Service Manual for Cavecool

Single zone model#CC34SB&CC62SB&CC102SB

Dual one model#CC29DB&CC54DB&CC102DB

CC34SB

CC62SB

CC102SB

CC29DB

CC54DB

CC102DB

The following lists the bar in the course of various failures that may occur, as well as to find and fix these faults. Please corresponds fault item and then find the corresponding page number information.

Maintenance Preparing:

○ Tools

1. Vise 2. Cross screwdriver 3. goggles 4. Clamp Meter 5. Multimeter (5A)




5. Wrench 6. Electric iron 7. Strippers 8. Sealing jaws 10. The protective gloves





○ Equipment

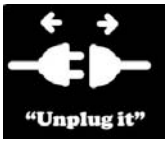
1. Vacuum pump 2. Soldering equipment 3. Pressure gauge / refrigerant metering device



Content

1. Repair work safety precautions (please follow below precautions before maintenance)

DANGER	
	• Do not use open flames indoor or smoke during reqairing. • Do not perform welding in poorly ventilated and confined areas • Do not have children nearby when reparing

WARNING	
	•Always unplug the power cord first before carrying out maintenance Otherwise, it may result in electric shock and injuries.
 ELECTRIC SHOCK HAZARD	•Please be careful not to get electric shock during reparing. Unplug the power cord before maintenance. If needs to check the circuit while the power is on,do not touch the live electrical parts! If electric wires are damaged, it must be replaced by qualified technician in time.
	• Use original parts which shown in the part list, do not use parts from other models or other brands, never modify the parts • Use appropriate maintenance tools, improper use of tools may cause insecure assembly • If wires are cut during maintenance. Remember to reconnect the wire and seal with insulating tape •When discharging the refrigerant, make sure the room is in good ventilation condition. •When cutting off the compressor pipes, pay attention to the remaining refrigerant and internal pressure. • After maintenance finished, use multimeter to check the insulation, make sure the insulation resistance is over 2 MΩ before connecting to power. •After repair, it is necessary to check whether the grounding is in good condition

NOTICE	
	Be careful to the high temperature of compressor and refrigeration pipes when product is on or just after the production was power off. Be careful to the high temperature after soldering
	Be careful not to let liquid refrigerant directly touches the skin,it may cause frostbit Metal parts and plastic parts burr may scratch the hand.

1.Technical specification

Single zone model

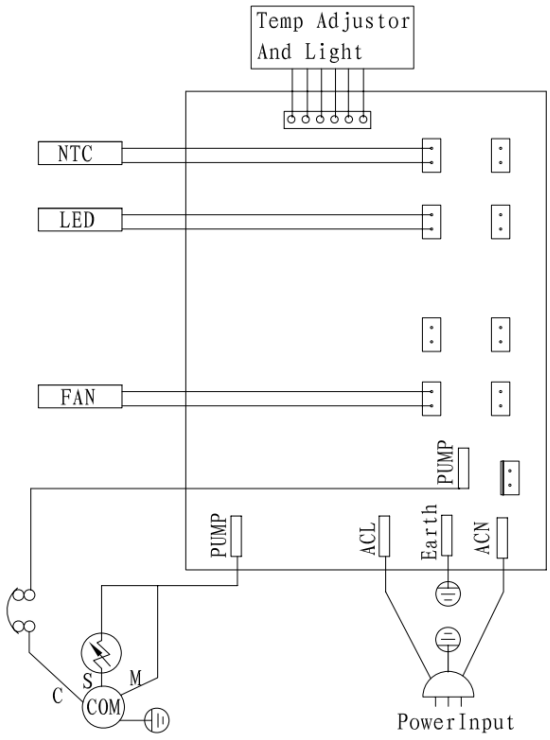
Model no.	CC34SB	CC62SB	CC102SB
Product type	Single zone compressor wine cooler	Single zone compressor wine cooler	Single zone compressor wine cooler
Installation Type	Free standing only	Free standing only	Free standing only
Gross / Net Volume	91L / 89L	152L / 148L	247L / 242L
Bottle Loading Capacity	34 bordeaux bottles	62 bordeaux bottles	121 bordeaux bottles
Voltage &Frequency	220-240V / 50Hz	220-240V / 50Hz	220-240V / 50Hz
Power	90W	90W	100W
Set temperature	5℃～20℃	5℃～20℃	5℃～20℃
Gas refrigerant	R600a	R600a	R600a
Weight of gas	25g	30g	38g
Defrosting type	Auto defrost	Auto defrost	Auto defrost
Climate class	SN/N/ST	SN/N/ST/T	SN/N/ST/T
Product dimension (W*D*H)	480×430×508	480×565×850	550×565×1277

Dual zone model:

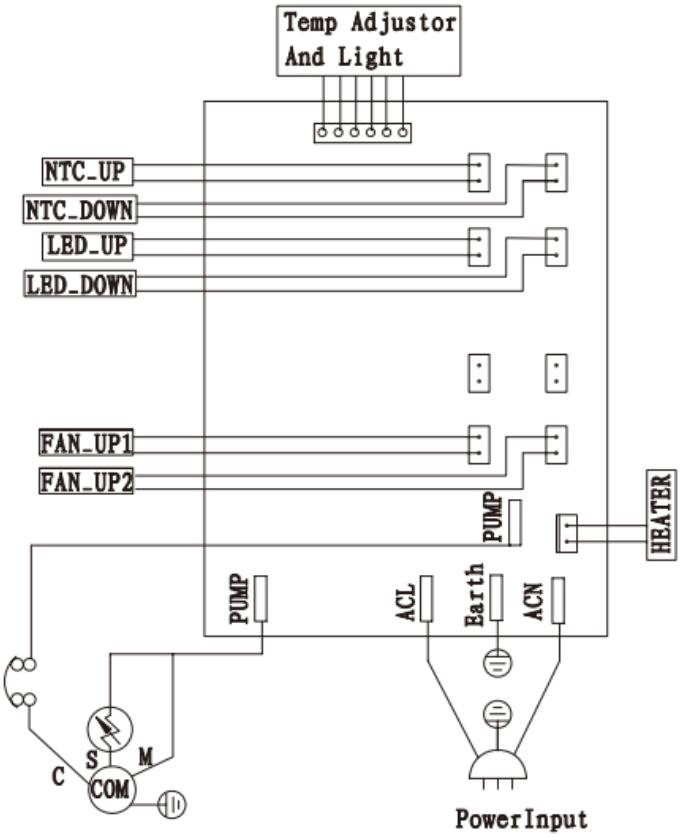
Model no.	CC29DB	CC54DB	CC102DB
Product name	Dual zone compressor wine cooler	Dual zone compressor wine cooler	Dual zone compressor wine cooler
Installation Type	Free standing only	Free standing only	Free standing only
Gross / Net Volume	85L / 80L	142L / 138L	240L / 232L
Bottle Loading Capacity	34 bordeaux bottles	62 bordeaux bottles	102 bordeaux bottles
Voltage &Frequency	220-240V / 50Hz	220-240V / 50Hz	220-240V / 50Hz
Power	90W	90W	100W
Temperature Setting	Upper: 5℃～12℃ Lower:12℃～18℃	Upper: 5℃～12℃ Lower:12℃～18℃	Upper: 5℃～12℃ Lower:12℃～18℃
Gas refrigerant	R600a	R600a	R600a
Weight of gas	22g	22g	22g
Defrosting type	Auto defrost	Auto defrost	Auto defrost
Climate class	N/ST	SN/N/ST	SN/N/ST
Product dimension (W*D*H)	480×430×508	480×565×850	550×565×1277

