			重 要 度		

		产 品 名称:	冷藏冷冻箱
		产 品 型号:	BCD-560WPZ/HC1(H)
		文 件 名称:	售后服务技术资料
		文 件 编号:	BSSJ00002772
		编 制 日期:	2021 年 3 月 20 日
借(通)用件登记			

							家电开发中心
旧底图总号							
底图总号	A						
	版本	更改单编号	签字	日期	重 量	比例	售后服务技术资料
出图审查	设计	曾思锋	审核				
	标准化				共 51 张	第 1 张	BSSJ00002772
日 期	批准						

Hisense

Refrigerator

Service Manual

Model:BCD-560WPZ/HC1 (H)

Hisense Refrigerator

Contents

1. Warning and precautions for safety

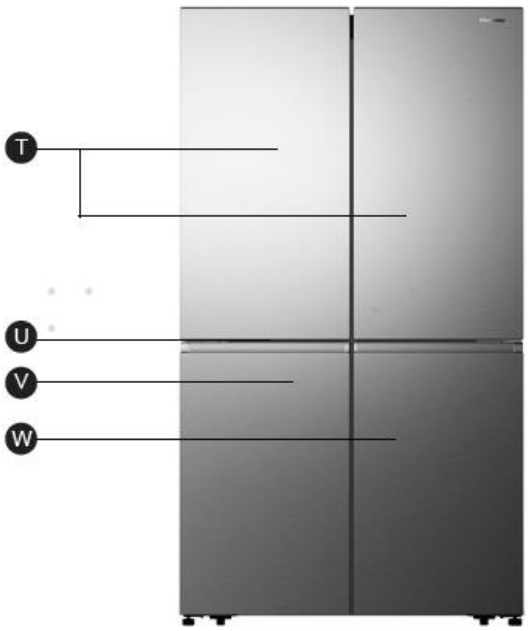
Please observe the following safety precautions in order to use safely and correctly the refrigerator and to prevent accident and danger during repair.

1. Be care of an electric shock. Disconnect power cord from wall outlet and wait for more than three minutes before replacing PCB parts. Shut off the power whenever replacing and repairing electric components.
2. When connecting power cord, please wait for more than five minutes after power cord was disconnected from the wall outlet.
3. Please check if the power plug is pressed down by the refrigerator against the wall. If the power plug was damaged, it may cause fire or electric shock.
4. If the wall outlet is over loaded, it may cause fire. Please use its own individual electrical outlet for the refrigerator.
5. Please make sure the outlet is properly earthed, particularly in wet or damp area.
6. Use standard electrical components when replacing them.
7. Make sure the hook is correctly engaged. Remove dust and foreign materials from the housing and connecting parts.
8. Do not fray, damage, machine, heavily bend, pull out or twist the power cord.
9. Please check the evidence of moisture intrusion in the electrical components. Replace the parts or mask it with insulation tapes if moisture intrusion was confirmed.
10. Do not touch the ice maker with hands or tools to confirm the operation of geared motor.
11. Do not let the customers repair, disassemble and reconstruct the refrigerator for themselves. It may cause accident, electric shock, or fire.
12. Do not store flammable materials such as ether, benzene, alcohol, chemicals, gas, or medicine in the refrigerator.
13. Do not put flower vase, cup, cosmetics, chemicals, etc., or container with full of water on the top of the refrigerator.
14. Do not put glass bottles with full of water into the freezer. The contents shall freeze and break the glass bottles.
15. When you scrap the refrigerator, please disconnect the door gasket first and scrap it

