Hisense

Refrigerator

Service manual

NO FROST

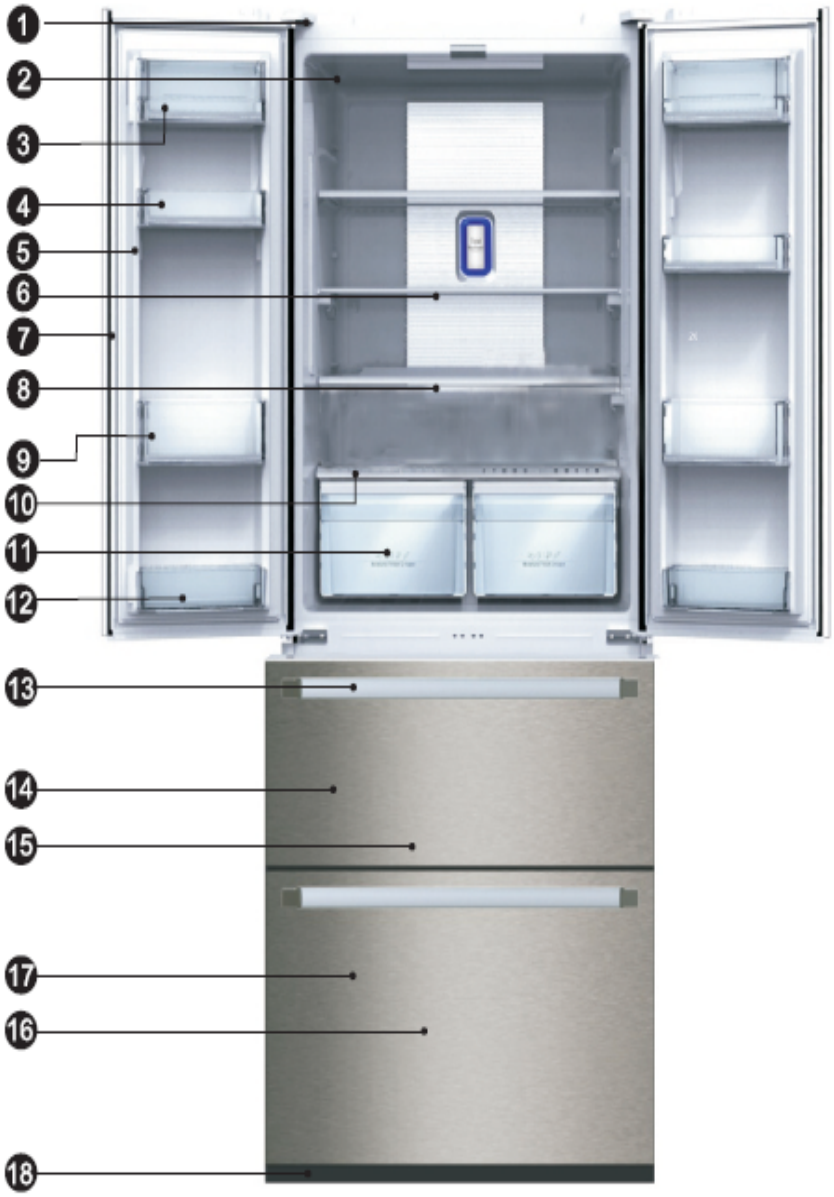
MODEL: RQ-52WC*（BCD-376WY）

NOTE: product specifications are subject to change.