2.Schematic diagram

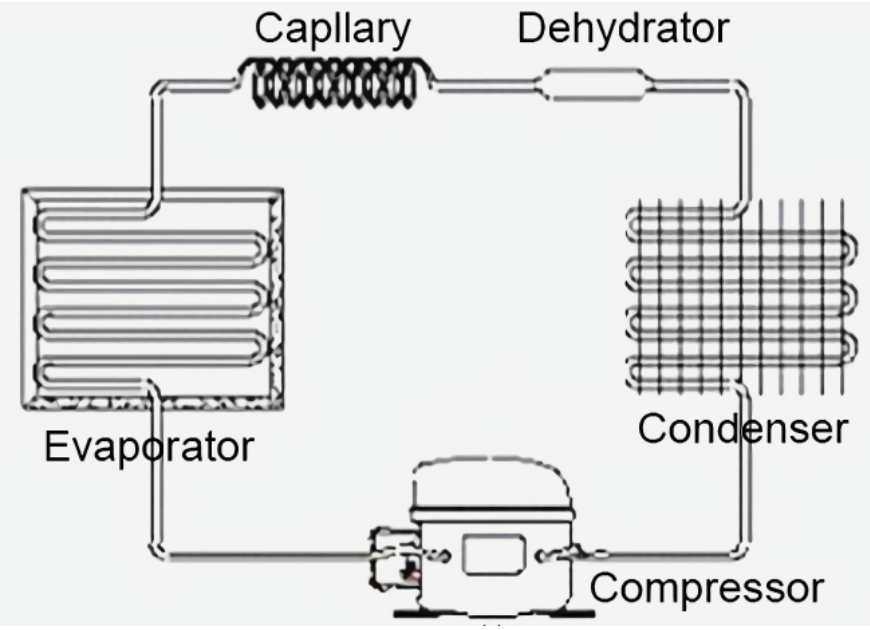
2.1.Single zone model



2.2 Dual zone model



2.3 Cooling system schematic diagram:

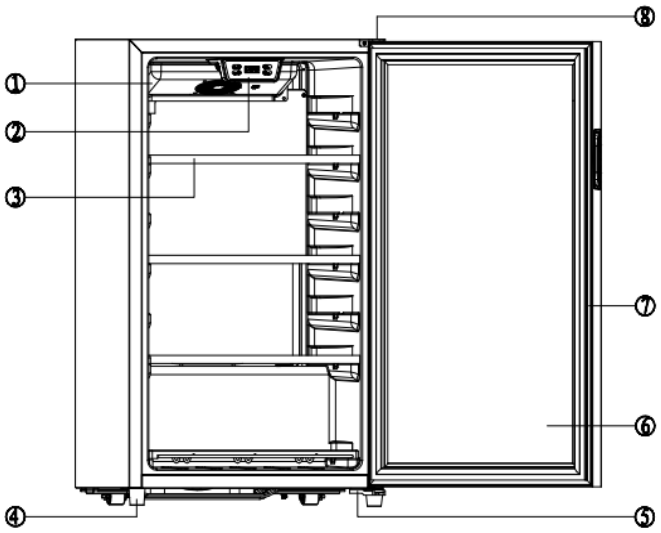


3.NTC value

R25℃=10.0KΩ		B25/50=3380K				材料批号：BT07D-0918H			
T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)
-40	206.1	5	22.17	50	4.160	95	1.111	140	0.3850
-39	194.6	6	21.25	51	4.025	96	1.083	141	0.3769
-38	183.9	7	20.36	52	3.895	97	1.056	142	0.3690
-37	173.8	8	19.53	53	3.770	98	1.030	143	0.3613
-36	164.4	9	18.73	54	3.649	99	1.004	144	0.3538
-35	155.5	10	17.97	55	3.533	100	0.9788	145	0.3465
-34	147.1	11	17.25	56	3.421	101	0.9546	146	0.3394
-33	139.3	12	16.56	57	3.313	102	0.9311	147	0.3325
-32	131.9	13	15.91	58	3.210	103	0.9082	148	0.3258
-31	125.0	14	15.28	59	3.109	104	0.8860	149	0.3192
-30	118.4	15	14.69	60	3.013	105	0.8644	150	0.3129
-29	112.3	16	14.12	61	2.920	106	0.8434		
-28	106.5	17	13.57	62	2.830	107	0.8229		
-27	101.0	18	13.05	63	2.743	108	0.8031		
-26	95.85	19	12.56	64	2.660	109	0.7838		
-25	91.00	20	12.08	65	2.579	110	0.7650		
-24	86.43	21	11.63	66	2.502	111	0.7467		
-23	82.12	22	11.20	67	2.427	112	0.7290		
-22	78.05	23	10.78	68	2.354	113	0.7117		
-21	74.20	24	10.38	69	2.285	114	0.6949		
-20	70.58	25	10.00	70	2.217	115	0.6785		
-19	67.16	26	9.635	71	2.152	116	0.6626		
-18	63.93	27	9.285	72	2.089	117	0.6471		
-17	60.87	28	8.949	73	2.029	118	0.6320		
-16	57.98	29	8.627	74	1.970	119	0.6173		
-15	55.24	30	8.319	75	1.914	120	0.6030		
-14	52.65	31	8.022	76	1.859	121	0.5891		
-13	50.20	32	7.738	77	1.807	122	0.5756		
-12	47.87	33	7.465	78	1.756	123	0.5624		
-11	45.66	34	7.203	79	1.707	124	0.5496		
-10	43.56	35	6.952	80	1.659	125	0.5371		
-9	41.58	36	6.710	81	1.613	126	0.5249		
-8	39.69	37	6.478	82	1.569	127	0.5131		
-7	37.90	38	6.255	83	1.526	128	0.5016		
-6	36.20	39	6.040	84	1.484	129	0.4904		
-5	34.58	40	5.834	85	1.444	130	0.4795		
-4	33.05	41	5.636	86	1.406	131	0.4688		
-3	31.59	42	5.446	87	1.369	132	0.4585		
-2	30.21	43	5.262	88	1.333	133	0.4484		
-1	28.89	44	5.086	89	1.299	134	0.4386		
0	27.63	45	4.917	90	1.265	135	0.4291		
1	26.42	46	4.753	91	1.232	136	0.4198		
2	25.27	47	4.596	92	1.201	137	0.4107		
3	24.18	48	4.445	93	1.170	138	0.4019		
4	23.15	49	4.300	94	1.140	139	0.3933		