2. Appearance and structure

2.1 View of the appliance

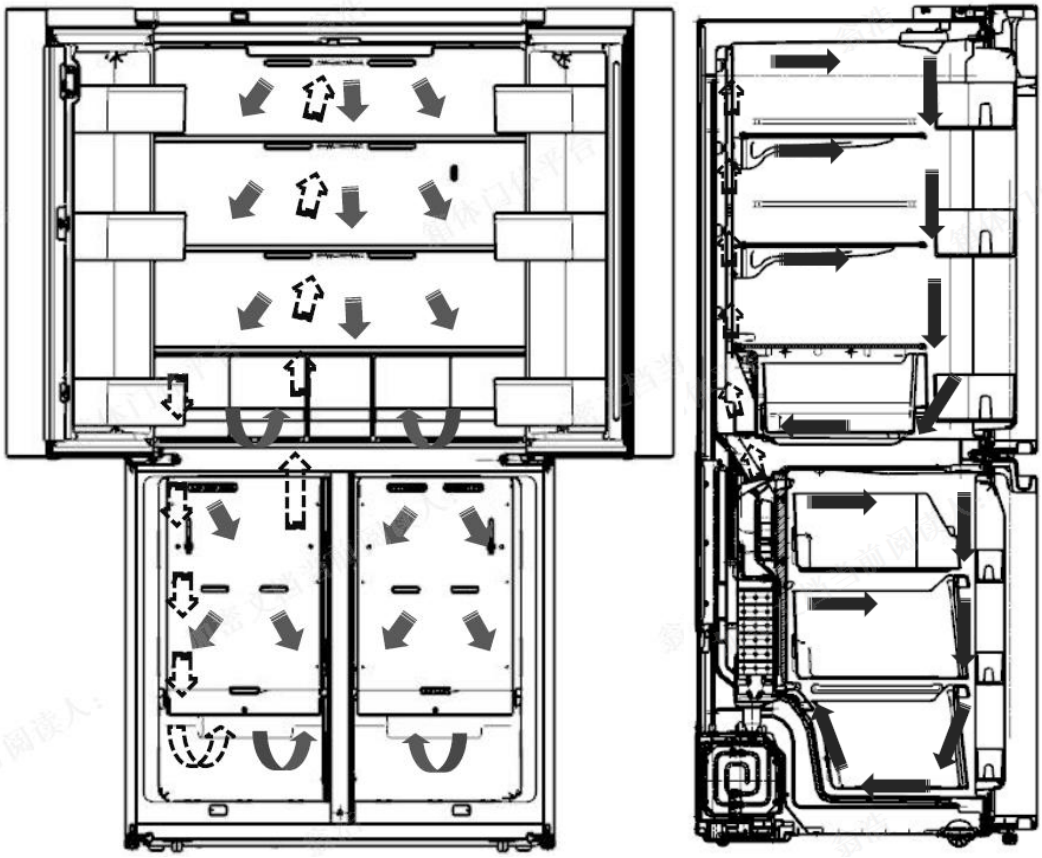
A Refrigerator LED Light
B Refrigerator Door Bin
C Rotary Separator
D Glass Shelf
E Cover
F Ice-Maker
G Freezer LED Light
H Freezer Tray
I Freezer Middle Drawer
J Freezer Lower Drawer
K Freezer Door Bin
L Water Filter
M Middle Storage Drawer
N Storage Drawer
O Convertible Compartment LED Light
P Convertible Compartment Tray
Q Convertible Compartment Middle Drawer
R Convertible Compartment Lower Drawer
S Leveling Leg
T Refrigerator Door
U Handler
V Freezer Door W Convertible Door



Note！

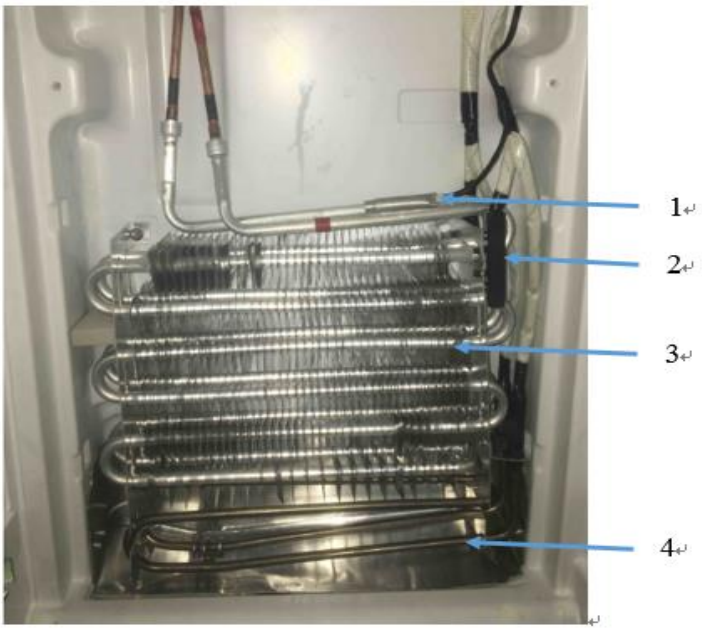
- Due to unceasing modification of our products, your refrigerator may be slightly different from this instruction manual, but its functions and using methods remain the same.
- To get the best energy efficiency of this product, please place all shelves, drawers and baskets on their original position as the illustration above.

