

**Ducted Fume Hood**

**BK-FH1200E**

**User Manual**

## **Preface**

Thank you for buying our Ducted Fume Hood.

The function of Ducted Fume Hood is to protect the operator from all kinds of harmful toxic gases, odors, moisture, particles, smoke, steam, soot, dust and corrosive gases generated in the course of experimental operations, while preventing the spread of contaminants in the experiment to the laboratory. It can not only better ensure the personal safety of laboratory personnel, but also provide a good laboratory environment, thus the Ducted Fume Hood is an essential part of the laboratory.

We sincerely hope that our products can bring you the most help to your work.

In order to help you know more of the Ducted Fume Hood, please make sure you read the user manual carefully before use. The contents of this manual are very important for your safe and correctly use of the machine.

Please properly stored after familiarizing with the manual for further facilitate access at any time.

## Catalogue

<b>Preface</b> .....	<b>i</b>
<b>Chapter 1 Product Introduction</b> .....	<b>1</b>
1.1 Scope of Application.....	1
1.2 Technical Parameters .....	1
1.3 Structure and Functions .....	1
<b>Chapter 2 Unpacking Inspection, Installation and Power-on Inspection</b> .....	<b>9</b>
2.1 Unpacking Inspection .....	9
2.2 Installation .....	10
2.3 Power-on Check.....	13
<b>Chapter 3 Product Use Precautions</b> .....	<b>14</b>
3.1 Storage Requirements .....	14
3.2 Transportation Requirements .....	14
3.3 Precautions.....	14
<b>Chapter 4 Common Fault Analysis and Solutions</b> .....	<b>16</b>
4.1 Common Fault Analysis.....	16
4.2 Simple Parts' Replacement .....	17
<b>Chapter 5 Routine Maintenance</b> .....	<b>19</b>
5.1 Periodic Maintenance.....	19
<b>Chapter 6 Label Introduction</b> .....	<b>20</b>
6.1 Fuse Label.....	20
6.2 Grounding Label .....	20
6.3 Film of Front Panel .....	20
6.4 Load Requirement Label.....	20
<b>Chapter 7 After-sale Service</b> .....	<b>21</b>

# Chapter 1 Product Introduction

## 1.1 Scope of Application

There are a variety of harmful odorous gases, odors, moisture and corrosive substances produced by experimental operations in the laboratory. To protect users for their safety and prevent the spread of contaminants in the experiment to the laboratory, the Ducted Fume Hood is needed near the source of pollution.

### Working Environment:

- (1) Indoor use.
- (2) Ambient temperature: 15°C~35°C.
- (3) Relative humidity: 80%.
- (4) Atmospheric pressure range: 70 kPa~110 kPa.
- (5) Power supply: 220 V/50 Hz.

## 1.2 Technical Parameters

The basic technical parameters of this product are shown in Table 1 as follows:

Table 1

Parameter	Model BK-FH1200E
Rated voltage	220 V
Rated frequency	50 Hz
External dimension (mm)	1200×800×2550
Operational dimension (mm)	990×605×900
Rated power	625 W
LED power	12 W
Speed	0.3 m/s~0.8 m/s
Noise	≤ 65 dB (A)



### Note

- Consumption power includes the power of the operating area load (the load cannot exceed 500 W).
- The company reserves the right to change the design of the product without prior notice.

## 1.3 Structure and Functions

### 1.3.1 Features of structure

- (1) The cabinet is designed with vertical straight surface, the operation perspective of which is open and more humane.
- (2) With high-quality cold-rolled steel plate material and electrostatic spraying on the surface, it has a good degree of finish.
- (3) The operating area of the fume hood is made of Phenolic Resin, which is resistant to

acid and alkali corrosion and can be dismantled for easy cleaning.

(4) Its front window adopts 5 mm thick tempered glass, which better protects the safety of personnel and experiments.

(5) With weighted manual front window, the opening height of front window can be adjusted at will.

(6) Configure with large space bottom cabinet, it can be placed in the laboratory supplies. With surface of electrostatic spraying, it is more beautiful and practical.

(7) Configure with panel mounted water cock and water supply flow control valve and laboratory sink, it is convenient for experiments.

(8) Configure with 5-inch LCD touch screen, the operating status of the machine is at a glance.

(9) Built-in PP centrifugal fan, it has large air volume, low noise, long service life, which is easy to install.

(10) The side of the cabinet is equipped with lifting handle, which is convenient for handling operation when the Ducted Fume Hood is installed.

