

SERVICE MANUAL FOR VT45

维修工具: tools

I. 螺丝刀 Screwdriver



II. 万用表 Multimeter



III. 钳子 Plier



IV. 加液筒 Charging Tube



V. 真空泵 Vacuum Pump



VI. 电子称 Electronic Weigher



VII. 肥皂水 Suds



VIII. 加液接头 charging connector



1. 机器不制冷

The wine cellar does not get cold at all.

插上电源，检查有无温度显示，如有温度显示，则通电半个小时时间后，检查箱内温度是否有变化

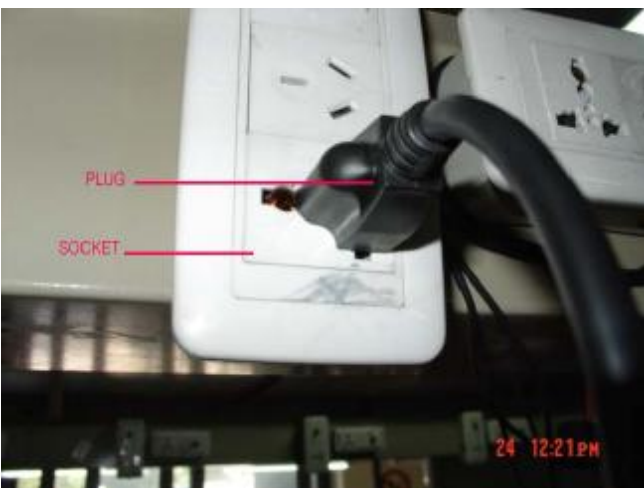
Turn on the power, check whether the temperature display board is indicating or not, if yes, look over if the temperature of the cabinet gets cool down after about half an hour.

如无温度显示，则

If the display board is extinct, then

① 检查机器电源插头是否插好，若没插上或有松动，请重新插紧电源 如下图所示：

Check to ensure the power plug is installed properly. If not connect the power or loosen, please connect it properly. (see the following picture)



② 拔下电源插头

Pull out the plug.

③ 检查主控板上的保险丝是否断裂，

Check and make certain the fuse in the control board has not blown

(1) 拧下后盖板上的固定螺丝

Screw off the screws on the back panel.



(2) 取下后盖板

Take off the back panel.



(3) 拧下控制板罩壳上图示位置螺钉

Screw off the screws on the control board cover



(4) 拧下控制板罩壳图示位置螺钉

Screw off the screws on the control board cover.



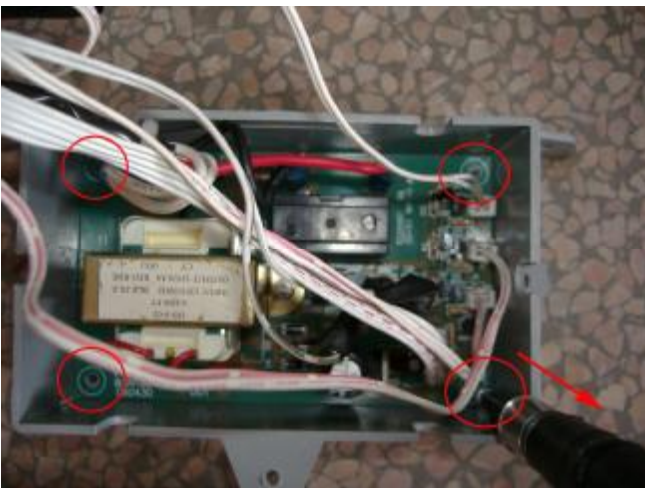
(5) 取下控制板罩壳上盖

Take off the control board cover.



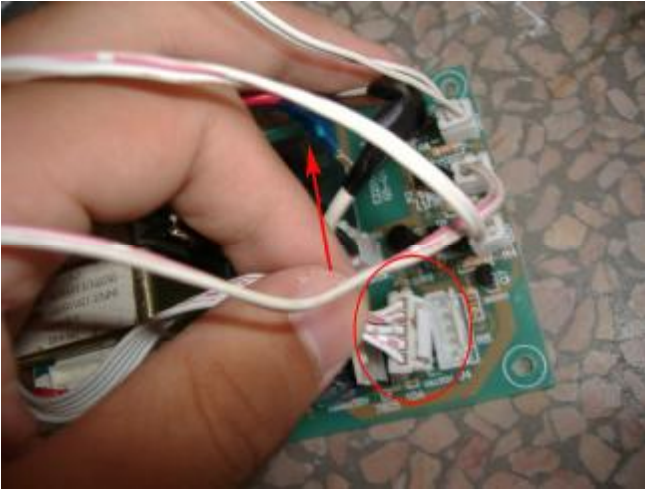
(6) 拧下控制板上固定螺钉

Screw off the screws on the control board.



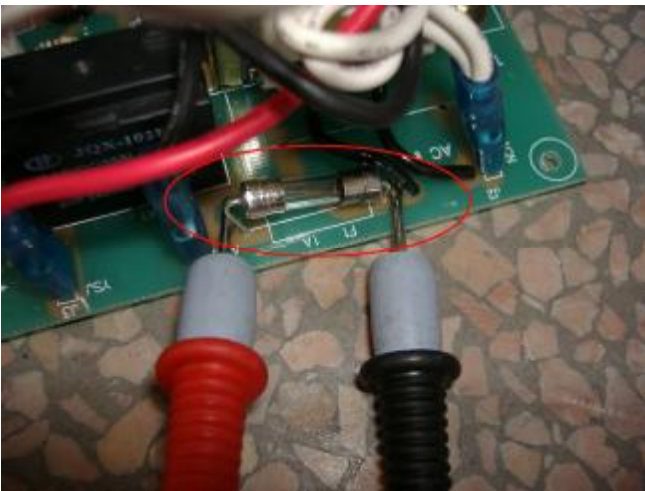
(7) 拔下控制板上接线柱

Pull out the terminal on the control board.



(8)用万用表测量保险丝电阻，若阻值无穷大，则判为保险丝坏，需更换主控板

Check the fuse, if the resistance is infinite, it shows the fuse is damaged, please replace the control board.