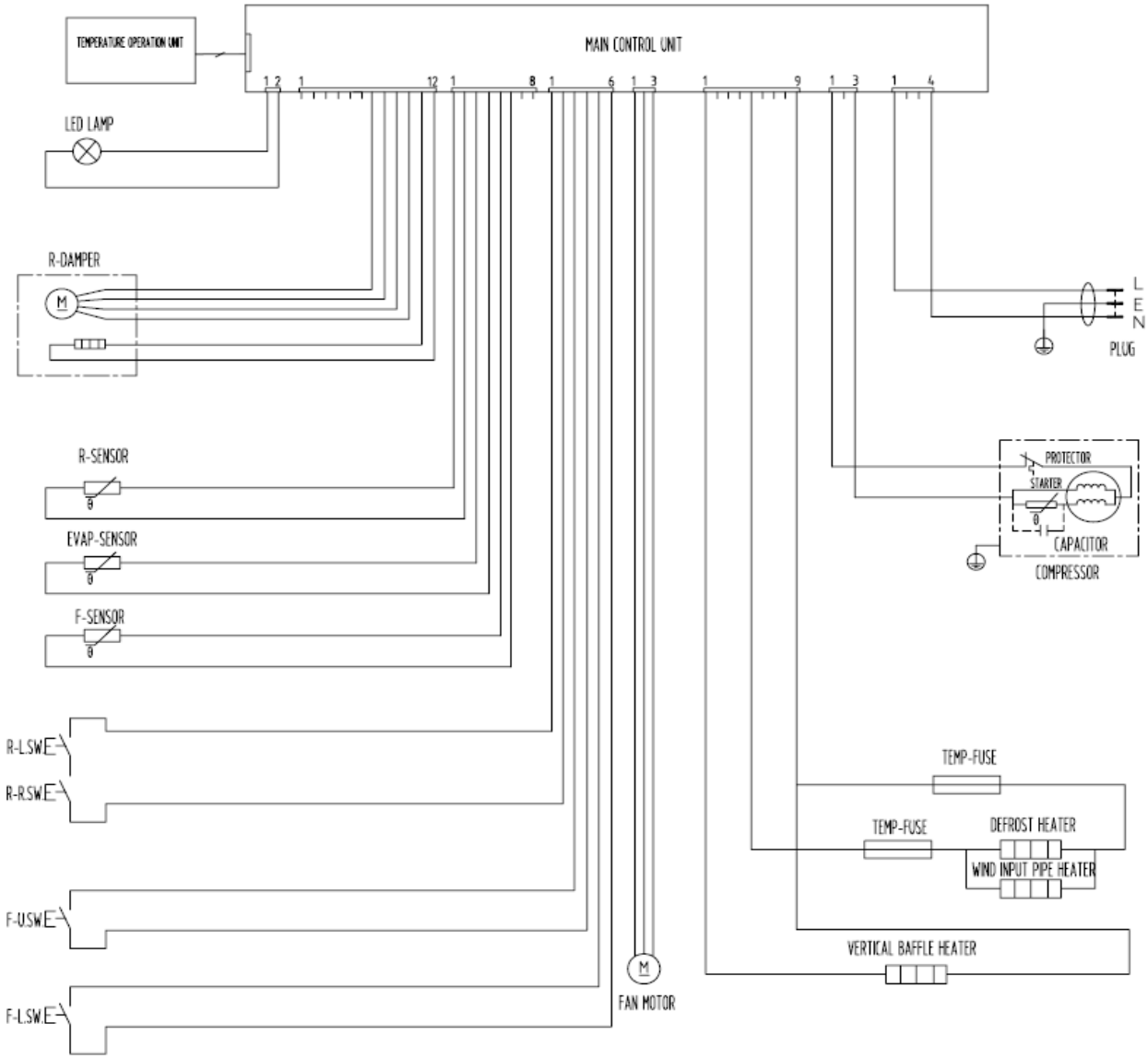
Comtents

Parts Description

1.Cabinet
2.LED light
3.Covered dairy rack
4.Middle rack
5.fridge door seal
6.Folded shelf
7.Flipper clapboard
8.Crisper cover
9.Bottle rack
10. Crisper cover
11.Fruits and vegetables Crisper
12.Bottom rack
13. Handle
14. Upper freezer drawer
15. Upper freezer salver
16. Lower freezer drawer
17. Ice cube tray
18. Adjustable bottom feet