2.2 Wind channel structure



2.3 Evaporator structure

2.3.1 Convertible evaporator structure

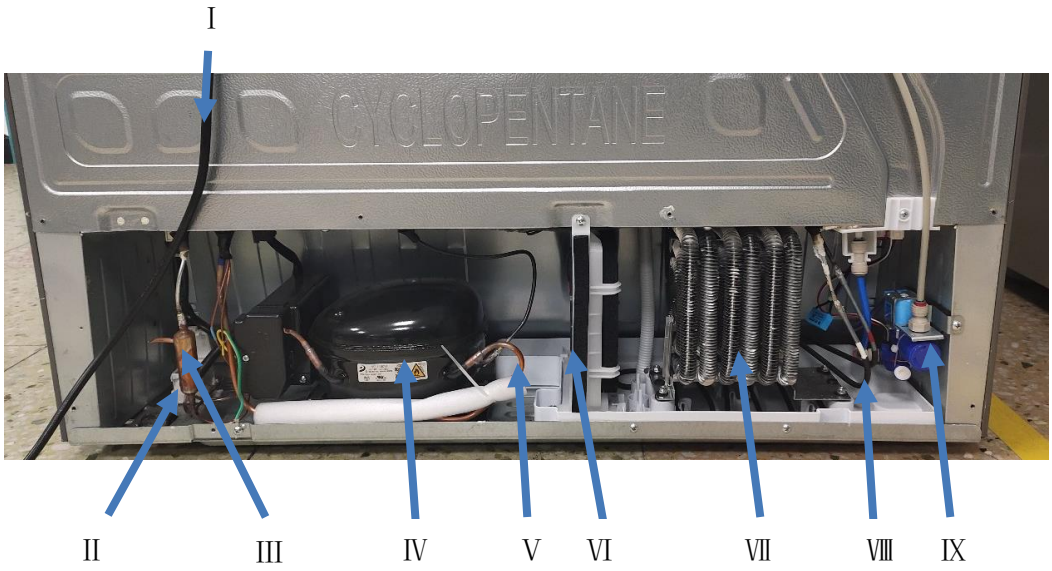


1 ——Sensor
2 ——Fuse
3 ——Evaporator
4 ——Heater

2.3.2 Freezer evaporator structure

1 ——Fuse
2 ——Accumulator
3 ——Sensor
4 ——Evaporator
5 ——Heater

2.4 Compressor room structure



Ⅰ ——Power cord
Ⅱ —— AC electromagnetic valve
Ⅲ——Dry filter
Ⅳ——Compressor
Ⅴ ——Suction tube
Ⅵ—— Fan Motor
Ⅶ——Bottom condenser
Ⅷ—— Evaporation dish
Ⅸ—— Valve body

3. Basic parameters

Content	Unit	Value
Voltage/Frequy	V/Hz	115V/60Hz
Rated Current	A	1
Defrost Power	W	280
Energy consumption/year	kWh/year	555
Net Weight	kg	118.5
Kind of coolant/Charge(R134a/R600a)oz	R/g	R600a/65

4. Operation and functions

4.1 Display controls

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.

POWER

Press and hold the “POWER” button for 3 seconds to turn the power function on or off. When the power function is on, the “POWER” icon lights, the refrigerator is stopped cooling.

Setting Compartment Temperatures

When you set a temperature, you are setting an average temperature for the entire compartment. The actual compartment temperatures may vary from the temperatures displayed depending on the amount and placement of stored food, and the surrounding room temperature.

Recommended Temperature Settings

- Fridge Compartment: 39℉(4°C)
- Fresh Choice Compartment: 19℉(-7°C)
- Freezer Compartment: 0℉(-18°C)

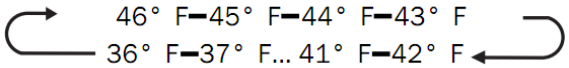
Refrigerator (Fridge) Compartment Temperature

1. Press ZONE repeatedly until the Fridge icon appears.

2. When Fridge is on, 

is illuminated and then press TEMP. repeatedly to cycle through the available temperature settings, from 46℉ to 36℉ (8°C to 2°C).

NOTE: Each press of the button decrease the setting by one degree.



