

Fume Hood FH(X) Series

(Apply to FH1000(X) FH1200(X) FH1500(X) FH1800(X))

Maintenance Manual

Version 2018.02

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Part 1. Failure and Maintenance





Note: pls let professionals operate the following maintenance, to avoid accidents caused by improper operation.

Failure 1. The device is not powered

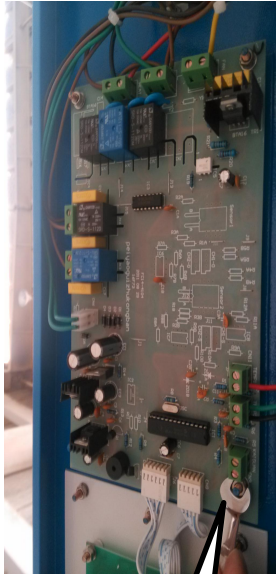
It means there is not any response, when the power switch and control panel switch is turned on(buzzer does not ring, display screen does not light, button has no response).

Handling methods and steps are as below,

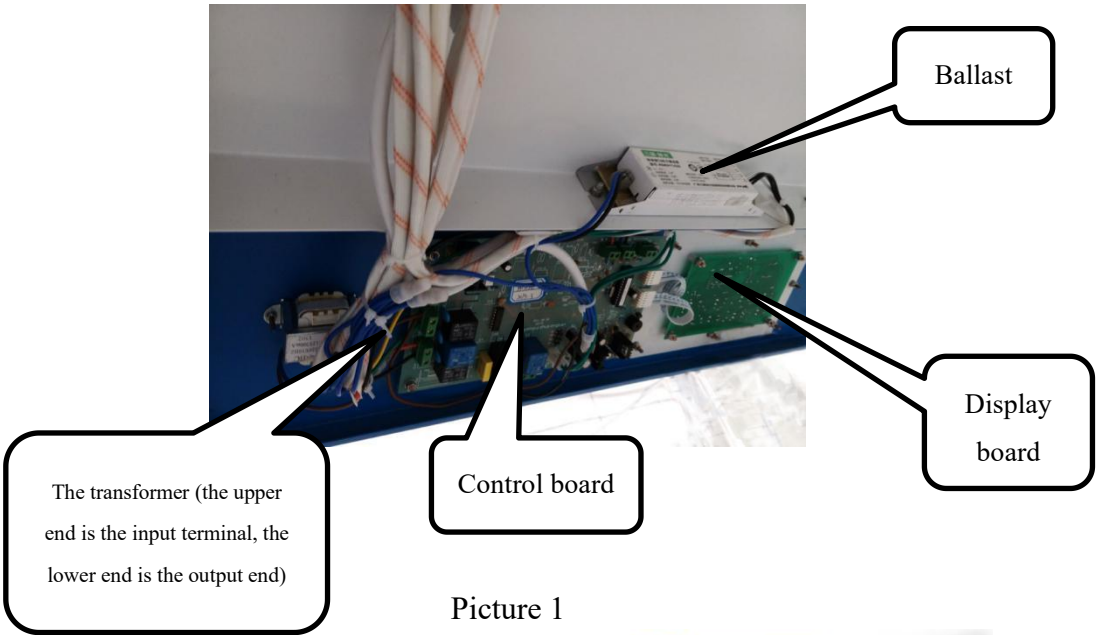
Detection Position	Processing method	Changing method	Diagram
Actual power supply voltage of the equipment and annotation parameters of fume hood nameplate	Check whether the actual power supply voltage of the equipment is consistent with the electrical parameters required by the normal operation of the equipment (the nameplate parameter of fume hood). If it is not consistent, replace the power supply voltage which is same as the nameplate annotation parameters.		
Power Wire	Check whether the power supply is normal and whether it is consistent with the electrical parameters required. Use a multimeter to determine whether the power supply wire is broken or damaged.		

<p>Fuse</p>	<p>Equipment with Fire Wire fuse and socket fuse, after confirmed that there is no problem with the above items. Confirm whether the two fuses(in the rear cabling board) are blown. If it's blown, pls replace the fuse with same specification on the label.</p>	<p>Circular fuse holders behind fume hood confirmed by label, F10A $\phi 5 \times 20$ mm. When need to replace the fire insurance tube, play out and replace the fuse using a slotted screwdriver, finally pressing back to.</p>	
<p>Transformer</p>	<p>Confirm the above items no problems, try the multimeter to check the input voltage of the transformer (the voltage value should be the supply voltage of the device) and the output voltage. First, test whether there is voltage on the two input AC voltages of the transformer. Then test the transformer output voltage: AC test with a multimeter CN6 at the two lines between the voltage is between 12V-14V (see Picture 7), indicating that this group of voltage output is correct, if the test voltage is not, that the transformer is bad, please Replace the</p>	<ol style="list-style-type: none"> 1. Turn off the power, as shown in Picture 2, use a Phillips screwdriver to remove the screws on both sides of the cabinet; 2. Lift the front panel up as shown in Picture 3, then open the front panel and secure it to the left and right panels with the support on the front panel to support the front panel; 3. Use a wrench to remove the nut of the circuit board trim as shown on the right; 4. Select the same type of 	<p>Picture 2, Picture 3</p>  <p>Circuit board trim board</p>

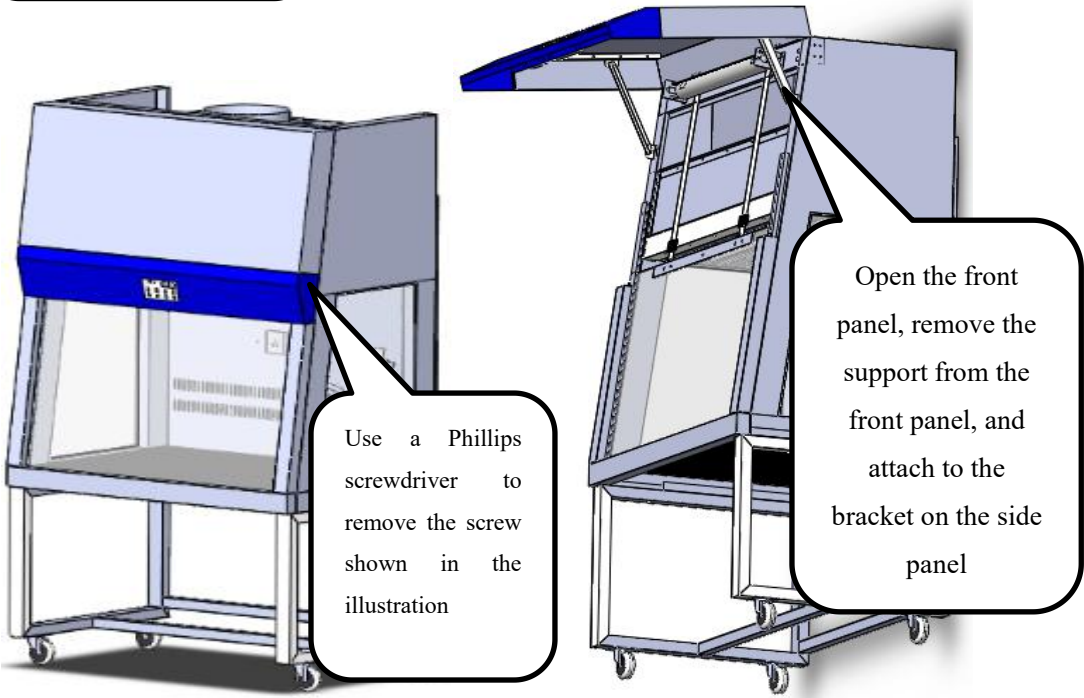
	transformer.	transformer, the new transformer in accordance with the just marked and taken pictures of the wiring, and its installation to the original transformer position; 5.After the power is turned on, power off, install the circuit board trim on the front panel and restore the front panel support,then lower the front panel and secure the front panel with screws.	
Cable	After the confirmation of the above items, then confirm whether the cable CN7 in picture 5 and CN1 in picture 6 are connected well. Then confirm whether CN8 in picture 5 and the CN2 in picture 6 are connected well.		As shown in picture 5 and picture 6

