



WC177

Caple in-column wine cabinet

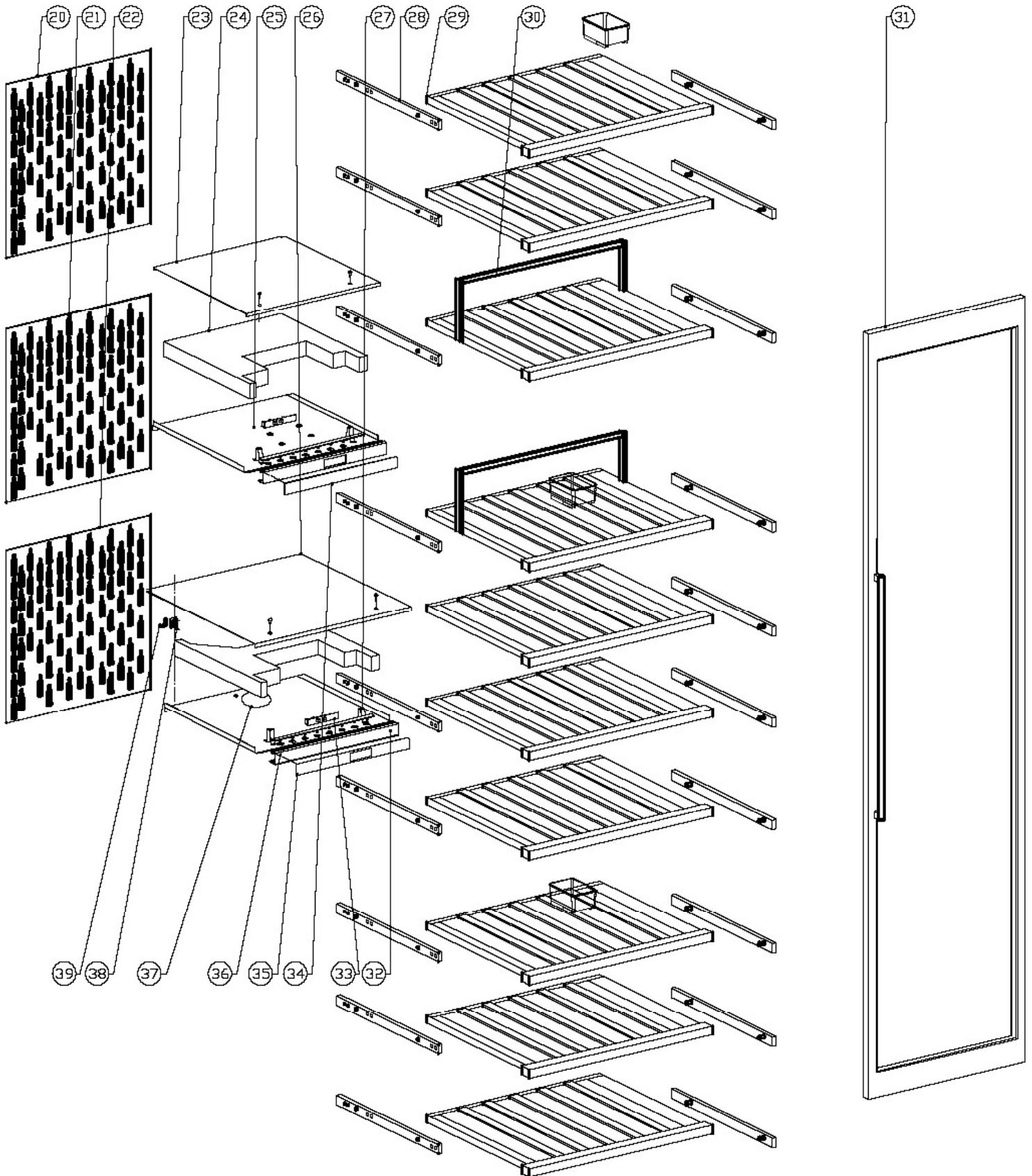


Technical information



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WC177 - Caple in-column wine cabinet

Item	Part Code	Description	Qty
1	DG11-46	Dry filter	1
2	DG13-1	Water box	1
3	DG12-37.1	Refrigerrant valve	1
4	DG2-14	Power cord	1
5	DG1-97	Compressor/Start Device/Overload Protector	1
6	DG22-3289	Electrical box cover	1
7	DG3-222-2	PCB board	1
8	DG11-49	Condenser	1
9	DG13-472	Fixing bracket A	1
10	DG13-473	Fixing bracket B	1
11	DG14-234	Top right hinge	1
12A	DG7-48	Fan	1
12B	DG17-143	Wire	1
13	DG11-18	Heater fan	2
14	DG14-148	Heat insulation panel	2
15	DG12-154	Evaporator	2
16	DG13-10	Water box	2
17	DG18-115	Foam	2
18	DG22-3266	Upper and middle air deflector	2
19	DG19-6	Fan cover	2
20	DG22-3268	Upper air duct board A	1
21	DG22-3270	Middle air duct board A	1
22	DG22-3269	Lower air duct board A	1
23	DG22-3259	Air duct board B	1
24	DG18-111	Foam	2
25	DG22-3260	Air duct board C	1
26	DG22-3261	Air duct board D	1
27	DG22-3262	Air duct board E	1
28	DG22-3281	Track	20
29A	DG15-246	Wooden shelf	8
29B	DG15-254	Stainless steel edged	8
29C	DG22-3271-L	Left shelf support	8
29D	DG22-3271-R	Right shelf support	8
30A	DG15-247	Presentation shelf	2
30B	DG15-254	Stainless steel edged	2
30C	DG22-3271-L	Left shelf support	2
30D	DG22-3271-L	Right shelf support	2
31A	DG23-303	Door	1
31B	DG22-475	Door axis	2
31C	DG22-3064	Handle	1
31D	M147-016	Gasket	1
32	DG13-3129	Display board box	2



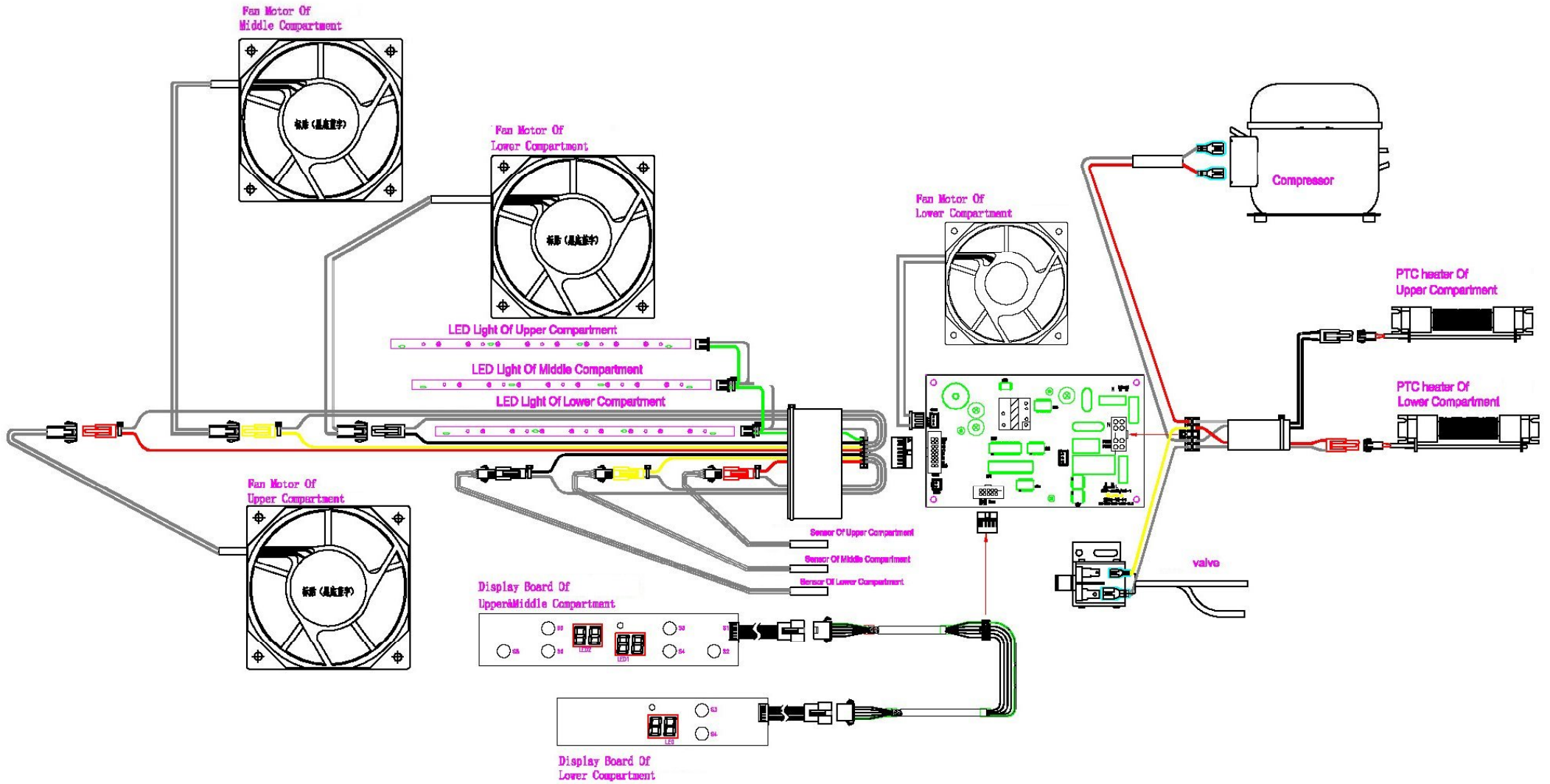
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Item	Part Code	Description	Qty
33	DG13-3063	Display support	2
34	DG20-375	Upper and middle display panel film	1
35	DG20-376	Lower display panel film	1
36	DG3-18-W	LED light	2
37A	DG7-48	Fan	1
37B	DG17-144-1	Wire	1
38A	DG13-198-W	Sensor cover	1
38B	FL-343	Pin	2
39	DG8-10	Sensor	3
40	DG13-198	Sensor cover	2
41	DG19-2	Fan cover	1
42	DG22-3265	Lower air deflector	1
43A	DG7-48	Fan	1
43B	DG17-145-1	Wire	1
44A	DG7-41-BH	Fan	1
44B	DG17-144-1	Wire	1
45	DG14-235-R	Low right hinge	1
46	DG13-3116	LED light cover	1
47	DG3-14-W	LED light	1
48	DG13-6-15	Cabinet leg	4
49	DG12-110-2	Air-circulating pipe for lower compartment	1
50	DG12-110	Air-circulating pipe for upper compartment	1
51	DG22-3275	Compressor bracket	1
-	DG22-3021	Bottom grill	1
--	DG14-235-L	Low left hinge	1



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Service Manual

Computer Controlled Wine Cellar

WC177

Service Manual

Here below we listed various faults while using the wine cellar, and the method of check-up and solve these default, and find the information of the correspondent page.