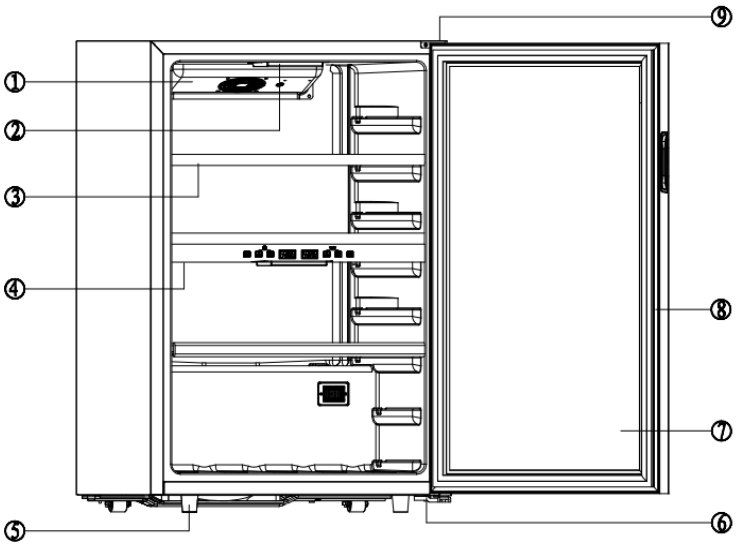
4.Structure diagram

4.1 Single zone model



1	Fan
2	Control panel and LED light
3	Shelf
4	Feet
5	Lower hinge
6	Door
7	Gasket
8	Upper hinge

4.2 Dual zone model



1	Fan
2	LED light
3	Shelf
4	Control panel
5	Feet
6	Lower hinge
7	Door
8	Gasket
9	Upper hinge

5.Control Panel

5.1 Single zone model

Temperature range is 5-20°C.

- 1. Press ON/OFF button to turn on the appliance, and press ON/OFF for 3 seconds to turn off the appliance.
- 2. Press LIGHT button to turn on or turn off the light

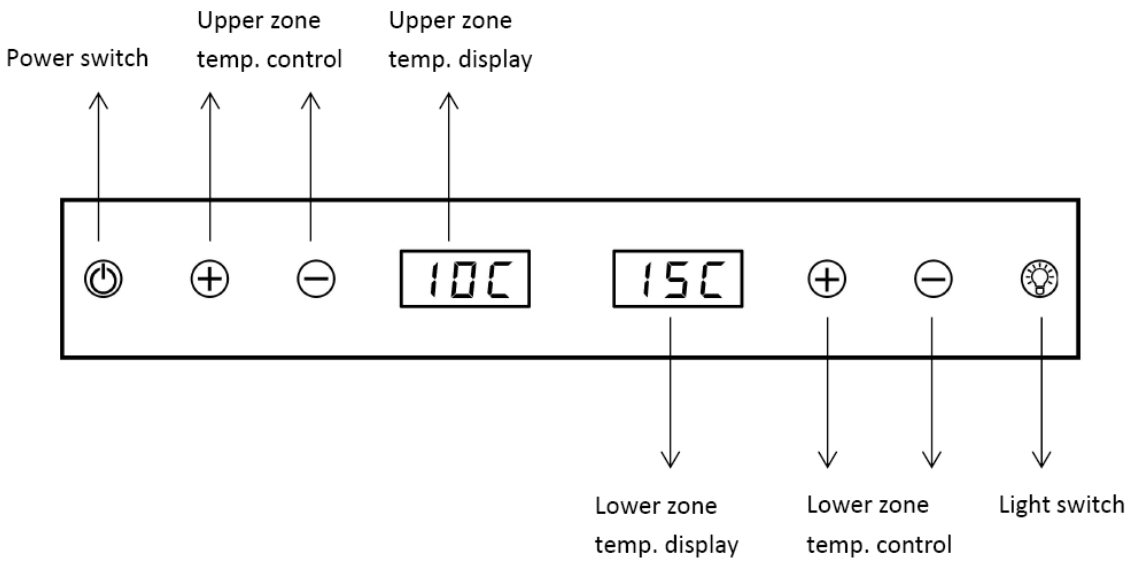
-3.Press UP button to increase the setting temepreture

-4.Press down button to decrease the setting temepreture

Press temperature control button “UP” and “DOWN” together for 3 seconds to change the LED display from Celsius to Fahrenheit

Important note: After selecting the desired temperature, the display will continue to show the real temperature inside the equipment, which will vary gradually until it reaches the selected temperature.

5.2 Dual zone model



Temperature range for upper zone is 5-12° C and for lower zone is 12-18° C.

- Press power switch button for 3 seconds to turn on or turn off the appliance
- Press light button to turn on or turn off the light in both zones

- Press lower zone temperature contol button  and  together for 3 seconds to change the LED display from Celsius to Fahrenheit.

- You can set the desired temperature by pressing  or  of each zone

The temperature selected will increase/decrease by 1° C with each press of the buttons.

Notice: Important note: after selecting the desired temperature, the display will continue to show the real temperature inside the equipment, which will vary gradually until it reaches the selected temperature.

6.The fault diagnosis

6.1 List of self-diagnostic code (Single Zone)

Code	Content	Description	Processing opinion
E1	Temperature sensor short-circuit fault	Check the wire connection of the temperature sensor socket and connection to the main PCB	For short-circuit,to replace a new part. For open circuit,check the connection and re-connect that part
L1	Temperature sensor open-circuit fault	Check the wire connection of the temperature sensor socket and connection to the main PCB	
HOO	High temperature alrm	When inside temperature is higher than 25° C and over 6 hours，it will display “HOO” and compressor stop working	Check below 5.3 Handling of common problems and 5.4 Diagnosis of problems
LOO	Low temperature alrm	When inside temperature is lower than 2° C and over 6 hours，it will display “LOO” and compressor stop working	

6.2 List of self-diagnostic code(Dual Zone)

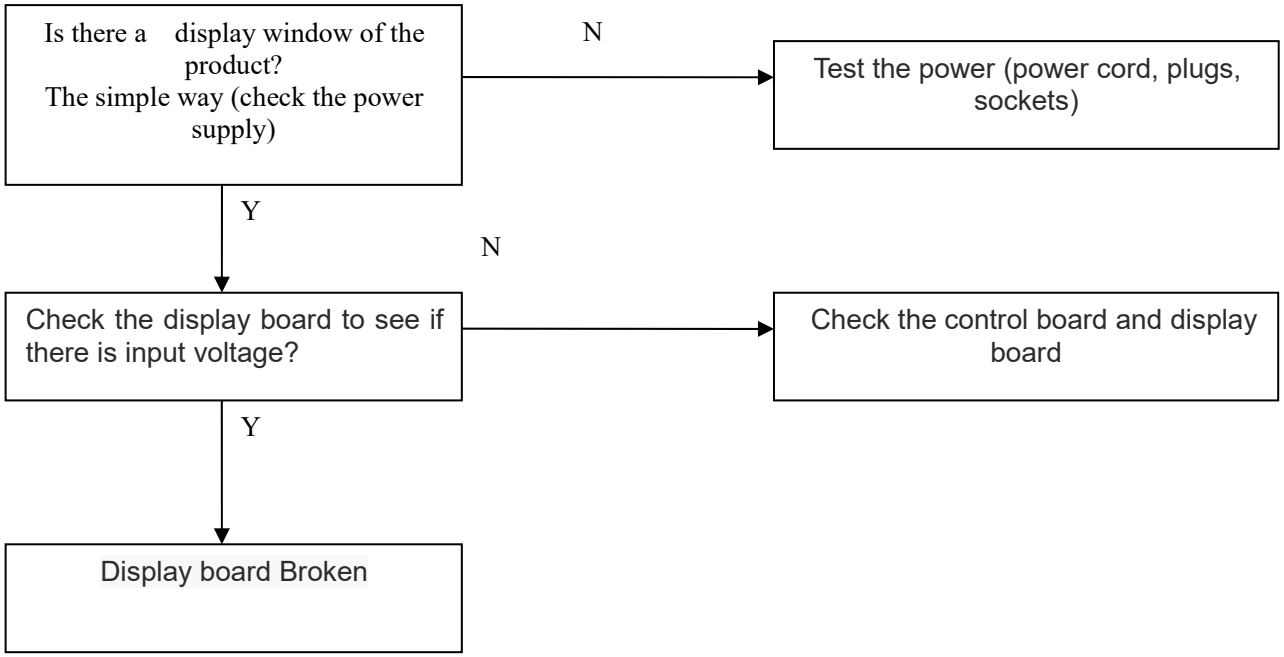
Code	Content	Description	Processing opinion
E1	Temperature sensor short-circuit fault	Check the wire connection of the temperature sensor socket and connection to the main PCB	For short-circuit,to replace a new part. For open circuit,check the connection and re-connect that part
L1	Temperature sensor open-circuit fault	Check the wire connection of the temperature sensor socket and connection to the main PCB	
F1	Upper zone fan in open circuit	Check the connection of the upper fan socket and connection to the PCB	
F2	Lower zone fan in open circuit	Check the connection of the lower fan socket and connection to the PCB	
HOO	High temperature alrm	When inside temperature is higher than 25° C and over 6 hours，it will display “HOO” and compressor stop working	Check below 5.3 Handling of common problems and 5.4 Diagnosis of problems
LOO	Low temperature alrm	When inside temperature is lower than 2° C and over 6 hours，it will display “LOO” and compressor stop working	