<p>Control panel</p>	<p>After the confirmation of the above items, please replace the new control panel.</p>	<ol style="list-style-type: none"> 1. Open the front panel and open the support in accordance with the method of changing the transformer, and remove the board decoration board. 2. Mark and take a picture of the connecting part of the control board wiring harness and take a new control board of the same type and model number, remove the wire from the old control board and connect it directly to the new control board (it is recommended to disconnect one electric wire and one electric wire to prevent the connection Wrong wiring), then remove the control board with a wrench and install the control board on the front panel (see right) and conduct the power-on test; 	 <p>Remove the control board with a wrench</p>
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		<p>3. After testing the correct power, the circuit board decorative plate, the front panel in accordance with the demolition of the reverse order in turn.</p>	
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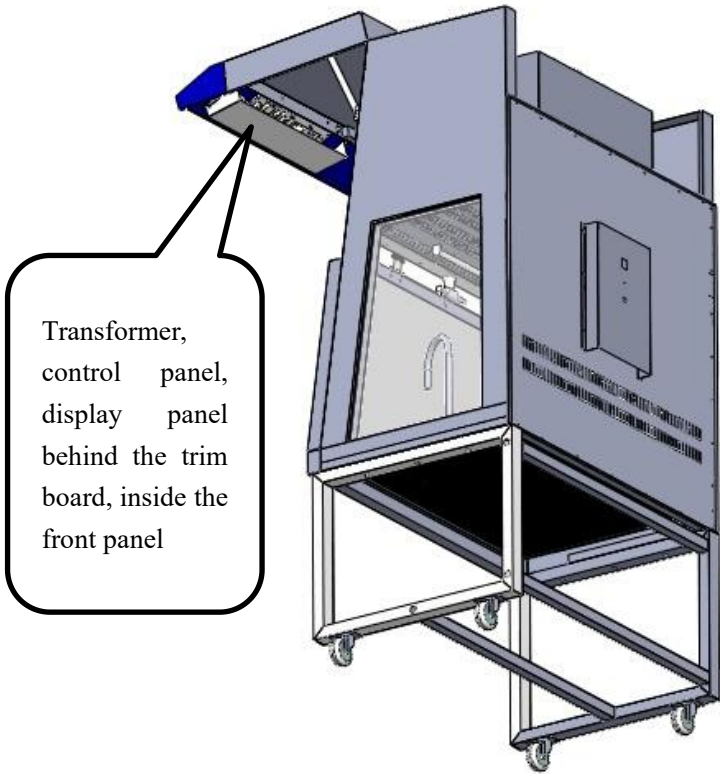