Statement: (Fig.4) shows the reference figure Fig.4
(→6.1.6) shows the reference item 6.1.6.

Warning: To prevent electrical shock, before attempting any cleaning or maintenance this unit MUST be disconnected from the electrical supply.

○ Tools

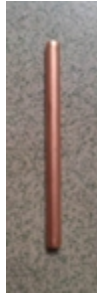
Plier



Phillips head screwdriver



Process pipe



Electrical Multimeter



Amp meter (5A caliper cable type)



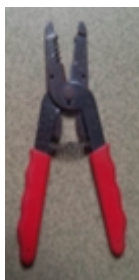
Spanner



Electrical soldering iron



Wire stripper



Seal plier



Protective gloves



Scissors

○ Equipment

1. Vacuum pump



2. Soldering equipment for copper pipe



3. Refrigerant meter




1. Safety rules on operation of repairing. (Rules must be obeyed).—	3
2. Electrical circuit diagram. _____	5
3. Cooling system diagram. _____	5
4. Name and function on control panel. _____	5
5. How to diagnose the fault. (Error Code E1, E2, E7, E8, E5, E, HI, LO)—	7
6. Gist on disassembly. _____	11
7. How to maintain the default. _____	21




1. Safety rules on operation of repairing (Rules must be obeyed).

To avoid the accident during maintain the wine cooler, and make sure the product is safety, rules must be obeyed list below.




○ Below we list the symbols and explain the danger when ignore it.

	Danger	This symbol means that the instance may have the chance to suffer death or a serious wound.
	Warning	This symbol means that the instance may have the chance to suffer death or a serious wound. '
	Notice	This symbol means that the instance may have the chance to suffer a wound. '

○ Below symbols distinguish and rules should be obeyed.





	This symbol means the instance hope to be noticed		This symbol means the instance must be done forcibly
 禁止	This symbol means the instance forbidden		

○ Below are the items must be obeyed

 Danger	
	<ul style="list-style-type: none"> • Please make sure to discharge the rest refrigerant in the parts. • When discharging refrigerant, make sure that it never go to the fire place and drain to outdoors. <p>Tell the customers that they never close to the discharge place and the fire is forbidden.</p> <ul style="list-style-type: none"> • Take apart the pipe by cutter. <p>Never take apart the part by soldering, otherwise it will fire the rest refrigerant in the systems and cause blast.</p> <ul style="list-style-type: none"> • Exhaust the rest refrigerant in the systems before welding. • After filling the refrigerant the sealing should be done by using smithing welding nozzle. <p>Using the welding machine will fire the refrigerant and blast.</p> <ul style="list-style-type: none"> • Since the R600a is heavier than the air, please let the R600a on the ground go especially for the hypogeum. • The operation on the servicing refrigerant bottle should be done in place without fire and outdoors. • Use the refrigerant warner please, as the rest refrigerant will cause the fire.
 禁止	<ul style="list-style-type: none"> • Don' t use fire in the place with rest refrigerant. • Don' t place the default compressor in indoor.






Danger

 拔除电源 插头	<ul style="list-style-type: none"> • During repairing, the power plug should be disconnected. <p>Before remove, install, replace parts disconnect the power plug.</p>
 小心触电	<ul style="list-style-type: none"> • Attention don' t get electric shock. <p>When checking current, voltage or charging never touch the connectors.</p> <p>When changing the parts, don' t touch the charged parts within three minutes after disconnect the plug.</p> <p>The capacitor will discharge for some time.</p>
 禁止	<ul style="list-style-type: none"> • Don' t damage the cooling pipe, sine the refrigerant is flammable, the damage will cause the fire or blast. • Don' t smoking in the service car.
	<ul style="list-style-type: none"> • Discharge the refrigerant entirely in the place without fire before disusing the refrigerant bottle. • Don' t touch the wine cooler when the cooling pipe damaged, don' t fie inside the wine cooler, keep the windows open to exchange the air. • Disusing the default compressor should be done outdoor without fire. • The maximum weight of the refrigerant bottle loaded in the vehicle should be comply to stated, the bottle should be place upright, the maximum leaning angle is 40° . • Do use the appointed part, otherwise it have chance to smoke fire or default. • Please put the default compressor into plastic bag and seal the peristome, then pack it with strip, as the rest compressor oil may leak in the vehicle and cause fire or blast. • Check if all the snails, parts, wiring are install in it' s place, if the area around the service part worsen. <p>When measuring the grounding resistance make sure that the test range is more than 1MΩ.</p> <p>Make sure the power cord and plug never be pinched on rear of the wine cooler.</p> <p>Exchange the power cord when it damaged.</p> <p>Clean the flake of the plug when it dirty.</p>



Notice

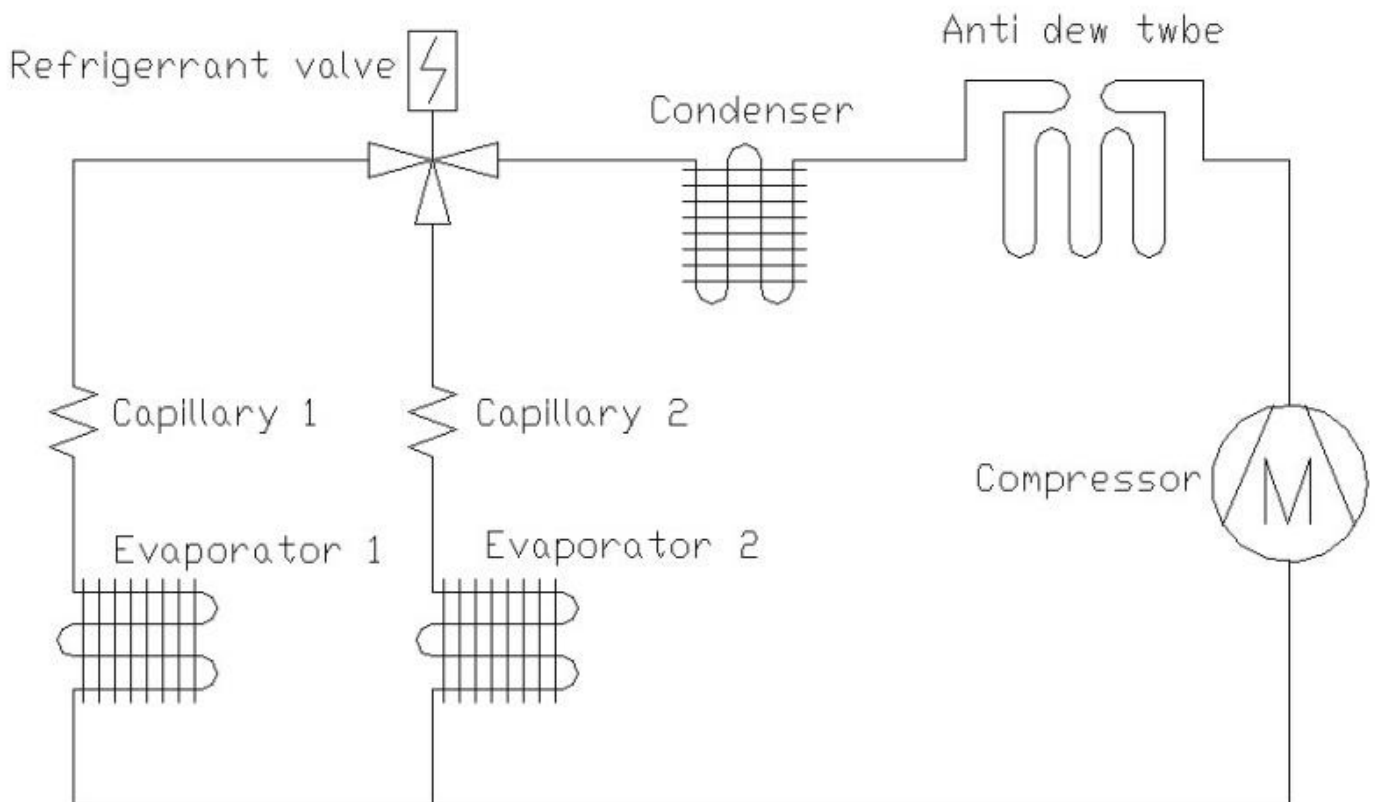
 注意高温	<ul style="list-style-type: none"> • Attention the hot. <p>The running or just stop compressor and the pipe sometimes are very hot. And the heating or just stop heater is very hot. The hot will cause scald.</p> <ul style="list-style-type: none"> • Attention the hot parts of the pipe after the welding.
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	<ul style="list-style-type: none"> • Attention the refrigerant during charge and discharge it, as it will frostbite the skin when touch it. • Attention the burr. The burr on the metal or plastic part may hurt the hand. • Attention the fins of the evaporator. The fins of the evaporator may hurt the hand.
	<ul style="list-style-type: none"> • Drive up the wine cooler when moving it. Pushing it may damage the floor. Cover a protector board on the easy damage floor.

2. Electrical circuit diagram.

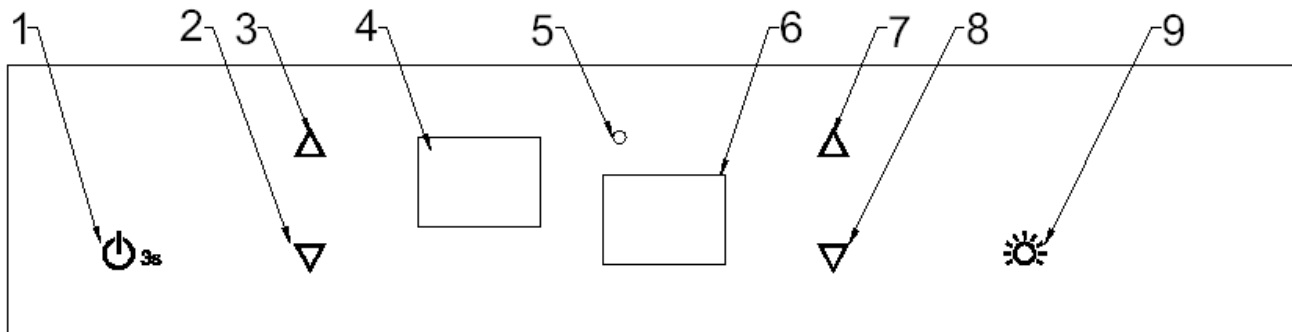
(See attachment 1)

3. Cooling system diagram.



4. Name and function on control panel.

4.1. Name and function on upper and middle compartment control panel.



1. POWER BUTTON

Power switch, switch on/off by pressing it and hold on for three seconds.