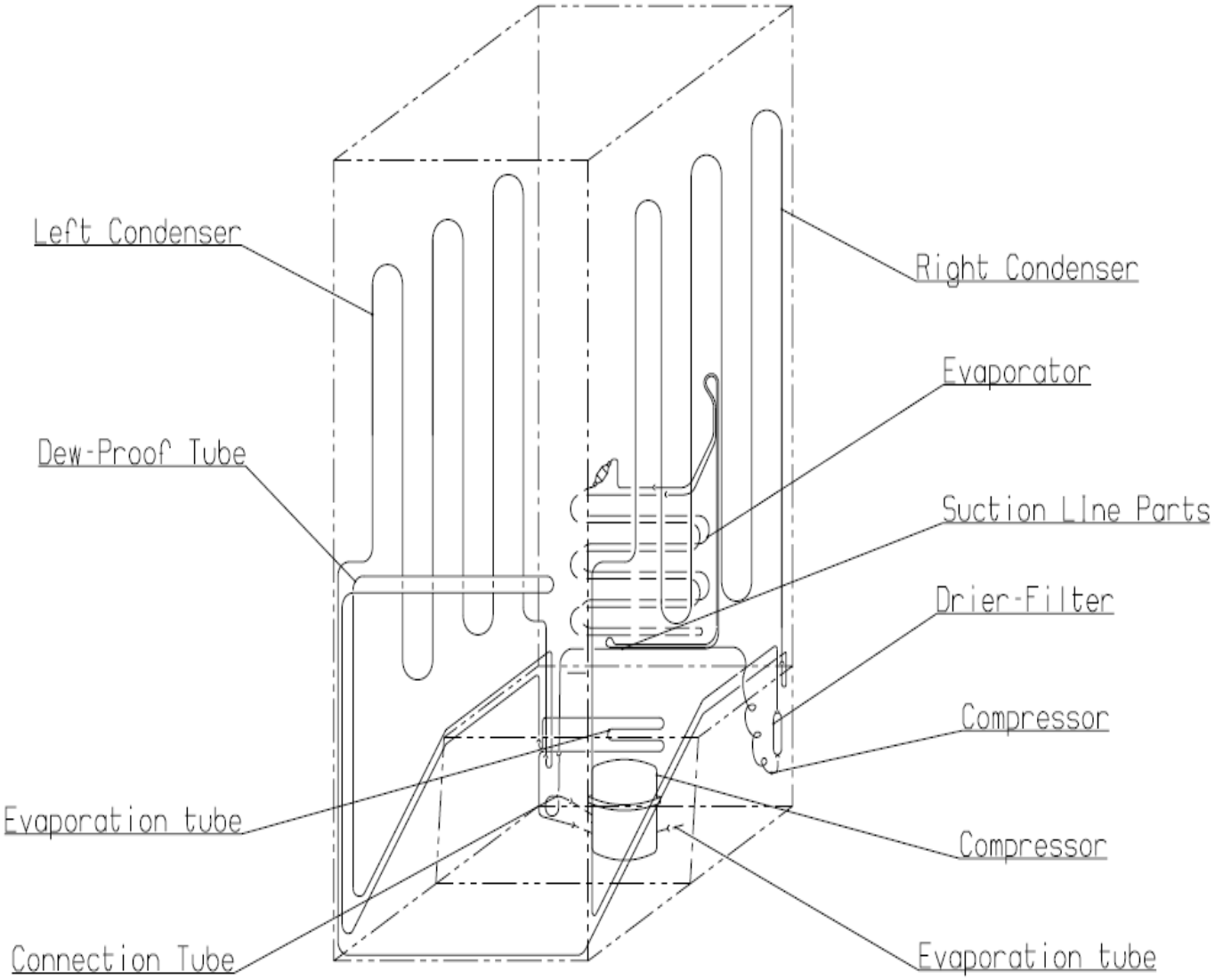


Circuit diagrams and parameters



Part name	Parameters
Main Control Board	220V-240V
Compressor	220V,<160W
heater	220V,<200W
refrigerator fan motor	DC13.2V,2W
LED light	DC12V,2W
electric wind gate	DC12V
Display Board Part	DC12V
temperature sensor part	DC5V ． 25℃ ．2KΩ
Overload protector	（120±5）℃
PTC Starting relay	<300V, <8A
Temperature fuse	10A, a.c250V
Capacitance	4μF

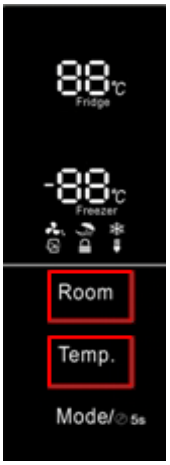
Cooling diagram



Compulsory defrost:

When on power within ten minute, keeping the fridge door or freezer door close situation, press Room and Temp. keys more than 10 seconds, the unit will enter into compulsory defrosting process:

* After entering the compulsory defrosting, it may run as the normal automatic defrosting process.



The setting of control panel:

Use your appliance according to the following control regulations, your appliance has the corresponding functions and modes as the control panels showed in the pictures below. When the appliance is powered on for the first time, the backlighting of the icons on display panel starts working. If no buttons have been pressed and the doors are closed, the backlighting will turn off.

Controlling the temperature

We recommend that when you start your refrigerator for the first time, the temperature for the refrigerator is set to 3°C and the freezer to -18°C. If you want to change the temperature, follow the instructions below.
Caution! When you set a temperature, you set an average temperature for the whole refrigerator cabinet. Temperatures inside each compartment may vary from the temperature values displayed on the panel, depending on how much food you store and where you place them. Ambient temperature may also affect the actual temperature inside the appliance.
All the buttons are locked if the icon " " is illuminated, press the "Mode/ 5s" button for 5 seconds to unlock them.

