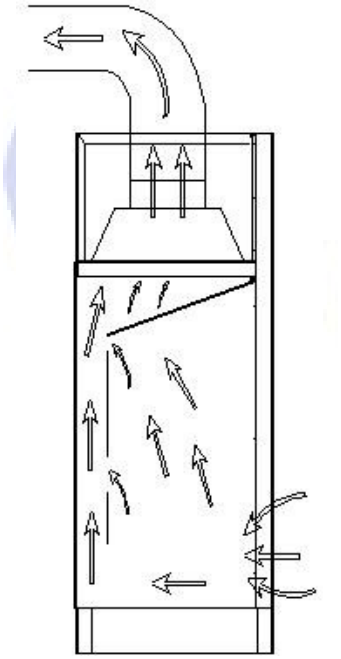
2.1 Functions

2.1.1 Product concept

There will be variety of toxic gasses, aerosol and corrosive substance during the experimentaloperation in the chemical laboratory, in order to protect the operator and laboratory environment also to prevent contaminants in the experiment spread to the laboratory. Fume hood should be used near the sources of pollution

NOTE: Experiments with the use of flammable, explosive substances and strong acids orbases should NOT be conducted by this YR (E) Ⅱ series Fume Hood.

2.1.2 Operating principle/air flow pattern



Picture 10

2.1.3 Protected object

The primary goal of the Fume Hood is to protect operators and laboratory environmentfrom exposure to infectious aerosol and toxic gas which may be generated from the reaction during experiments.

2.1.4 Technical parameters

Model / Parameter	YR0102-4	YR0103-6	YR0104-6	YR0105-6
Rated Voltage AC	220V±10% □		110V±10% □	
Rated Frequency	50 Hz □		60Hz □	
External Dimension (W*D*H))	1000*800*2515 mm	1200*800*2515 mm	1500*800*2515 mm	1800*800*2515 mm
Working Zone Dimension (W*D*H)	790*600*870 mm	990*600*870 mm	1290*600*870 mm	1590*600*870 mm
Power Supply Consumption	400 W	400 W	500 W	500 W
Inflow Velocity	0.3～0.8m/s			
Fluorescent Lamp Consumption	T5 8W	T5 12W	T5 16W	T5 16W
Noise	≤68dB（A）			