### 1.3.2 Structure

Shown as Figure 1:

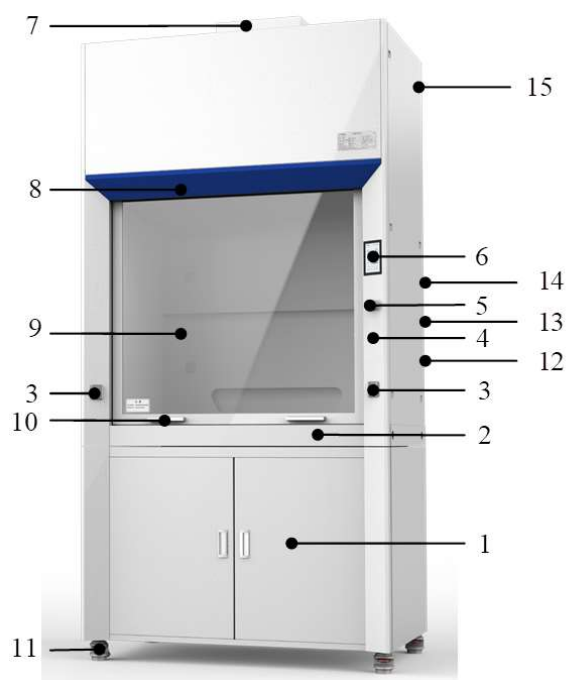


Figure 1

**1** Base Cabinet; **2** Rhone (inside); **3** Splash-proof Socket; **4** Switch of Faucet (optional 1); **5** Switch of Faucet (optional 2); **6** Touch Screen; **7** Air Outlet; **8** LED lamps (inside); **9** Front Glass Door; **10** Handle; **11** Caster; **12** Fuse Holder (back); **13** Power Socket (back); **14** Boat Switch (back); **15** Hasp










### 1.3.3 Functions

(1) Initial interface

Initial interface is the interface that is automatically entered after power on, and is the most commonly used interface when the instrument is running. The interface is shown as follows.



Figure 2


- Click  to open or close the LED lamps.
- Click  to open or close the fan.
- Click  to open or close the splash-proof socket.
- Click  to open or close the voice broadcast.
- Click  to enter Timing Switch/Fan Settings/Standby Settings interface.
-  shows the real-time velocity.
-  shows the real-time volume.
-  shows the real-time temperature.
-  shows the real-time humidity.



### Caution

- The power of the instrument used on the socket can not exceed 500W.
  - The splash-proof socket can be waterproof only when its front cover is put down; when the front cover is opened, the socket cannot be considered as waterproof.
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### (2) Settings interface

Click  to enter settings interface. You can choose Timing Switch/Fan Settings/Standby Settings to enter corresponding interface.

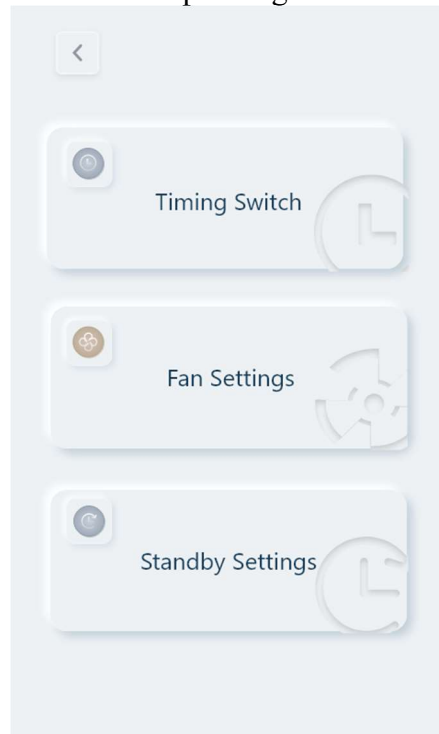


Figure 3

### (3) Timing Switch

Click "Timing Switch" to enter timing switch interface in above figure. Click on the corresponding numbers in the different areas below and enter the number of minutes you want to set in the pop-up keypad to automatically perform the time countdown for the corresponding function.