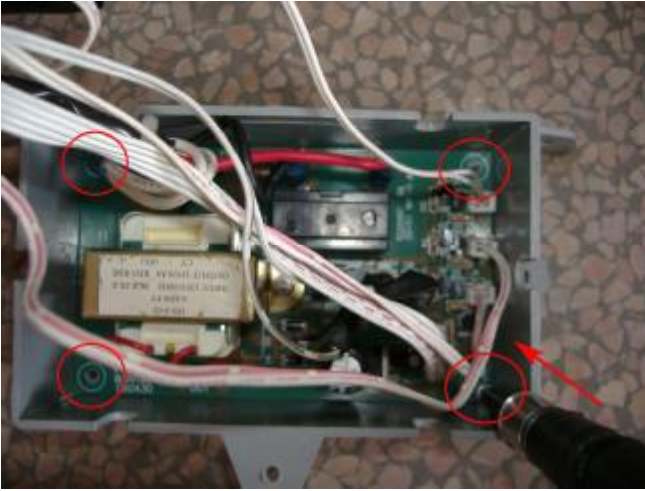
(9)更换新的控制板

Replace with a new control board.



(10)用螺钉固定到控制板上

Fix it with the screws.



(1)插好控制板上接线柱

Plug the terminal on the control board.

(2)盖上控制板罩壳上的盖子

Recover the control board cover.



(3)用螺钉固定控制板罩壳

Fix the control board cover.

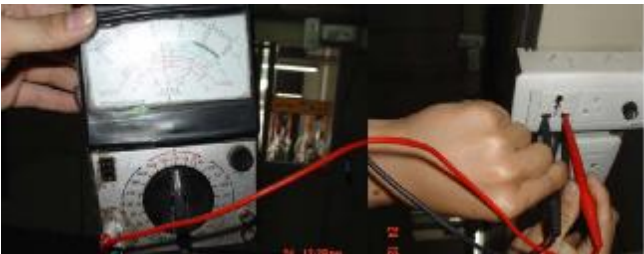


(4)用螺钉固定后盖板

Fix the back panel with screws.



- ④电源插座电压是否正常，如图所示
Check the voltage in the socket. See the following.



用万用表检查插座输出电压是否为 105V~126V 之间，如不在此范围之内，请与当地供电部门联系
The voltage should between 105V to 126V in the socket, if it isn't within the range, please contact the local power supply administration.

- ⑤判断制冷系统是否泄漏
Check if the refrigerant system is leakage.

(1)拔下电源插头

Pull out the plug.



(2)拧下后背板固定螺丝

Screw off the screws on the back panel.



(3)取下后背板

Take off the back panel.



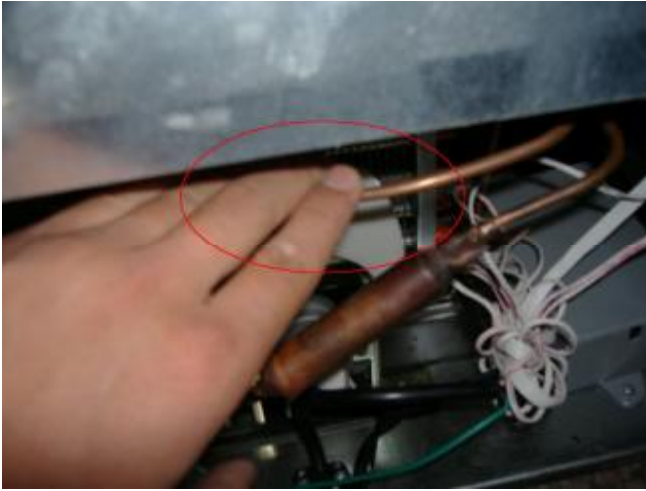
(4)插上电源，用手短时间触摸压缩机，压缩机有震动，证明压缩机在正常工作。

If compressor is shaking when you touch it by hand, this shows compressor is working.



(5)机器工作一段时间后，用手触摸排气管，排气管不热

If exhaust pipe isn't hot felt by hand after compressor running a period of time.



(6)用手触摸回气管，回气管不冷
The intake pipe isn't cool by hand.



以上现象可判定为系统泄漏。(以下为修理过程)

Then we can say machine has the problem of System Leakage.

Method:

a. 剪断工艺管

Cut process tube.



b. 用焊枪取下工艺管

Take off the process tube.



c. 换上新的工艺管
Replace a new process tube



d. 焊接好工艺管
Weld the process tube



e. 在工艺管上装上快装接头
Install the vacuumizing connector onto the process tube.



f. 系统充氮，在快装接头处接入 0.8Mpa 氮气

Charge nitrogen. Connect the dried Nitrogen that the pressure is 0.8Mpa to the process tube



g. 检查各焊点，用带有肥皂水的毛巾轻轻掩住焊点，若有气泡，证明焊接有缝隙。

Cover the welding point with towel that is soaked with soapsuds. If there is bubbles that means there is seam.





h. 脱开快装接头，用焊枪重新焊接有气泡产生的焊点
Re-weld the parts at which there are seams



i. 然后，充氮气检此焊点，直到没有气泡产生
Test with towel as charging Nitrogen until there are no bubbles.



j. 快装接头与真空泵相接，打开真空泵电源，抽真空 20 分钟以上。
Connect the vacuum pump with the processing tube and then vacuumize for more than 20 minutes.



k. 给罐装瓶抽真空，用抽真空泵给罐装瓶抽真空 5 分钟以上。

Connect the vacuum pump with canned bottle and then vacuumize for about 5 minutes.



l. 给罐装瓶称重，用电子秤称出罐装瓶自身重量。

Weigh up the canned bottle.



m. 给罐装瓶充入制冷液，获取适当的制冷剂量。(大约 62g)

Charge the refrigerant into the canned bottle. (about 62g)



n. 给充有制冷剂的罐装瓶称重
Weigh the canned bottle with refrigerant



o. 罐装瓶与快装接头相接，压缩机通电 5 分钟以上，注入制冷剂
Connect the canned bottle with the process tube and then compressor work for more than 5 minutes, charge the refrigerant into compressor



p. 给罐装瓶称重，确认罐装瓶重量与抽真空前像同。
Weigh the canned bottle for check the refrigerant were charged completely



q. 夹扁工艺管，确保不会有气体逸出后封口

Clamp the process tube and make it flat, and seal it after ensuring no leakage of the gas.



r. 通电检查机器制冷性能，装好后封板

Connect the refrigeration system to power and check is there any problems and then fit in the back panel



⑥如系统无泄漏，则需检查管路是否有堵塞现象

If the refrigerant system has no leakage, we should check if there is any block in the tubes.