3. Release the TEMP. control when the desired temperature setting appears.

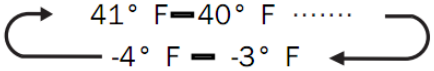
My Fresh Choice Compartment Temperature

1. Press ZONE repeatedly until the My Fresh Choice appears.

2. When My Fresh Choice is on, 

is illuminated and then press TEMP. repeatedly to cycle through the available temperature settings, from 41℉ to -4℉ (5°C to -20°C).

NOTE: Each press of the button decrease the setting by one degree.



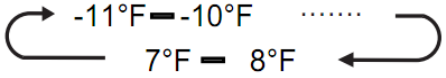
3. Release the TEMP. control when the desired temperature setting appears.

Freezer Compartment Temperature

1. Press ZONE repeatedly until the Fridge icon appears.

2. When Freezer is on,  is illuminated and then press TEMP. repeatedly to cycle through the available temperature settings, from 7℉ to -11℉(-14°C to -24°C).

NOTE: Each press of the button advances the setting by one degree.



3. Release the TEMP. control when the desired temperature setting appears.

Super Cool

The Super Cool feature helps to keep food stored in the refrigerator at the set temperature during periods of high usage, large grocery loads, or temporarily warm room temperatures.

The Super Cool feature lowers the temperature in the fridge compartment to 36℉(2°C) to cool food faster.

1. Press MODE repeatedly until the Super Cool icon  appears.

NOTE: When Super Cool is on,  is illuminated and 36℉(2°C) appears in the temperature display.

2. Press “MODE” to manually turn off Super Cool and return to the previously set temperature.

NOTE: Super Cool will automatically turn off after 3 hours, and the refrigerator will revert to its previous temperature setting.

Super Freeze

The Super Freeze feature helps to keep the food stored in the freezer at the set temperature during periods of high usage, large grocery loads, or temporarily warm room temperatures.

The Super Freeze feature lowers the temperature in the freezer compartment to -11℉(-24°C) to freeze food faster.

1. Press MODE repeatedly until the Super Freeze icon  appears.

NOTE: When Super Freeze is on,  is illuminated and 11℉(-24°C) appears in the temperature display.

2. Press TEMP. to manually turn off Super Freeze and return to the previously set temperature.

NOTE: Super Freeze will automatically turn off after 52 hours, and the freezer will revert to its previous temperature setting.

When selecting the Super Freeze function. ensure there are no bottled in the freezer compartment. Bottles and cans may explode.

ICE

The ice maker is located inside the freezer compartment, near the top of the compartment. When it makes ice, the ice is stored in ice storage box inside the upper freezer drawer.

1. Press the “ICE” button to turn the ice maker on or of. When the ice maker is

turned the icon lights.

2. To use the ice, open the freezer compartment door, then pull open the upper freezer drawer and remove ice from the storage box.

3. For your health, please don't use the ice on the first day of using the refrigerator.

Energy saving

Press the "MODE" button to turn on the energy saving function, the "Energy saving" icon will be illuminated.

1. When the "Energy saving" function is on, the temperature of fridge is automatically switched to 43℉(6℃) and the temperature of freezer is automatically switched to 1℉(-17℃), the temperature of My Fresh Choice compartment is immovability.

2. When energy saving function is on you can switch it by pressing the "MODE" or "TEMP" button and the refrigerator temperature setting will back to the previous setting.

Door Open Alarm

If a door is open for longer than 2 minutes, an alarm will sound to alert you and the control panel will display "dr". The alarm will sound 3 times every minute for 8 minutes.

• To turn off the alarm, close all doors completely.

Demo Mode

1. Demo Mode is for store displaying only. To enter this mode, you could press the leftmost key "POWER" and the rightmost key "ICE" at the same time for 3 seconds then you can hear a voice and see the whole control panel light up for 1 second.

2. In this mode, the light and the display operation is normal, but the refrigerator is not cooling. When the refrigerator is in the Demo Mode, if consumers open the door or no keys operation for 30 seconds with the door opened, the temperature control panel will show as follow from A to F

3. To exit this mode, you could press the leftmost key "POWER" and the rightmost key "ICE" at the same time for 3 seconds, then you can hear a voice and see the whole control panel light up for 1 second.

NOTE: The Demo Mode stays on even if the refrigerator power off. If the consumers enter the mode with unintentional operation, you should exit it as soon as possible, since the refrigerator.

℉/℃

To toggle between Celsius and Fahrenheit on the display, press and hold the "TEMP" button for three seconds.