2. Upper compartment DOWN BUTTON

Used to lower (cool) the upper compartment temperature in 1 °C decrements.

3. Upper compartment upper button

Used to raise (warm) the upper compartment temperature in 1 °C increments.

4. Upper compartment display

Upper compartment inner temperature readout.

5. Indicator light

Indicator light illuminates to signify the cooling mode is currently in operation. (Notice: after compressor off, it can be on only after 3 minutes later, so the indicator light as also on after 3 minutes).

6. Middle compartment display

Middle compartment inner temperature readout.

7. Middle compartment upper button

Used to raise (warm) the middle compartment temperature in 1 °C increments.

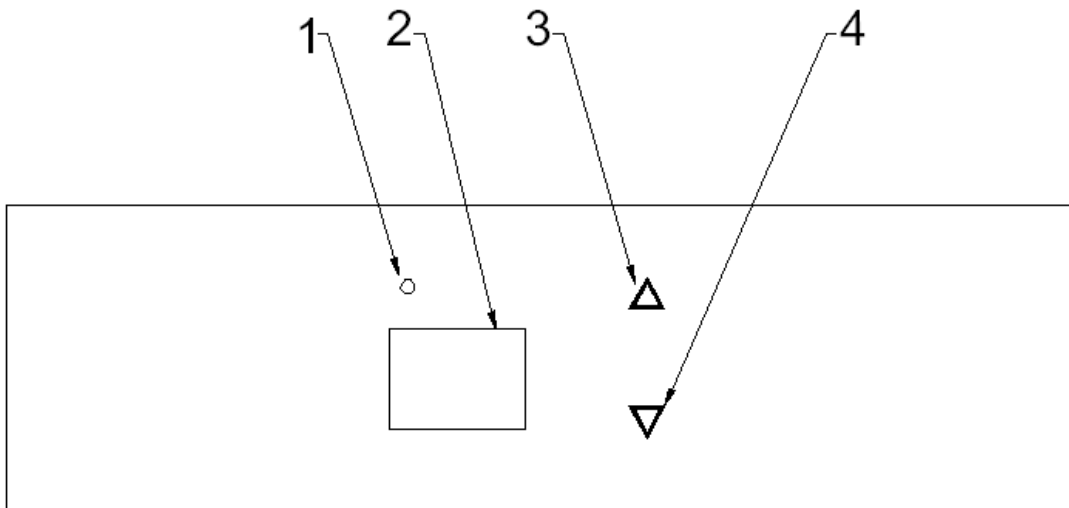
8. Middle compartment DOWN BUTTON

Used to lower (cool) the middle compartment temperature in 1 °C decrements.

9. LIGHT BUTTON

Used to switch the internal light on/off. Press it twice, the inner light on and free from the door switch.)

4.2. Name and function on lower compartment control panel.



1. Light indicator

Indicator light illuminates to signify the light switch on/off.

2. Lower compartment display

Lower compartment inner temperature readout.

3. Lower compartment upper button

Used to raise (warm) the lower compartment temperature in 1 °C increments.

4. Lower compartment DOWN BUTTON

Used to lower (cool) the lower compartment temperature in 1 °C decrements.

5. Diagnose the default

5. 1. Self examination system to check the fault

Because the wine cellar series adopted computer control system, which is convenient for the maintenance and examination of the wine cellar, and there is the self examination in the computer board.

If there is any doubt about the fault of the control system, please apply the self-examination system.

The method is following:

- 1 >. Press up and down at the same time, turn the power, enter the self examination system after hearing three beeps.
- 2 >. The normal self examination phenomenon as following:
 - a. No answer after pressing key;
 - b. The display tune show setting temperatures.;
 - c. The compressor works non-stop, and the induction light is on;
 - d. The fan of the evaporator, the condenser running speedily and the refrigerant valve swich one time per 3 seconds;
 - e. The light switch normally is controlling the light.
- 3 >. If the above a~e point is line in the situation, and every components of the machine is normal; if there is any different, and firstly check the abnormal components and their connection wire. If the connection is tight, replace the components. If the replacement fail, it can be judged as control panel's fault, please

replace it with the same module. (→6.2.2)

4 >. Unplug the plug to exit the self-examination system.

5.2 Error code

Symbol	Representation	Checking point		Solution
E1	Upper compartment sensor open circuit.	Check the wiring and connection between PCB and sensor, if it open circuit.		If the connection and wiring is normal, replace the sensor please (→6.1.6)
E2	Upper compartment sensor short circuit.	Check the wiring and connection between PCB and sensor, if it short circuit.		
E7	Middle compartment sensor open circuit.	Check the wiring and connection between PCB and sensor, if it open circuit.		
E8	Middle compartment sensor short circuit.	Check the wiring and connection between PCB and sensor, if it short circuit.		
E5	Lower compartment sensor open circuit.	Check the wiring and connection between PCB and sensor, if it open circuit.		
E6	Lower compartment sensor short circuit.	Check the wiring and connection between PCB and sensor, if it short circuit.		
HI	High temperature warning. Inner temperature too high	1. Display on all compartments :check if the compressor normal, if any gas leakage.		Replace the compressor, start or protector, or repair the leakage (→7.1, 7.2, 7.3)
		2. Display on single compartment	a. Check if the valve normal.	If the valve fail, replace it. (→6.2.4)
			b. Check if the capillary block.	If the capillary block, replace it. (→6.2.5)
L0	Low temperature warning. Inner temperature too low	Display on any one of upper and middle compartments.	a. Check if the valve normal.	If the valve fail, replace it. (→6.2.5)
			b. Check if the main PCB normal.	If the PCB fail, replace it. (→6.2.2)
L0	Inner temperature too low	Check if the PCB faulty.		If the PCB faulty, replace it. (→6.2.3)

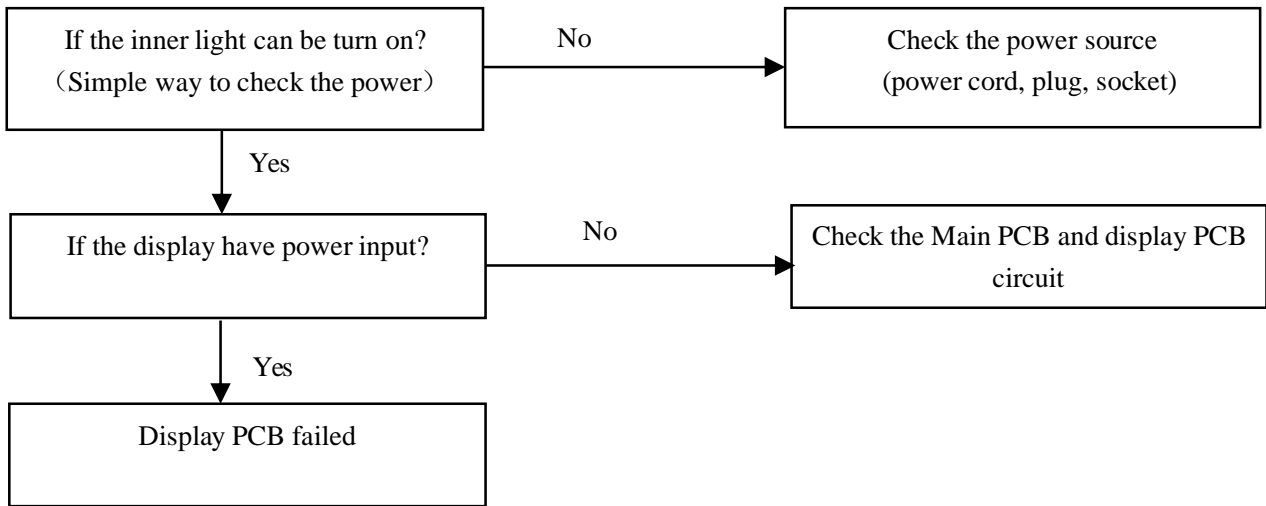
“HI” High temperature warning — After the wine cooler ten hours running for ten hours constantly, if the any of the inner temperature is over 23°C, the readout show HI, after it showing for one hour, the the buzzer alarm, and one hour later, the buzzer stop, the compressor stop. The HI alarm can be stopped by disconnect the power plug.

“LO” Low temperature warning — After turning on the wine cooler two hours, if the inner temperature is lower than 0 °C and lasting for 15 minutes, the readout show LO, the buzzer alarm, and the compressor stop at the same time, when the inner temperature is over 2°C, the LO warning quit.

