Kalstein

Model YR0102-3

Fume Hood YR Series (P)

Instruction Manual

Thank you very much for purchasing our Fume Hood Series YR (P) YR0102-3.

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.

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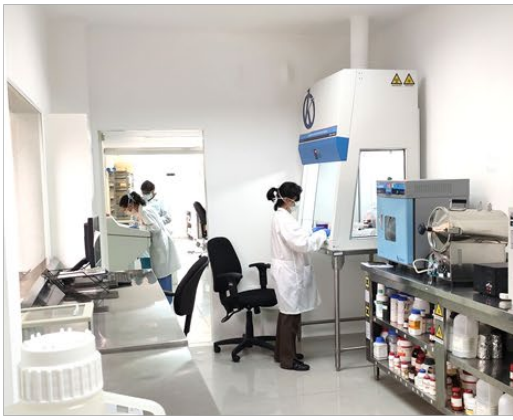

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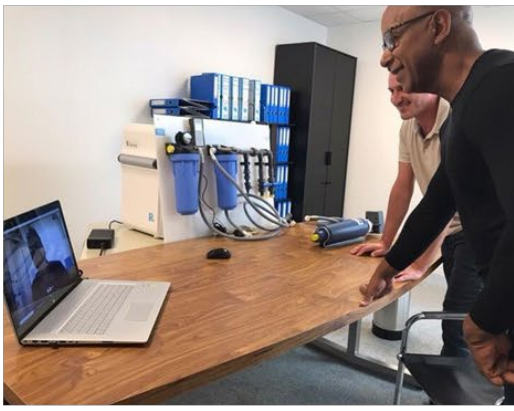

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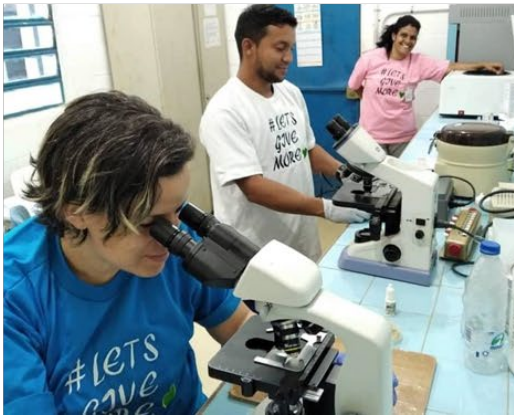
Enjoy of personalized advice for the correct preventive and corrective maintenance of your equipment, thanks to Kalstein's manuals and articles, special catalogues and video tutorials.



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FUME HOOD

Fume Hood (Serie P)

Serie YR0102-3 to YR0105-5

When performing general chemical applications, it is important to have the right fume hood in order to protect the lab technician from inhaling toxic vapors. Often, people tend to confuse a biosafety cabinet with a fume hood. There is to say that they are different devices, because these devices utilize particulate filters, which do not remove chemical vapors, and they should not be working with any kind of chemicals.

Fume Hood function

A fume hood is a ventilation system that exhausts chemical fumes, vapors, gasses, dust mist and aerosol. They serve as physical barriers between reactions and the laboratory operator, offering a great protection against any inhalation exposure, chemical spills, run-away reactions and fires. These devices have a box-like structure with a moveable sash window. An extract blower and ductwork constantly and safely ventilate these devices' hood. Fume Hoods are used to protect lab environment and operator during general chemical applications. By installing proper filter, it can also protect the environment.

Laboratory fume hood

The way a fume hood functions is by maintaining a relatively negative pressure in the hood interior to prevent any contamination from escaping while drawing air in through the hood opening at a consistent rate. There are some recommendations to keep in mind when it comes to handling a fume hood:

- ✓ Do not put your head in the hood when contaminants are being generated.
- ✓ Minimize foot traffic by the face of the hood. Do not make fast movements when taking items in and out of the hood.
- ✓ Keep the hood sash closed as much as possible.
- ✓ Do not use the hood as a waste disposal mechanism. Solvent bottles in the fume hood must be capped when not in use.