4.2 Changing the water filter

Caution:

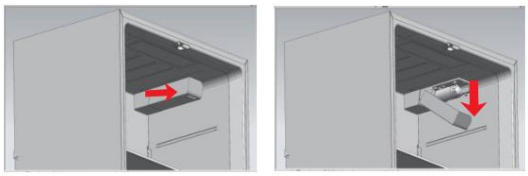
Please refer to the owner's manual for proper maintenance and operation. If this device is not maintained and operated as specified in the owner's manual, there is a risk of exposure to contaminants.

For more information, visit global.hisense.com or the California State Water Resources control Board's web site at www.waterboards.ca.gov.

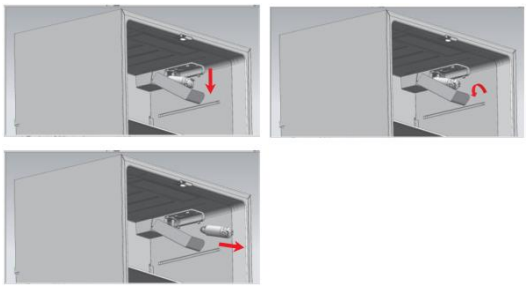
To change the water filter, follow these steps:

1. Shut off the water supply, then pull the handle under the cover outwards to open

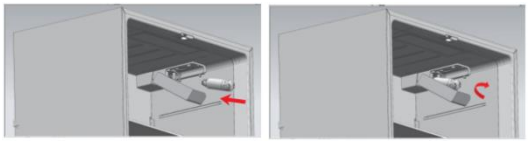
the cover.



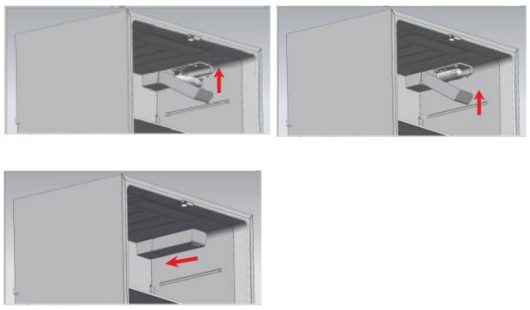
2.Pull the water filter downwards and turn it about 90° counter-clockwise to take it out. When the filter is disassembled, pay attention to keep the filter head upward tilted to avoid water leaking from the front filter part, and the dropped water in the cover should be cleaned immediately.



3. Insert the new water filter into the hole and at the same time turn it about 90° clockwise until it stops.



4.Push the water filter up and pull the cover up to horizontal pull it back until it locks.



5.Turn the water supply back on.

Note: After turning on the water supply, you should check the leaks. If leaks occurs, repeat the above operation steps 1-5. If leaks persist, discontinue use and call your supporting dealer.

6. Flush filter for 5minutes before using.

Removing any residual matter inside the water supply line after installing the water filter.

1.Turn on the main water supply and supply water from water supply line.

2.Run water through the dispenser until the water through the dispenser until the water runs clear (approx. 6 to 7 minutes).This will clean the water supply system and remove the air from the lines.

3.Additional flushing may be required in some households.

4. Open the refrigerator door and make sure there are no water leaks coming from the water filter.

Note: Be sure to flush the dispenser thoroughtly, otherwise water may drip from the dispenser. This means that there is still air in the line.

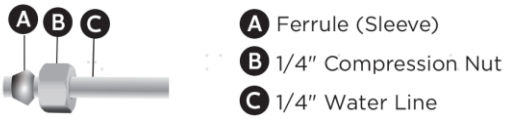
4.3 Connect Water Line To Refrigerator

IMPORTANT: If you turn the refrigerator on before the water is connected, turn off the ice maker.

1.Unplug refrigerator or disconnect power.

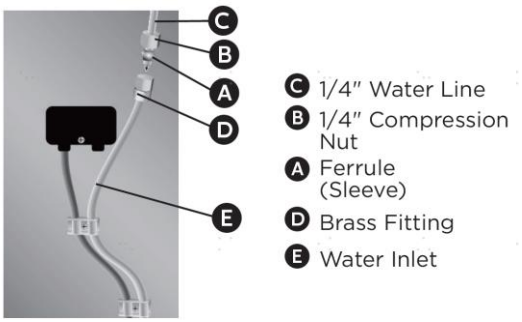
2.Close shutoff value.

3.Thread a 1/4 "compression nut and ferrule (sleeve)onto the free end and of 1/4" water line.