(1)将过滤器末端的毛细管剪断，如果过滤器处有气体喷出，而毛细管处无气体喷出，说明管路堵塞。

Cut off the capillary from the filter, if the gas pushed out through the filter meanwhile no gas through the capillary, it shows there is block in the tubes.



(2)用焊枪取下过滤器并且更换新的过滤器

Take off the filter with the welding torch and replace a new one.

(3)根据上述方法通氮气并且重新抽真空加液

Recharge the nitrogen gas, vacuumize the machine and recharge the refrigerant as above methods.

2.机器工作时，制冷差

The wine cellar is not cooling enough.

① 检查机器是否受到阳光直射或附近有热源

Avoid the cellar in direct sunlight or adjacent to heat source.

箱内灯常亮，也可能导致箱内温度过高

Keep light in the cabinet on result in too high inner temperature.

②检查机器四周是否通风不良，若是，则将机器置于通风处

Ensure the good ventilation around the cellar.

③检查门是否关闭不严实或开门时间过长

Check and ensure the door closed well or keep it open not too long time.

④检查门封条是否变形

Check and ensure the door gasket is good enough.



⑤检查系统是否泄漏

Check if the refrigerant system is leakage.

⑥检查风机是否转动

Check if the condenser fan motor is rotating.

Method:

(1)拧下后盖板上的固定螺丝

Screw off the screws on the back panel.



(2)取下后盖板

Take off the back panel.



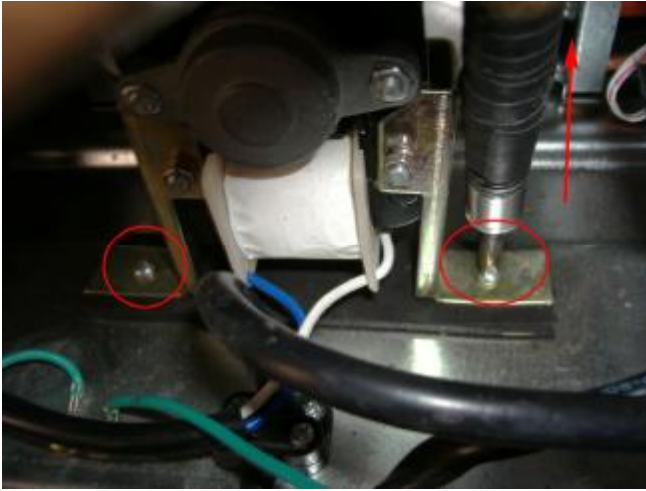
压缩机工作时，风机不转，并且风机的接插件无松动现象，修理方法如下：

If the fan motor is not running when the compressor is working, and the connectors are proper fixed, please repair it as following:



a. 拧下风机固定螺钉

Screw off the fixed screws on the fan motor.



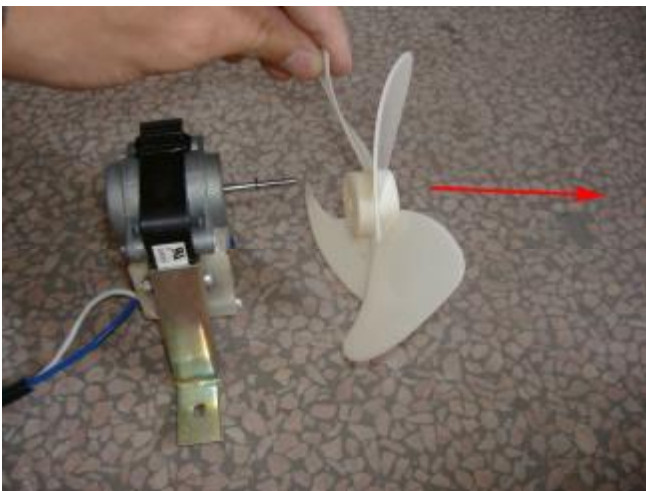
b.取出风机

Take out the fan motor.



c.拔下风机叶片

Pull out the blade.



d.拔下风机的接线柱

Pull out the terminal.



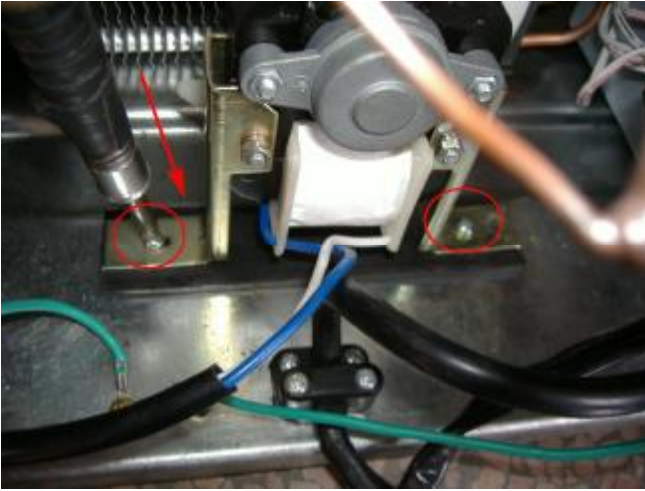
e. 更换新的风机
Replace the fan motor with a new one.