LED Display

PP Sink
resistant to acid,
alkali and anti-corrosion

Waterproof Socket

Water&Gas
Remote Control

Fume Hood specifications

These fume hood models have specific features that makes them the ideal device to have in your laboratory. They have an LED screen that displays airflow level. In addition, they have a waterproof socket. Moreover, these models have a water and gas remote control and a PP sink resistant to strong acid alkaline and is anti-corrosion. The measurements for this fume hood YR0102-3 model are 1040 mm x 750 mm x 2220 mm on the external size and 820 mm x 520 mm x 872 mm on the internal size. The YR0103-5 model measurements are 1240 mm x 800 mm x 2200 mm on the external size and 1020 mm x 570 mm x 872 mm on the internal size. In addition, the YR0104-5 model measurements are 1540 mm x 800 mm x 2200 mm on the external size and 1320 mm x 570 mm x 872 mm on the internal size. Finally, the YR0105-5 model measurements are 1840 mm x 800 mm x 2200 mm on the external size and 1620 mm x 570 mm x 872 mm on the internal size.

Advantage:

- ✓ It is safer to use anti-corrosive water tap.
- ✓ Microprocessor control system, LCD display
- ✓ Made of porcelain white PP, resistant to strong acid, alkali and anti-corrosion.
- ✓ Front window which is made of thick transparent toughened glass maximize light and visibility inside the fume hood, providing a bright and open working environment.

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Thanks to your purchase, a donation will be made to a non-profit foundation that fights against breast cancer and helps most vulnerable communities.

www.kalstein.eu

I. Application Range

Welcome to choose YR Kalstein (P) Series Fume Hood. And we sincerely hope that our product can bring you best help.

In order to make you understand more clearly about our Fume Hood, please read this manual carefully before you start to use it. It is very important for you to use our instrument correctly and safely.

And please put the manual in appropriate position in order to use it at random.

It is the new technical instrument in air condition workshop and clean workshop. And it is widely applicable in electron, chemicals, mechanism, medicine, university and lab. Fume hood can be usedin operation of potential risk or unknown infected factors, and the experiment of flammability, explosive volatilization and narcotics. It can protect operator and samples.

Working environment:

1. Only used in door.
2. Environment temperature：15℃～35℃；3.
Relative humidity：≤75%.
4. Pressure Range：70kPa～106kPa.
5. Power supply 220V, 50/60Hz；110V，60Hz

II. Product Features

Features of YR (P) Series Fume Hood

Shell: White PP, thickness 8mm, bending designed to avoid spilling over.

Working zone: The working zone adopting PP board, it has better acid and alkali resistance function.The table board is made up of chemical-resistant laminate, it could be removable for cleaning.

Window: More than 5mm thickness of toughened glass

Control panel: It adopt touched-model switch, this type could make more convenient operation andpretty appearance.

Electrical control system: it has the function of preventing over-load and getting an electric shock. Ithas stable performance to extend lifetime.

Sockets: adopted specialized safety product of laboratory, it has the performance of dirt proof, waterproof and acid-alkali proof. The material is PC Flame-retardant fire.

III. Performance Index

Velocity：

Inflow Velocity: 0.3~0.8m/s

Vibration：

The net displacement is no more than 5μm（rms）when the frequency is from 10Hz to 10kHz

Noise：

The noise is less than 68dB(A) when environment noise is less than 50dB and it is 300mm far awayfrom glass door, above 380mm from working board.

Resisting pressure： 1390V cannot breakdown in 5s.

Grounding resistance：≤0.1Ω.

Power supply: AC 220V，50/60Hz；AC110V 60Hz.