4.Insert the free and of the 1/4" water line into the brass fitting attached to the water inlet on the back of the refrigerator.

5. Slide the 1/4" compression nut over the ferrule(sleeve) and screw the 1/4" compression nut onto the brass ftting.



6.Comfirm 1/4" water line is secure by gently pulling on it.
7. Turn on water supply and check for leaks. Correct any leaks.

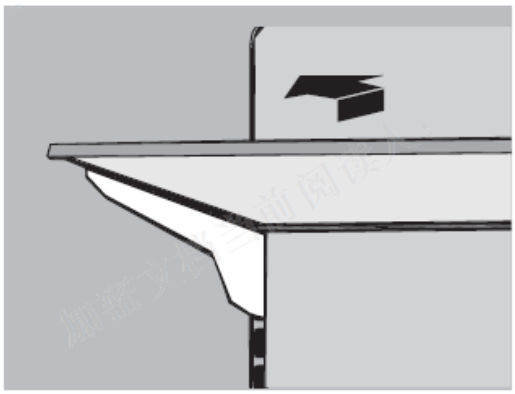
4.4 Using The Appliance

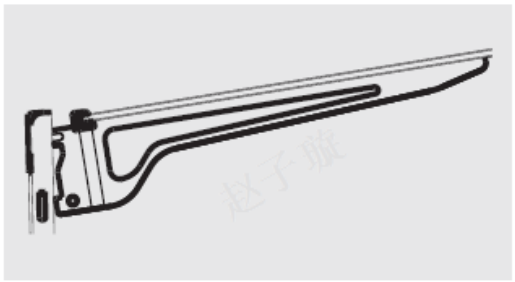
This section tells you how to use most of the useful features. We recommend that you read through them carefully before using the appliance.

Adjustable Shelves

The height of the shelves can be adjusted to fit your storage needs.

1. To remove a shelf, gently lift upward and then pull the shelf forward until the end of the shelf is past the rail support.



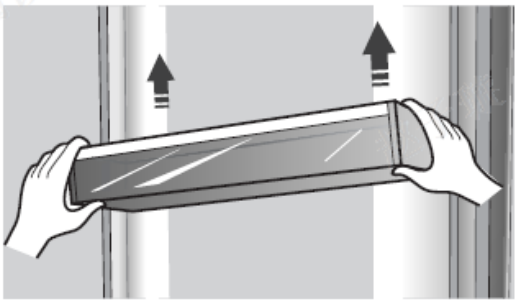


2. To reinstall a shelf, gently slide the shelf back into the refrigerator compartment, and then lower the shelf onto the rail support.

Removable Door Bins

The bins located in the middle of the door are adjustable.

To Remove and Replace a Door Bin:
1. Place hands on both sides of the bin and lift upward.
2. Pull the door bin out.
3. Replace the door bin by inserting it above the support and pressing down to snap into place.



Note: The quality of your ice will be only as good as the quality of the water supplied to your ice maker. Avoid connecting the ice maker to a softened water supply. Water softener chemicals (such as salt) can damage parts of the ice maker and lead to poor quality ice. If a softened water supply cannot be avoided, make sure the water softener is operating properly and is well-maintained.

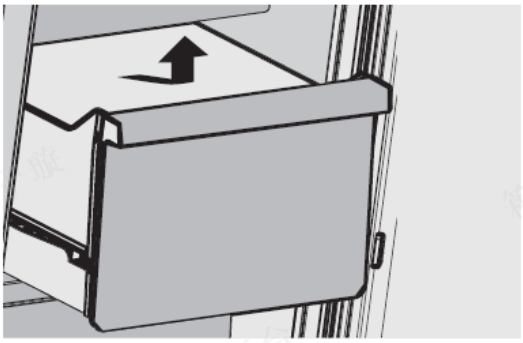
Freezer Drawers

To Remove/Replace Freezer Drawer:

1. Pull out drawer to maximum extension.

2. Lift up to remove the drawer.

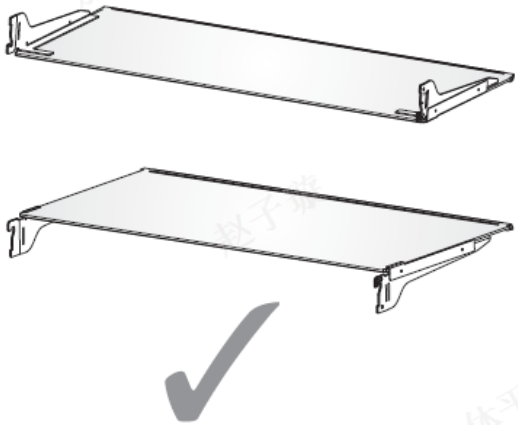
3. Reverse steps 1 and 2 to replace the drawer.