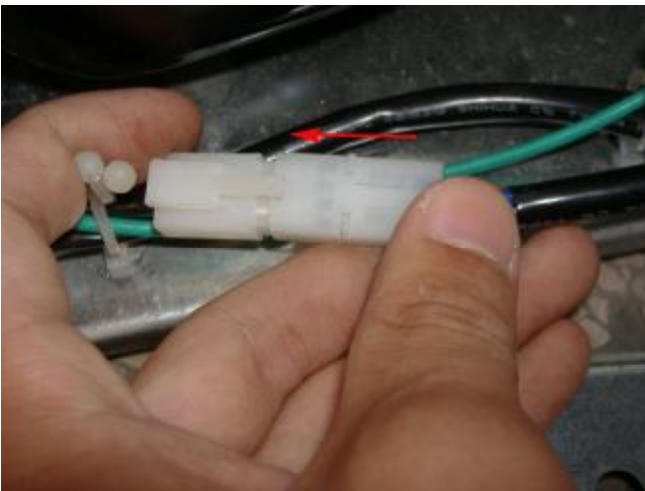
f. 插上风机叶片
Insert the blade.



g. 固定风机
Fix the fan motor.



h.接好接插件
Install the connector.



i.固定后封板
Fit in the back panel.



3.机器工作时，噪音大

The cellar is too noisy.

① 检查机器放置是否平整

Make certain the cellar is properly leveled and standing firm.

图示为底脚不平整，需调整底脚高度，使机器保持水平。

You may adjust the leveling legs to keep it level.



② 检查机器内管路是否相碰

Make certain the pipeline untouched each other.



③检查风机的固定螺丝是否松动，风叶是否与其他零件相碰

Check if the fan fixed screws are loose and the blade touches with other parts.

4.机器通电工作时，灯不亮。

The light is not on when connect the power.

①检查主控板上灯的接插件是否松动

Check and ensure the connectors on the control board are tightened enough.

a.拔掉电源插头

Unplug the power cord.



b.取出箱内搁架
Take out the racks.



c.拧下灯盖板上固定螺钉
Screw off the screws on the light cover.



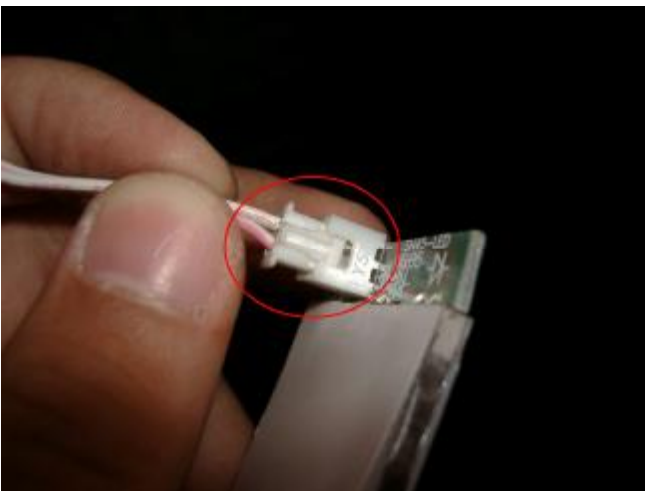
d.取下灯盖板
Remove the light cover.



e.取出导光板
Take off the LED board.



f.检查导光板上的接插件是否松动
Check if the connector on the LED board is loose.

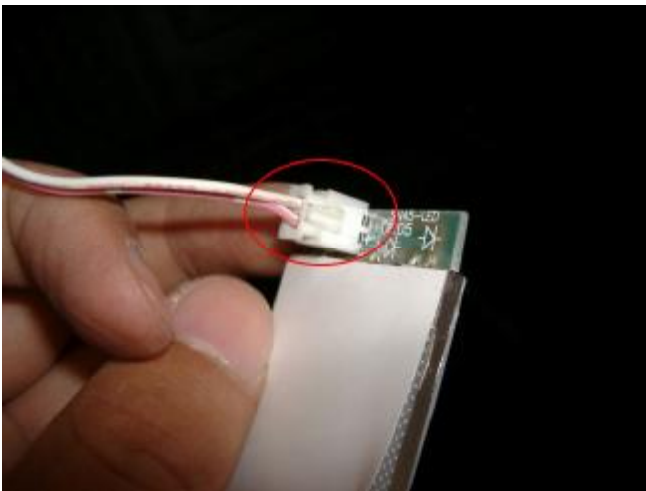


g.如接插件正常，则更换一个新的导光板
If the board has a good connecting, we should replace a new LED board.



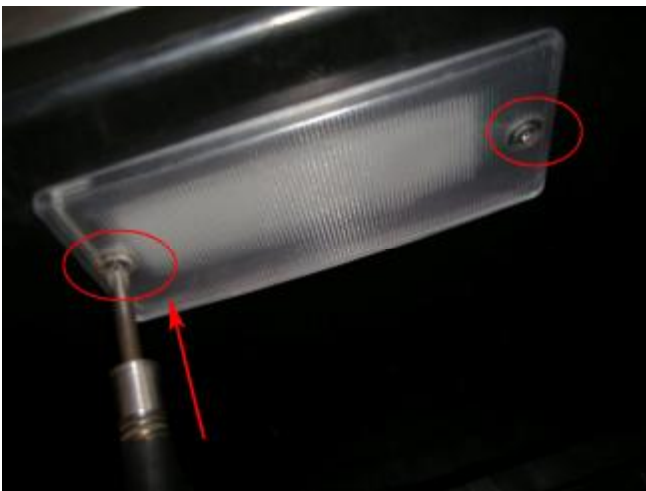
h.将导光板上的接插件接好

Install the connector on the board.



i. 固定灯盖板

Fix the light cover.



5.LED 显示“ER”

“ER” showed on LED indicator

LED 显示“ER”，判断为接线柱接触不良或热敏电阻损坏

“ER” showed on the LED indicator, the terminal is not connected well or the thermal resistor is damaged.