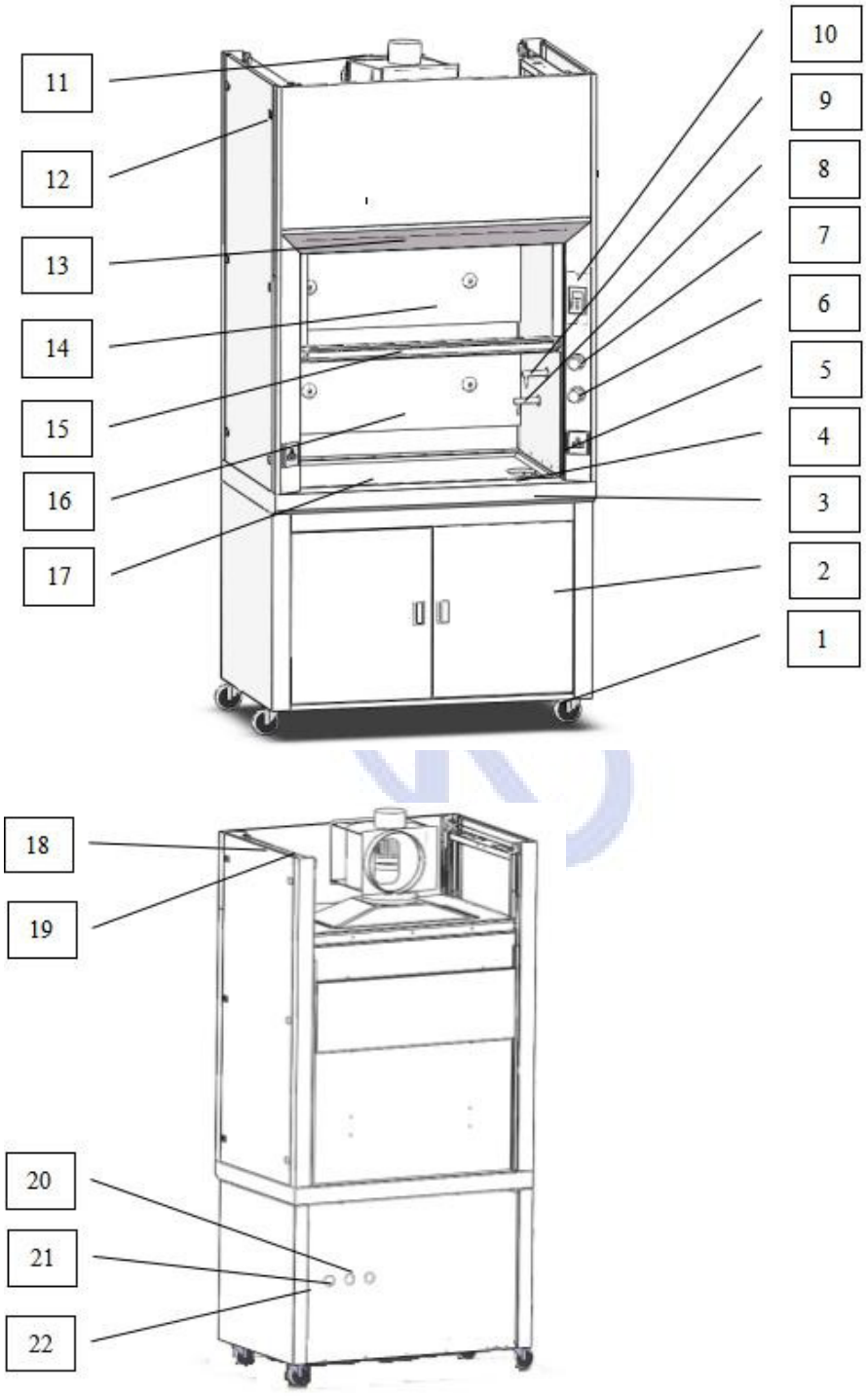
NOTE:

a) Power supply consumption does not include the consumption loaded at working zone, whichshould not exceed 500W.

b) Kalstein reserves the right to make changes in future product design, without reservationand without notification to its users.

2.2 Product Structure

2.2.1 Structural composition of YR (E)Series Fume Hood



Picture 11

1, Caster

13, Fluorescent Lamp

2, Base cabinet

3, Armrest

4, Water sinks

5, Socket

6, Gas tap control knob

7, Water taps control knob

8, Gas taps

9, Water taps

10, Control panel

11, Exhaust outlet

12, Buckles

14, Front window

15, Glass door shake hands handle

16, Phenolic compact laminate

17, Worktable

18, Socket insurance tube

19, Power stock

20, Water outlet

21, Gas inlet

22, Water inlet

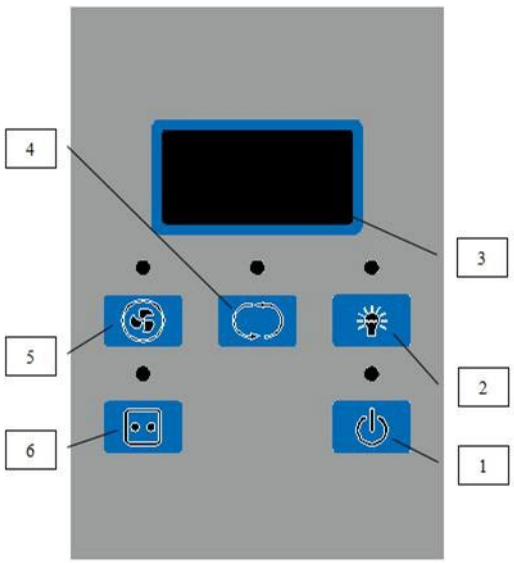
2.2.2 Structure introduction

★Lighting source

LED fluorescent lamp to ensure that the operating zone average illumination meets the standard requirements.

★Control panel

The equipment operation panel, socket, lighting, fan, fan control, power six touch buttons andwindshield display unit, each function working lamp.