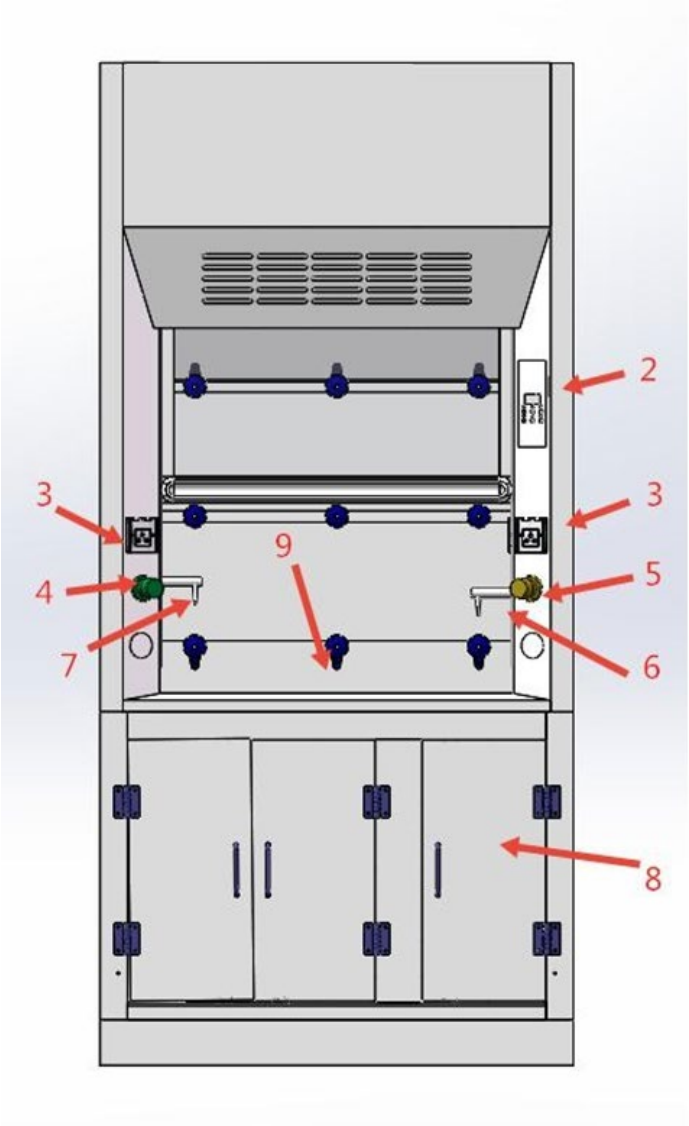
Model		YR0102-3	YR0103-5	YR0104-5	YR0105-5
External size (W * D * H)		1047 * 800 * 2450 mm	1247 * 800 * 2450 mm	1547 * 800 * 2450 mm	1847 * 800 * 2450 milímetro
Internal size (W * D * H)		787 * 560 * 700 mm	987 * 560 * 700 mm	1287 * 560 * 700 mm	1587 * 560 * 700 milímetro
Work Surface Height		820 mm			
Maximum aperture		740 mm			
Airspeed		0,3 ~ 0,8 m / s			
Noise Level		≤68dB			
Lighting Lamp		LED Lamp			
		12 W * 1	30 W * 1	30 W * 2	36 W * 2
Blower		Built-in PP centrifugal fan （2 fans only for FH1800 (P)); Adjustable speed.			
Front Window		Acid and alkali resistant, manual, 5mm tempered glass, adjustable in height.			
Power Supply		AC220V ± 10%, 50 / 60Hz; 110 V ± 10%, 60 Hz			
Electricity Use		330W	360W	360W	360W
Material	Main Body	Made of white PP porcelain, 8 mm thick, resistant to strong acids, alkalis and anti-corrosion.			
	Working Table	Chemical resistant phenolic resin.			
Standard Accessory		Lighting lamp, water tap, gas tap, water sink, Low cabinet.			
		Waterproof plug * 2, PP centrifugal blower, pipe strap * 2 (4 pieces for FH1800 (P) only)			
		4 meter PVC conduit (2 pieces of 4 meter PVC powder only for FH1800 (P)), Diameter: 250mm			
Optional Accessory		PP worktable, epoxy resin tabletop or ceramic tabletop.			
		External PVC centrifugal fan (only need to select when duct is more than 4m)			
Gross Weight		160 kg	198 kg	225 kg	259kg
Pack Size (W * D * H)	Main Body	1188 * 938 * 1612 mm	1388 * 938 * 1612 mm	1688 * 938 * 1612 mm	1988 * 938 * 1612 mm
	Low Cupboard	1188 * 888 * 1000 mm	1388 * 888 * 1000 mm	1688 * 888 * 1000 mm	1988 * 888 * 1000 mm