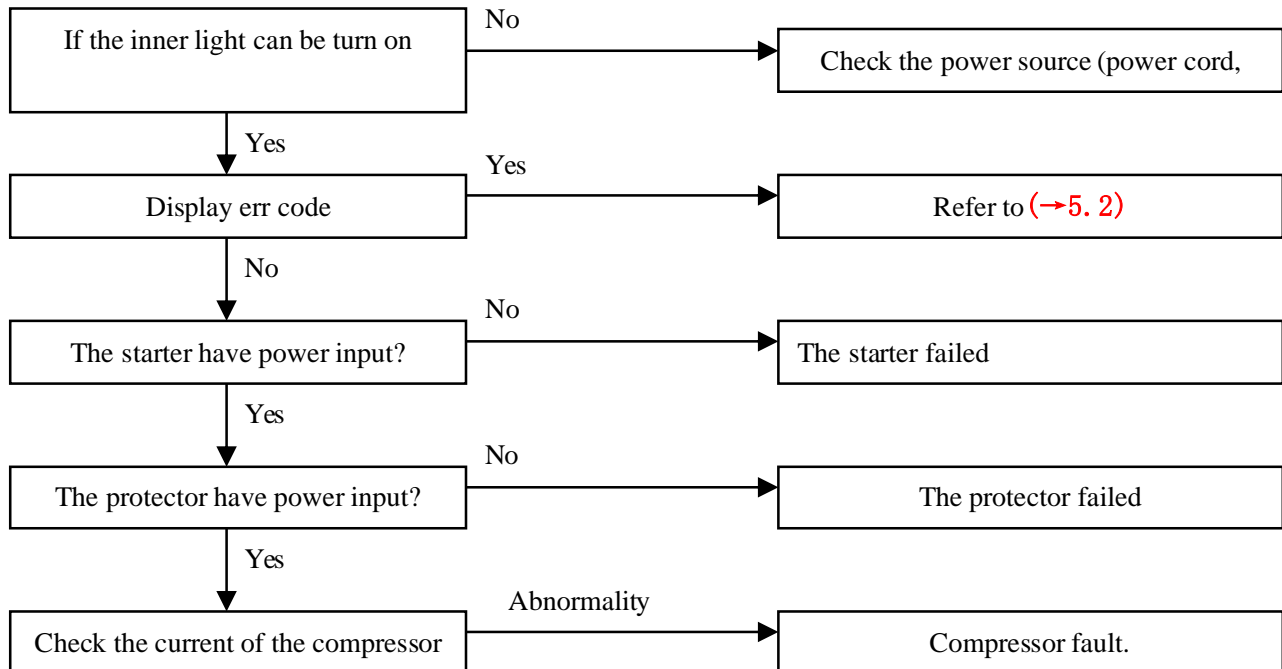
5.3 Procedure of diagnose the default

- There isn't any display on the display PCB.

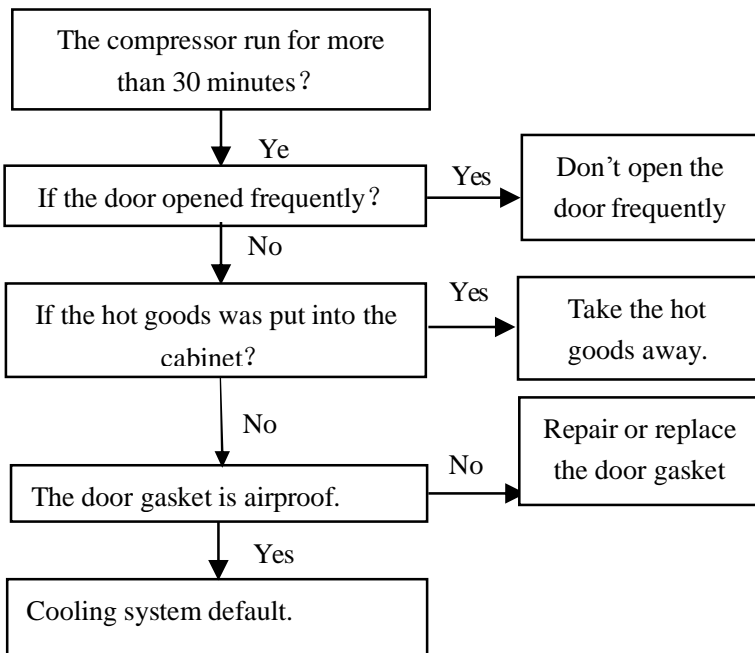
The test voltage and point (→2).



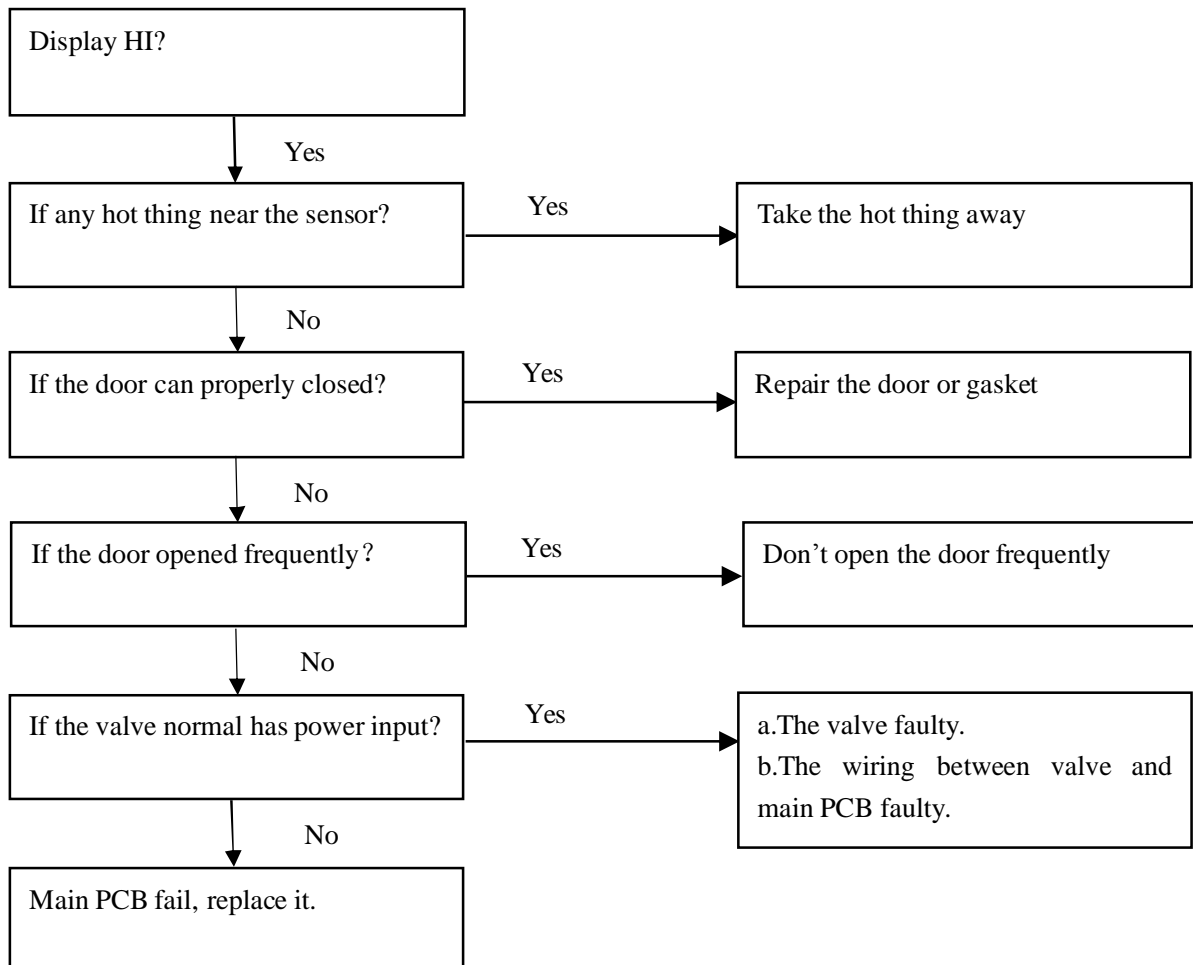
- All of compartments are not cooling (the compressor off)



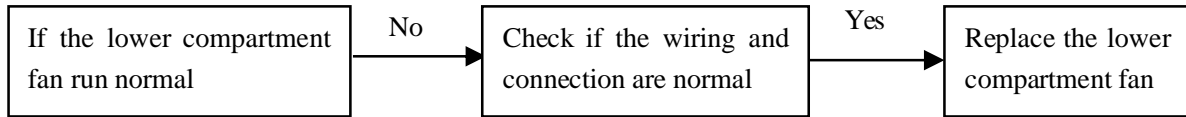
● **The upper compartment not cooling (the compressor running)**



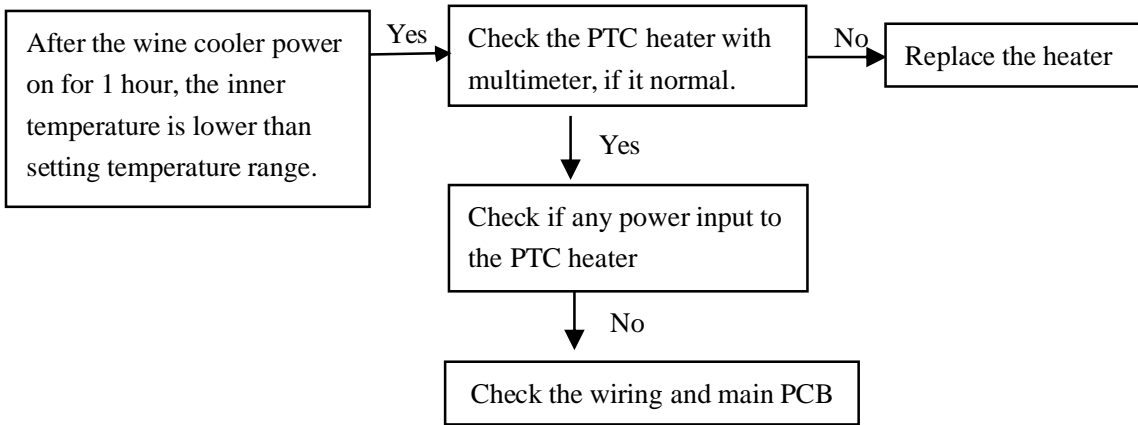
● **One of upper or middle compartment normal, the other not cooling.**



● **The middle compartment normal, but lower compartment not cooling.**



● **The inner temperature is not rise in time.**



6. Gist on disassembly.

Warning: Disconnect the power plug before maintain the wine cooler.

6.1 Gist on disassembling the inner cabinet.

6.1.1. How to remove the shelves.

Open the door and pull the shelf outward (arrow A direction), then rise it as arrow B direction (Fig. 1). Push the end of the shelf to the side stoppers corresponding to the notches and take it out as directions C and D show (Fig. 2).