Picture 1

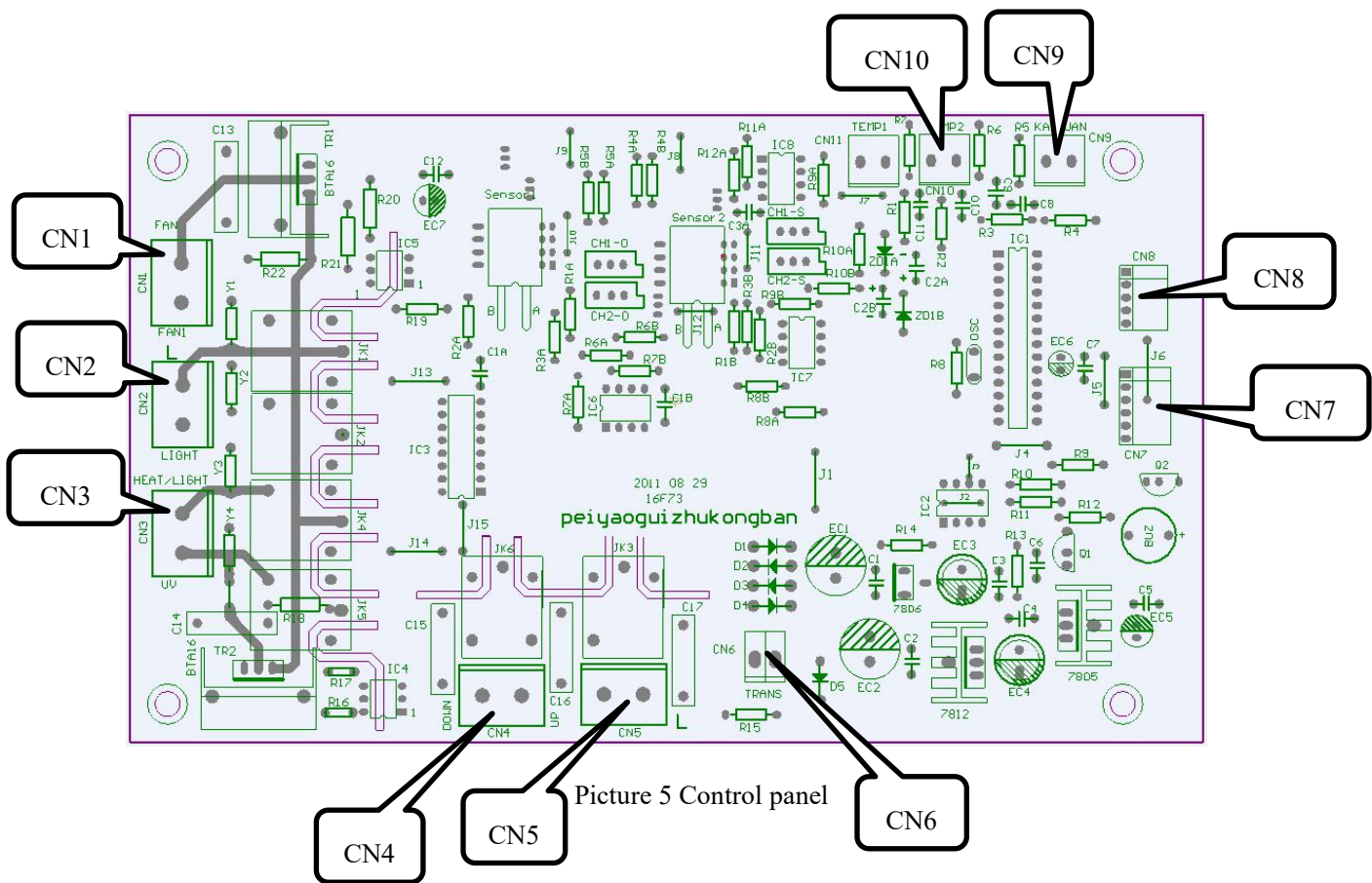


Picture 2

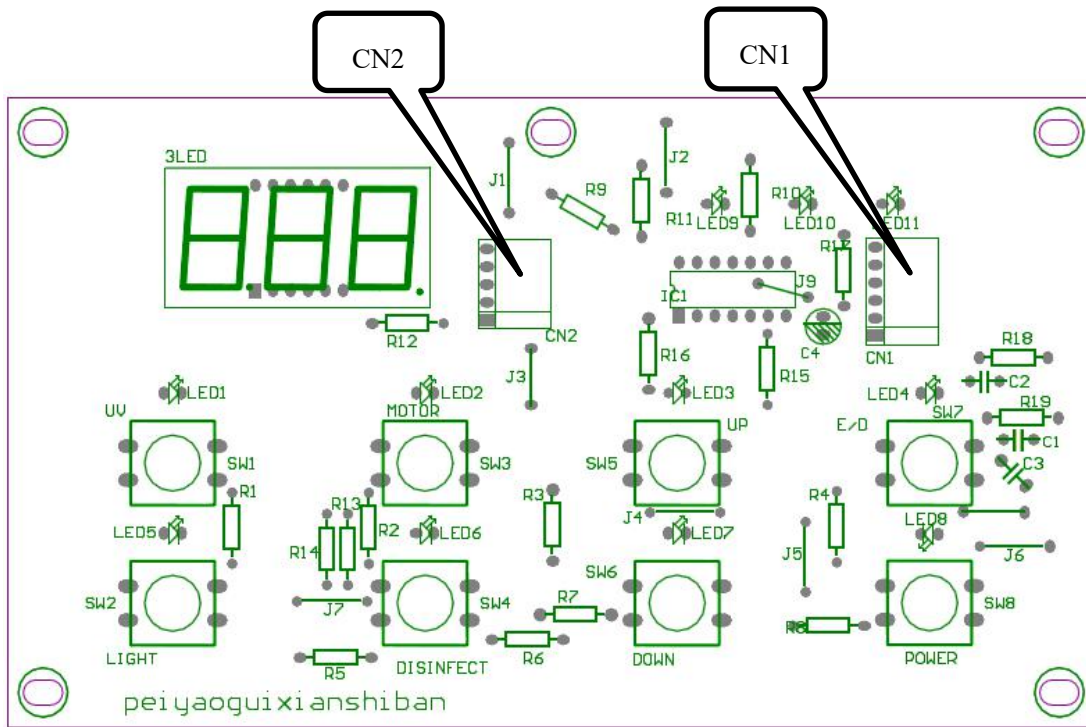
Picture 3



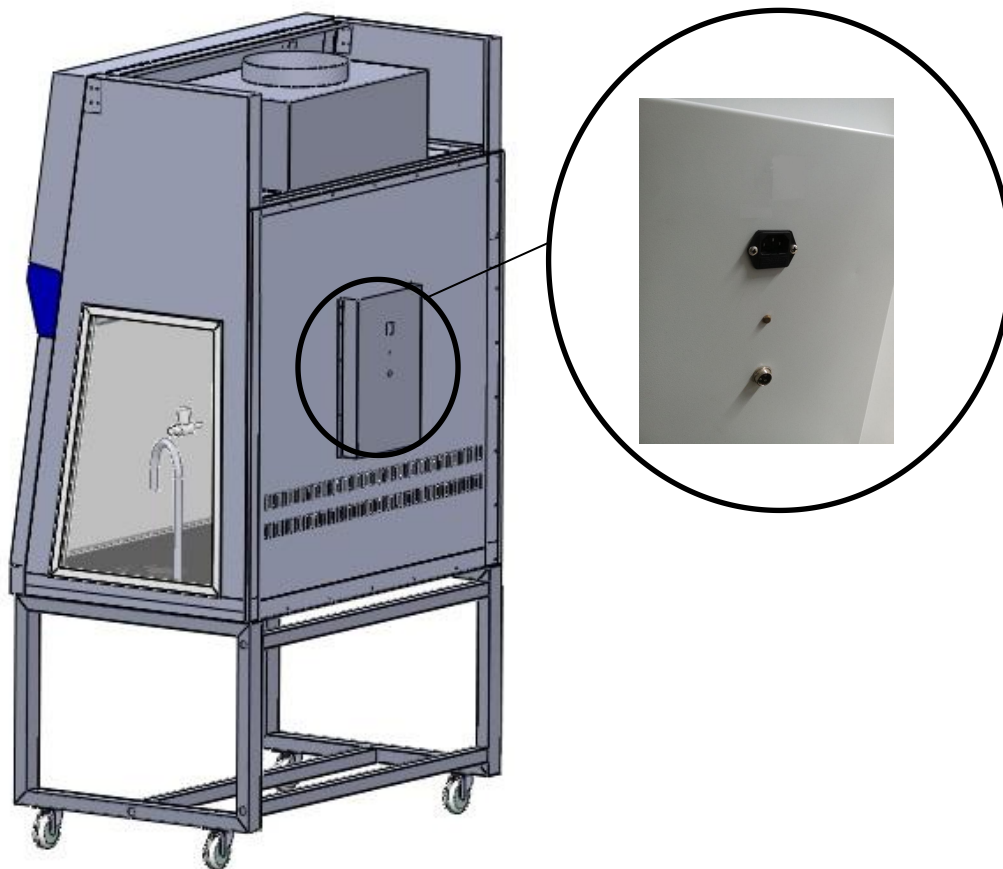
Picture 4



Picture 5 Control panel



Picture 6 display board




Picture 7

Failure 2. The display is not bright (buzzer sounds normally after power on)

Digital tube is not bright(The buzzer sounds normally after power on) It refers to alarm all button function is normal after power on, but the digital tube is not light or no response.

When dealing with such failure, processing method and steps are as follows:



Detection	Processing method	Changing method	Diagram
Digital Tube	Turn off the power to confirm digital tube is damaged, such as damaged, replace the new display board	1.In accordance with the method of replacing the transformer in Failure 1, open the front panel and open the support, remove the circuit board trim; 2.Mark and take a picture of the display board wiring harness, remove the display board with a wrench, take a new display board of the same model, and connect the wiring harness to the front panel according to the markings and the previously taken pictures (see Picture 1), and the power test; 3.After testing the correct power,the circuit board decorative plate, the front panel in accordance with the demolition of the reverse order in turn;	
Cable	Check if the cable connecting the display board to the		Picture 1

	control board is in bad contact		
Control board	Confirm the above items without problems, please replace the new control panel.	To replace the new control board method, see the replacement method of the control panel in Failure 1.	



Failure 3. Button no response and the display is not bright (boot alarm)





The key does not response and the digital tube is not bright (open the alarm) is the equipment after the alarm, the key function is no response and the digital tube is not bright and no response. The processing methods and steps of dealing with this kind of Failure refer to the failure 2.




Failure 4. Failure of front window


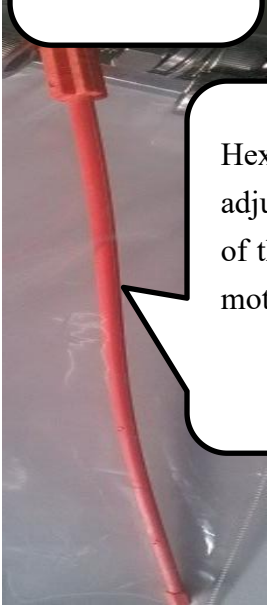

Front window lift failure is when the "  " or "  " button pressed front window glass door no action.

When dealing with such failures, the treatment methods and procedures are as follows:

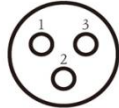
Detection method	Processing method	Changing method	Diagram
Control board	Follow the procedure for replacing the transformer in Failure 1 to open the front panel and open the support, and remove the circuit board trim panel. Turn on the "  " key, press and hold the "  " key. Use a multimeter to test the voltage between the blue line and the	The replacing method of control panel is same as Failure 1.	As shown in Picture 5, Picture 6

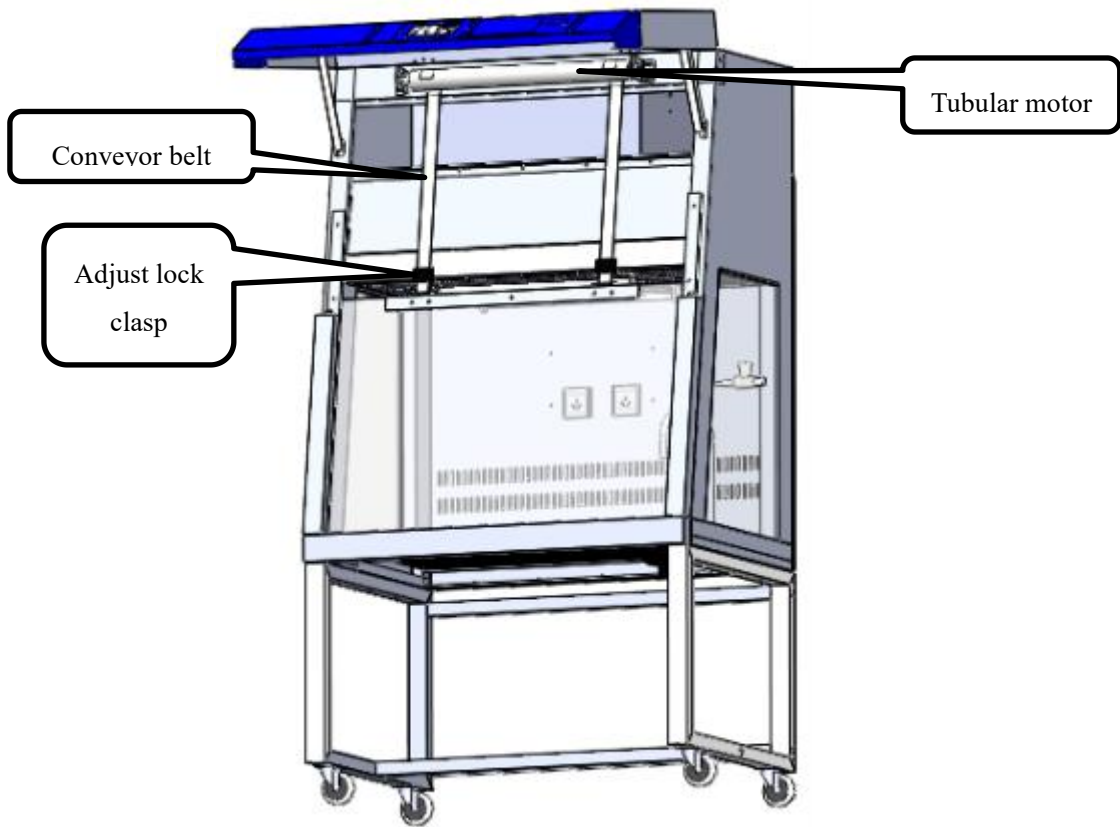
	<p>brown line of the CN4 terminal on the control panel (voltage value should be the power supply voltage of the device) Press and hold "  ", use a multimeter to check the voltage between the blue line and the black line on the control panel (Picture 5) of the CN4 terminal (the voltage value should be the power supply voltage of the device). If there is no voltage, the control panel is damaged and the control panel is replaced.</p> <p>Note:For example,when the front or rear glass door is working normally when the "  " or "  " button is pressed and the foot switch is not responding,the equipment is powered on and the"  " button</p>		
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	<p>is activated. Press and hold the "  " button, (Fig.5)CN9 terminal Voltage between green line and red line (the voltage value should be the supply voltage of the equipment), and press and hold the "  " key to test the control board separately with the multimeter (Picture 5) CN10 terminal Green line and black Line voltage (voltage values should be the supply voltage of the device), if no voltage,control panel damage, replace the control panel.</p>		
Tubular motor	<p>If the above is normal, motor brown line and blue line or black line and blue line shall be directly connected to the power supply, such as tubular motor without action,tubular motor damage, replacement of</p>	<p>1.Mark and take pictures of the tubular motor harness connection, and remove the tubular motor cable, loosen the adjustment lock button to separate the conveyor belt from the front window glass, and</p>	