1. Room

You can activate Fridge OR Freezer compartment temperature setting by pressing "Room" button.

2. Temp

After fridge temperature setting is activated, press "Temp." button to set fridge temperature between 8°C and 2°C as needed. And the control panel will display corresponding value according to the following sequence.

8°C — 7°C — 6°C — 5°C
OFF — 2°C — 3°C — 4°C

After freezer temperature setting is activated, press "Temp." button to set fridge temperature between -15°C and -25°C as needed. And the control panel will display

-15°C — -16°C — -17°C — -18°C — -19°C
-25°C — -24°C — -23°C — -22°C — -21°C — -20°C

corresponding value according to the following sequence.

3. Mode/ 5s

You can select different modes by pressing the "Mode/ 5s" button. When certain mode is selected, wait for the corresponding icon flashing for 10 seconds. Buzzer will sound two times afterwards and the icon will be illuminated, which means the setting is completed.

4. Super cool

Super Cool can refrigerate your food much faster,keeping food fresh for a longer period

- When the super cool function is activated, the corresponding icon will be illuminated.
- Super cool automatically switches off after 6 hours and the refrigerator temperature setting displays 2°C.

5. Super Freeze

Super Freeze will quickly lower the temperature within the freezer so food will freeze faster. This can lock in the vitamins and nutrients of fresh food and keep food fresh longer.

- In case of the maximum amount of food to be frozen, please wait about 24 h.
- Super freeze automatically switches off after 32 hours and the freezer temperature setting displays -25°C.

6. Holiday

If you are going to be away for a long period of time, holiday function will be your best choice.

- When the holiday function is activated, the temperature of the refrigerator is automatically switched to 15°C to minimize the energy consumption.

Important! Do not store any food in the fridge during this time.

7. Energy saving

If you are going to be away for a long period of time, holiday function will be your best choice when this temperature of refrigerator is automatically switched to 8°C and the temperature of freezer is automatically switched to -18°C.

8. Artificial intelligence

When this function is activated, the temperature of the appliance is automatically adjusted.

Note: If you want to switch off the mode you have selected, simply press the "Room" button and set the temperature of corresponding compartment as you need.

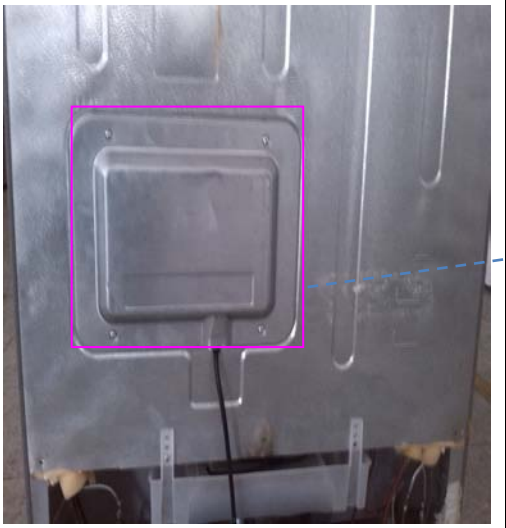
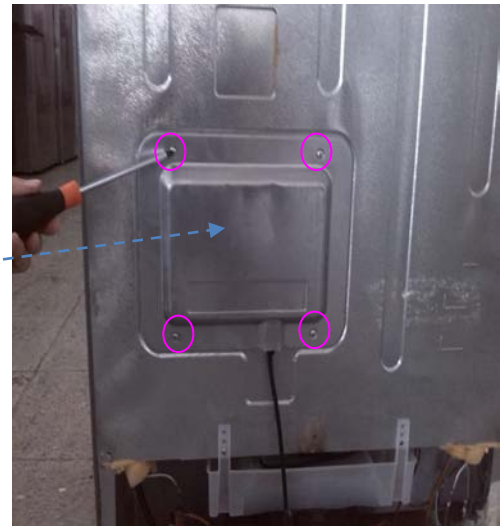
9. Door alarm

If the door of fridge or freezer is open for over 1 minutes, the door alarm will sound and the fridge or freezer will display "dA" on the control panel. In case of door alarm, buzzer will sound 3 times every 1 minute and will automatically stop alarming 10 minutes later.

- To save energy, please avoid keeping the door open for a long time when using the appliance. The door alarm can be cleared by closing the door.