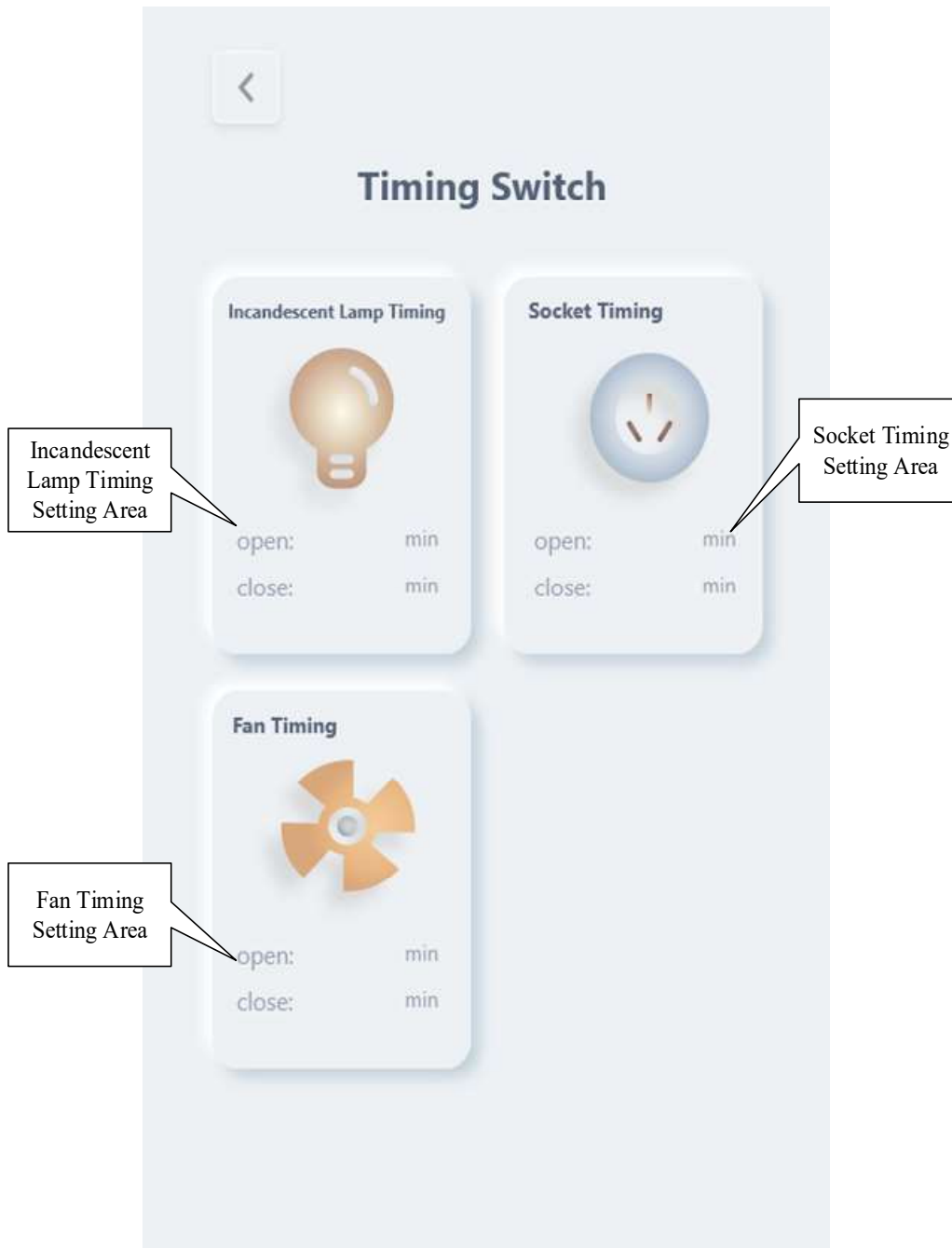


Figure 4

#### (4) Fan Settings

Click on the "+/-" in the velocity and fan parameters to adjust the velocity and fan parameters according to the figure below.



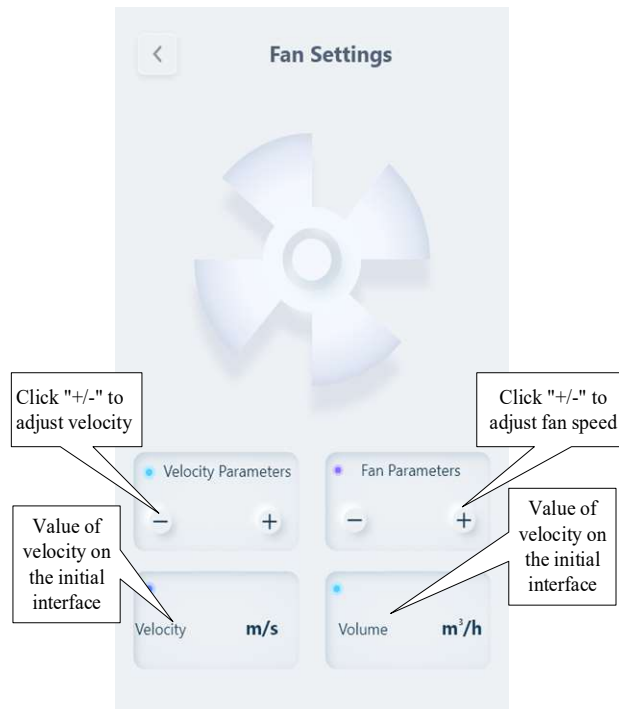


Figure 5

#### (5) Standby Settings

This function is to set the rest time of screen. After setting, if there is no operation in the screen in this time period, it will enter the standby state. In the standby state, each function operates normally and the screen becomes dark.

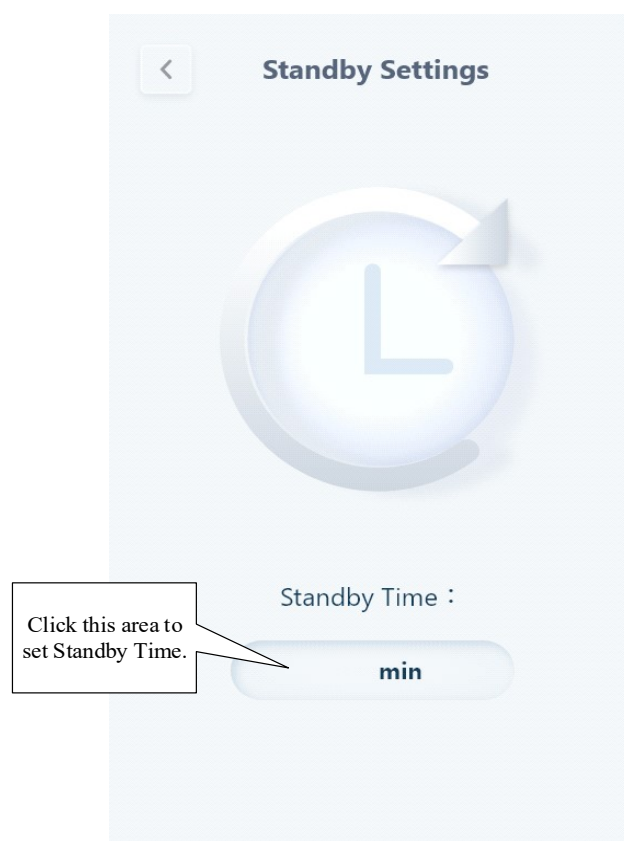



Figure 6

(6) Glass door


The glass door can be raised and lowered by dragging the glass door with two hands.