① 接线柱接触不良维修方法如下

The repair steps for the terminal is:

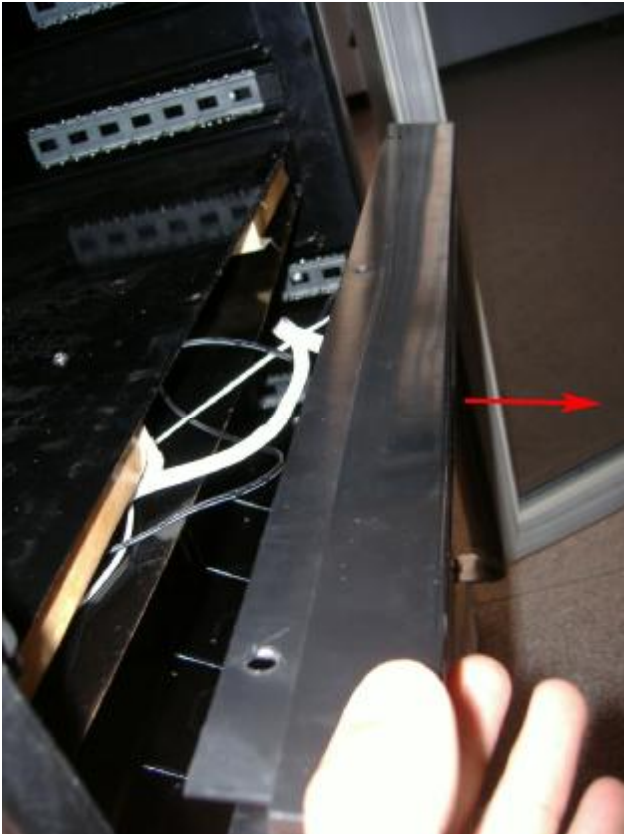
(1)用螺丝刀拧掉数码温控罩壳上的螺钉

Screw off the screws on the cover.



(2)取下数码温控罩壳

Take off the plastic panel.



(3)取下温控罩壳内的保护盒
Take off the protective box inside the plastic panel.





(4)检查温度显示板上的接插件是否松动（白色的为上箱探头，红色的为下箱探头）

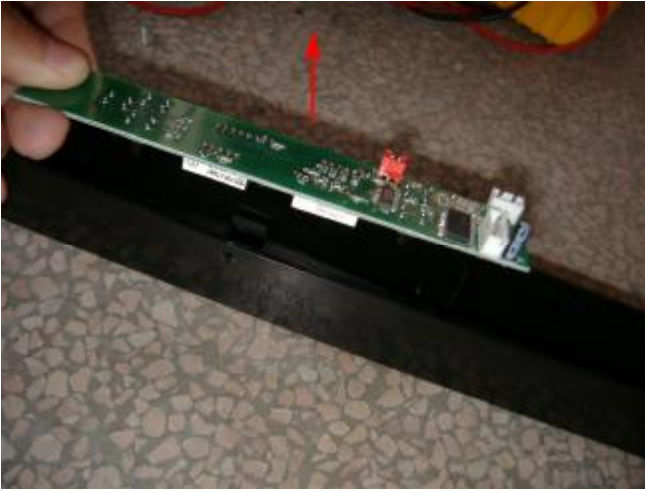
Check if the connectors on the temperature display board are loose. (The white one is the terminal of up cabinet sensor, the red one is the terminal of bottom cabinet sensor)



(5)如接插件正常连接，则

a.取出显示板

Take out the display board.



b.拔掉显示板上的接线柱
Pull out the terminal of the display board.



c.用剪子剪下接线柱图示部分
Cut the terminal according to the picture.



d.重新接上好的接线柱，用胶布隔离捆扎结实
Reconnect a new terminal, and tie it up with rubberized fabric.



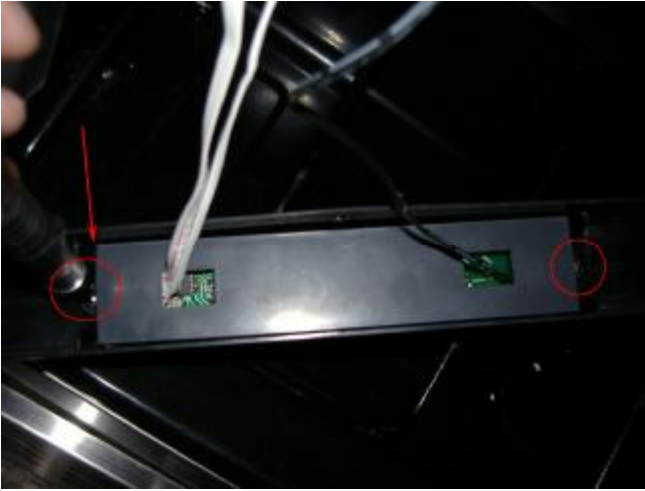
e. 固定温度显示板
Fix the temperature display board.



f. 插好接线柱
Plug the terminal.



g. 固定保护盒
Install the protective box.



h. 安装温控罩壳
Fit in the plastic panel.



② 热敏电阻损坏，修理方法如下：

The repair steps are as follows if the thermal resistor is damaged.

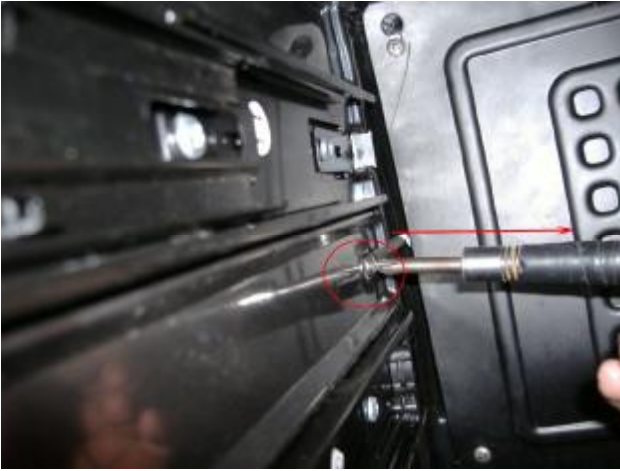
(1)取下箱内所有搁架

Take out all the racks in the cabinet.



(2)拧下上箱（或下箱）热敏电阻固定螺钉

Screw off the screws of the thermal resistor. (up cabinet or bottom cabinet)



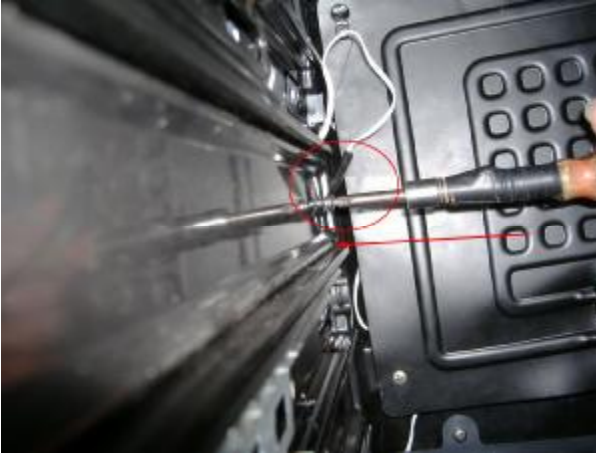
(3)剪断图示连接线，重新接上新的热敏电阻

Cut the line according to the picture, reconnect a new thermal resistor.