Picture12

Soft touch buttons

The main operation can be operated through the touch buttons.

Power button:  ,the main switch of the Fume Hood

Blower (Fan):  ,the control button which show blower working status

Adjust fan speed:  press to adjust the speed of the blower (fan) from F1 to F9, When theF9, press again return to F1.

Fan gear adjustment every time to save the current value, which is in the same working stall asthe last time when turn off the blower.

Fluorescent lamp:  Fluorescent lamp control keys

Socket power:  General controls the working state of power socket

★Socket

The socket is set in the front side of the cabinet, can supply power to the equipment in the operation zone.

⚠: Please make sure the total power of sockets should be ≤ 500W

★Insurance tube(fuse)

Insurance tube is installed on the top of the right side of the cabinet (picture 11), power socket, socket insurance tube used on the fume hood respectively equipped with fire wire and socketinsurance tube. Insurance tube specifications should be consistent with the insurance tube label contents. Replace please refer to label content for replacement.

★Structure

a) Fume hood shell with 1.0 mm cold rolled steel plate after antirust processing, electrostaticspraying.

b) Interior: High grade melamine board with good acid and alkali resistance function, workthe Chemical resistant phenolic resin, can remove facilitate cleaning.

front window:5mm toughened glass

d) Control panel: soft touch buttons, machine good appearance, easy to operate.

e)Electric control system: Prevent overload, prevent to get an electric shock and stable performanceand long service life.

f） Stock: Using special laboratory safety products, fire retardant material of PC materials.

2.3 Instructions of Operation

2.3.1Normal Operation Notice

a) 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.

b) The equipment should be powered off and unplugged before doing any replacement of parts, such as UV lamp and fluorescent lamp.

c) The front window is made of explosion-proof toughened glass. In order to keepthe front window clean and clear, please wipe it by wet soft cloth and keep it away from hydrofluoric acid

d) The air deflector and other internal accessories should be cleaned according tothe use of the Fume Hood

e) The air duct and the blower of the Fume Hood should be cleaned and maintainedregularly in a proper way

f) Fume Hood should be placed in a position where there should be no other equipment or machine within 150mm of the front window

g) Do NOT place any soft or tiny materials (such as soft tissue) on the worktableduring the operation to prevent breakdown of the blower causing by sucking those materials

h) The packed Fume Hood should be stored in a warehouse with relative humidity no more than 75% and temperature lower than 40℃. The warehouse should havegood ventilation performance without acid, alkali or other corrosive gases

i) The maximum storage period is one year. A performance inspection should bedone if the storage period exceeds one year

NOTE: KALSTEIN WILL NOT BE LIABLE FOR ANY RISK OR DAMAGE ARISING FROM YOUR FAILURE TO APPROPRIATELYOPERATION THE FUME HOOD!

2.3.2 Normal Operation Process

a. Connect to a suitable power supply, the LED screen would be lighted as “  ”

b. Press the POWER button  on the control panel. The LED screen would display the operating time of the blower. Raise the front window to a proper height. Press the FAN button  to turn on the blower. The LED screen would display the speed level of the fan memorized from the last timeof operation. The indicator light on the FAN button would be turned on to show the working statusof the blower. Make sure the blower runs at least FIVE minutes before starting any experiment.

c. Press the LAMP button  to turn on the fluorescent light. The indicator light above the buttonwould be turned on to show the working status of the fluorescent light. Press the LAMP button  again, to turn off the fluorescent light. Please refer to the actual condition of illumination in thelaboratory room to decide whether the fluorescent light is needed.

d. Press the POWER button  on the control panel, then power off the Fume Hood.

e. After finishing the experiment, turn off the blower and the fluorescent light and drop the frontwindow to lowest.

f. If power failure happened during the operation causing by interruption of electricity supply ordropping off of plug or other abnormal situations, the equipment could memorize the current operating status automatically and resume those functions when power on again.

2.4 Regular Maintenance

Overall maintenance period

Comprehensive maintenance is recommended to be carried out for a period of 1000 working hours orone year; weekly and monthly maintenance is also required to optimize the performance of the FumeHood.

 t off ALL power before applying maintenance for the equipment!