#### 1.3.4 Instructions for use

(1) Connect the power, open the "Boat Switch" on the back.

(2) Then it enters initial interface when the screen light up. Click , the color of display area changes and the LED lamps open; click it again, close the LED lamps (open or close the LED lamps according to your ambient lighting conditions of the laboratory).

(3) Raise or lower the glass door by hands to change the height of the glass door according to your experimental contents.

(4) Click  to open the fan.

(5) Click  to open the splash-proof socket.



#### Caution

The power of the instrument used on the socket can not exceed 500W.

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(6) If the power supply is interrupted during the process of use or power plug is off and other abnormal circumstances that cause power failure, the device will maintain the last working state once the power reconnect. That is, when the power reconnect, it is still the working state before happens power failure. The instrument has power failure memory

function.

(7) After use, turn off the power.

(8) Empty the water from the equipment. Turn off the switch of the water and gas faucet (optional).

(9) After completing the day's maintenance, lower the front glass window to the lowest level.



**Caution**

Don't put the instrument at the place that is hard to operate and easy to disconnect.

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**1.3.5 Airflow mode protection area map**

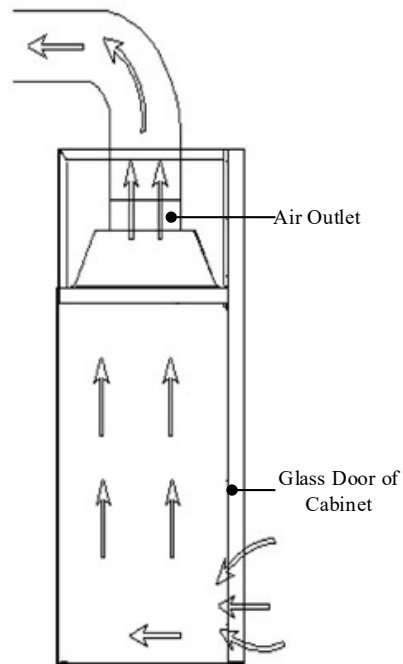


Figure 4 Side view

## Chapter 2 Unpacking Inspection, Installation and Power-on Inspection

### 2.1 Unpacking Inspection

Before unpacking, please ask the customer to check whether the outer packing box is intact and whether the shipping mark has changed. If the package is damaged or the transport mark is abnormal, please take photos and keep them, then notify our company at the first time in order to normally use the instrument.

When opening the box, you should civilized, not rough, brutal, avoid hurting the unit inside the box or causing personal injury.

#### 2.1.1 Cabinet unpacking

Option 1: Use M8 wrench to disassemble, as shown in Figure 8.



Figure 8

Option 2: Disassemble with electric drill with M8 socket, as shown in Figure 9.



Figure 9

After removing the above screws, just remove the wooden box to the left and right as shown in Figure 10.

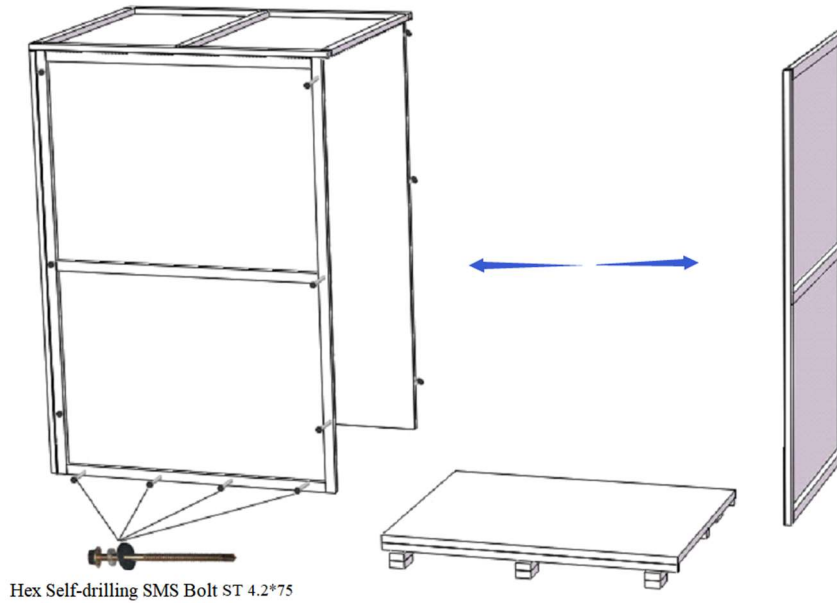


Figure 10

After unpacking, first of all, please confirm whether this product is the ordered product, then carefully check the contents of the packing list whether there are missing parts and whether there is any damage caused by transportation to each part. If there is damage, please contact our company at the first time after receiving this product.