	<p>tubular motor.</p>	<p>protect the front window glass. Remove the fixing pin on the one side of tubular motor, and lift another side of tubular motor, then you can remove the tubular motor. Take a new same tubular motor, install it in the opposite direction to the tubular motor holder and install the fixing pins. Wiring correctly as the pictures taken before, and use the adjustment locking button to connect the conveyor belt to the glass, and adjust the lock to make tension of the conveyors consistent.</p> <p>2. Power on to test tube motor, and determine if the speed of the conveyor belt tension is same by eyeballing the lifting speed of the both sides of glass door, Whether left and right sides of the front glass is flush,if not, continue to adjust the locking button</p>	 <p>Remove fixing pin, lift another side, to remove the tubular motor.</p>  <p>Hexagonal adjusting rod of the tubular motor</p> 
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		<p>until the front window glass is flush and the tension is the same.</p> <p>3.Take the hexagonal adjusting rod of the tubular motor to adjust Motor stroke.</p> <p>Press the glass door up key on the operator panel,If the glass can not reach the required height, please widdershins turn the regulation hole on the upper side of the tubular motor ;If the height of the glass is too high,please turn the regulation hole on the upper side of the tubular motor in clockwise direction;If the glass does not reach the bottom, please widdershins turn the regulation hole on the lower side of the tubular motor;</p> <p>If Leaking a long part of the conveyor belt when the glass door down in the end,please turn the regulation hole on the lower side of</p>	
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		<p>the tubular motor in clockwise direction; So let the conveyor belt straightened but not tight when the glass door down in the end,there is $520 \pm 5\text{mm}$ between glass and table support when rise to the highest. 3.Restore it in the opposite direction</p>	
Foot switch	<p>After confirming that there is no problem with the above items, check if the foot switch is damaged by using the multimeter (remove the foot switch and press the two pedals respectively to confirm whether the terminals 1, 2, 3 and 3 are on, and the sketch map of the foot switch Right), such as foot switch wire open circuit, foot switch damage, replace the foot switch.</p>		





Picture 8




Failure 5. Socket without electricity

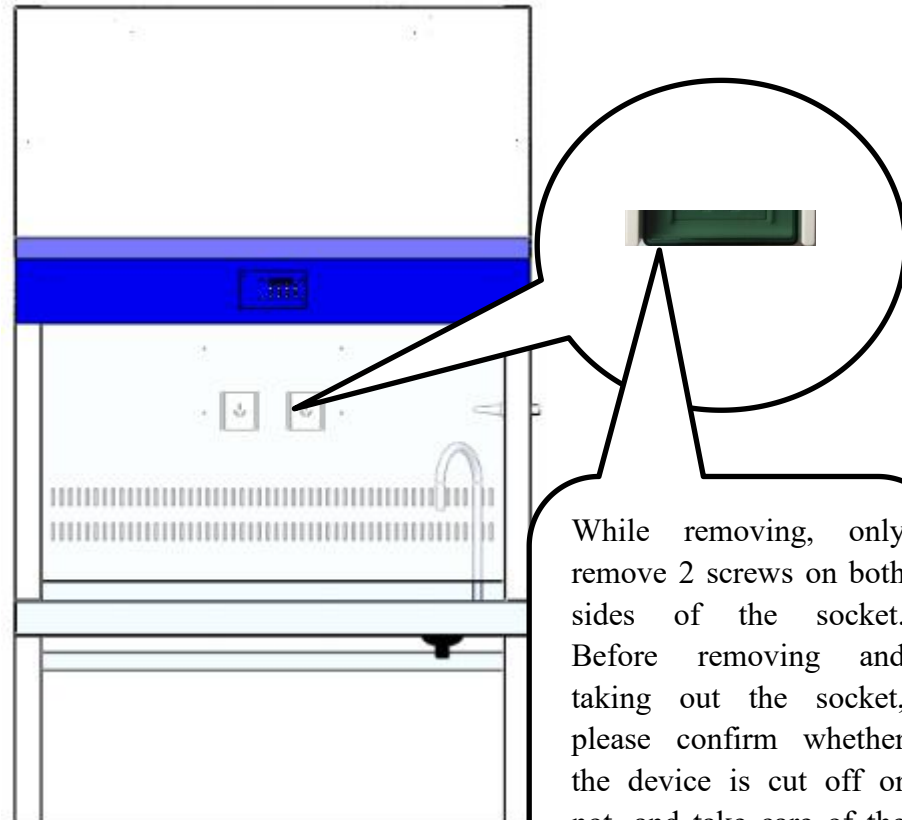
Socket without electricity means turn power on a switch, open the control panel power key, Socket on the cabinet has no electric when start "  " button

Treat this Failure, method and steps as below:

Detection	Processing method	Changing method	Diagram
Socket fuse	Check the socket fuse on the rear side of the cabinet (position As shown in picture 7). If the fuse is blown, replace the fuse with its corresponding label calibration specification.	Replacement method as shown malfunction 1 in the replacement method of fuse.	

<p>Socket</p>	<p>After confirming that there is no problem with the above item, remove the socket on the front side (as shown in picture 9), knob down the socket key, use the multimeter to measure the voltage of wire that connection socket (the value should be the supply voltage of the device) and judge whether the socket is damaged. If the connection lead wire voltage is normal, the socket is damaged, then replace the socket.</p>	<p>Simply remove the 2 screws on each side of the socket (Before removing the outlet, make sure that the equipment is powered off. And when taking out, please pay attention to the internal wire connection, and avoid disconnecting the wires. Behind "L" is the Fire Wire interface, "N" is the zero line interface “⊕” is grounding interface.) Take a new outlet, and installing it in the opposite direction in accordance with the demolition method.</p>	
<p>Socket line</p>	<p>After confirming that there is no problem with the above item, Use a multimeter to check whether there is socket line disconnected, If there is a broken line, Reconnect it after power failure, The socket wire is connected to the CN3 (picture 5) on the control board(Follow the method of finding the transformer in</p>		


	malfunction 1 to find the display board and the control board)		
The control panel (or display panel)	<p>After confirming that there is no problem with the above item, Powering on the device, press “” and “” in turn , Use the multimeter to check whether the CN3 red wire (socket wire) and the blue wire (neutral wire) are energized on the control panel(The value should be the supply voltage of the device), If not powered , The control panel (or display panel) may be damaged, please Replace the new control board (or display board).</p>	<p>The method of replacing the control board is shown in the control panel replacement method in malfunction.1. The method of replacing the display board is shown in the digital panel replacement method in malfunction.2、</p>	



Picture 9

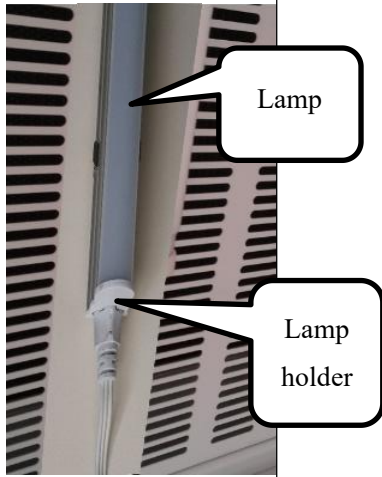


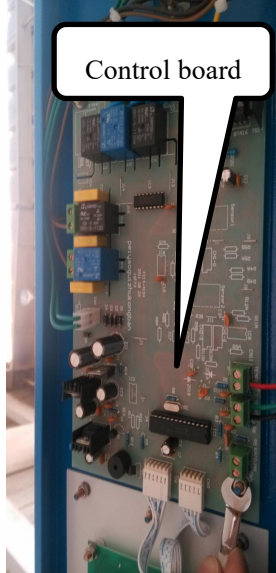
While removing, only remove 2 screws on both sides of the socket. Before removing and taking out the socket, please confirm whether the device is cut off or not, and take care of the connection between the internal conductors and avoid the connection of wires. Behind the "L" as a fire line interface, "N" is a zero line interface , “⊕”Earthing interface)