6.3 Handling of common problems

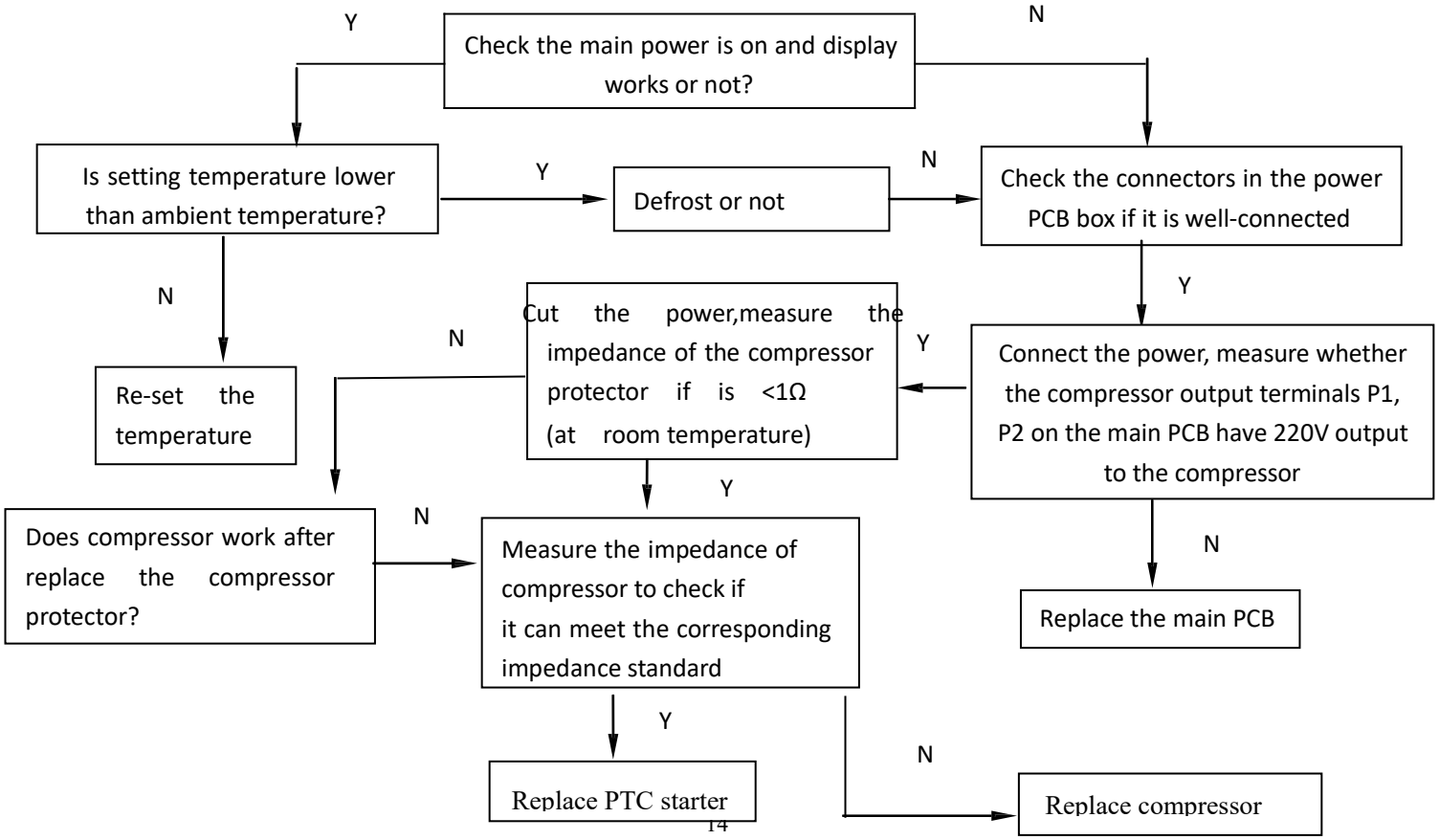
PROBLEM	***POSSIBLE CAUSES***
Appliance is not cooling	*Appliance is not plugged in* *Appliance is not turned on* *Check if voltage of the installation* *Check the circuit breaker or if fuse has blown*
Appliance is not cold enough	*Check the temperature control setting* *Check if ambient temperature is beyond appliance operating temperature* *The door is opened too frequently* *The door is not closed properly* *The door is not sealing properly* *Check if wine cooler is exposed to sunlight or there has a heat source nearby* *Insufficient free space around the appliance* *Check if too many wine bottles have block the air ventilation hole*
The compressor starts and stops frequently	*The external temperature is high.* *A large quantity of bottles has been put into the cellar.* *The appliance is opened frequently.* *The door is not properly closed.* *The cellar has not been correctly set.*
LED lights do not operate	*The appliance is not plugged in* *The fuse has blown* *LED lights are not broken* *The light switch is off*
Vibration	*Check and ensure that the appliance is level*
The appliance makes a lot of noise	*A noise resembling circulating water is produced by the coolant gas and this is normal.* *At the end of a cooling cycle, you can hear the noise of water circulating.* *Expansion and contraction of the internal walls may cause a cracking sound.* *The appliance is not level* *Check if fan is in good condition*
The door does not close properly	*The appliance is not level.* *The door seal is dirty or damaged.* *The shelves are not positioned correctly.* *A part of the contents is preventing the door from closing.*
LED display is not working properly	*Control panel failed* *Power PCB has broken* *The appliance is not plugged in* *The probe is not working*
Condensed water on the door glass	*It's normal when ambient temperature is too high or ambient humidity is too high.*