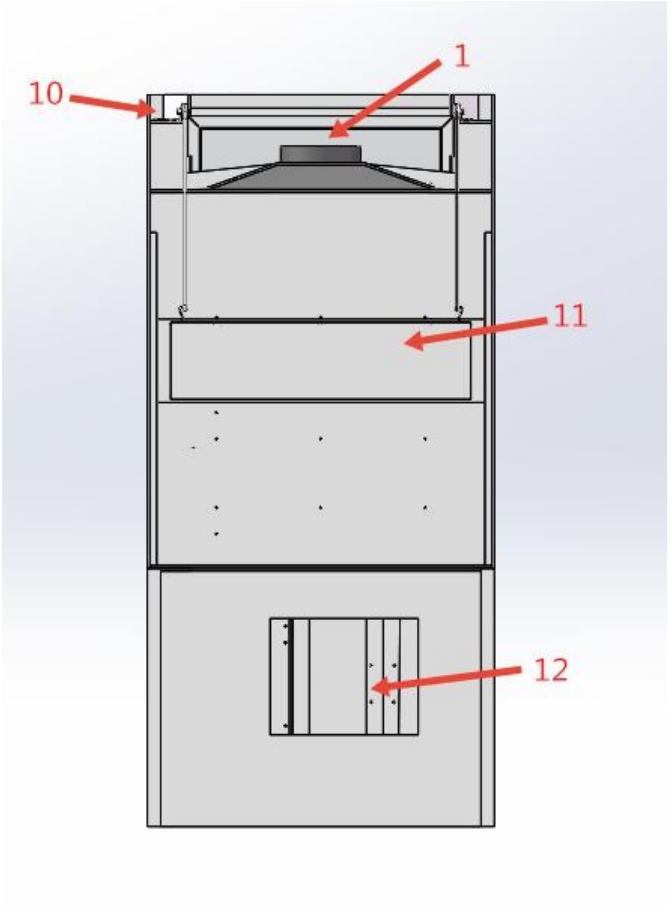
IV. Function and Structure

1. Air Filter System (refer to the airflow mode chart)

Air system is the main part to ensure the performance of the fume hood. It is made up of blower and air duct. As the negative pressure, the room air is absorbed into the work area, then exhaust from the top, finally through the special duct to the outside room.

Structure and Components





1. fan and the wind barrels 2. control panel 3. Socket 4. Water valve 5、Gas valve 6. Gasfaucet 7. fuller faucet. 8. Base cabinet door 9. Table panel 10. Power Supply 11. Clump weight 12. Access wind

★Fluorescent Lamp

The fluorescent lamp could ensure the working area have enough light. It made up of fluorescenttube.

★Control Panel

Fume hood controller takes microcontroller as the core and uses modular design. Its main featuresare full function, simple, clear interface, and easy operation.

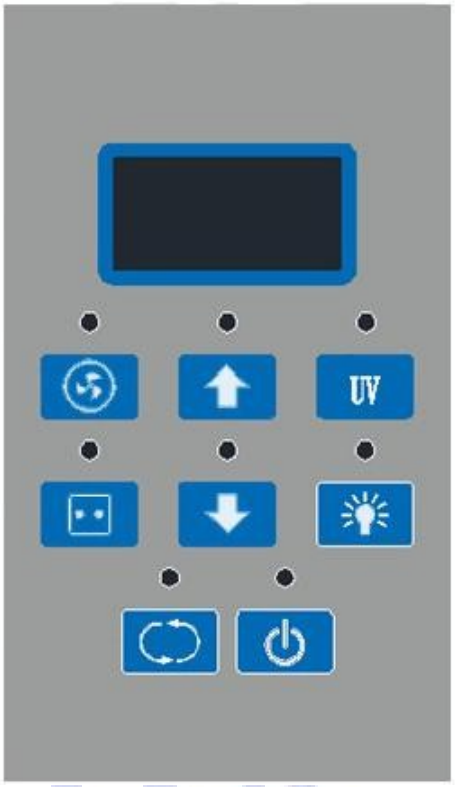
- Large-screen LCD real-time display various states.
- The current and preset angle of air valve display simultaneously.
- The preset angle of air valve can be adjusted at any time. Power off memory function store therunning parameters automatically.
- Automatic delay off function. Automatically shut down after the air valve is closed.
- Limit alarm function to ensure maximum safety of users.