If the phenomenon of self-modification is found, it will not be covered by the warranty.

### 2.1.2 Accessory inspection

Carefully count whether the accessories and information are complete according to the packing list.

## 2.2 Installation



### Caution

This Ducted Fume Hood should be installed by our company's trained and qualified engineers.

### 2.2.1 Preparations before installation

- (1) Remove all packing components;
- (2) Check the outer surface of the main unit for scratches, deformation or foreign objects;
- (3) Carefully inventory accessories and information against the packing list;
- (4) Move the entire unit to a site as close as possible to the final location and easy to install;
- (5) Check whether the power voltage and frequency are consistent with the voltage and frequency shown on the label.



### Caution

The support part is placed at the rear of the Ducted Fume Hood and should be taken out before installation; it is strictly forbidden to place or disassemble it upside down when handling the cabinet.

### 2.2.2 Installation steps

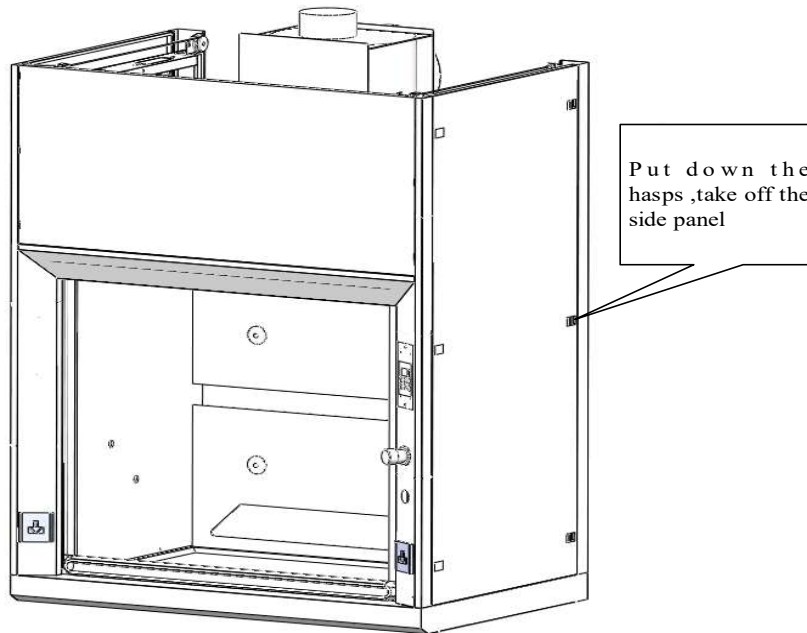


Figure 11

Put down the hasps ,take off the side panel. Then remove the side panel on the other side follow the same method.

The method of connecting upper cabinet with base cabinet is as follows:

(1) Place the base cabinet in a suitable installation position, brake the castor brakes, then place the fume hood cabinet on top of the base cabinet and adjust the cabinet to be flush with the left, right and rear sides of the base cabinet.

(2) Fix the upper and lower cabinets to prevent side slippage, open the bottom cabinet door, and then out take stainless steal inner HXBTs M10\*20, flat washers  $\phi 10$ , spring washers  $\phi 10$ , nuts M10 from accessory box in the attachment.

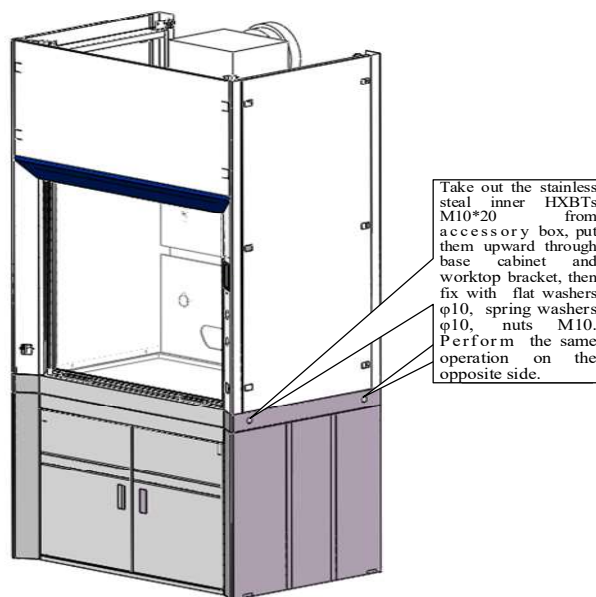


Figure 12

(3) Install the sink in the corresponding sink installation hole on the counter top, and then connect the pipe of the sink in the bottom cabinet (the sink and the drainage pipe have been connected to the factory) with the laboratory drainage pipe; if there are faucets and gas taps as an option, connect the pipes of the faucets and gas taps with the laboratory pipes.