Failure 6. The LED lamp is not bright

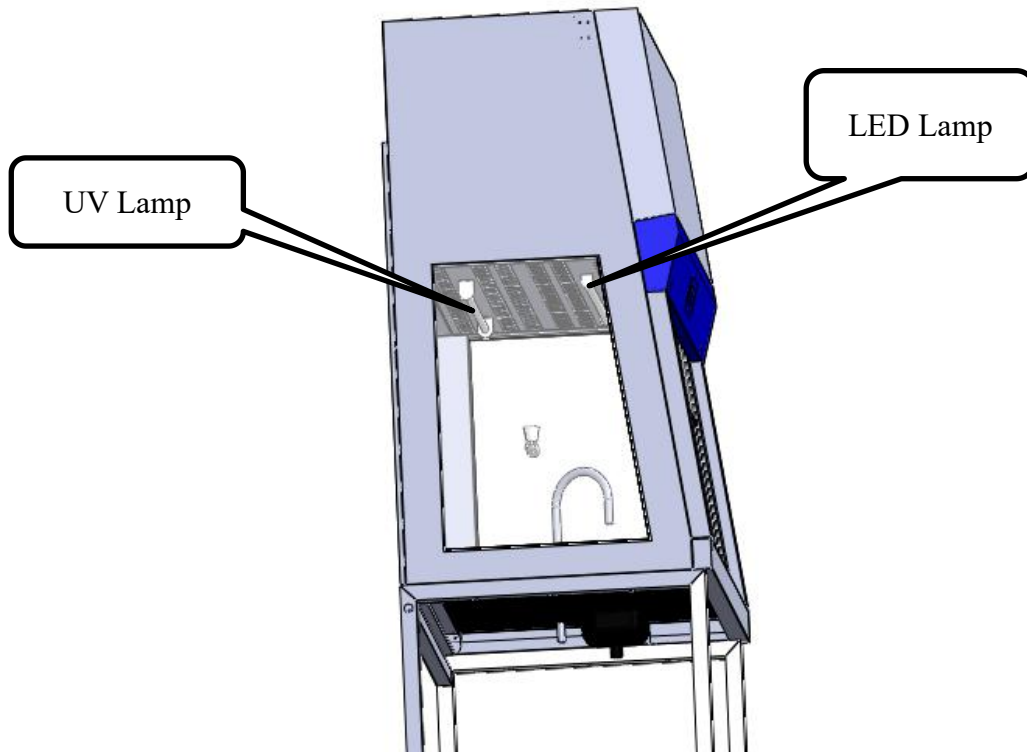
When started the button “  ”, the LED lamp is not bright.

The processing methods and steps for dealing with such failures are as follows:

Detection position	Processing method	Replacement method	Diagram
Power wire	Lift the front window glass to the highest, and then cut off the power to confirm whether the line on the right side of the lamp is in good contact with the contact.		

<p>Lamp</p>	<p>If there is no problem above, take down the lamp tube to confirm whether the tube on both sides of the lamp tube is black. If it is black, the lighting tube will be damaged. Replace the same specification lighting tube (the location of the lamp is shown in picture 10).</p>	<ol style="list-style-type: none"> 1. break the LED fluorescent lamp holder and take off the old LED fluorescent tube (see the right picture). 2. then take the new LED fluorescent tube, break off the LED fluorescent lamp holder, clamp the LED fluorescent tube. 3. connect the power supply, press the key, press the lighting key, check the light can be correct. 	
<p>Control board</p>	<p>If there is no problem above, according to Failure 1,replace the transformer method, open the front panel and open the support, remove the PCB trim panel,find the control panel,and electrify the equipment.Press in turn“  ”and “  ”key,A multimeter is used to detect the control panel (picture 5). The voltage of the green line and the blue line (zero line) of the CN2 connecting block should be the supply voltage of the device, such as no</p>	<p>The replacement method of the control panel is referred to in the replacement method of the control panel in Failure 1.</p>	

	voltage, the damage of the control panel, and the replacement of the new control panel.		
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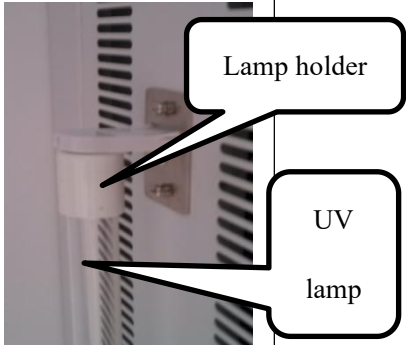

Picture 10

Failure 7. The UV lamp is not bright

The UV lamp is not bright when the "UV" button is started.


The processing methods and steps for dealing with such failures are as follows:

Detection position	Processing method	Change method	Diagram
Blower and light	Confirm that the fan and light are closed, if not completely closed, the ultraviolet lamp can not start. If the fan and light have been closed, please follow the follow-up procedure.		
	Cut off the power supply, make sure whether there is a	1. The old ultraviolet lamp tube is rotated	



<p>UV Lamp</p>	<p>good contact between both sides of the lamp holder and the lamp holder. Take down the lamp tube to confirm whether the filament in the two sides of the lamp tube is open or not, such as circuit breakage and ultraviolet lamp damage, and replace the same specification of ultraviolet lamp.(The position of the ultraviolet lamp is shown in picture 10).</p>	<p>about 90 degrees, and the lamp tube can be pulled down (as on the right). 2. Take the new ultraviolet lamp tube, insert the lamp foot to rotate about 90 degrees and feel lightly. 3. Connect the power supply and press the key, check the UV light can be correct.</p>	<p>Picture 10</p> 
<p>Control board</p>	<p>If there is no problem above, according to Failure 1, replace the transformer method, open the front panel and open the support, remove the printed circuit board, find the control panel, and connect the device. , Press in turn“  ”and“UV” key , A multimeter is used to detect the control panel (picture 5). The voltage of the black line and the blue line (zero line) of the CN3 connection block should be the supply voltage of the device, such as no voltage, the damage of the control panel, and the replacement of the new control panel.</p>	<p>The replacement method of the control panel is referred to in the replacement method of the control panel in Failure 1.</p>	<p>See picture 5</p>

<p>A wire between a ultraviolet lamp ballast</p>	<p>If there is no problem, after power off, comb the wire between the ultraviolet lamp and the ultraviolet lamp ballast, the connecting wire between the ultraviolet lamp ballast and the control board. Check whether the connection is loose, such as loosening, reconnecting the loose wire</p>		
<p>Ultraviolet lamp ballast</p>	<p>If the above problem is no problem, the ballast is damaged, the new ultraviolet lamp ballast with the same specification is replaced, and then the ventilator can be reduced.</p>	<ol style="list-style-type: none"> 1. mark and photograph the ballast and remove the ballast with the wrench. 2. Take the new town flow device, reinstall the ballast on the panel, and connect the ballast wiring harness according to the tag and the photos taken before. 3. power test operation, no error after power failure, according to the reverse direction of disassembly can be reduced. 	

Failure 8. Blower fail to work

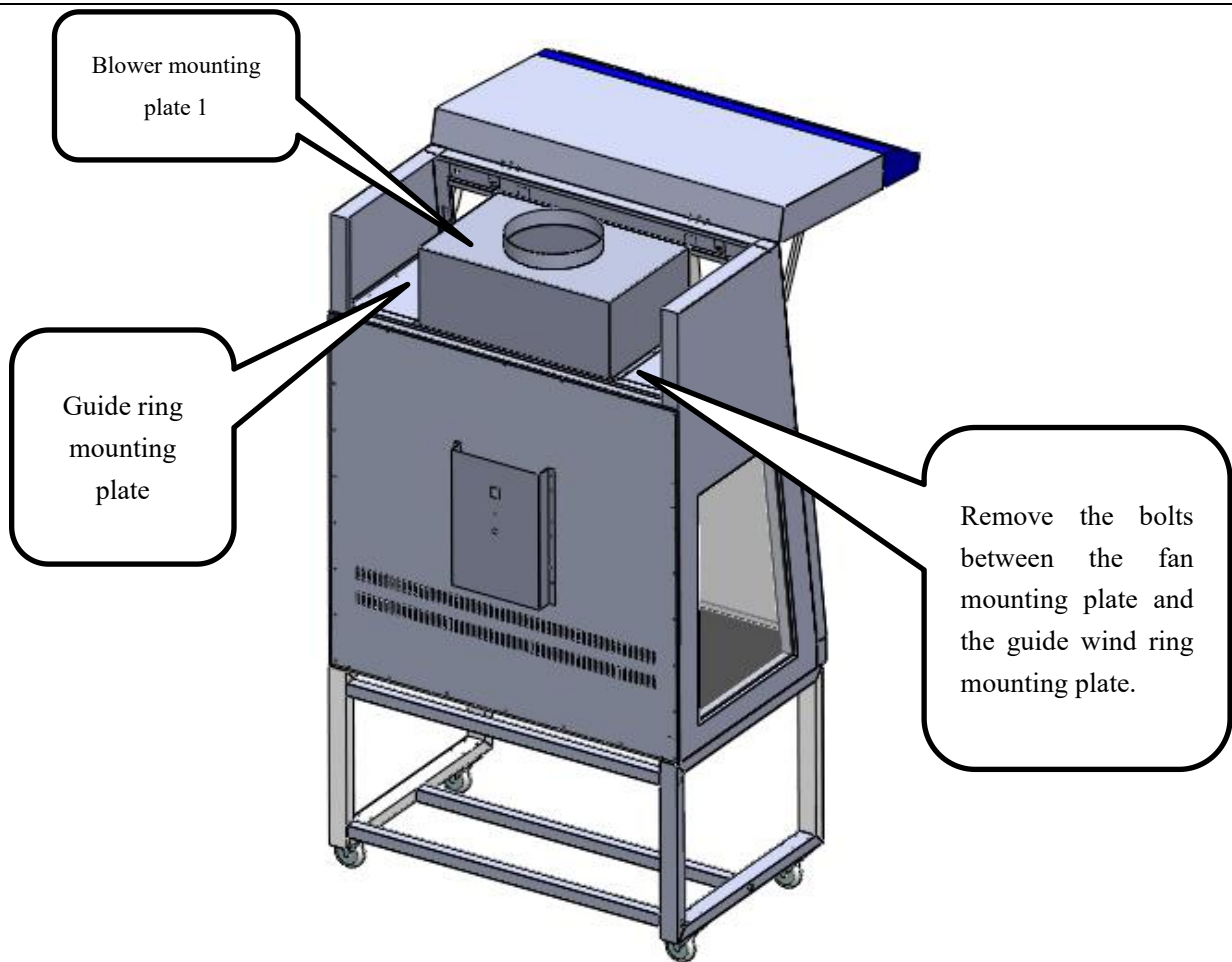
The blower does not work when it starts“  ”Key