6.4 Diagnosis of problems

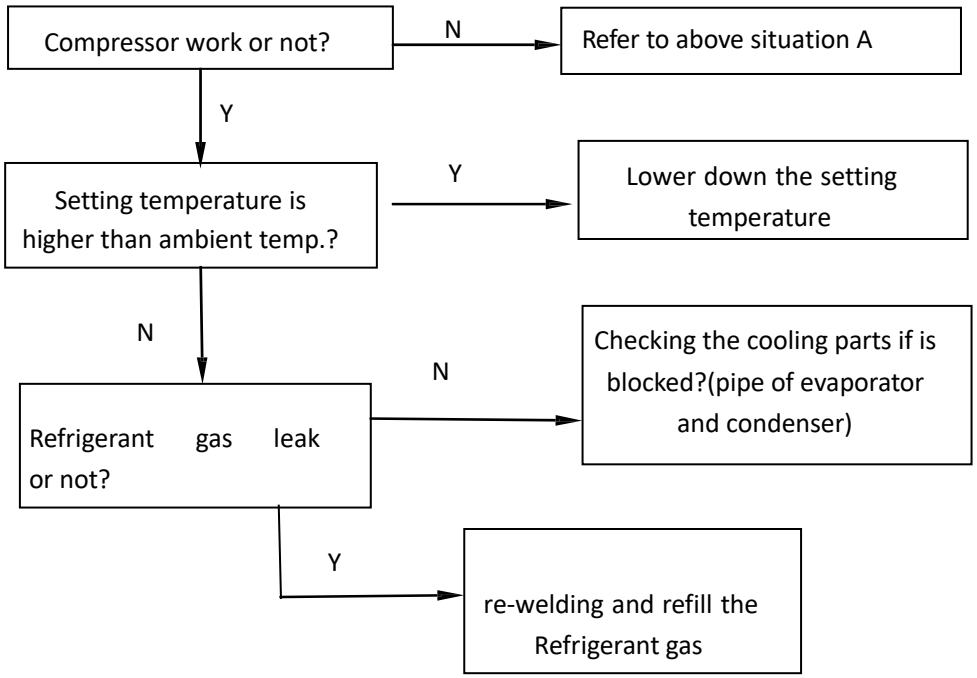
●Screen not display



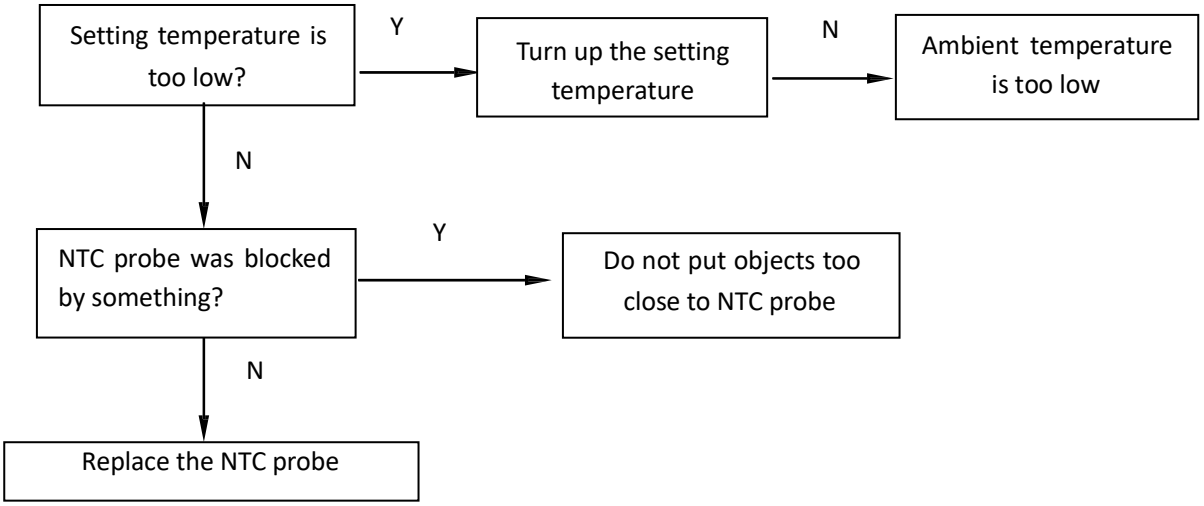
●Compressor doesn't work



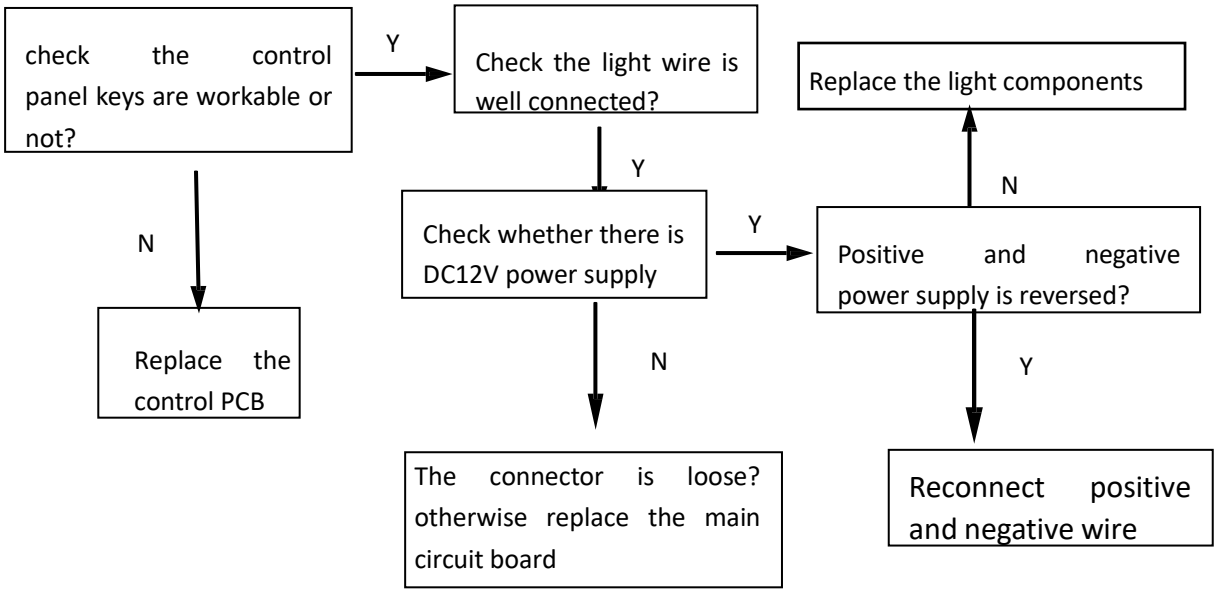
●Not cooling or not cooling enough:



●Over cooling



●.LED light-failure



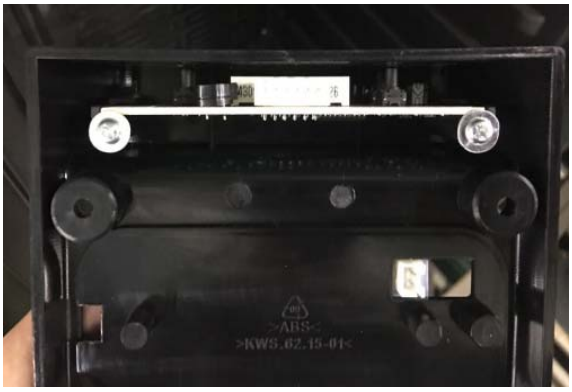
7.Disassembly instruction of main components

Turn off and unplug the appliance before replacing the parts to ensure safety operation

7.1． Control PCB & LED light for single zone

1）Unscrew the two bolts,then take off the control panel box and LED light cover.