Specifications:

Rated voltage: AC220V (~10% ~+ 7%)
Operating temperature: 0 ℃ --35 ℃ Storage
temperature: -10 ℃ --50 ℃ Humidity: 5% -
90% RH non-condensing
Air valve actuator running time: 28 seconds (0 ° --90 °)

Relay contact output capacity: 5A / AC 250V (resistive load)

Instructions:



Power button, the main switch of the Fume Hood

Fluorescent lamp, press to turn on the light

Blower (Fan), press to turn on the blower

Socket power, press to activate the sockets in the working zone

Adjust fan speed, press to adjust the speed of the blower (fan) from F1 to F9

V. Operation Process

a) Connect to a suitable power supply,

b) Power on the Fume Hood by pressing the power switch under the working zone, the LED screenwould be lighted as "  "

c) Press the POWER button  on the control panel to enable all functions (fluorescent lamp, blower, socket). The LED screen would display the accumulated operating time of the blower.

d) Raise the front window to a proper height.

e) Press the FAN button  to turn on the blower. The LED screen would display the speed level of the fan memorized from the last time of operation. The indicator light above the FAN button would be turned on to show the working status of the blower. Make sure the blower runsat least FIVE minutes before starting any experiment.

f) Press the LAMP button  to turn on the fluorescent light. The indicator light above the button would be turned on to show the working status of the fluorescent light. Please refer to theactual condition of illumination in the laboratory room to decide whether the fluorescent light isneeded.

g) After finishing the experiment, turn off the blower and the fluorescent light and close the frontwindow

h) Press the POWER button  to power off the Fume Hood after all functions have been turnedoff. Press the power switch to disconnect power before plugging out.

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

Fault Exclusion:

Fault phenomenon	Check contents	Treatment
No display after power	Power lines, controller fuse	Restore power, replace the controller fuse
Air valve angle display does not match	Air valve factor is whether appropriate	Adjust the air valve factor
Lighting does not light	Ballast, lamp	Replace the ballast, lamp
Fan does not work	Fan contactor, fan	Replace the fan contactor, fan

★Socket

A socket is set on the right front side of the table-board, it can supply power to the devices in theoperating space.

The power of the device using in the working area should less than 500W.

★Fuse Tube

Fuse tubes are installed at the back of the product, as shown in the structure figure. Fuse tubes are set

in the corresponding fuse tube seat and power socket， Fuse tube specifications complies with the label right under the tube, when change the fuse tube, please refer to the label.

VI. Notes

1. Fume Hood is one of the important lab safety devices. In order to correct usage to ensure safety, please read these instructions and notes carefully. If necessary, please join lab safety and operation skills training.
2. Read this manual before you use the fume hood.
3. Please retain this instruction to vide.
4.All the damage caused by the misuse or change the constructions unauthorized; Kalstein will not take any responsibility.
5.The fume hood should avoid laying nearby the personnel frequency gate/window or the corridor.
6. The power should have good earthing.
7.Before changing the fluorescent lamp, the power should be put off.
8. After packing, the package should be store at the following circumstances: the temperature should be less than 40℃; The relative humidity should below 85%; no aggressive gas exists, and it has good ventilation.
9. The front perspective window of the fume hood is made of explosion-proof toughened glass to keep clean it should the wiped by wet soft close and kept away from HF and other acid.
10. The assembly should be cleaned regularly according to the usage, such as flow guiding plate etc.
11. The flow tunnel and flower etc. should be clean, maintain by a specially assigned person
12. Not any device should be placed within 150mm away from the front window, and it's better to adjust the front window to the low height, as the fume hood needs enough space to ensure the airflow.
13. During usage, please try not to put the soft things (such as the paper towel) on the tabletop, to avoid it been absorbed in the wind hole or blower.
14. For our company product modeling and color pictures, please see the real product for detailed information. Models are subject to change without prior notice.

Declaration: Any danger caused by abuse; Kalstein will not take any responsibility!

VII. Installation and Using Guide

7.1 Installation

7.1.1 Install position

The fume hood is better not be positioned at the place where people pass by frequently, where mayblock the window or light, where may obstruct the door opening.

7.1.2 Preparation before installation

1) Check the surface of package and damage situation.
2) If the equipment was delivered in cold weather, put in a warm place for 24 hours before use.
3) Before breaking the package, move the entire equipment to the place where as close as possible.