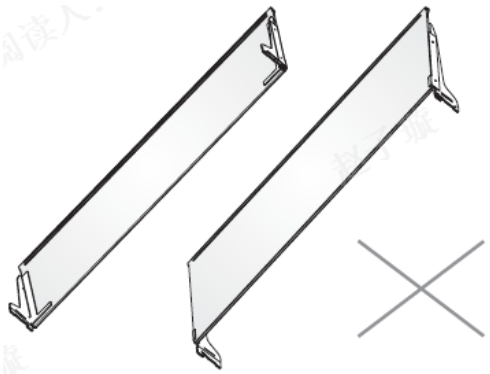


Shelf parts clean

•When cleaning the shelf parts, remove the lower shelf parts should be placed horizontally, either front or back , to prevent the shelf support from falling off.

•If the shelf parts are placed at an Angle and the side of the shelf parts touch the ground. When the cleaning force is not correct, the shelf bracket is easy to fall off.





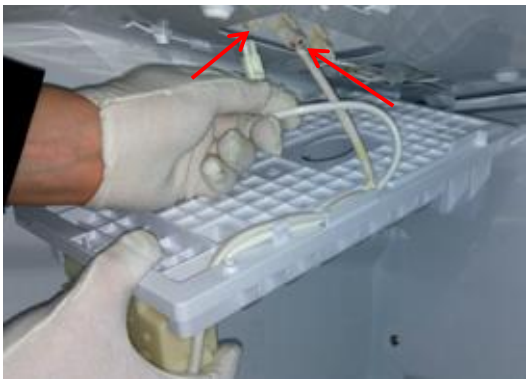
4.5 Remove the Ice maker part

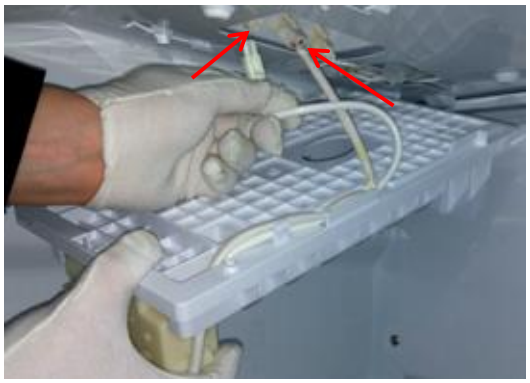
1. open freezer door, take upper drawer out.