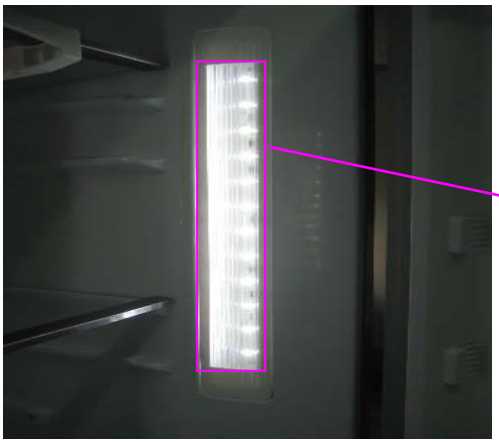
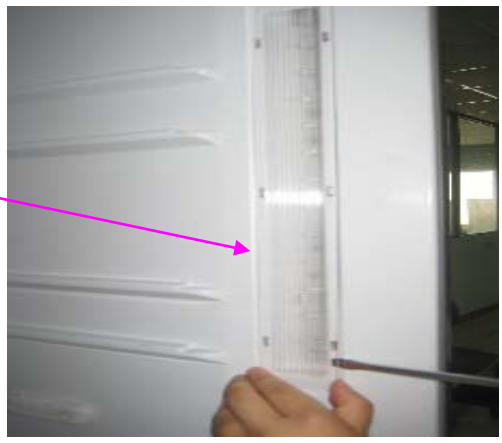
The guide for disassembly common parts of refrigerator

◆The instruction of replacing the main board.

1. The location of the electrical main board. 2. Unscrew electrical box cover (4 screws).		

3. Remove the electrical cover. 4. Remove the screw fixing the main board(2 screws).		
5. Unplug the electrical wires.		

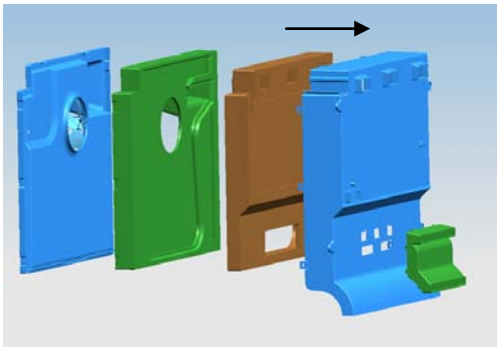
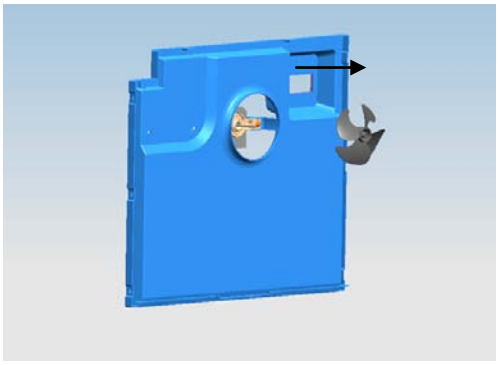
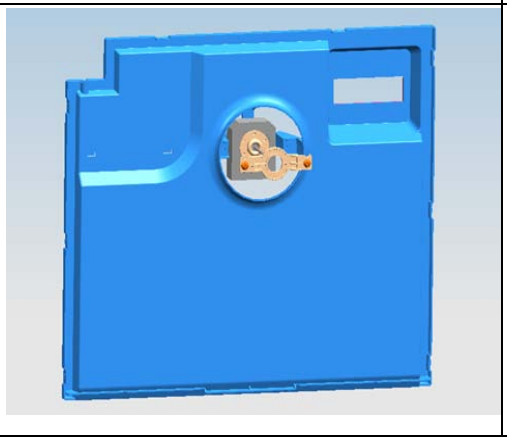
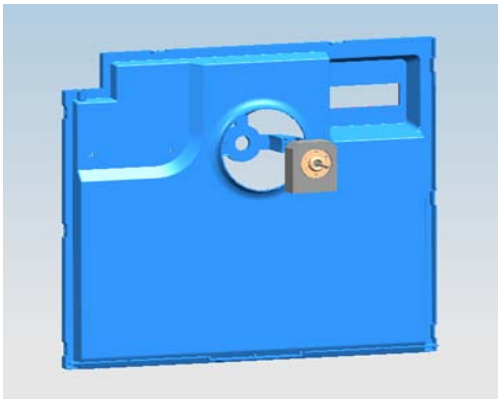
◆The instruction of of replacing LED light..