(4)固定好热敏电阻

Fix the new thermal resistor.



(5)放入搁架，关上门

Put the racks in and then close the door.

6.LED 显示 “LL”

“LL” showed on the LED indicator.

LED 显示 “LL”，如上图所示，说明箱内温度过低，电路失控，更换主控板，步骤如下：

“LL” showed on the LED indicator that means the temperature is too low in the cabinet. The circuit is out of control, please replace the control board, the steps are as follows:

(1)拧下后盖板上的固定螺丝

Screw off the screws on the back panel.



(2)取下后盖板

Take off the back panel.



(3) 拧下控制板罩壳上图示位置螺钉

Screw off the screws of the control board cover (according to the picture)



(4) 拧下控制板罩壳图示位置螺钉

Screw off the screws of the control board.



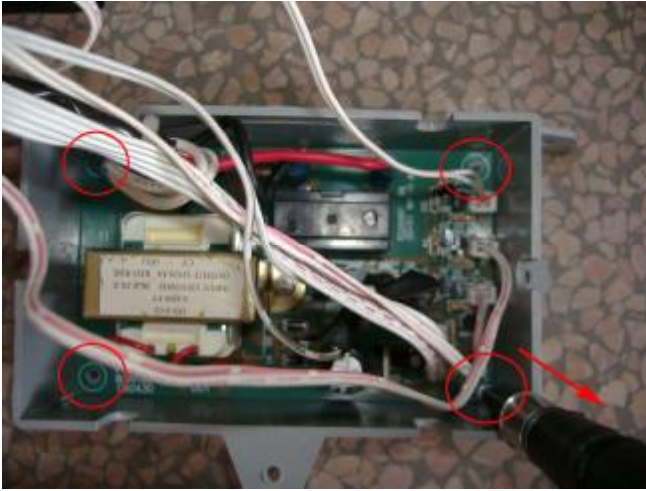
(5) 取下控制板罩壳上盖

Take off the upper cover of the control board.



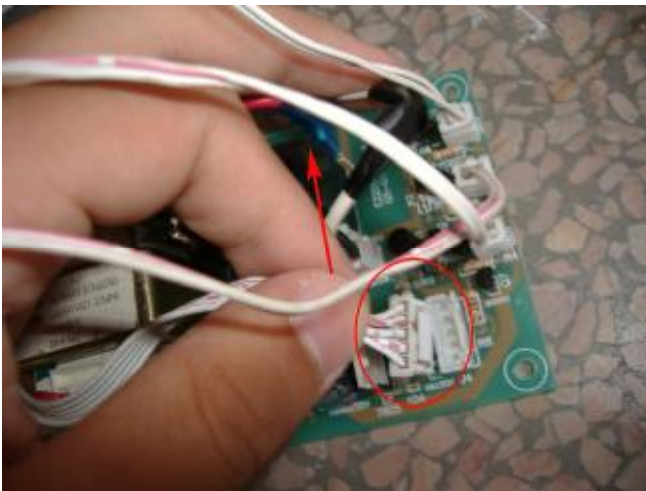
(6) 拧下控制板上固定螺钉

Screw off the screws on the control board.



(7) 拔下控制板上接线柱

Pull out the terminal on the control board.



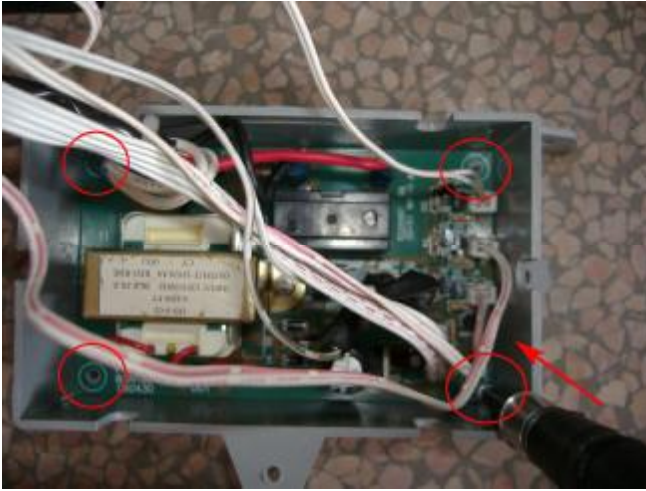
(8) 更换新的控制板

Replace with a new control board.



(9) 用螺钉固定到控制板上

Fix it with the screws.



(10) 插好控制板上接线柱

Plug the terminal on the control board.

(11) 盖上控制板罩壳上的盖子

Recover the control board cover.



(12) 用螺钉固定控制板罩壳

Fix the control board cover.



(13) 用螺钉固定后盖板

Fix the back panel with screws.



7.LED 显示“HH”

“HH” showed on the LED indicator

LED 显示“HH”,箱内温度过高,不制冷,则判为制冷系统故障

“HH” showed on the LED indicator, the temperature in the cabinet is too high; the cellar does not get cold at all: the refrigerating system got trouble.