7.1.3 Installation

1) Clear the package material and **packing fragments** inside the case.

2)  **Any packing fragments may lead to the damage of filter and air blower.**

3) Confirm the complement of accessories according to the list.

4) Check the condition of fume hood, find if there is any damage on the surface and the componentinside the working zone is tight.

 **Do not put hand in the exhaust fan in any case**

7.1.4 Checking and Debugging

Run fume hood and test its function for trail, to make sure all functions are normal, there should beno noise inside the cabinet, exhaust pipe unimpeded, air blower works like normal.

7.1.5 Training

 After the installation, train the operators basic use steps and cautions.

Untrained or unqualified persons should not use this equipment.

7.2 Usage

7.2.1 Prepare before work

Put the plug-in socket, put the other end to net socket, the required power supply is 220V 50/60 Hz。

7.2.2 Function switch/buttons

See P8 introduction

7.2.3 Operation

When power is ready, turn on the switch, let cabinet electrified. Press the “Power’ key then after the blower runs 5 minutes the cabinet will be ready to use. When running, the LCD screen will show pressure difference between two sides of filter, if the value exceeds 200Pa, the alarm will hoot to remind that filter needs to be changed. If experiment tools need to be put inside the cabinet, do that before using, do not open window frequently during use.

VIII. Maintenance

8.1 Maintaining period

Each year or every 1000 working hours and before each restart, proper maintaining should be applied.

1. Cut the power off before daily maintain.

2. The working hours counting directly affect the maintaining decision, we recommend make aparticular schedule and record as reference

3. Exhaust pipe and outside pipe must be maintained often.

8.2 Recommended maintaining and repairing method

a) Surface Clean

To keep the cabinet clean, clean the cabinet periodically (suggest at least every week), wipe the surface by soft rag dipped soap water. Do not spread any chemical liquid on the screen, in order to avoid color fade or dim letters. Window and cabinet surface should be cleaned by special chemicals.

b) Fuse plug replacement

There is around tube fuse plug base at the right plate of the cabinet, the models are marked in labelsthat are F5A φ5×20 mm for power socket, and F10A φ5×20 mm for zero line, When the plug need to be changed, pluck off power cable plug, press and twist fuse base anticlockwise by straight screwdriver, change the fuse, twist fuse base clockwise. To change the fuse in socket, pry out thefuse base by straight screwdriver to change the fuse, and then push it back.

8.3 Light change

When the light needs to be changed, power off the cabinet, open the front plate, remove the screws at both sides of the cabinet, open the front cover plate, twist off the light tube, replace by a new one, fix the font plate.

8.4 Filter change

If the product is equipped with activated carbon filters or other types of filters, the filters should be replaced in time based on the fume hood's using time and environment. Remove the holding bolt of the back cover plate from the back of the cabinet with a screwdriver, and then remove the bolt on the filter fixed layering with spanner. Take down the old filter and put a new filter of the same modelinto the right position of the cabinet according to the original installation， then tighten bolts and layering and install the back cover plate.

IX. Repairing

9.1 Before Maintenance

1.To check whether the equipment implement grounding measure to ensure use security following instructions. Inspect electrical wiring devices to see if there is falling, short break, and if those occura s, should be canceled at once.

2. Judgment and maintenance for regular fault

1) The screen is not bright

Check whether the power is on and the conditions for the importation, whether the insurance control tube is broken.

2) Fluorescent lamp is not bright. Replace fluorescent lamp

The above-mentioned electrical components must be operated by qualified electrician in the security conditions (cut off power supply). Other parts are not allowed to disassemble, or consequences responsible by users themselves.

1. When the equipment breakdown caused by other fault, and the operators cann ot handle immediately, please notify our company's maintenance department immediately, in order to your safety, do not maintain equipment on your own.
2. Maintenance of the equipment is only recognized by the Kalstein training of technical personnel.
3. If you need to order parts, please contact our technology services sector, please specifying the Fume Hood type and number.