The accumulated operating time is a vital factor of deciding when the maintenance is needed. A comprehensive record of operation is highly recommended to be taken down after each time of operating.

The blower and the exhaust duct should be inspected and maintained regularly.

Maintenance methods

1) Weekly and monthly maintenance
   a. Clean the external surface and front window (refer to 2.4.1)
   b. Check the various functions of the Fume Hood
   c. Record down the maintenance result
2) Annual maintenance
   a. Check the rope firmness of the front glass window
   b. Check the fluorescent lamp, replace it if needed
   c. Apply for overall performance test of the cabinet annually to ensure thatthe safety performance has met the requirements. User is responsible fortesting costs
   d. Record down the maintenance result

2.4.1Clean the equipment surface

Clean the fume hood regularly (at least every week). Wipe the entire surface with a wringed out soft cotton cloth which has been soaked with concentrated liquid soap. Don't spray any chemicals on the operation panel or other labels, to prevent discoloration or illegibility of the label film. Use a piece ofsoft cotton cloth or towel with non-abrasive household cleanser to wipe the external surface and frontwindow.

2.4.2 Storage conditions

Fume Hood should be stored in a warehouse with relative humidity no more than 75% and temperature lower than 40℃. The warehouse should have good ventilation performance without acid,alkali or other corrosive gases. Storage period shall not exceed one year. Fume Hood stored for more than one year needs to be unpacked and checked before selling and using. Only the tested and qualified safety cabinet could be sold.

2.5 Replacement Parts List

YR0102-4 Fume Hood Replacement Part List

NO.	Part Name	Specification
01	Fuse tube	5A\10A
02	LED Fluorescent lamp holder	T5 8W
03	Blower	PP Centrifugal fan
04	Main control panel	YR(E) series fume hood main control

		panel
05	Front window glass	756*950*5

YR0103-6(E)Fume Hood Replacement Part List

NO.	Part Name	Specification
01	Fuse tube	5A\10A
02	LED Fluorescent lamp holder	T5 12W
03	Blower	PP Centrifugal fan
04	Main control panel	YR(E) series fume hood main control
05	Front window glass	956*950*5