The processing methods and steps for dealing with such failures are as follows:

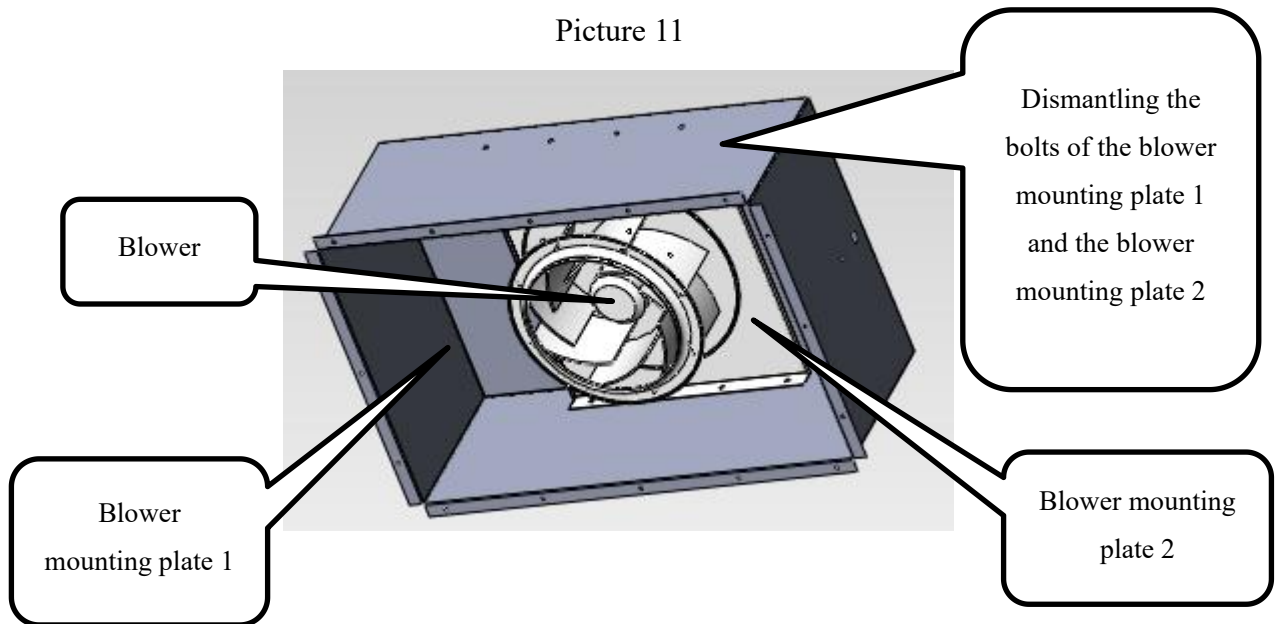
Detection position	Processing method	Change method	Diagram
Blower connection	Check whether there are falling off, broken line and short circuiting of the wiring of the blower. If there is a similar situation, it should be eliminated in turn.		
Control board	<p>The front panel is opened and the support is opened according to the replacement transformer method in the Failure 1. The circuit board decoration board is removed and the control board is found. The equipment is electrified, Press in turn“  ”and“</p> <p> ”Button, see if the blower's indicator light is on, if the fan indicates the light, Use the multimeter to detect the control board (picture 5) CN1 Connection seat and zero line (Blue line) voltage (This voltage is over 60% of the power supply voltage.), If the voltage is abnormal,</p>	The replacement of the control board is seen in the replacement method of the control board in the Failure 1.	See picture 4, picture 5

	the control board is replaced. If the light of the fan can not be lighted, change the control board.		
Blower	If there is no problem above, connect the fan directly to the power supply of the equipment and observe whether the fan is started, if the fan is not started, the blower will be damaged, and the same type of fan will be replaced.	<ol style="list-style-type: none"> 1. Mark and photograph a fan wire harness to connect some photos, and then remove the connecting line of the fan. 2. As shown in picture 11 , Use a wrench to remove the wind machine and install 1 guide connecting nut ring mounting plate, the fan mounting plate 1 part removed 3. As shown in picture 12, the wrench is used to remove the connecting bolts of the fan mounting plate 2 and the fan mounting plate 1, and the 2 parts of the fan mounting plate are removed.As shown in picture 13, the fan can be taken by the wrench to unload the bolts of the fan and the fan mounting plate 2. 4. Fresh air machine, shown in picture 13 in accordance with the position, and then the fan installed in wind machine 2 with a wrench, and then in the reverse order of the fan part can be installed, the position of the connection terminal 	See picture 11, picture 12, picture 13

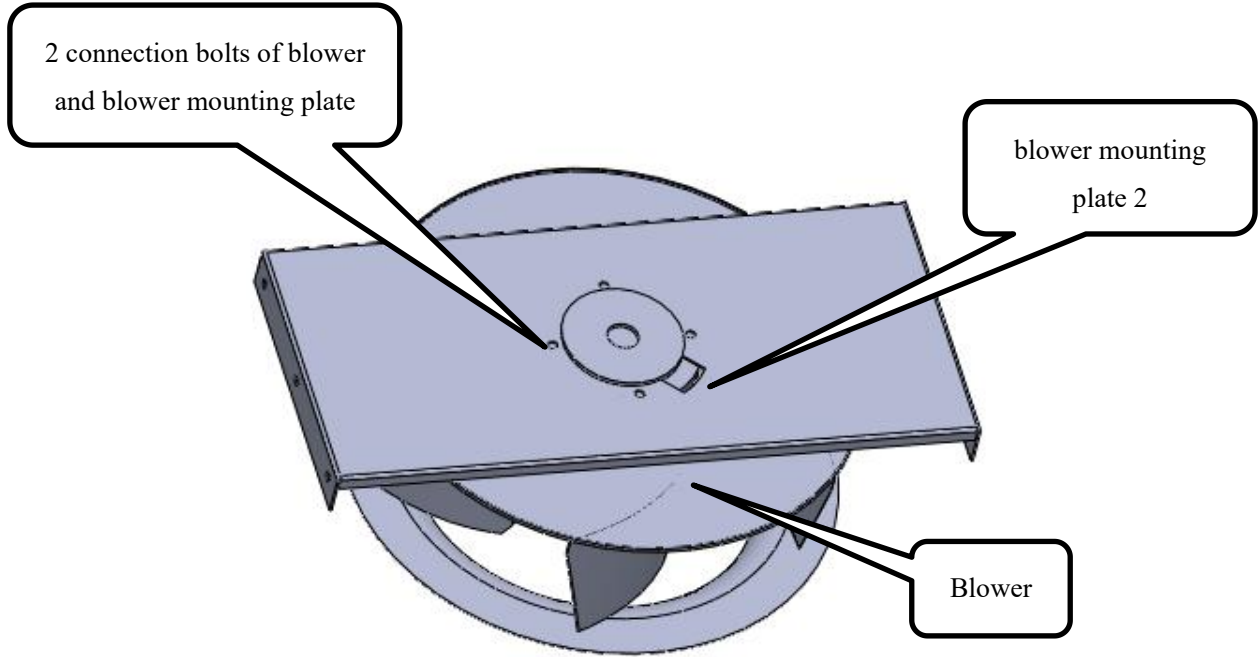
		<p>according to fan connection before shooting the correct electrical test operation of wind turbine, correct power in the opposite direction down and mounted to the support removing the front panel, then put down the front panel, the front panel with screws.</p>	
<p>Connecting traverse of blower and circuit board</p>	<p>If there is no problem above, if the power goes out, comb out whether the connection between the blower and the circuit board is connected or loosened or open, if connected or broken, connect the conductor again, and then restore the hood.</p>		