Shelf

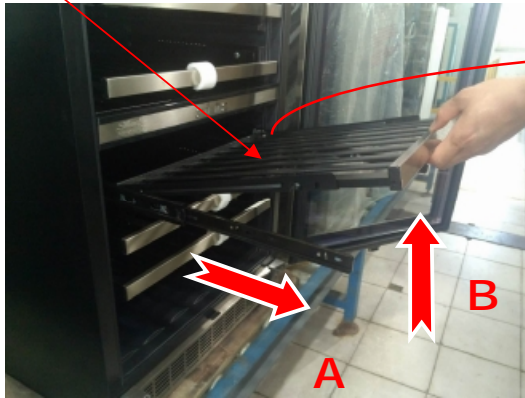


Fig.1

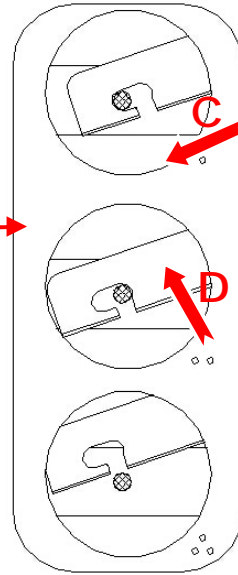


Fig.2

6.1.2. How to remove the rail

The process of removing the two section rail: Take the shelf off (6.1.1) → remove the rail
 Remove the shelf, remove two fixing screws of the fail. (Fig.3)

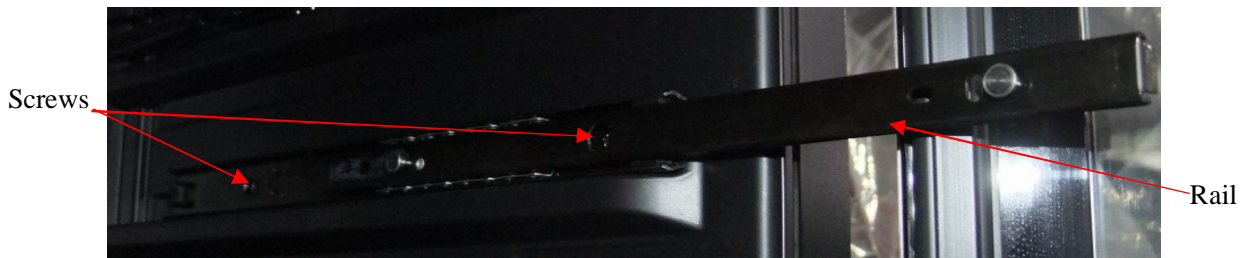


Fig.3

6.1.3. How to remove the air-duct boards A, B, C, D, E

1) The process of removing the air-duct board B: Remove the shelves(6.1.1) → remove the air-duct board B

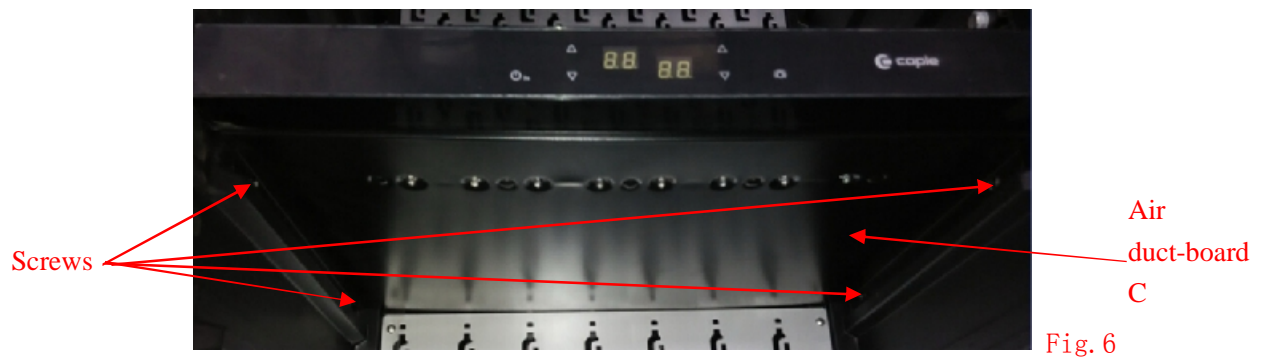
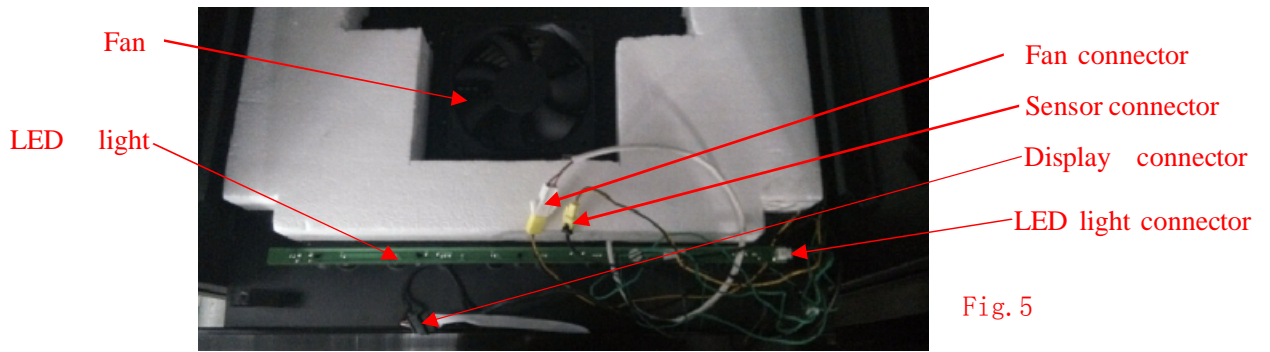
Remove two fixing screws, pull the air-duct board B out. (Fig.4)



Fig.4

2) The process of removing the air-duct board C: Remove the shelves(6.1.1) → remove the air-duct board B(6.1.3) → remove the air-duct board C

Remove the air-duct board B, disconnect all connectors (Fig.5). Remove the other four fixing screws, pull the air-duct board C out (Fig.6).

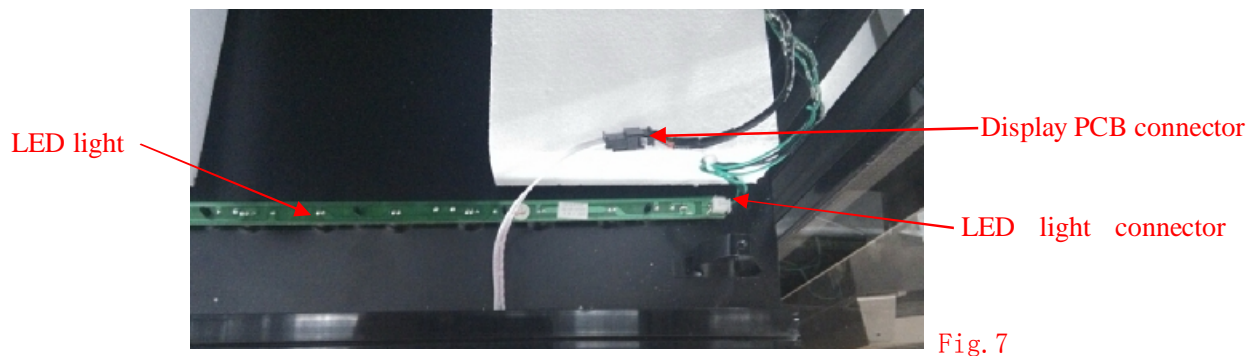


3) The process of removing the air-duct board D: Remove the shelves(6.1.1) → remove the air-duct board D

Remove two fixing screws, pull the air-duct board D out. The process is same as removing the air-duct board B.

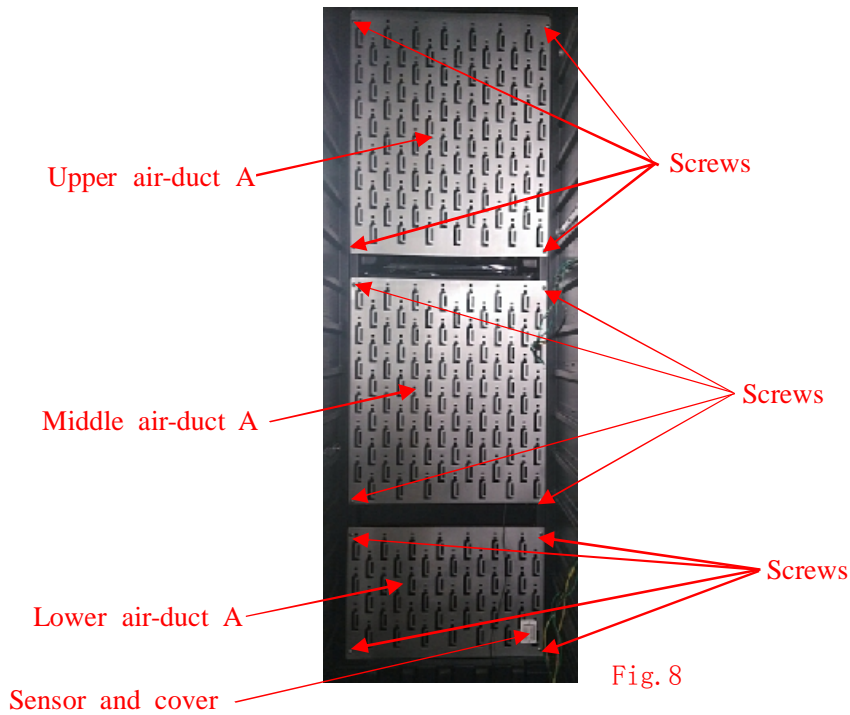
4) The process of removing the air-duct board E: Remove the shelves(6.1.1) → remove the air-duct board D(6.1.3) → remove the air-duct board E

Remove the air-duct board D, disconnect all connectors (Fig. 7). Remove the other four fixing screws, pull the air-duct board E out (Fig. 6), The process is similar with removing the air-duct C.