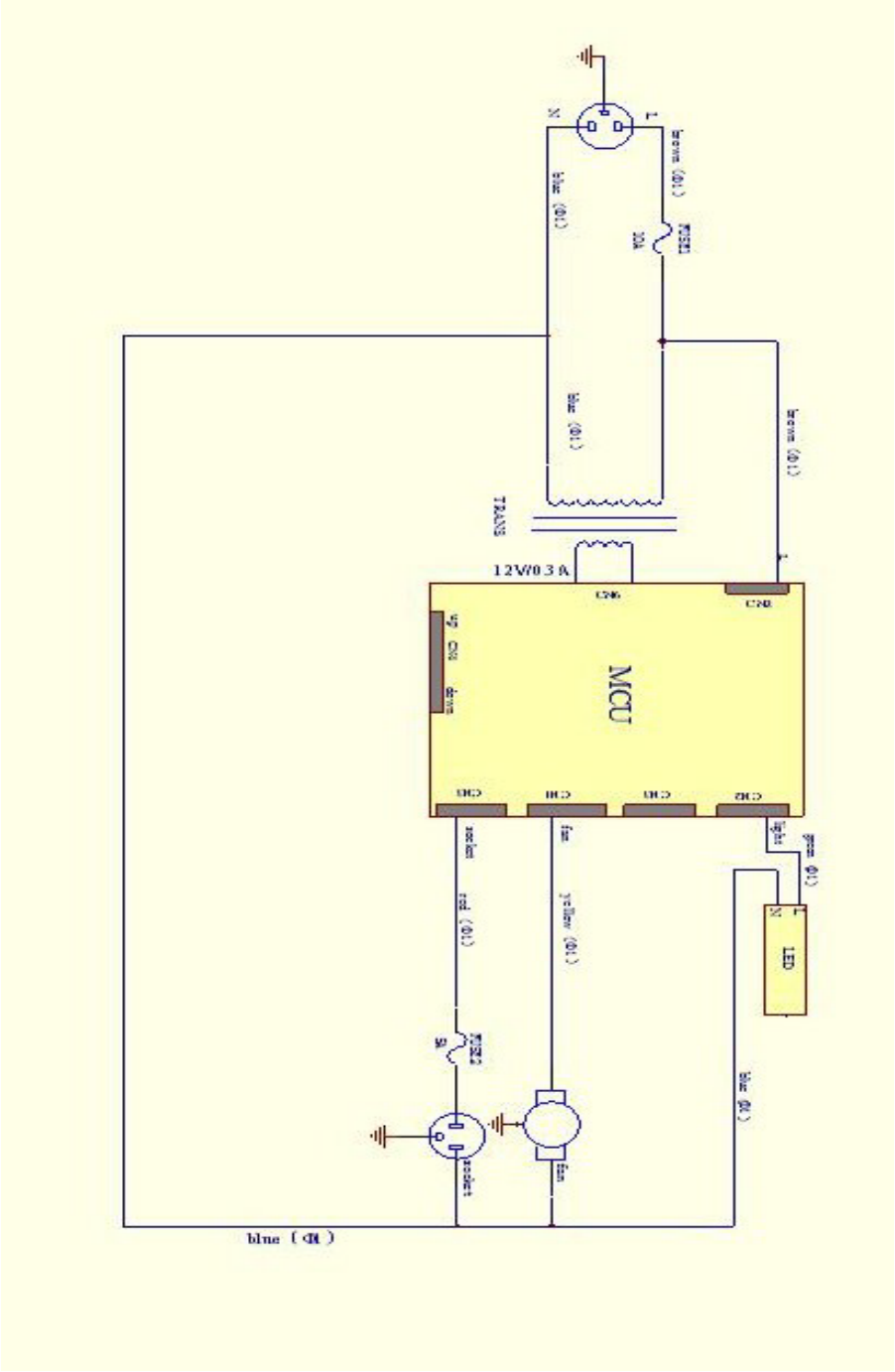
YR0104-6(E)Fume Hood Replacement Part List

NO.	Part Name	Specification
01	Fuse tube	5A\10A
02	LED Fluorescent lamp holder	T5 16W
03	Blower	PP Centrifugal fan
04	Main control panel	YR(E) series fume hood main control
05	Front window glass	1256*950*5

YR105-6(E)Fume Hood Replacement Part List

NO.	Part Name	Specification
01	Fuse tube	5A\10A
02	LED Fluorescent lamp holder	T5 16W
03	Blower	PP Centrifugal fan
04	Main control panel	YR(E) series fume hood main control
05	Front window glass	1556*950*5

2.6 Wiring Diagram



Picture 13

3. Common Failures and Solutions

3.1 Trouble shooting

Please confirm that the power is well connected, whether the power cord is obvious damaged, thecircuit and the fuses are in good condition.

1. In order to ensure the maintenance and use of security, you need check whether the equipment hasa reliable grounding measure according to the manual. To check whether the electrical wiring of the equipment is off, broken and short circuit. It should be excluded if similar situation appears.

Common Failures diagnosis and Solutions

Failures	Checking Part	Suggestion
LED fail to work	Lamp tube	Replace the lamp tube
	Circuit	Check the circuit
	Control panel	Replace the control panel
Button fail to work	Control panel	Make sure the power is well connected and the fuseis in good condition
		Check if the button is broken
		Make sure the connecting wire is well connected
		Replace the control panel
Blower fails to work	Blower	Replace the blower if it is defective
	Circuit	Check the circuit
	Control panel	Replace the control panel
No electricity in socket	Socket fuse	Check if the socket fuse is broken
	Socket	Check if the socket is broken
	Circuit	Check the circuit
	Control panel	Replace the control panel
No electricity in equipment	Power supply	Check whether the power supply is well connected
	Power cord	Check whether the power cord is in good condition

	Fuse	Check if the fuse is damaged
	Potential transformer	Check whether the transformer works normally
	Control panel	Replace the circuit panel
Display fails to work	Connecting cable	Check whether the connecting cable is wellconnected
	Display screen	Check whether the screen is in good condition
	Control panel	Replace the circuit panel