Picture 11



Picture 12



Picture 13

Failure 9. Airflow velocity adjustment failure

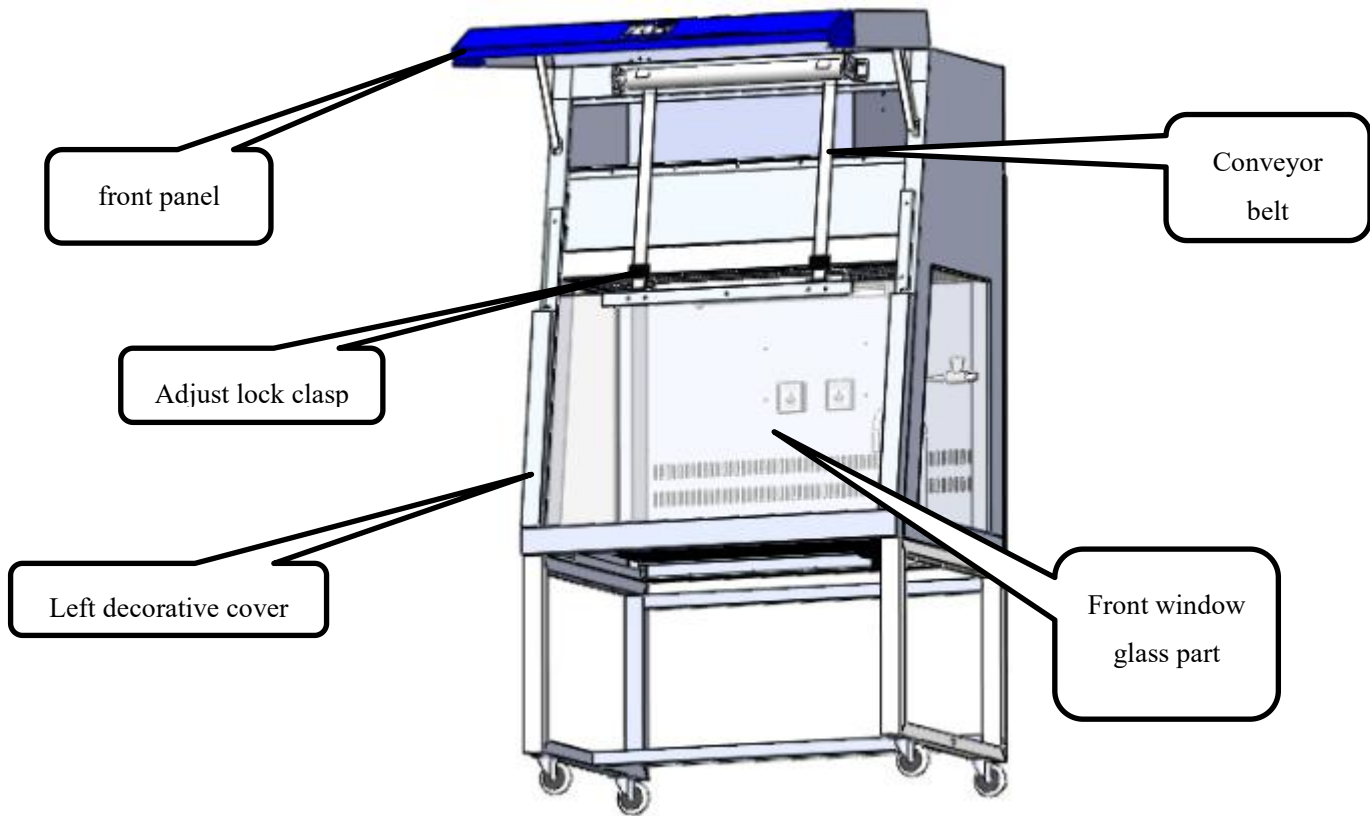
Airflow velocity adjustment failure means that when the circulating speed key is pressed, the speed of the fan is not changed.

Please replace the new control board directly to deal with this kind of Failure(The method of replacing the control board with the method of replacing the control board with Failure 1).

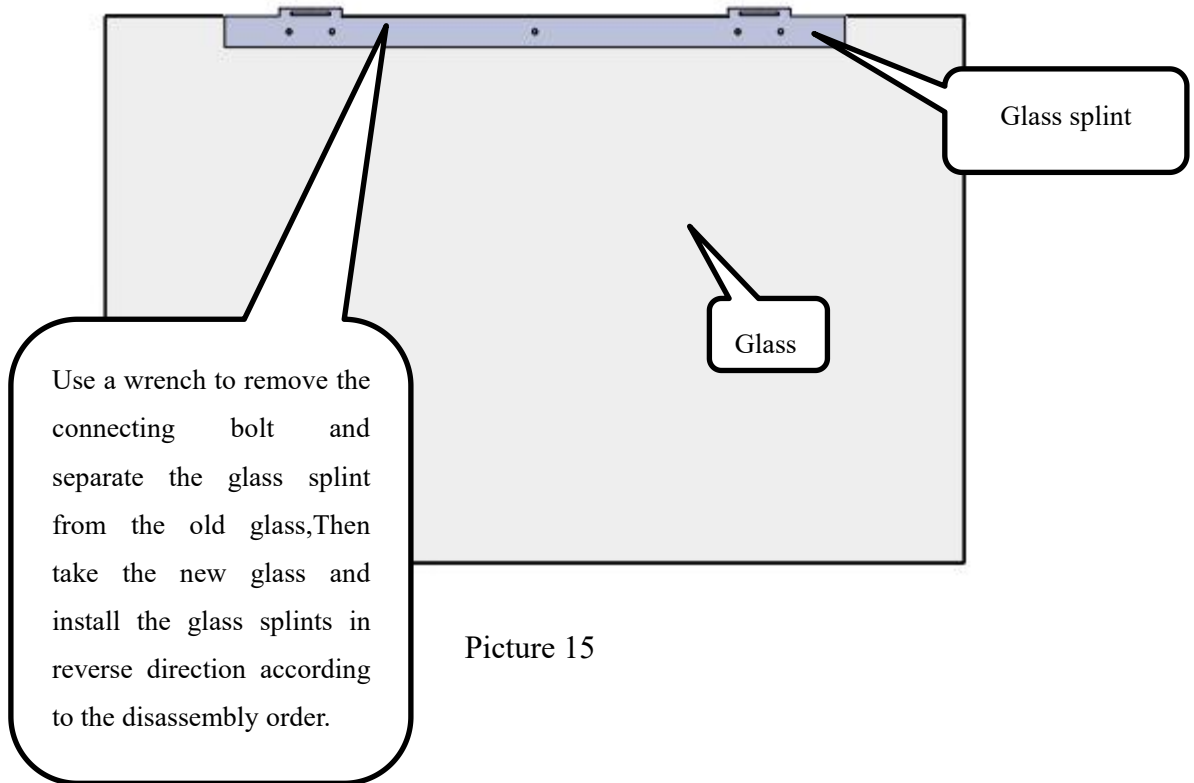
Part 2. Parts replacement

Replacement parts	Replacement method
Front window glass	<p>First, put the glass to the lowest point, contact the panel, power off;</p> <p>Open the front panel and support (see the methods and steps to replace the transformer in Failure 1,the front panel and the support opening method).</p> <p>Loosen the belt adjusting locking button, the glass door and the conveyor belt separation, using cross screwdriver to the left or right trim cover removed, then the glass guide rail side of the front window glass, you can remove the old main window(picture 14).</p> <p>As shown in picture 15,Use the spanner to remove the inside and outside splint of the front window, then take the new front window glass and use the wrench to install the front window part. Pay attention to not too tight when the wrench fasten the glass splint, so as to prevent the glass from being broken.</p> <p>The front window glass part is installed on the cabinet according to the reverse order of disassembly, the left and right guideway are installed, the conveyor belt is connected with the front window glass, and the electricity is adjusted by electricity. Debugging methods refer to the replacement of tubular motor methods in Failure 4 steps 4 and step 5,When the front window glass door is descended to the end,the conveyor belt is straightened but not tight. When it rises to the highest, the glass distance is 520 + 5mm from the table bracket.When the front window is lifted smoothly, then install the left and right decorative cover, put down the support and install it on the front panel, then put the front panel down, screw the front panel, and restore the hood.</p>
Side window glass	<p>First, lift the front window glass to the highest, power off;</p> <p>Cut water, gas pipe and sink pipe, take down the deck;</p> <p>While holding the side window glass outer frame and glass outside the ventilator, remove the screws of the side window glass inner frame with the screwdriver from the operation area, then take the lower side window glass outer frame, then remove the old side window glass. (As shown in picture 16);</p> <p>Take the new side window glass and install it in the opposite direction of disassembly;</p> <p>Install the panel to connect water, gas pipe, and sink pipe.</p>