2) Pull off the wire connectors and then can replace the control PCB and LED light board



7.2.Control PCB & LED light for dual zone model

7.2.1 Control PCB

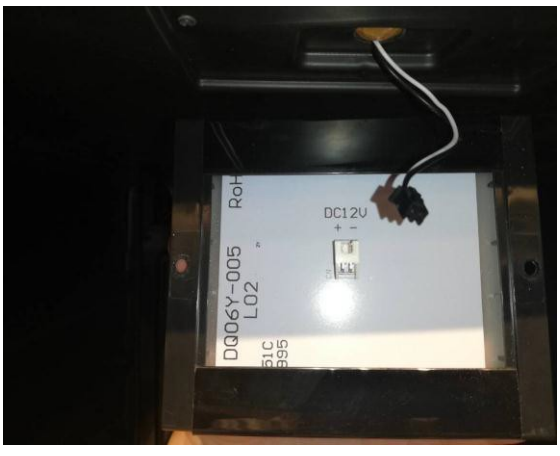
1）Unscrew the 4 bolts on the control panel box.

Unscrew the 4 bolts on the control panel box.

2)Take off the control panel box and the wire connector,then can replace the new control PCB

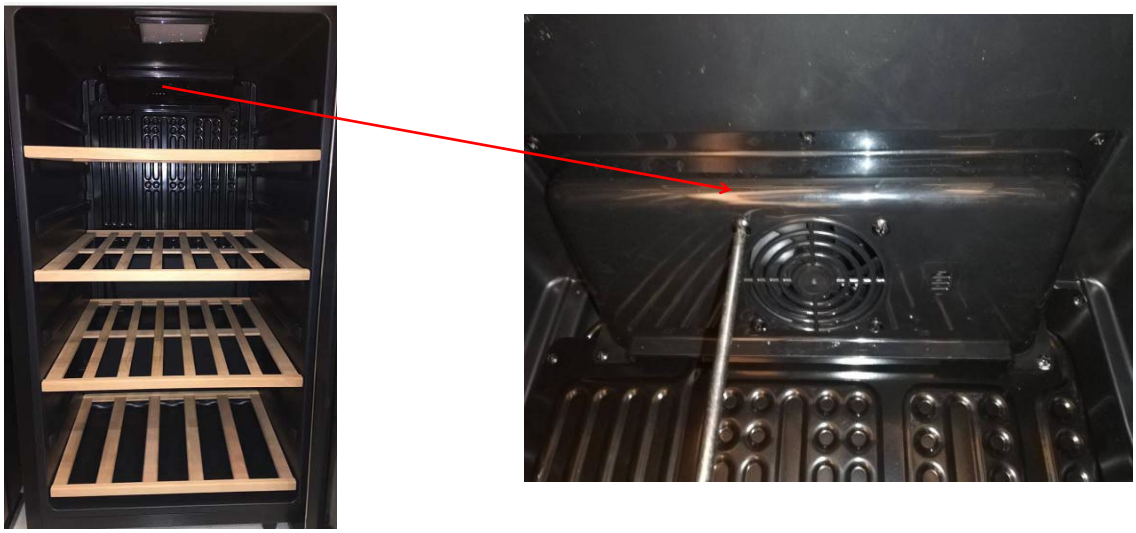
7.2.2 LED light

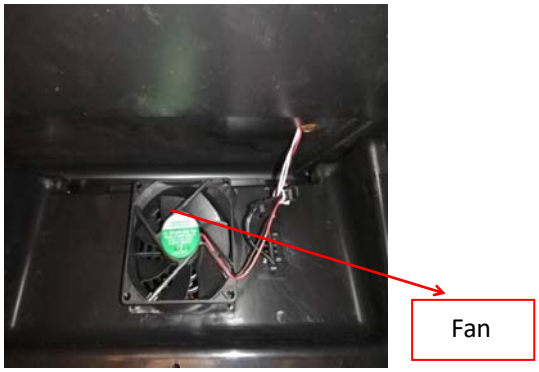
1） Remove the screws and and take off the light cover,then replace the new LED light board.

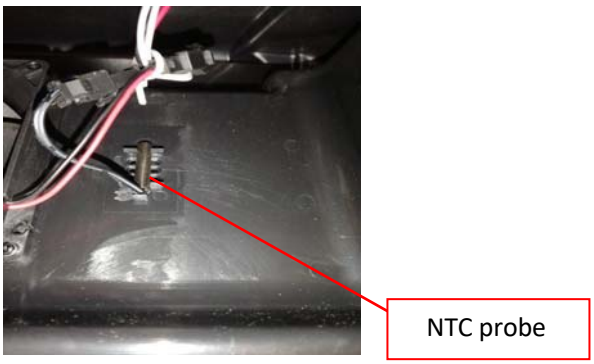


7.3.Fan&NTC probe

7.3.1 Single zone



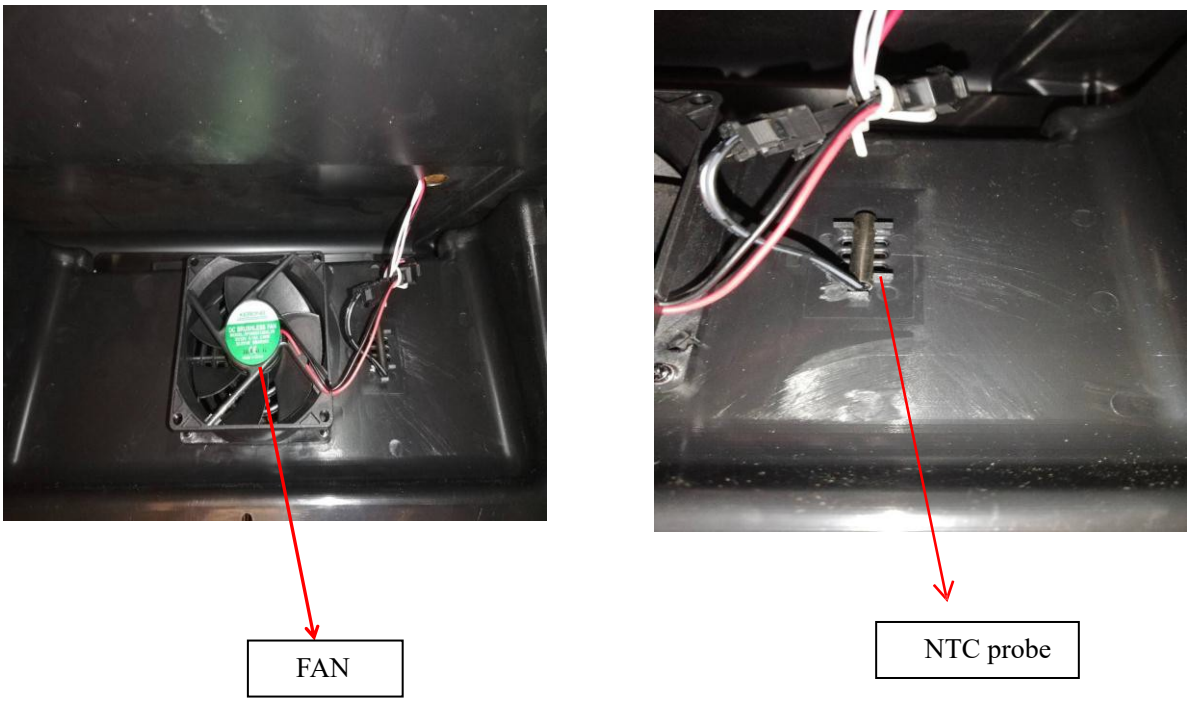




7.3.2 Dual zone

Upper zone fan&NTC probe

Remove the fan mask,and then can replace the fan and NTC probe.