(4) As shown in Figure 13, take the pipe card and external drainage pipe, first set the pipe card on the external drainage pipe, then set the external drainage pipe on the cabinet outlet, and finally fasten the pipe card with a word screwdriver, and connect the other side of the external drainage pipe to the outside.

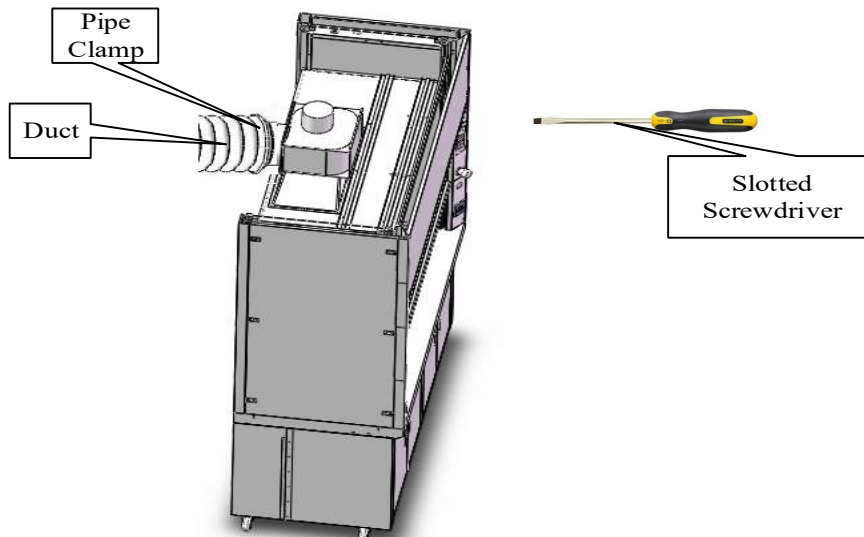


Figure 13

▲ Note that before pushing and pulling the front window glass, you need to loosen the fixing screws on both sides of the counterweight plate on the back of the equipment by a Phillips screwdriver, in order that the front window glass can be pushed and pulled smoothly.

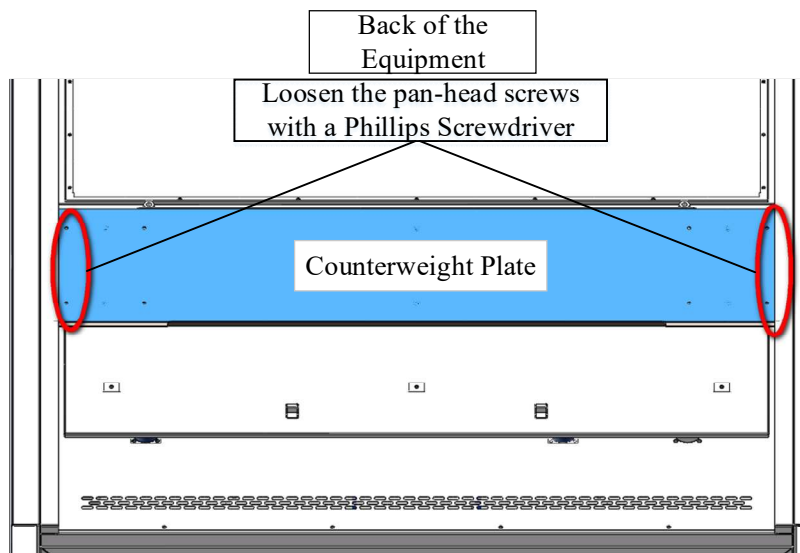


Figure 14

## 2.3 Power-on Check

After power on, check the following items according to the normal operation and use process:

Check Items	Normal Situation
Power	Connect the power supply, instrument power on.
Fan	Rotate the knob switch of fan, fan runs normally and achieve stepless speed regulation.
Glass door	Move the glass door up and down, it slides up and down smoothly.
LED lamps	Press the push-button switch of LED lamp, the LED lamp is on.
Splash-proof socket	Press the push-button switch of splash-proof socket, and the multimeter detects the output power supply voltage.



### Caution

If there is any problem, please contact your local dealer for debugging and installation adjustment.

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- This product should be placed in laboratory or teaching laboratories.
- The location of installation should be far from dust and vibration sources.
- Be sure to plug the power supply into an outlet with a ground wire and ensure that the grounding terminal is reliably grounded and use a power supply with a leakage protection device.
- The interior and surroundings of the instrument must be carefully cleaned after installation with a vacuum cleaner or a tool that does not produce fibers.
- After installation and cleaning, the average wind velocity of the working area can be measured by an anemometer. When the wind velocity is not greater than 0.3m/s, the knob switch of fan should be adjusted to increase the wind velocity; conversely, when the average wind velocity is not less than 0.8m/s, the wind velocity should be reduced.



## **Chapter 3 Product Use Precautions**

### **3.1 Storage Requirements**

Ducted Fume Hood should be stored with the relative humidity not more than 80%, the temperature less than 40 °C, good ventilation, no acid, alkali and other corrosive gases in the warehouse. Storage cycle shall not exceed one year. If the Ducted Fume Hood stored for more than one year, it need to be unpacked and inspected. Only qualified Ducted Fume Hood can be put into use.