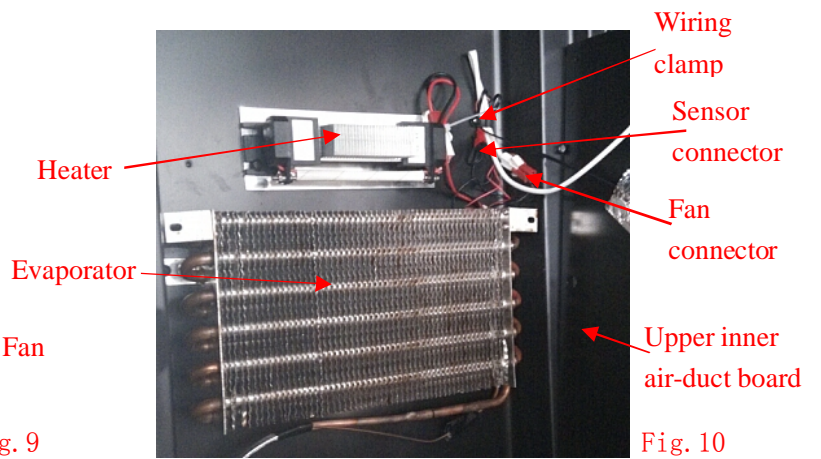
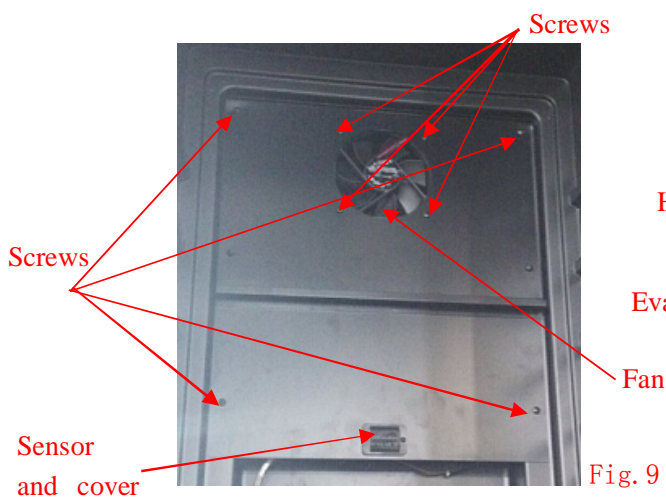
5) The process of removing the air-duct board A (upper, middle, lower): Remove the shelves(6.1.1) → remove the air-duct board A (upper, middle, lower).

Remove four fixing screws one any air-duct board A, pull the air-duct board As out. (Fig. 8)



6) The process of removing the inner air-duct board A(upper, middle, lower): Remove the shelves (6.1.1) → remove the air-duct board A(upper, middle, lower) (6.1.3) → remove the inner air-duct board (upper, middle, lower).

After removing any one air-duct board A, remove the inner air-duct board fixing screws(Fig. 9) pull the inner air-duct board A out. (Fig. 10)



6.1.4. How to remove the heater

The process of removing the heater : Remove the shelves (6.1.1) → remove the air-duct board A(upper, lower) (6.1.3) → remove the inner air-duct board (upper, lower) (6.1.3) → remove the heater (upper, lower).

After removing the inner air-duct board, disconnect the heater connector, remove two heater fixing screws. the process used for both heaters (Fig. 10) .

6.1.5. How to remove the inner fans.

There are four fans inside the cabinet, the upper compartment is on the upper inner air-duct board, the middle compartment fan is on the middle inner air-duct board, lower compartment fan is on the air-duct board E, the heater fan is on the lower inner air-duct board. The fans on inner air-duct boards have same method of removing.

- 1) The process of removing the fan on the air-board E (lower compartment fan): Remove the shelves(6.1.1) → remove the air-duct board D(6.1.3) → remove the lower compartment fan.

After removing the air-duct board D, the fan on the air-board E (lower compartment fan) (Fig. 5) .

- 2) The process of removing the fan on the inner air-board (upper, middle compartment fans and lower heater fan): Remove the shelves(6.1.1) → remove the air-duct board A (6.1.3) → remove the inner air-duct board (6.1.3) → remove the fans.

After removing the inner air duct boards, remove four fixing screws of the fan, and remove the fan. (Fig. 9)

6.1.6. How to remove the sensor

The process of removing the sensor on the air-duct A: Remove the shelves (6.1.1)→ remove the air-duct board A (6.1.3) → remove the sensor

After removing the air-duct board A, press out the fixing nails from the back with hard tool, remove the sensor cover, remove the sensor from the air-duct board and cover. (Fig. 11)

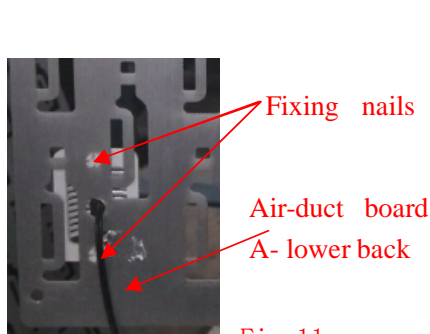


Fig. 11

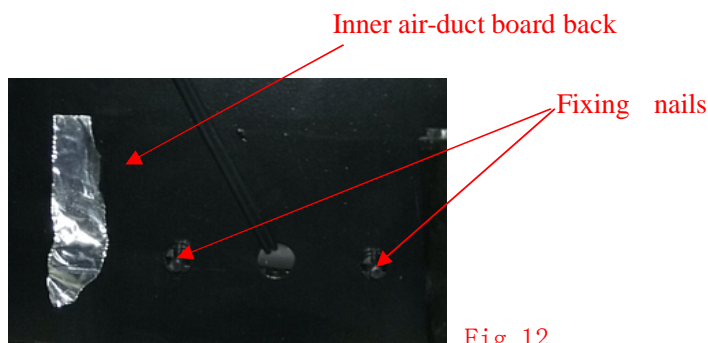


Fig. 12

The process of removing the sensor on the inner air-duct: Remove the shelves (6.1.1)→ remove the air-duct board A (6.1.3) → remove the inner air-duct board(6.1.3) → remove the sensor

After removing the air-duct board A, press out the fixing nails from the back with hard tool, remove the sensor cover, remove the sensor from the air-duct board and cover. (Fig. 11)

6.1.7. How to remove the LED light

- 1) How to remove the upper LED light

1>The process of removing the upper compartment LED light: Remove the shelves (6.1.1)→ remove the upper compartment LED light.

After removing the shelves, prize the light cover by hand, the light PCB was fixed by six hooks. (Fig. 13 & Fig. 14). Pull the hooks outward one by one and pull the light PCB down, remove the LED light. (Fig. 15 & Fig. 16)

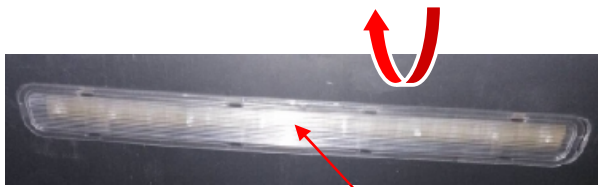


Fig. 14

Light cover

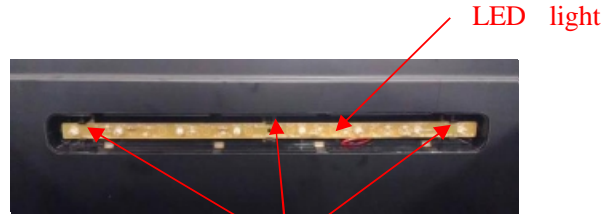


Fig. 13

Hooks

LED light



Fig. 15

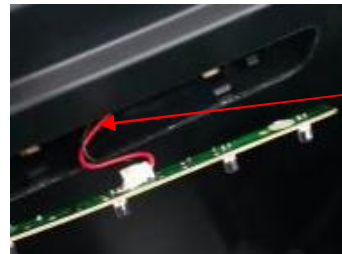


Fig. 16

Wiring

2>The process of removing the LED light on air-duct board C or E: Remove the shelves(6.1.1) → remove the air-duct board B or D (6.1.3) → Remove the display PCB air-duct board C or E
After removing the air-duct board B or D, you can see the LED light, disconnect the light connector, press the heads of the plastic pins fixing the LED light one by one and pull the LED light upward. (Fig. 5, Fig.7 & Fig.17).

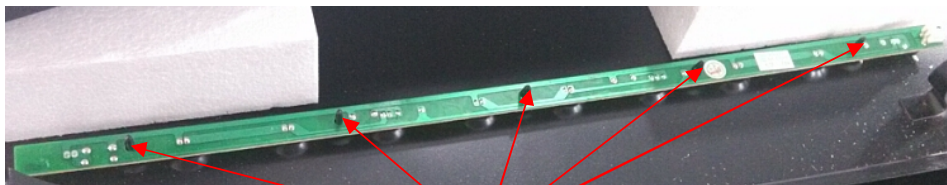


Fig. 17

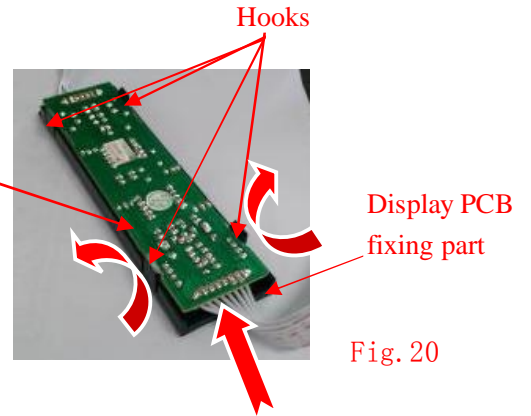
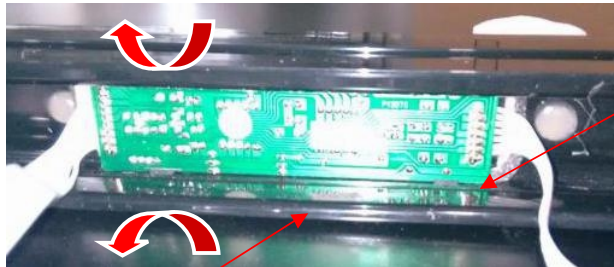
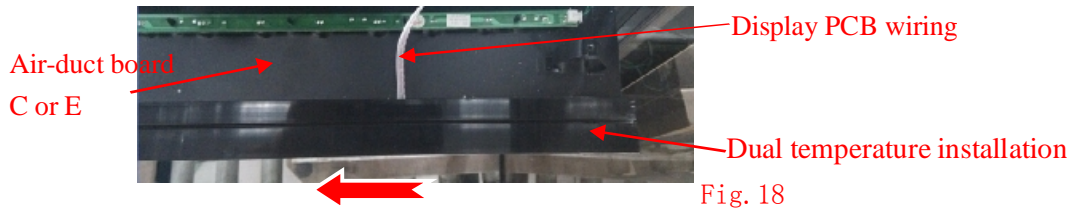
Fixing nails

6.1.8. How to remove the display PCB.

The process of removing the display PCB on air-duct board C or E: Remove the shelves(6.1.1) → remove the air-duct board B or D(6.1.3) → Remove the display PCB

1) After removing the air-duct board B or D, disconnect the display PCB connector, remove four screws under the air-duct board B or D, pull it outward for a certain distance, and push the display PCB fixing part to the side far away for the door hinge, and take the part away. (Fig. 5&Fig.7&Fig.18)