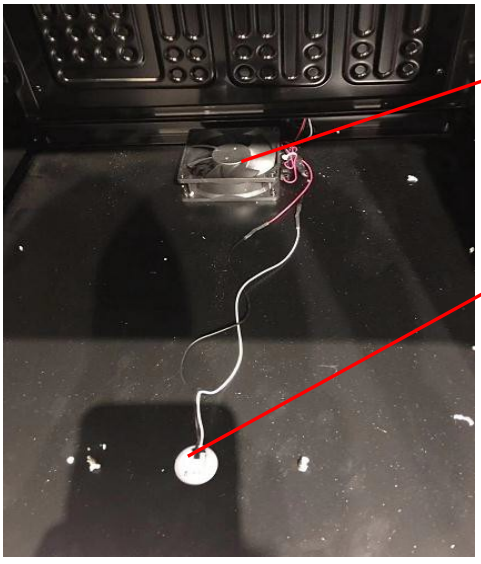


7.4Lower zone NTC probe

7.5Lower zone fan & LED light

Unscrews and remove upper &front cover of the separation zone

Remove the foam in the separation zone,then can replace the fan and LED light.

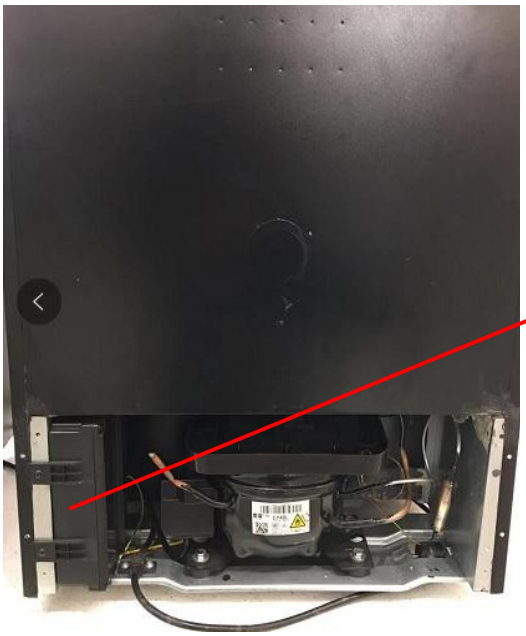


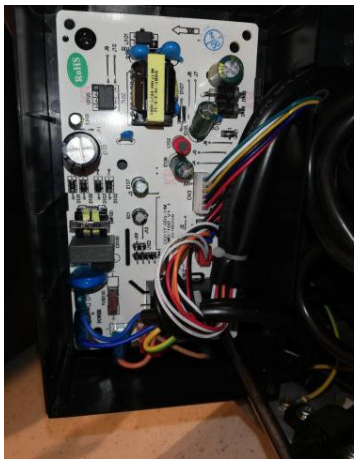
LOWER ZONE FAN

LOWER ZONE LED LIGHT

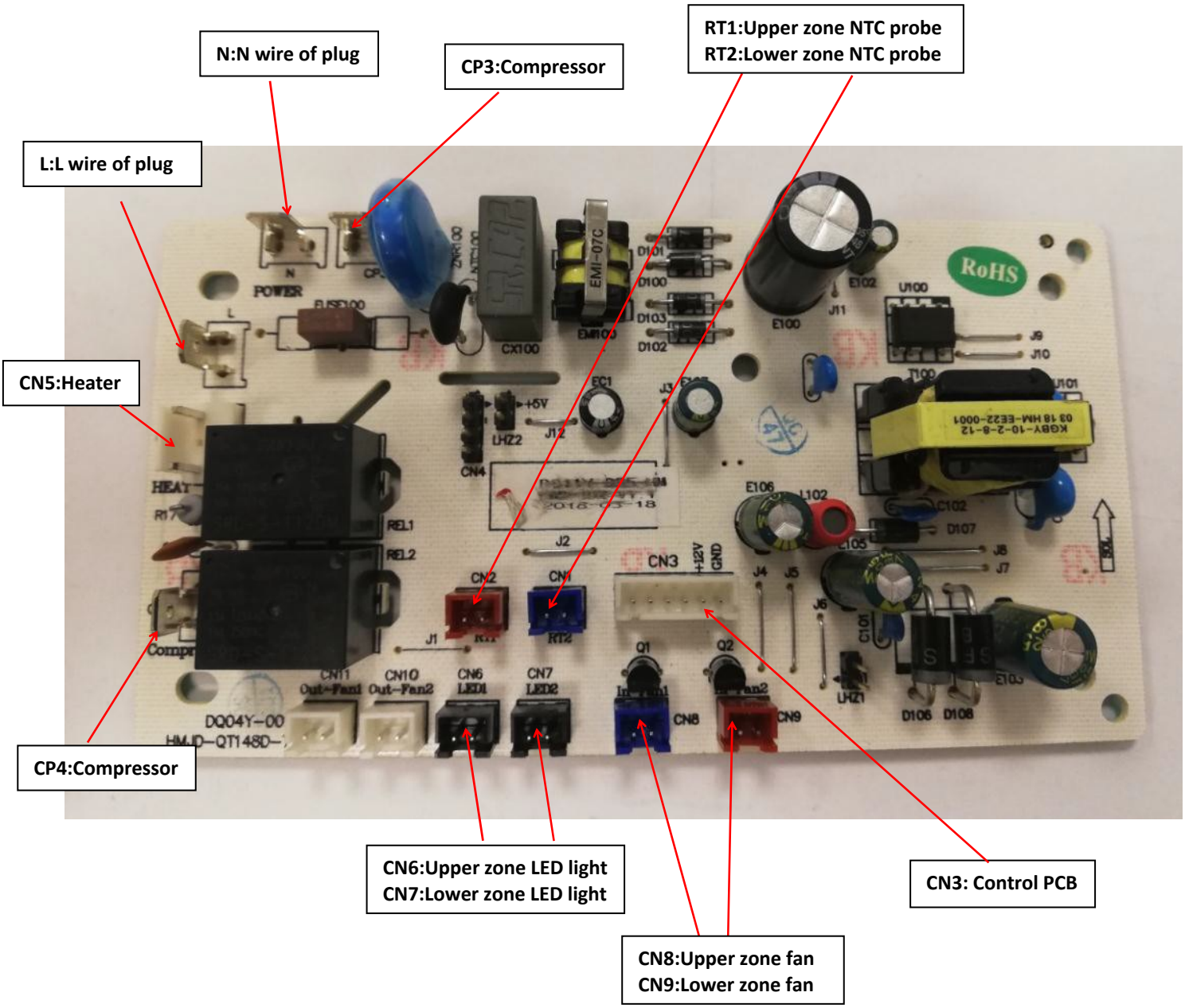
7.6POWER PCB

1） Remove the screws, and take out the electric box cover





POWER PCB


N:N wire of plug
CP3:Compressor
RT1:Upper zone NTC probe
RT2:Lower zone NTC probe
L:L wire of plug
CN5:Heater
CP4:Compressor
CN6:Upper zone LED light
CN7:Lower zone LED light
CN3: Control PCB
CN8:Upper zone fan
CN9:Lower zone fan
POWER
CX100
EMI-07C
E100
U100
RoHS
CN4
CN2
CN1
CN3
+12V
GND
REL1
REL2
CN11
Out-Fan1
CN10
Out-Fan2
CN6
LED1
CN7
LED2
CN8
CN9
Q1
Q2
D106
D108
DQ04Y-00

7.7Door gasket

The door seal is an accessory used for sealing between the glass door and the cabinet,follow below instruction to replace the gasket:

1) Open the door.

2) Pull out the gasket begin from the corner,be careful not to damage the door seal with too much force.

3) When installing, also start from the corner and press the gasket against the door lining.

7.8.Door

Lay down the cabinet (glass door facing up)