8.LED 显示缺笔画数字,更换显示板,步骤如下:

Unavailable letters showed on the LED indicator, the indicator should be replaced. Please do as follows:

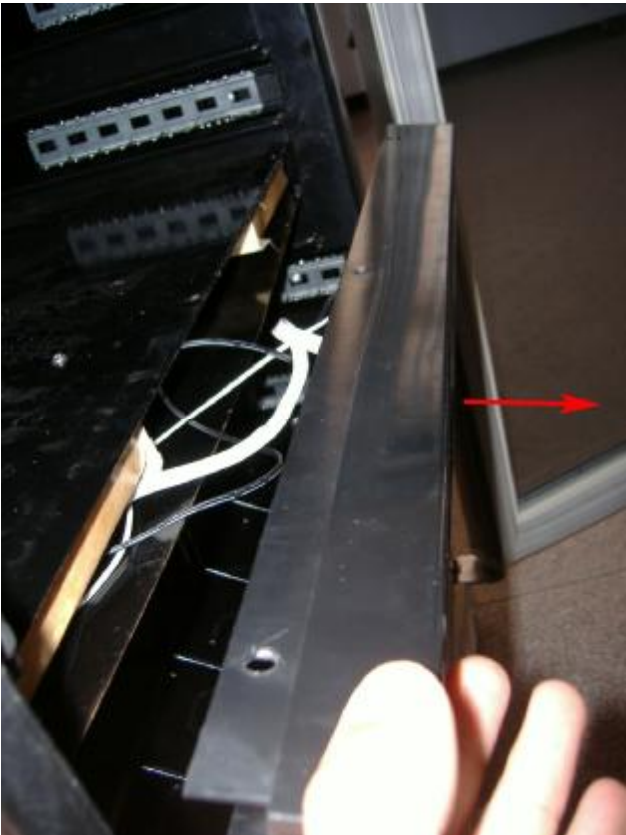
(1)用螺丝刀拧掉数码温控罩壳上的螺钉

Screw off the screws on the cover.





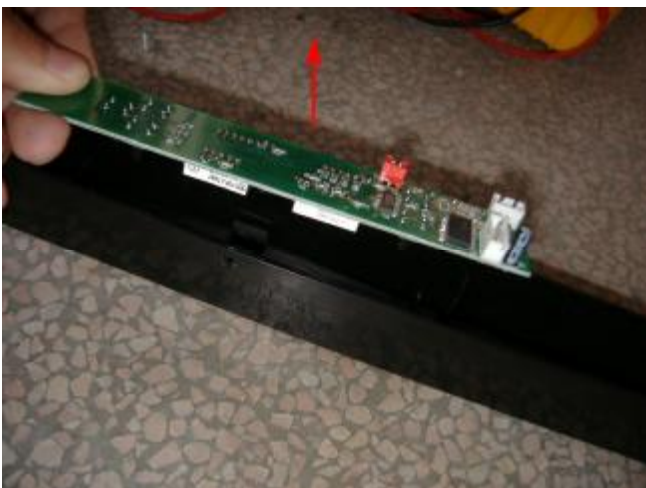
(2)取下数码温控罩壳
Take off the plastic panel.



(3)取下温控罩壳内的保护盒
Take off the protective box inside the plastic panel.



(4)取出显示板
Take out the display board.



(5) 拔掉显示板上的接线柱

Pull out the terminal of the display board.

(6) 更换一块新的显示板

Replace the display board with a new one.



(7) 固定温度显示板

Fix the temperature display board.



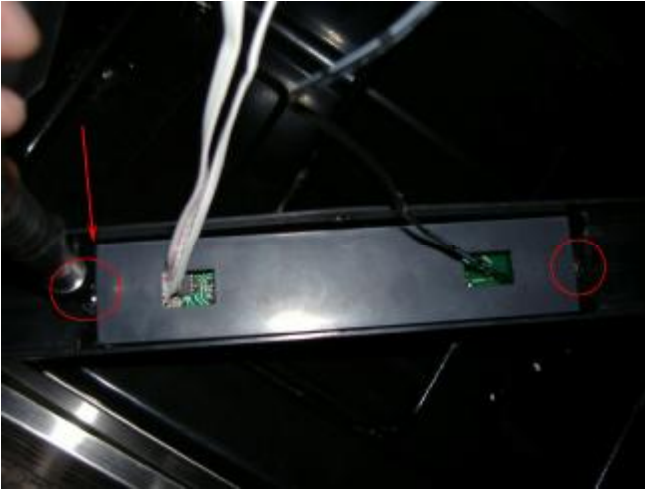
(8) 插好接线柱

Plug the terminal.



(9) 固定保护盒

Install the protective box.



(10) 安装温控罩壳

Fit in the plastic panel.



9.如上下箱温度偏差较大（上低下高）,则说明中隔板中风机不转，需检查风机是否正常工作。

If the temperature of the up and down cabinet has great warp (the up temperature is low, but the bottom temperature is too high), it seems the fan in the middle shelf doesn't rotating, we should check whether the fan is working normally or not.

Method:

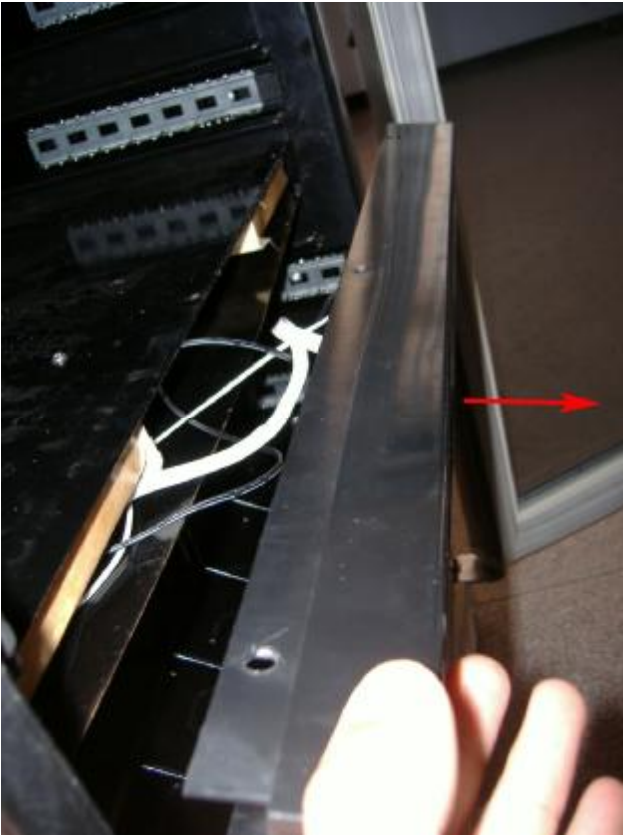
①先将中隔板上温控器罩壳的固定螺丝拧下

Take off the plastic panel.