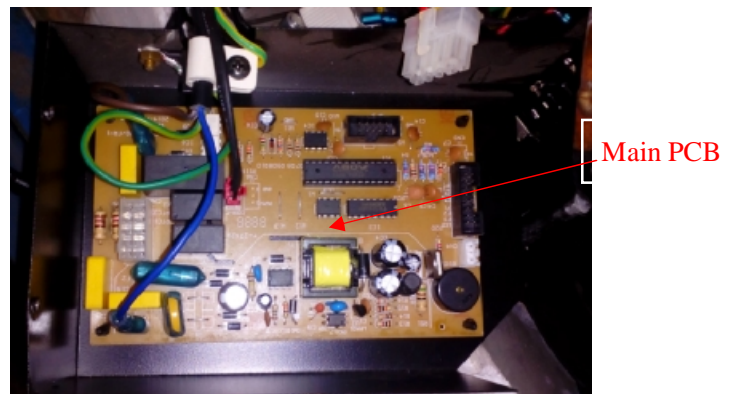
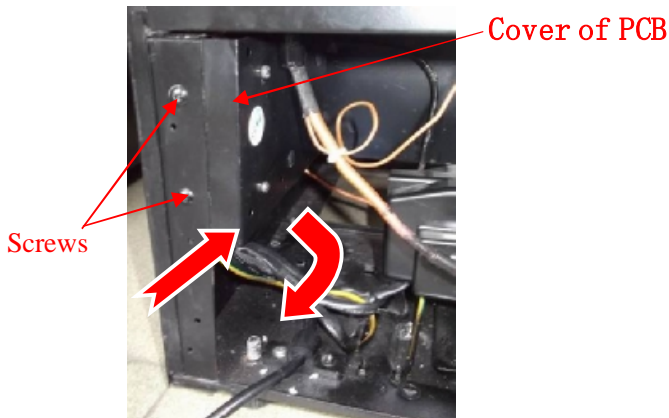
2) From the display PCB back, pull the hooks one by one follow the arrows show, and take the PCB off. (Fig. 19 & Fig.20)



6.2 Gist on disassembly outside the cabinet.

6.2.1. How to remove the Cover of PCB

Remove two screws fixing Cover of PCB, push the Cover of PCB forward and pull down it, then pull it out. Disconnect all connectors from the Main PCB, remove the grounding and clamp screws, remove the Cover of PCB. (Fig. 21 & Fig. 22)



6.2.2. How to remove the Main PCB

The process of removing the Main PCB: Remove the Cover of PCB (6.2.1) → Disconnect the connectors → Remove the Main PCB

After removing the Cover of PCB, disconnect all connectors, press the head of the nails one by one and pull the PCB at the same time, remove the PCB. (Fig. 23 & Fig. 24)

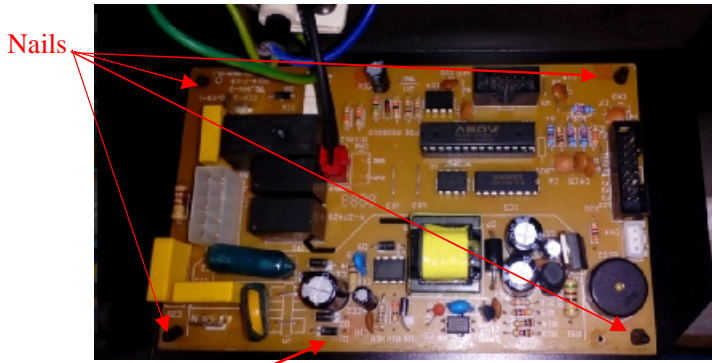


Fig. 23

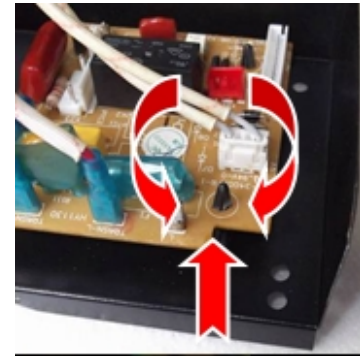


Fig. 24

Diagram of Main PCB connection (Fig. 25)

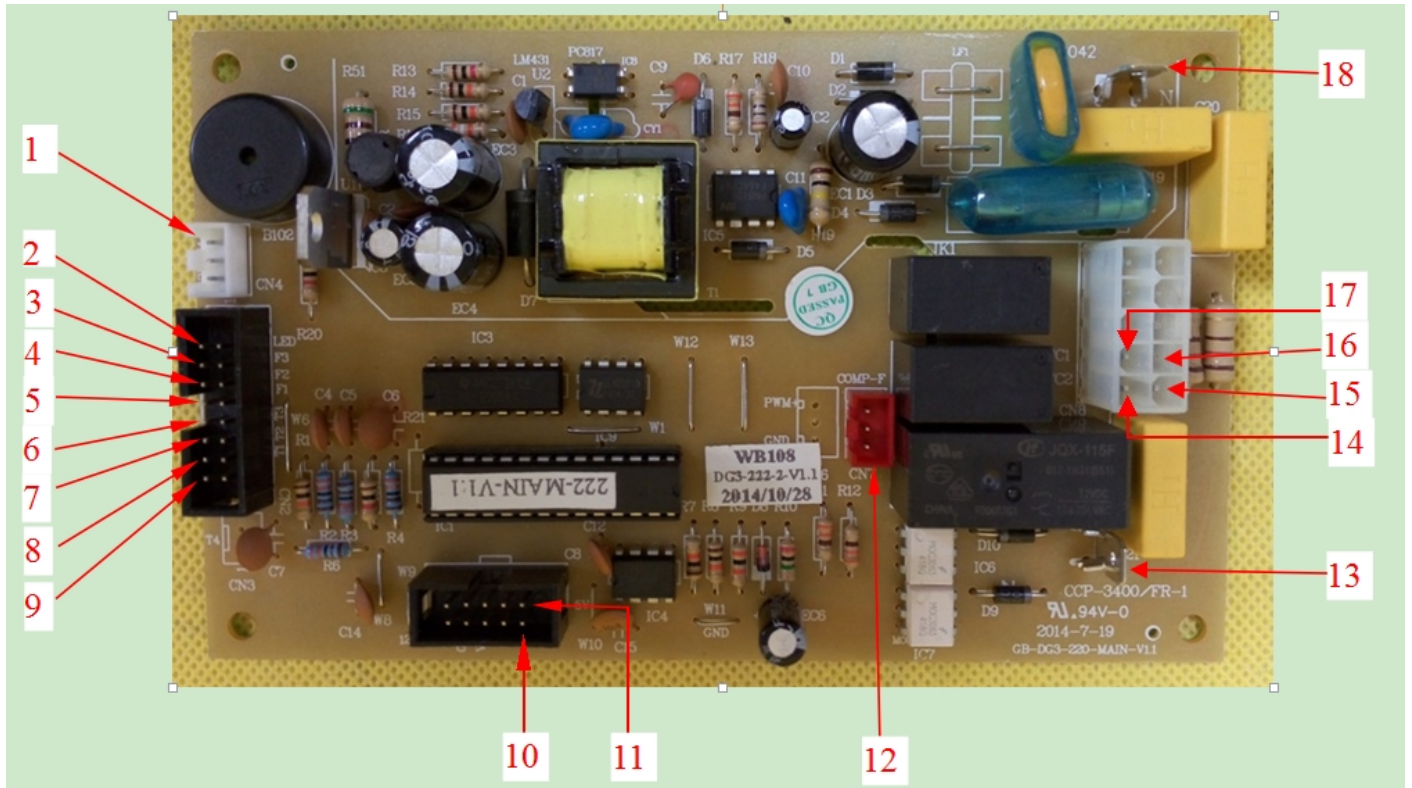


Fig. 25

1. Lower heater fan (F4)
2. LED 灯 LED light
3. Lower compartment fan (F3)
4. Middle compartment fan (F2)
5. Upper compartment fan (F1)
6. Lower compartment sensor (T3)
7. Middle compartment sensor (T3)
8. Upper compartment sensor (T3)
9. Door switch(MKG)
10. Lower display PCB (one readout)
11. Upper and middle display PCB (two readouts)
12. Condenser fan (F5)
13. Power - L
14. Lower heater (PTC2)
15. Compressor (COMP)
16. Valve
17. Upper heater (PTC1)
18. Power - N

6.2.3. How to remove the compressor

The process of removing the compressor: Remove the electrical cover of compressor → disconnect the connectors → Separate the pipe connect to the compressor → remove the compressor

Notice: Separating the pipes should be done in place without fire and good ventilation outdoor.

Heat the joints A, C, D, and disconnect the pipe by using plier, remove the electrical box of the compressor, disconnect the connecting wiring, then remove the four basic screws fixing compressor by using the monkey spanner, remove the compressor. (Fig. 26)

Diagram of rear side solder joints. (Fig.26)



Fig. 26

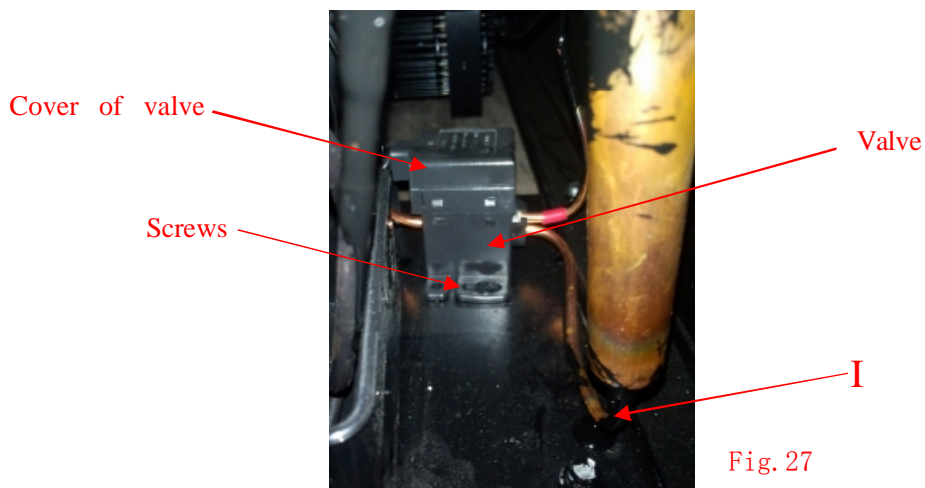
- A: compartment's suction pipe solder joint
- B: Anti-dew pipe solder joint
- C: Discharge pipe and anti-dew pipe solder joint
- D: Connecting pipe and compressor solder joint
- E: Process pipe joint
- F: Connecting pipe and upper compartment suction pipe solder joint
- G: Lower compartment's capillary and valve solder joint
- H: Upper compartment's capillary and valve solder joint
- I: Valve and filter solder joint
- J: Connecting pipe and anti-dew solder joint
- K: Condenser and filter solder joint

6.2.4. How to remove the valve:

The process of removing the valve: Remove the electrical cover of valve → disconnect the connectors → Separate the pipe connect to the valve → remove the valve

Notice: Separating the pipes should be done in place without fire and good ventilation outdoor.