1. The location of the lamp. 2. Using a screwdriver to pry the lamp housing		
3. Remove the lamp cover.		

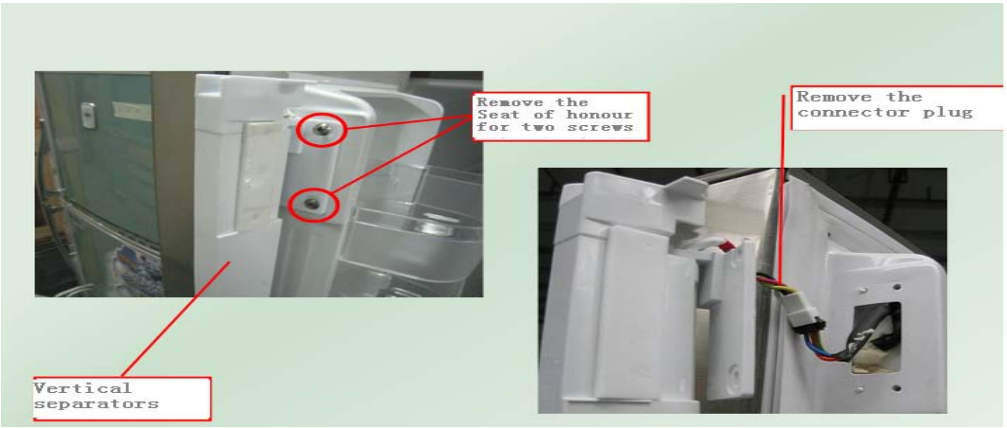
3. Unplug the electrical wires and remove the screws fixing the lamp board.		

◆The instruction of of replacing fan motor

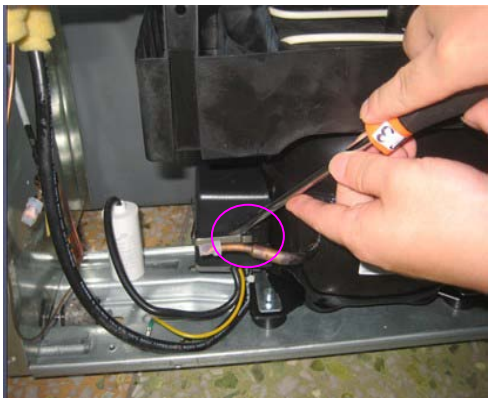
1. The location of the fan motor and remove the freezer drawers and ice tray bracket. 2. Unscrew four screws of the wind channel compartment in freezer chamber.		
3. Unplug the electrical wires and remove the wind channel compartment out of freezer chamber.		

4.Remove the wind channel cover board and wind blade from the wind channel compartment.		
5. Unscrew the fixing screws of the fan motor and replace it.		

◆The instruction of of replacing vertical separators.

Vertical separators Location	

◆The instruction of replacing PTC starting relay and overload protector.

1. The location of the PTC Starting relay and Overload protector.		

2. Disconnect the connecting wire of the PTC Starting relay and Overload protector.		

◆The instruction of replacing display board.

1. The location of the display board . 2． With a screwdriver, craft knife to pry display board		
3. Unplug the display board wires and remove the screws fixing .		

◆The instruction of replacing heater.

1. The location of the heater and disconnect the connecting wire and the heater 2.Remove the heater from the finned evaporator with hands.		 

◆The instruction of replacing temperature fuse.

1. The location of the temperature fuse and disconnect the plug from the freezer 2.Cut the fixing rope and romove the temperature fuse from the finned evaporator.		

◆The instruction of replacing temperature sensor part.

1. The location of the temperature sensor part 2.Unscrew the screw of the cover for temperature sensor part.		

3.Remove the cover and take the temperature sensor part out.		

Troubleshooting

◆The solution for digital display code problem:

No.	Problems	analysis	Solutions
1	The refrigerator digital display window flashing with 'dR' code.	The refrigerator door left open for more than 2 min or the refrigerator door is not well closed.	Check the refrigerator door and make sure it properly closed.
2	The digital display window show "F1"	1. The refrigerator chamber Tem. Sensor is open circuit or short circuit. 2. The refrigerator chamber Tem. Sensor is bad. 3. The control PCB is bad.	1. Using a Multimeter with the ohm switch to measure the resistor of sensor or checking the connecting is well or not. 2. Change the sensor 3. Change the control PCB
3	The digital display window show "F3"	1. The freezer chamber Tem. Sensor is open circuit or short circuit. 2. The freezer chamber Tem. Sensor is bad. 3. The control PCB is bad.	1. Using a Multimeter with the ohm switch to measure the resistor of sensor or checking the connecting is well or not. 2. Change the sensor 3. Change the control PCB
4	The digital display window show "F5"	1. The Evaporator Defrost Sensor is open circuit or short circuit. 2. The Evaporator Defrost Sensor is bad. 3. The control PCB is bad.	1. Using a Multimeter with the ohm switch to measure the resistor of sensor or checking the connecting is well or not. 2. Change the sensor 3. Change the control PCB
5	The digital display window show "F4"	1. The greenhouse Sensor is open circuit or short circuit. 2. The greenhouse Sensor is bad. 3. The control PCB is bad.	1. Using a Multimeter with the ohm switch to measure the resistor of sensor or checking the connecting is well or not. 2. Change the sensor 3. Change the control PCB
6	The digital display window show "F6	1. The receive communication fault between the main electrical PCB and the display PCB. 2. The control PCB is bad. 3. The display PCB is bad.	1. Check the wire terminal is well or not between the main electrical PCB and display PCB. 2. Change the main electrical PCB. 3. Change the display PCB.