### **3.2 Transportation Requirements**

Ducted Fume Hood should be transported in full accordance with the requirements shown on the outside surface of the packing box. The buyer should carefully check the integrity of the packing box when receiving the Ducted Fume Hood with the packing box sent by the logistics company. If the packing box has damage, extrusion and other phenomena, please refuse to sign and contact us in time.

### **3.3 Precautions**

- (1) Ducted Fume Hood is an important laboratory safety instrument. To ensure safety and normal use, please read this user manual and precautions carefully and attend relative laboratory safety and skills training.
- (2) Please read this user manual before use.
- (3) Please save this user manual for future reference.
- (4) The company will not be responsible for any damage caused by improper use or self-alteration of the product structure.
- (5) This product is indoor use instrument, please do not use it outdoors, please do not put it in the place of high-speed dust and vibration sources.
- (6) Avoid placing the instrument near doors/windows or corridors where people flow frequently.
- (7) First put the product in position before wiring, please confirm whether the rated voltage and frequency of the product are in consistent with the parameters of the input power supply, and the environmental power socket should have good grounding.
- (8) If the operation is found to be abnormal, the power should be cut off in time, and notify the relevant personnel for maintenance.
- (9) When replacing LED lamps, please turn off the power and unplug.
- (10) The cabinet with packaging should be stored in a temperature of not more than 40 °C, relative humidity of not more than 75%, no corrosive gases, well-ventilated environment.
- (11) The viewing window of Ducted Fume Hood is made of explosion-proof tempered glass. In order to keep the window clean, it should be wiped with a moist soft cloth and kept away from hydrofluoric acid.
- (12) Please do not use volatile oil, thinner, corrosive liquid to wipe the cabinet, avoid hurting the surface of the cabinet or causing changes in the shape of the cabinet.
- (13) The lining accessories of Ducted Fume Hood should be cleaned regularly according to the use condition.
- (14) The ducts, fans, etc. of Ducted Fume Hood should have a person to regularly clean maintain.
- (15) There should not be any large experimental instrument 150 mm from the glass window, there should be sufficient space, which not affect the flow of air.

(16) In the process of instrument use, do not put soft, fine items (for example: soft tissue) on the table, avoid being sucked into the negative pressure duct and fan, thus affecting the operation of the instrument.

(17) The picture, product, shape and color of our company shall prevail in kind, and the product model is subject to change without notice.

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**Caution**

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For the record: for not using the instrument in accordance with the methods specified in this manual, it may damage the protection provided by the instrument. If there are risks caused by your false operation, the company does not assume responsibility!

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## Chapter 4 Common Fault Analysis and Solutions

### 4.1 Common Fault Analysis

Before diagnosing the fault, please confirm whether the power supply is connected, whether the power cord is obviously broken, whether the fuse is good, and whether the push-button switch of main power is in conduction.

Fault	Part	Judgement Basis	Solution
LED lamps does not light up	Lamp	Check that lamp tube is broken	Replace the broken lamp tube.
	Wire	Check that wire is poor connect	Wiring again.
Button does not work	Wire	Check that power is poor connect	Reconnect the power.
		Check that fuse is broken	Replace the broken fuse
		Check that button is broken	Replace the broken button
Fan failure	Fan	Check that wire is poor connect	Wiring again.
	Wire	Check that fan is broken	Replace the broken fan
Splash-proof socket has no power	Fuse of splash-proof socket	Check that wire is poor connect	Wiring again.
	Splash-proof socket	Check that fuse is broken	Replace the broken fuse
	Wire	Check that splash-proof socket is broken	Replace splash-proof socket.
No energizing	Power	Check that wire is poor connect	Wiring again.
	Power cord	Check that power is normal	Replace power.
	Fuse	Check that power cord is obviously broken	Replace the power cord



#### Caution

- The operation of the above electrical components must be carried out by a qualified electrician under safe conditions (cut off the power). And other parts are not allowed to disassemble, otherwise the consequences are borne by the user.
- If there is other failure that is not in above list, and the operator can not immediately remove, please immediately notify our company's service center. Please do not repair the instrument yourself for the sake of your safety.

- 
- The maintenance of this instrument should only be undertaken by trained and approved technicians.
  - If you need to order parts, you can inform our service center, and indicate us the model and number of the multifunctional workstation you have purchased please.
- 

**Consumables part:** LED lamps, fuses can be provided by our company or customers can purchase the corresponding specifications in the market. Please contact us for the specifications of the material when you replace it by yourself, or you can apply for the replacement by our company. The company will charge a certain service fee and consumables fee for the replacement.

## 4.2 Simple Parts' Replacement

### 4.2.1 Replacement of fuse

The power socket is located at the top of the front panel of the Ducted Fume Hood. When replacing it, first turn off the power and unplug, use a screwdriver to lift out the fuse holder and replace the new fuse, and then press back.

Fan fuse holder and splash-proof socket fuse holder are located at the top of the front panel, when replacing them, first turn off the power and unplug them, use a Phillips screwdriver to press and screw the fuse holder counterclockwise, take off the fuse holder and replace it with a new fuse, then press and screw the fuse holder clockwise.