Unscrew the lower door hinge screws and take off lower door hinge. Then you can take off the door to replace the new one.

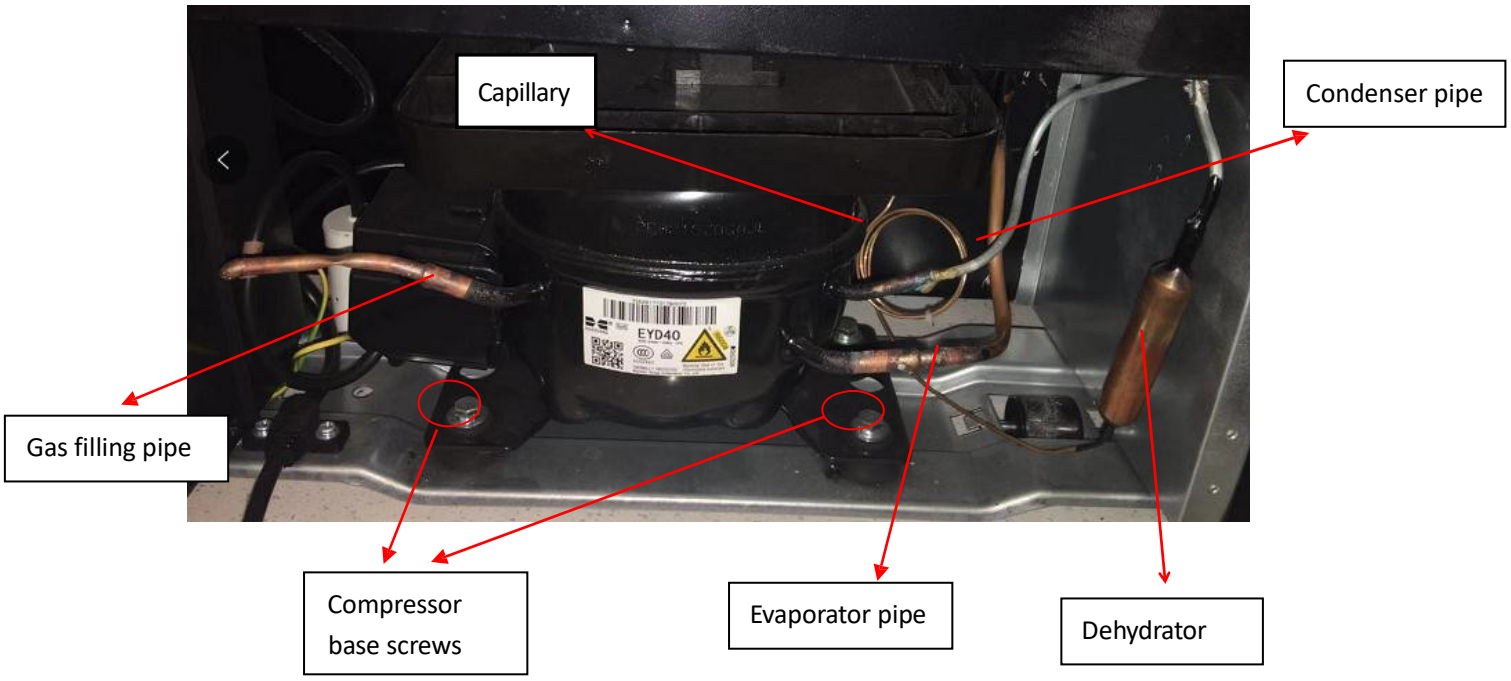
7.9.Compressor

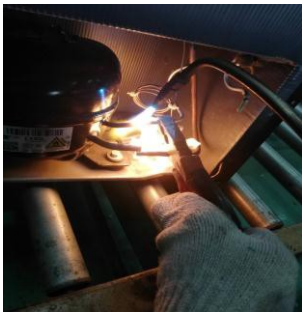
A. Dismantling the compressor:

1) Cut the gas filling pipe and slowly leak out the refrigerant gas.(1)

2) Cut the dehydrator, condenser pipe and evaporator pipe by using a welding gun (2)

3) Unscrew the bolts on compressor base and remove the compressor (3)





1 2

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7.10.Install a new compressor:

1)Replace the new compressor and connect the pipe of dehydrator, condenser pipe and evaporator pipe (4)

2) Use a welding gun to weld the dehydrator, condenser pipe and evaporator pipe(5)

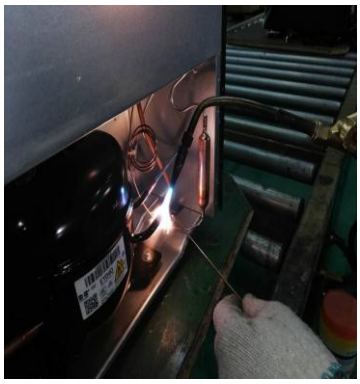
3) After welding, evacuated the compressor and refill the refrigerant gas (6)

(Evacuate time ⩾15min， KPA⩽15pa)

4) Sealing the gas filling pipe after refilling the gas(7)

5)Tidy up all pipe to avoid contacting with each other or touch the cabinet,in case there will have noise during compressor working (8)

4



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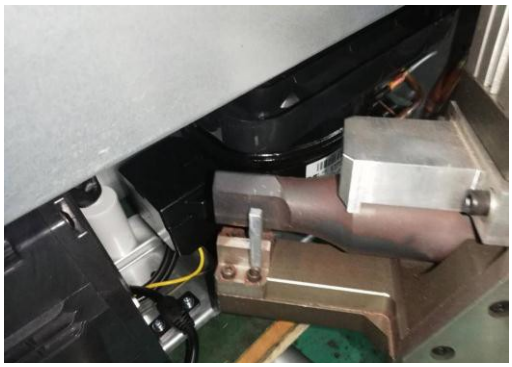

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