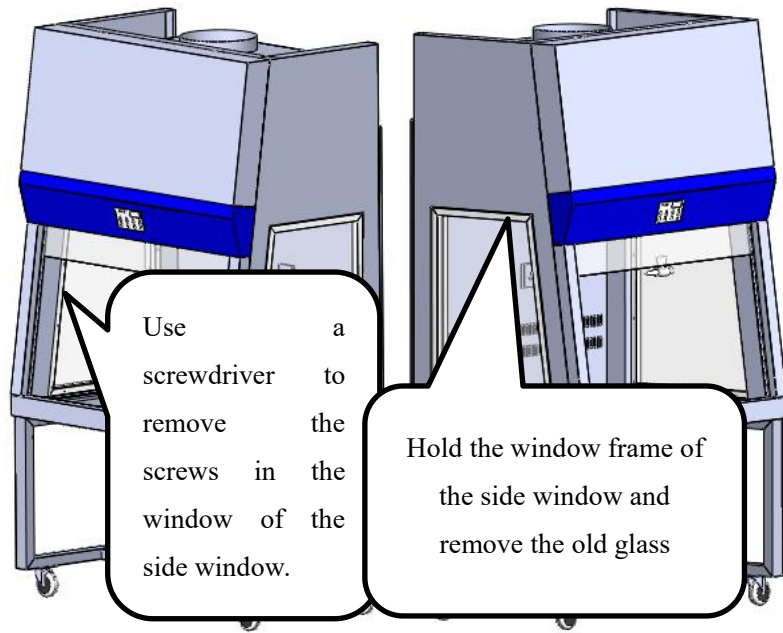
<p>Filter (Judge whether the filter needs to be replaced on the basis of the use frequency and the use environment, Normally when used for 3500 hours,the ventilator alarm needs to be replaced. In the standby state, the length of the fan is 5 to 6S.Operating time of ventilator fan(Filter use time)Can clear the zero.)</p>	<p>Minimize the front window glass, cut off the power supply, open the front panel and support(Refer to the method of replacing the transformer part in the Failure 1 to open the front panel and support); Unlock the conveyor belt to adjust the lock, separate the glass door from the conveyor belt, and then use a screwdriver to disassemble the connecting bolt from the inner baffle and the cabinet to remove the inner baffle.(As shown in picture 17); Use a spanner to remove the filter layering, then remove the old filter, then take the new filter, make the arrow of the filter label up, install it to the illustration position, then take the filter layering and the removed parts to install on the cabinet.(As shown in picture 18); the inner baffle mounted to the cabinet, the conveyor belt is connected with the front window glass, and then power debugging, debugging method. Failure to replace the tubular motor method in step 4 and 4 step 5, the front window glass door drop when the conveyor belt straightened but not tight, up to the highest when the glass is 520 + 5mm from the table to the front window glass lifting bracket, smooth and error free, put down the support and the installation of the front panel, then put down the front panel, the front panel is fastened by screws, and the reduction of ventilation cabinet.</p>
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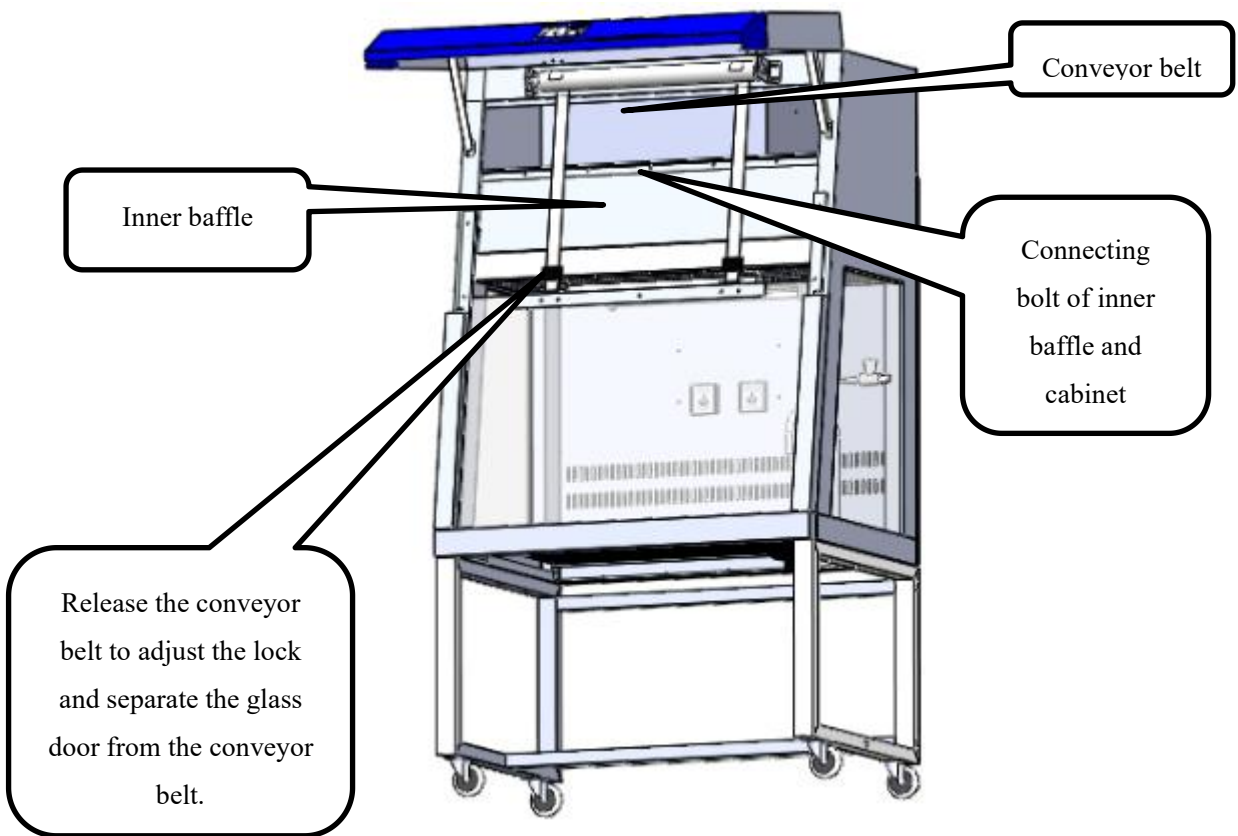
Picture 14



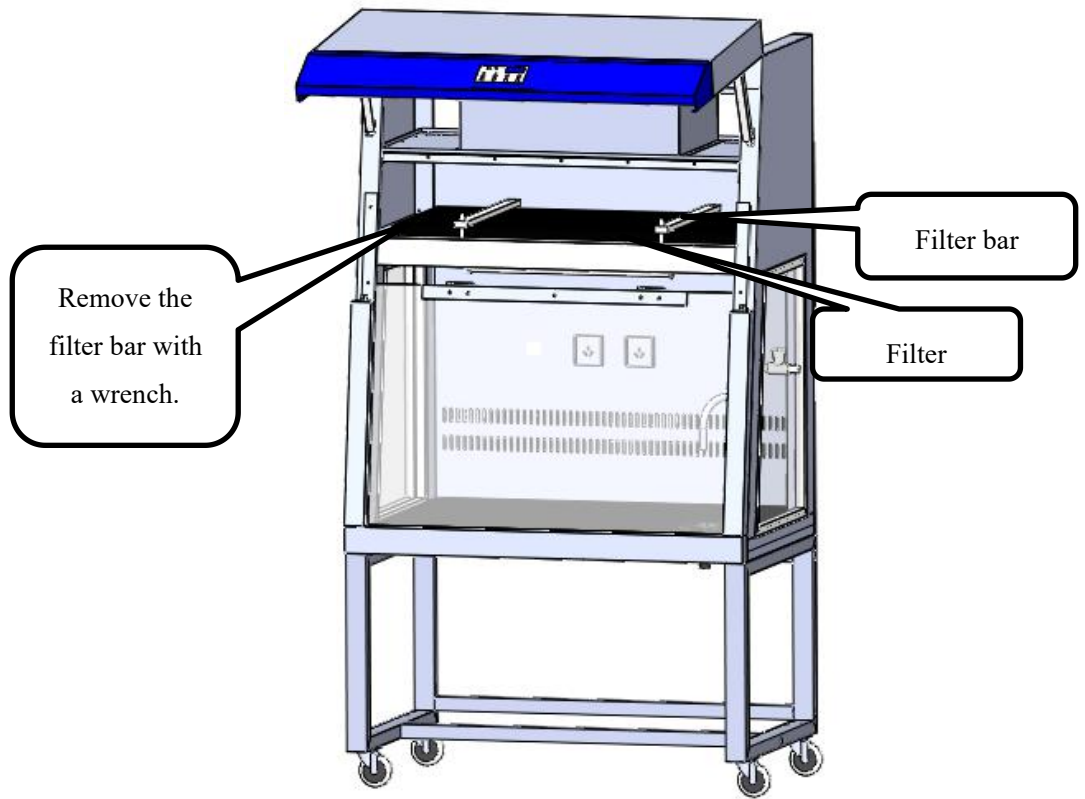
Picture 15



Picture 16



Picture 17



Picture 18

Part 3. Appendix: Wiring diagram