Note:

1. The digital display window light will be off after 1 min without any touching.
2. When there is any code problem happen, pass any keys of the control panel, the code will be showed on the digital display window again.
3. The location of all Sensors:

3.1 The refrigerator chamber Tem. Sensor is on the right side of the refrigerator chamber.

3.2 The Evaporator Defrost Sensor is on the right up side of the Evaporator in the freezer chamber.

3.3 The freezer chamber Tem. Sensor is in the wind channel part in freezer chamber.

Using a multimeter with the ohm switch to measure the resistor of sensor, normally at surrounding 25 ℃ the resistor should be about 2kohm and every with the temperature decreases 1 ℃ the corresponding resistor value would increase about 450hm. If the measured value is not within the normal scope, the sensor is bad and needs to repair or change.

◆The common problem judging method

Problem	Cause
Refrigerator can't start	1.1 Is the power cord connecting well? 1.2 Is the power voltage too low? 1.3 Is the sensor irrational setting? 1.4 Is the ambient temperature too low? 1.5 Is the circuit on power? 1.6 Is there some default in compressor 1.7 Is the refrigeration system blocked by ice or dirty, please stop the unit and restart after 10 minutes to see if the compressor can start.
Weak cooling effects	2.1 Is there any heat source around the refrigerator? 2.2 Is there enough space around the refrigerator for rejection of heat? 2.3 Is the setting of the temperature appropriate? 2.4 Is there too much food or overheating food in it? 2.5 Does there open the door frequently? 2.6 Is the door completely closed? 2.7 Does the gasket destroyed or distort? 2.8 Does the gas leak?
The unit can not stop running	3.1 Is there any heat source around the refrigerator? 3.2 Is there enough space around the refrigerator for rejection of heat? 3.3 Is the setting of the temperature appropriate? 3.4 Is there too much food or overheating food in it? 3.5 Does there open the door frequently? 3.6 Is the door completely closed? 3.7 Does the gasket destroyed or distort? 3.8 Is the thermostat good operation? 3.9 Does the gas leak?
Ice up in the freezing chamber	4.1 Is the setting of the temperature appropriate? 4.2 Is there multi-moisture food and too close to the back wall of the refrigerator? 4.3 Is the ambient temperature too low? 4.4 Is the electric parts on good condition, specially the thermostat wich will cause the unit non-stopping .
Abnormal noise	5.1 Is the refrigerator stably placed? 5.2 Does the refrigerator bump other objects?

	5.3 Whether the internal accessory of the refrigerator is in the right place. 5.4 Whether the water plate of compressor is fall from the unit. 5.5 Does the tube of the refrigeration system bump each other? 5.6 The noise sound likes Water flow inside the refrigerator ,in fact ,it is normal, which is caused both when refrigerator start and shut-down; in addition, frost-dissolving causes this sound, too, which is a normal phenomenon. 5.7 There will be a cracking sound in the cabinet ,when the cabinet or cabinet accessory contracting or expanding, this sound will be made, which is normal. 5.8 The motor operation sound in the compressor is appears to be louder at night or begin starting. which is a normal phenomenon; also the uneven placing would lead to too much running noise.
There is a peculiar smell in the units	6.1 Is the food with special smell sealed tight? 6.2 Does it have long time storing food or degenerated food? 6.3 Whether the internal cabinet needs cleaning.
the forefront or the middle cabinet heats	7.1 As fridge Anti-condensation tube is placed here and caused the above phenomenon, which is normal.
Refrigerator's two sides or the back heat	8.1 As condensation tube is placed here and caused the above phenomenon, which is normal.
the cabinet surface condensation	9.1 Air humidity is too large.