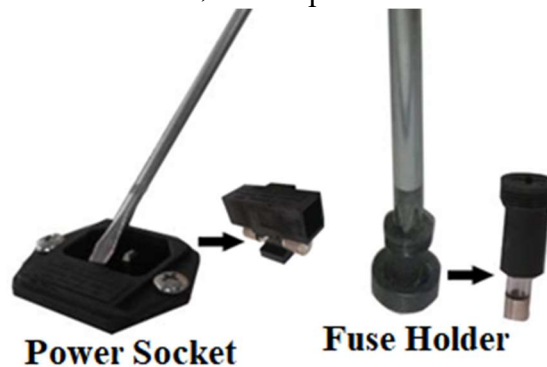


Figure 15

### 4.2.2 The LED lamp replacement

When the LED lamp of the Ducted Fume Hood is broken and needs to be replaced, mention the front window glass to the highest height, then disconnect the power supply, remove the LED lamp power cord, break the LED lamp holder, take off the old LED tube, take the new lamp and replace it in place, then connect the LED lamp power cord, and test the power supply without error.

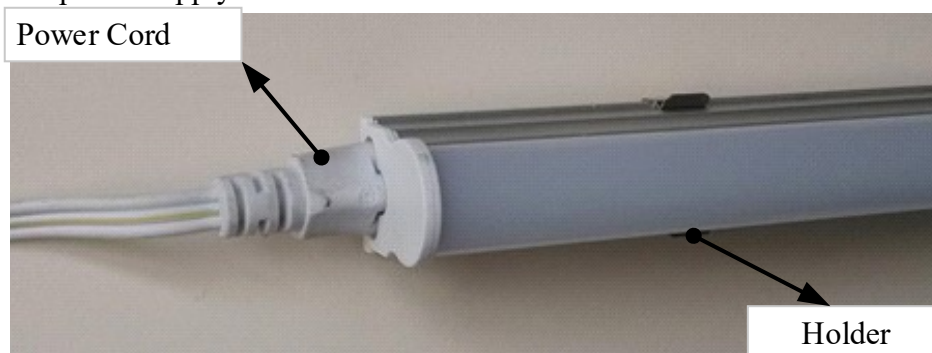


Figure 16



## Chapter 5 Routine Maintenance

### 5.1 Periodic Maintenance

#### 5.1.1 Weekly or monthly maintenance

- (1) Surface cleaning;
- (2) Check the various functions of the instrument for abnormalities;
- (3) Record this maintenance in the record.

#### 5.1.2 Annual maintenance

- (1) Checking the solidity of the wire rope part of the front glass door;
- (2) Checking the LED lamps;
- (3) Apply for annual testing of the overall performance to ensure the safety of Ducted Fume Hood performance, testing costs are the responsibility of the user;
- (4) Record this maintenance in the record.

Surface cleaning: In order to keep the cabinet clean, please clean it regularly (recommended at least once a week), wipe it with a soft cloth dipped in soapy water and then wring out and wipe. Please do not spray any chemical reagents on the operation panel or other labels to prevent discoloration of the label film or unclear handwriting. Clean the outer surface of the cabinet and glass with a flexible cleaner or glass-specific cleaner.

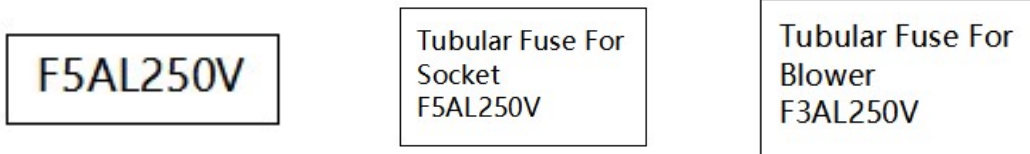


#### Caution

- Cut off the power supply before doing routine maintenance.
  - Since the statistics of the operation time will directly affect the judgment of the maintenance needs, we suggest that a detailed record of the operation time should be prepared for reference and inquiry when using this instrument.
  - For the fan and external exhaust pipe, regular inspection and maintenance must be carried out.
-

## Chapter 6 Label Introduction

### 6.1 Fuse Label



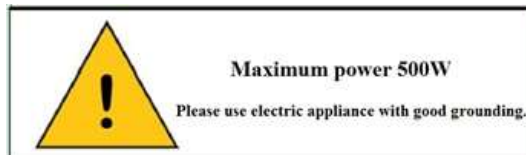
### 6.2 Grounding Label



### 6.3 Film of Front Panel



### 6.4 Load Requirement Label



## **Chapter 7 After-sale Service**

**7.1** The warranty period of the purchased product and maintenance contents are subject to the sales contract.

**7.2** Warranty period of the instruments and instrument, if the user improper use caused by failure or damage, the company does not assume warranty obligations.

**7.3** After the warranty period, the company is also responsible for maintenance, but charges the corresponding maintenance fees.

**7.4** Instrument's use period is 8 years, production date see product label.

**7.5** The Company trains and approves the maintenance unit and maintenance personnel to provide drawings and some necessary technical data of the instrument.