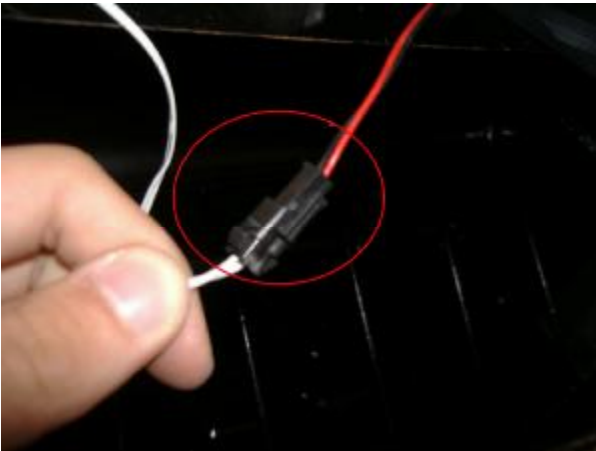
②取下数码温控罩壳

Take off the plastic panel.



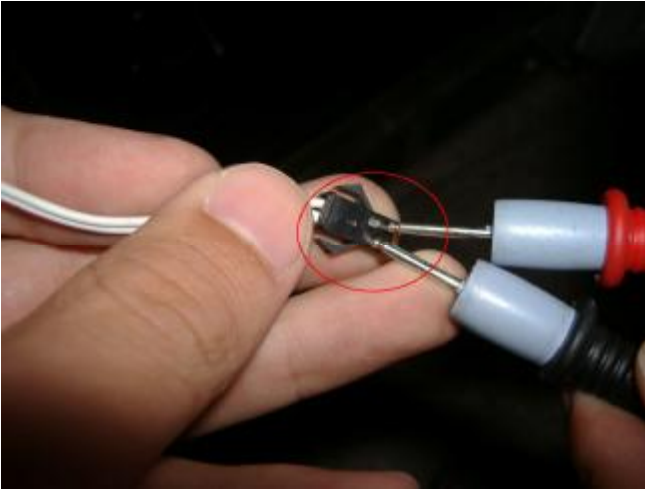
③检查中隔板中风机的接插件是否松动

Check if the terminal of the fan which is in the middle shelf is loose.



④用万用表检查接插件上是否有 12V 电压输入

Check the terminal if there is 12V DC voltage input with the multimeter.



⑤检查主控板上风机的接插件是否松动

Check and ensure the fan connector on the control board has good connecting.



⑥如以上情况都正常，说明风机坏，需更换新的风机

If above is well, it shows the fan is damaged, we should replace the fan.

Method:

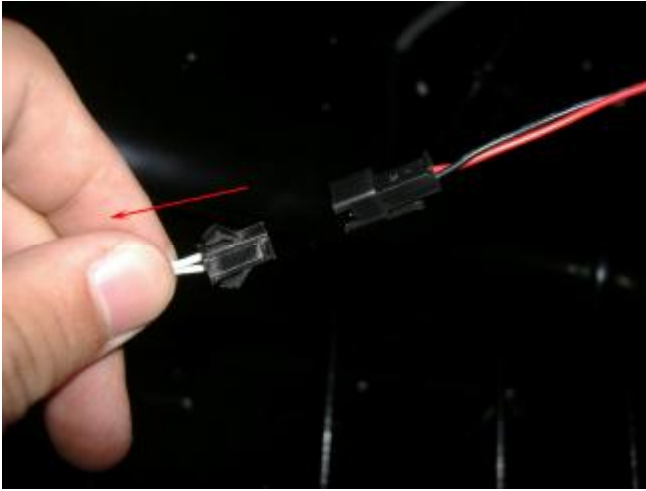
(1)将风机的固定螺丝拧下

Take off the fan fixed screws.



(2)拔下接插件

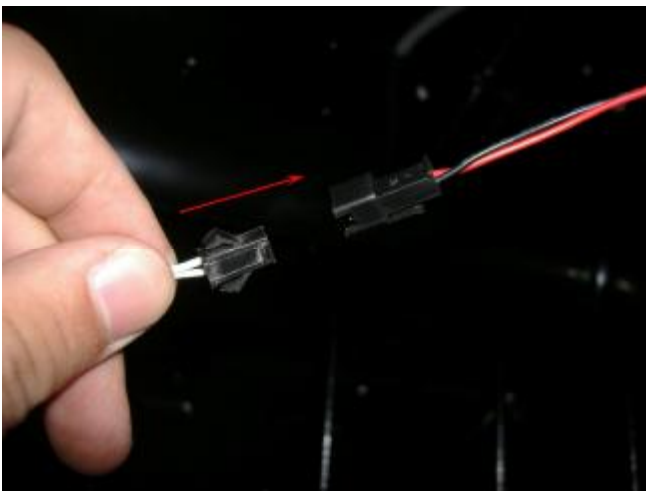
Pull out the terminal.



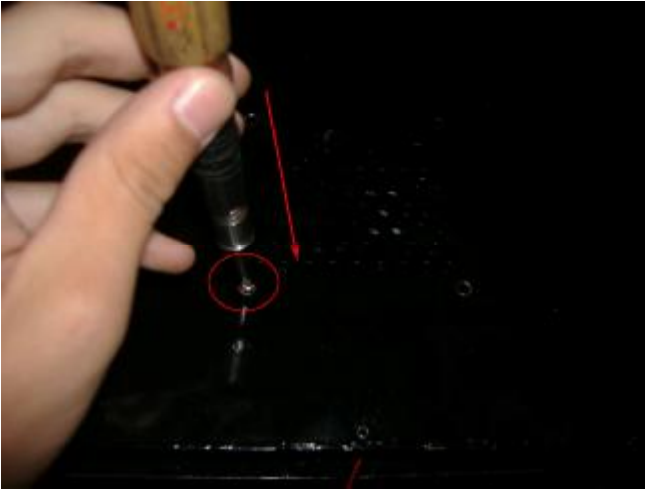
(3) 换上新的风机
Replace a new fan.



(4) 将接插件接好
Connect the terminal.



(5) 固定风机
Fit in the fan.



(6)固定温控器罩壳

Install the plastic panel.