◆The solution for the common problem.

1.Cooling is not enough good (Many reasons might cause that cooling not enough good, as blow :)		
Reason	analysis	Solutions
1) Leakage of Gas	If some gas leaked unit will work not well. Phenomenon of failure: a. lower pressure of liquid cycle system b. high temperature of copper tube of discharging gas, hand feels very hot. C. much noise, sounds like "ZZZZZ", comes from outlet of capillary. d. the temperature fell down very slowly.	First find out the point of leaking on tube, and then sealed it, vacuuming it, finally recharge with Gas. Note: If you find oil on somewhere, it is possible that leakage point is there.
2)The quantity of Gas is too much	If too much Gas was charged into the cycle system, the extra gas will occupy some space of evaporator, so that the area of heat exchange becomes less, unit will work not well. Phenomenon of failure: a, higher pressure of liquid cycle system than norm. b, higher temperature of condenser. c, larger electric current of compressor d, there maybe ice on the suction tube. e, when gas is too much, some gas liquid might goes back into compressor, compressor will be damaged by liquid.	First stop unit for several minutes, and then open charging tube, discharge all of gas. Change a new filter, and then recharge gas, finally sealed the system.

3) There is air in the liquid cycle system	The air in system will cause lower efficiency of cooling. Phenomenon of failure: a, higher pressure of liquid cycle system than norm, but the pressure is not over the limit. b, higher temperature of discharging tube. C, much noise	First stop unit for several minutes, and then open charging tube, discharge all of gas. Change a new filter, and then recharge gas, finally sealed the system.
4)Low working efficiency of compressor	General when a compressor works for many years, some parts of compressor were wear, so that compressor discharge less gas out, unit does not work strongly. Phenomenon of failure: a, lower pressure of discharging, check the pressure of system with pressure meter to see if it is normal. b, higher temperature of compressor surface. C, cut off the discharging tube, to see if you can block the gas coming out of the tube when compressor is working.	Change a new compressor.
5) There is something that blocked the liquid cycle system	Some time there is something blocked the filter of liquid cycle system, so that unit is not cold. Phenomenon of failure: a, lower pressure of discharging b, lower temperature of discharging.	Change a new filter

2.NO COOL

(Popular failure reasons are below):

Reason	analysis	Solutions:
1) Leakage of gas	Phenomenon of failure: a, leaking fast b, leaking slowly c, no voice of liquid flowing d, cut off charging tube, no gas goes out.	First find out the point of leaking on tube, and then sealed it, vacuuming it, finally recharge with gas. Note： If you find oil on somewhere, it is possible that leakage point is there.
2)There is some thing that blocked the liquid cycle system	A,Ice blocking Sometime because unknown reason water comes into liquid cycle system, the capillary will be blocked by water after unit runs for period of time. Phenomenon of failure: The unit works well in the inception, after period of time the ice appears in the capillary and becomes more and more, till blocks the hole of capillary completely. In the moment	First stop unit for several minutes, and then open charging tube, discharge all of gas. Blow the cycle system with gas of nitrogen, and then recharge Gas, finally sealed the system.

	you can find the ice on the evaporator defrosts. The noise of liquid flow disappears. The pressure of absorbing becomes negative. The phenomenon above will appear again and again. The way to check ice blocking: Warm the capillary with a hot towel, after a while the ice in the capillary melt, you can hear a sound of gas flow comes from the capillary abruptly. The pressure of absorbing becomes higher. It is Ice blocking.	
	B, there is offal block the capillary Phenomenon of failure: If the capillary is blocked by something such as offal etc., the sound of liquid flow disappears. The ice on the evaporator defrosts The pressure of absorbing becomes negative. Higher temperature of discharging tube The way to check offal blocking: If you warm capillary with the way of checking ice blocking, there is no change. It must be offal blocking.	First stop unit for several minutes, and then open charging tube, discharge all of gas. Blow the cycle system with gas of nitrogen. Change a new capillary and filter, and then recharge Gas, finally sealed the system.

COMPRESSOR NEVER STOPS：	
Reason	Solutions
1)The setting temperature is not reasonable.	Readjust the temperature setting.
2) the sensor is bad.	Replace the sensor.
3)Seal of door is damaged.	Replace the gasket
4)Too much food in the refrigerator	Please put the food properly.
5)Wind door is broken.	Replace wind door.
6)Fan motor is broken.	Replace fan motor

Note:

- Before doing these operations above, disconnect the main power supply. Failure to do so could result in electrical shock or personal injury.
- In case of any detailed technical information please check with the technical specifications.