Simple accessories replacement method

3.1.1 Replace the fuse

The roundness fuse holder on the top of the fume hood confirmed by label, it is F5A φ5×20 mm F10A φ5×20 mm. For replacing the fuse, turn off the power and disconnect the plug. Use a Phillips screwdriver and rotate it anticlockwise to unscrew the fuse holder. Replace the fuse inside the fuse holder and then, use a Phillips screwdriver and rotate it clockwise to screw back the fuse holder. Usea Slotted screwdriver to lever up the fuse holder to open it. Replace the fuse inside the fuse holder and then, press the fuse holder back.

Use a Slotted screwdriver to lever up the fuse holderto open and replace it, then press the fuse holder back.

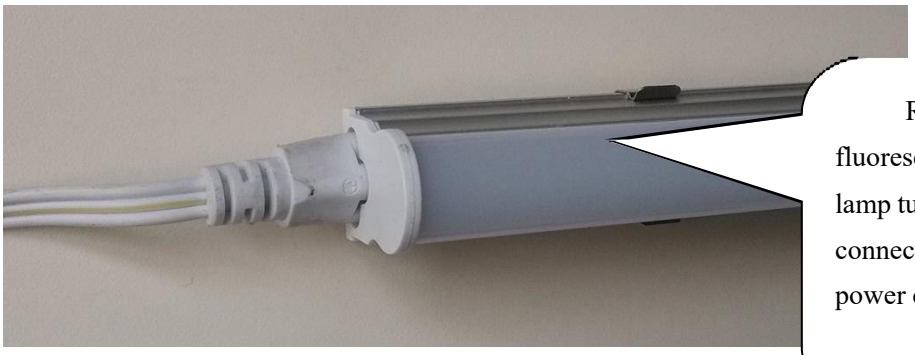
Use a Phillips screwdriver and rotate it anticlockwiseto unscrew the fuse holder. Replace the fuse inside the fuse holder andthen, use a Phillips screwdriver and rotate itclockwise to screw back thefuse holder.

Picture 14

3.1.2 Replace fluorescent light

For replacing the lamp tube, turn off the power and disconnect the plug. Remove the lampshade on the top of the fume hood with the Phillips screwdriver, then you can see the fluorescent light. Strike the power cord of the lamp tube, remove the used fluorescent light. Install a new lamp

tube by pushing it in and connecting with the power cord.



Picture 15

⚠ NOTE: a) The above trouble shooting methods should be done by qualified electricians under safe conditions (cut off power supply). Other components should not be removed. Risk caused by failing to follow those instructions would be responsible by user.

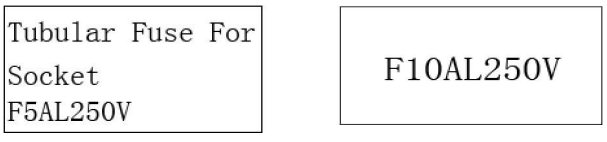
b) Please contact local dealers if a failure could not be traced or solved. Do NOT repair theequipment without a qualified electrician.

c) The trouble shooting and repair of this equipment only could be undertaken by trained andrecognized technicians.

d) Please contact local dealer or agent to order required component or part. The model numberand the serial number of purchased Fume Hood need to be indicated.

3.2 Label Description

3.2.1 Fuse label



Picture 16

Note:5A socket fuse label located under the socket fuse holder.

10A power fuse label, located under the power socket.

Ground label（Picture 17）

Picture 17

4.Warranty

4.1. Warranty is 12 months from EX-factory date (excluding consumable accessories, UV andFluorescent lamp, fuse)

4.2. Kalstein would not be responsible for any repair of damage caused by improper operation

4.3. If the warranty has been expired, Kalstein would still be responsible for repair with relative charges

4.4. Lifetime of biosafety cabinet is 8 years from production date on the label

4.5. Kalstein would provide equipment drawings and necessary technical data for maintenancecompanies or personnel trained by Kalstein engineers

Warranty Declaration: **One-year Warranty, Life-long Maintenance**