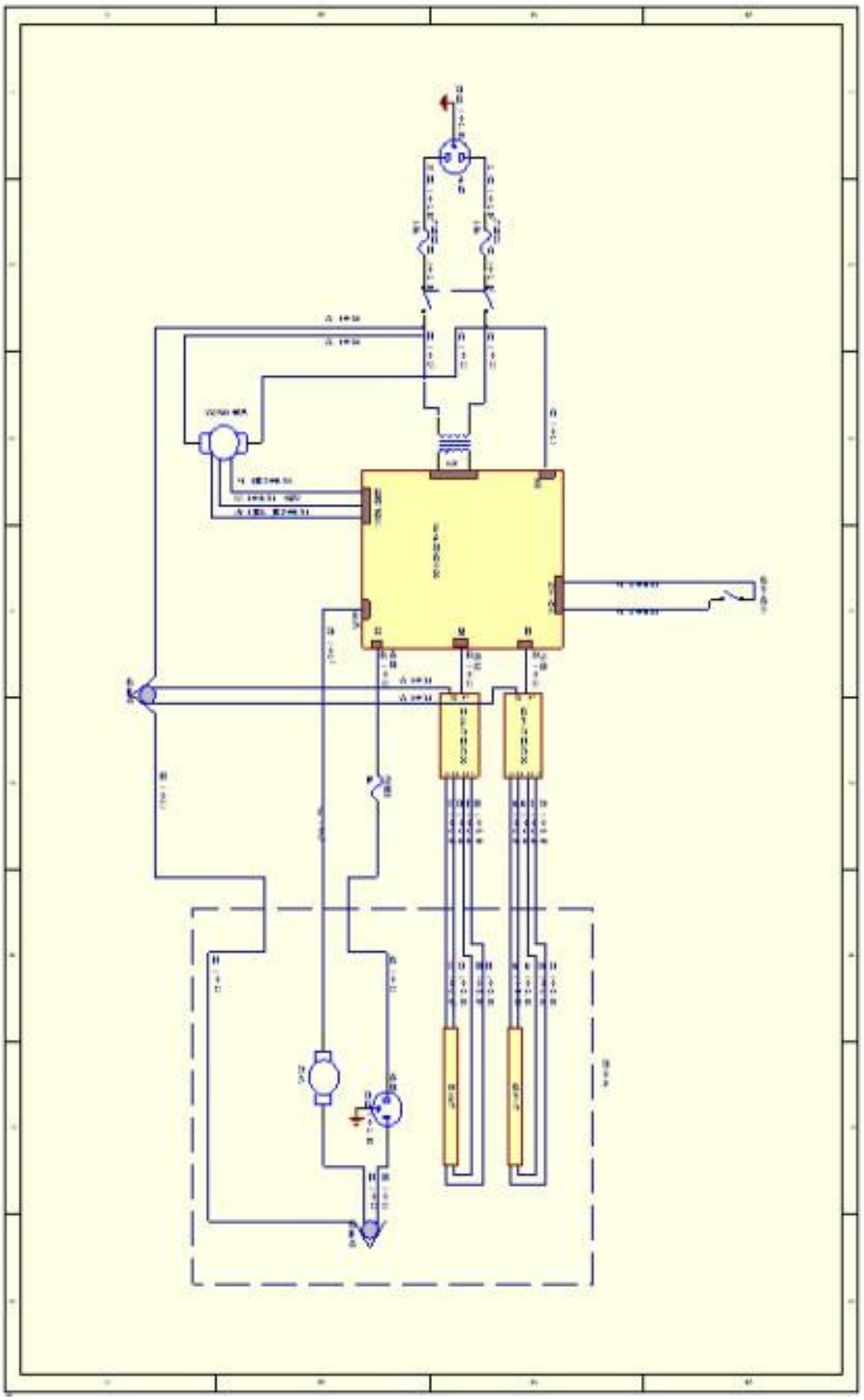
X. Guarantee

- The guarantee period is 12 months from shipment date. (Not include lamp, fuse tube)
- Our company assumes no obligation to warranty the equipment failure or damage due to theimproper use within the warranty period.
- Our company responsible for maintenance after warranty period, the maintenance fee charged. Provide the necessary drawings and technical data to the person or institution which is trained andrecognized by our company.

XI. Spare part list

250V，10A Fuse tube	2 (replacement is allowed by user following instructions) 250V，
5A Fuse tube	1 (replacement is allowed by user following instructions) Power
line	1 piece

XII. Wiring Diagram



XIII. Airflow diagram