- a. Remove the cover of the valve, with slot-type screwdriver or similar tool.
- b. Heat the solder joint G, H, I with soldering iron and take apart the valve.
- c. Remove 2 screws on front and back of the valve and Remove the valve. (Fig.26 & Fig.27)



6.2.5. How to remove the evaporator

The process of removing the evaporator: Remove the shelves(6.1.1) → remove the air-duct board B(6.1.3) → remove the air-duct board C(6.1.3) → remove the air-duct board D(6.1.3) → remove the air-duct board E(6.1.3) →remove all air-duct board A → remove the evaporator

Notice: Operate cooling pipes and compressor, evaporator, condenser should be in place without fire outdoors.

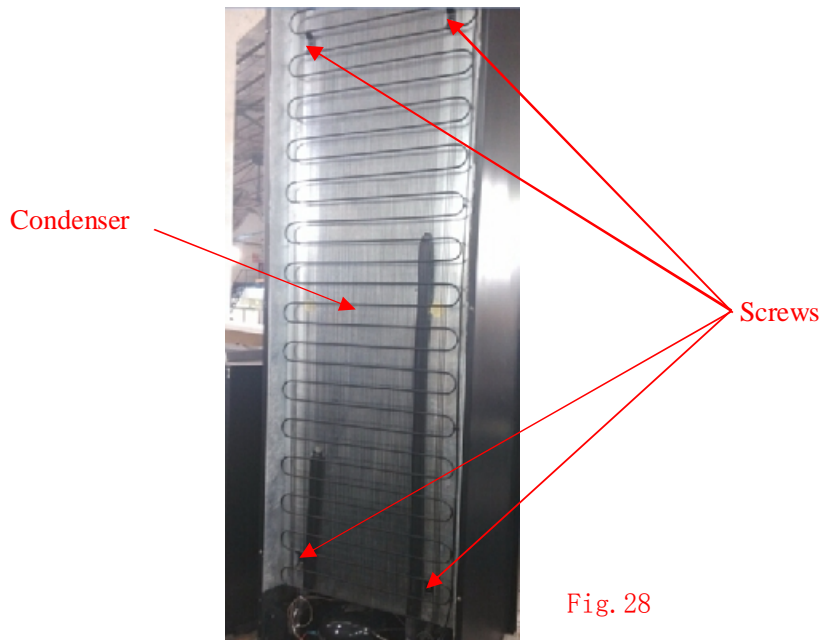
After removing all air-duct board A, heater the joint F,H for upper evaporator or A,G for lower evaporator, and separate the pipe by using the plier, then remove the six fixing screws of evaporator and remove the evaporator from inner cabinet. (Fig.10 & Fig.26)

6.2.6. How to remove the condenser

The process of removing the condenser: Disconnect the joints of condenser (Fig. 26) → remove the condenser

Notice: Operate cooling pipes and compressor, evaporator, condenser should be in place without fire outdoors.

Set free the refrigerant from E, and wait for 15 minutes and make sure all refrigerant is out. Heat the joint B, K to separate the condenser, then remove four fixing screws of condenser and remove the condenser. (Fig. 28)



7. How to maintain the default.

It should take approximate 1-2 hours to reach the lowest setting temperature of about 5°C for an empty unit (assuming ambient temp of 32 degrees centigrade and continuous operation). If not, check the compressor, cooling fans, controller. If all these are working normally, there is probably a cooling pipe fault.

7.1. Overhaul the compressor

If the wine cooler not cooling, check the current with the Amp meter, refer to rating label, if it too high or too low, cut the discharge pipe (Fig.26 item C) and (Fig.26 item E), power on, check the current, and feel the discharge pipe, if the obvious air pressure from compressor, if the current still very high or very low or the discharge pipe with small air pressure, the compressor fault, replace the compressor please.

(Noted: Turn on the compressor which cut pipe not longer than 15 minuets in order to avoid suck moist air)

7.2. Check the cooling system

1>.When it is sure that the compressor is working normally and the cooling system's fault is concentrating on the cooling system pipe. Check following below:

- a. Cut off the discharge pipe (Fig.26 item C) of the compressor, and infuse 0.8-1.5 MP nitrogen per process pipe, and put the hand close to the cut kerf. If there is a little gas leak from the terminal, it means normal, otherwise it is jammed.
- b. Make sure the capillary is working normally. Then reconnect the discharge pipe, and infuse 0.8-1.5 MP nitrogen from process pipe, then test the leakage, check with soap water if the cooling system of the soldering point is damaged. Check from the soldering point around the compressor (Fig.26). If all joints around the compressor is find, check the evaporator joints inside the cabinet (Fig. 10), remove the inner air duct board to check the joints around the evaporator. (→6.1.3)
- c. If all the soldering point in b is not leaking, there are two possibility, one is leakage in the

inner condenser (or anti- dew pipe), another is the damage on the parts in the cooling system such as evaporator, condenser. If it is the inner damage, it can not be repaired, and if the damage on the parts, replace them.

2>. Make sure the compressor is normal, If any one of upper and middle is normal, the other one is not cooling or temp too low (lower than setting temp more than 3°C), it will be caused by the corresponding part problem.

a. Check the valve, when power off, exchange the connectors of the valve, turn on the power, listen to the valve carefully, there is a 'tick' sound from it, otherwise confirming the PCB is ok, replace the valve. (→6.2.4)

b. If the valve operates normally, it may be caused by the capillary for not cooling compartment block. Clean the capillary with nitrogen. (refer to above).

7.3. Refill the refrigerant

Make sure there is no leakage in the cooling system, infuse the refrigerant.

1>. Using the vacuum pump form a vacuum in the system, via the joints of the high/low-pressure pipe, the low-pressure pipeline is on the process pipe of the compressor (Fig.26, item E), high-pressure pipeline is on the process pipe of the filter. Apply the vacuum pump for approximately 20 minutes. Until the vacuum is lower than 100Pa. Then solder the process pipe of the filter. Keep the vacuum running while soldering this joint

2>. Fill Cooling system with refrigerant via the process pipe of the compressor (Fig.26, item E). (Regarding refrigerant quantity Please refer to the instruction at back label of wine cooler). Then solder the compressor process pipe after the system is charged with refrigerant.

7.4. Running test:

After the procedures above finish, turn the unit on. To verify the effectiveness of the repair, monitor the unit, the compressor should automatically stop within + or - 2.5 deg centigrade of the set temperature within approx 3 hours (assuming an ambient temperature of 32°C and the unit is empty).

Noise problem

1 Compressor noise

1>. The working of motor and piston motion will cause noise when compressor working. So if noise is steady and not so high, it's normal. If noise is not steady or very high, it's compressor fault and it should be maintained or replaced. (→6.2.3)

2>. If compressor's shock absorption rubber is hardening or damaged, or fixing screw of compressor is too tight or loose, it will cause noise. The settlement is to change new shock absorption rubber or adjust fixing screws by using the monkey spanner. (→6.2.3)

2 Fan noise

1>. When the fans are running, the vanes are circumrotating rapidly and the air flows, which will cause steady and standard noise. The noise should not too high and it is normal.

2>. If the noise is extremely high and abnormal, replace the default fan please. (→6.1.5)

7.6.Refrigerant jet noise

Default: There is continuous noise like a water spray from the capillary.

Reason: The end of the capillary is in the wrong position, or there are rough edges on the end of the capillary

Solution:

- 1>. Remove the evaporator (→6.2.5) , heat the soldered joint of the capillary (Fig.10) , then remove the capillary from the evaporator and smooth the end with an eraser. (Caution: do not allow any particles into capillary unit).
- 2>. Replace the capillary into the evaporator, then solder it back into the correct position (not exceeding 15mm in the evaporator) and pack the joint with anti vibration compound.
- 3>. Recharge with refrigerant. (→7.3)

7.7.Capillary vibration noise

Default: high frequency impact noise in capillary Zone.

Caused by either reason below:

- 1>. The capillary being insert too deep into the evaporator, so when the refrigerant is Jetting, the end of vibrating capillary will hit the inside of the evaporator.
- 2>. Vibration from the capillary touching the inside of the cabinet or air duct board, then when refrigerant is jetting.

Solutions:

- 1>. Refer to (→7.6)
- 2>. If the capillary touch the inner cabinet and the air duct panel, adjust the position of the capillary and add the damping block.

7.8.Oil jammed noise

Fault: intermittent and deep jet noise coming from inside of the capillary.

Cause: Compressor oil flowing into the cooling system pipe work probably due to the capillary slightly out of alignment during transportation

Solution: Clean the cooling system pipe, vacuumize it and recharge with refrigerant see (→7.3)

7.9.Evaporator freezing.

Because the door seal is not air-proof, or the door is not closed well, cause much water come into the cabinet, and the water got frozen when it encounter the cold air, sometimes the ice is too thick, and it will block the fan or broken the fan.

The solution:

1 >. Replace the door seal or close the door well. If the door seal is slightly not air-proof, it can be repaired by the heat dryer.

Aiming at the distortion of the seal with the heat dryer, and move up and down until it expand to the normal state. When it is cool, check it with the door closed, if there is any distortion, heat it again until it fix for the door. (Fig.29)

2 >. If the fan is broken, replace the fan.



Fig. 29

7.10. Unstable temperatures inside the cabinet.

The unstable temperature is caused by the evaporator fans cease, and it can be check by the below method: When the compressor is running, the fan should be running, if the fan stop, check the whether is any fault in the fan or fan connection. If the fan is broken, replace it with the fan of the same model . (→6.1.5)

7.11. The digital display's missing stroke fault.

This malfunction is caused by the display panel's default, replace with the same model's display panel. (→6.1.8)

ATTACHEMENT 1