2. Disassemble two fixed screws with a cross screwdriver.

3. Pull out the ice maker part

4. Unplug two terminals, then take out the ice maker part.



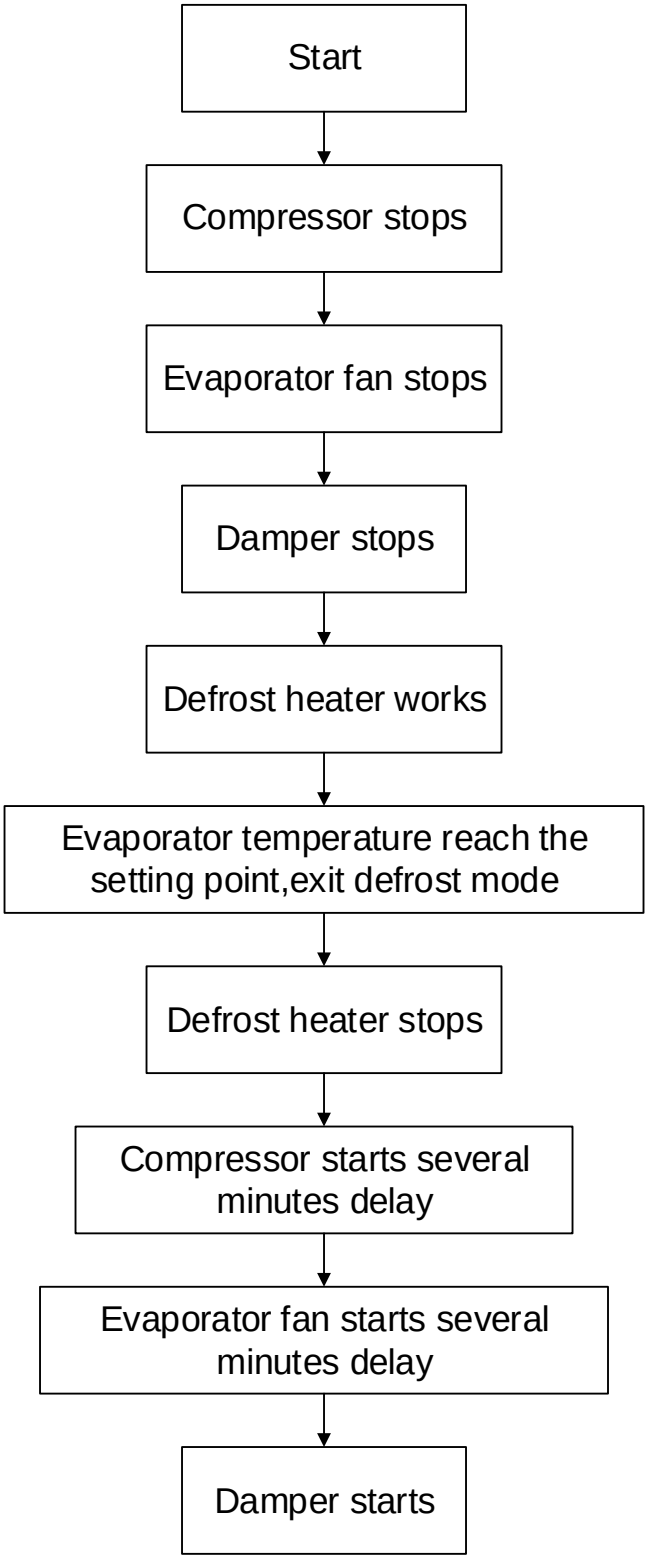


4.6 Defrost mode

4.6.1 Start condition

When compressor accumulated running time reach the setting point (depends on the environment temperature), it will enter defrost mode automatically.

4.6.2 Defrost flow


Start
Compressor stops
Evaporator fan stops
Damper stops
Defrost heater works
Evaporator temperature reach the setting point,exit defrost mode
Defrost heater stops
Compressor starts several minutes delay
Evaporator fan starts several minutes delay
Damper starts

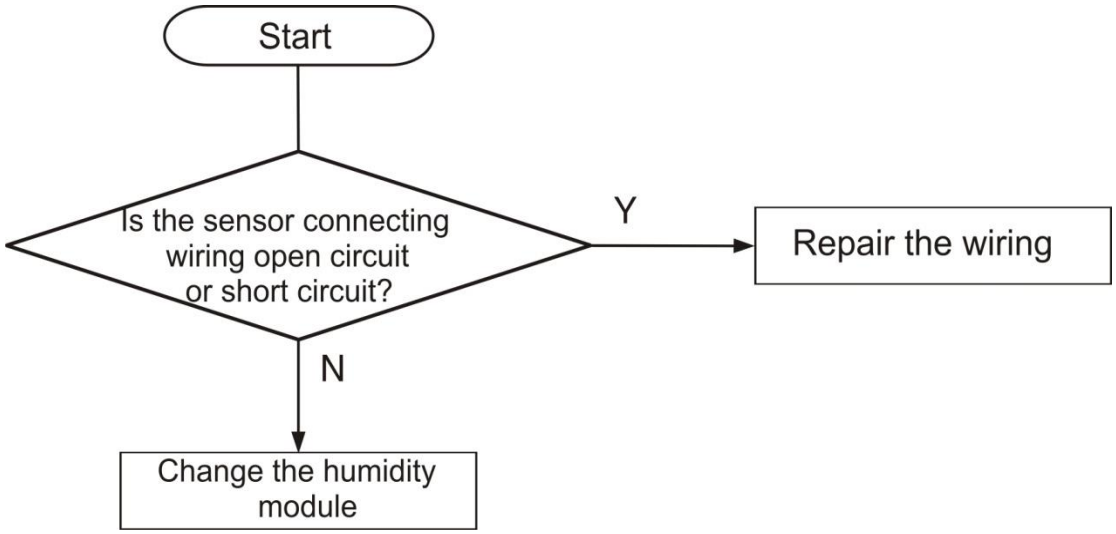
4.7 Error display

4.7.1 Error Code

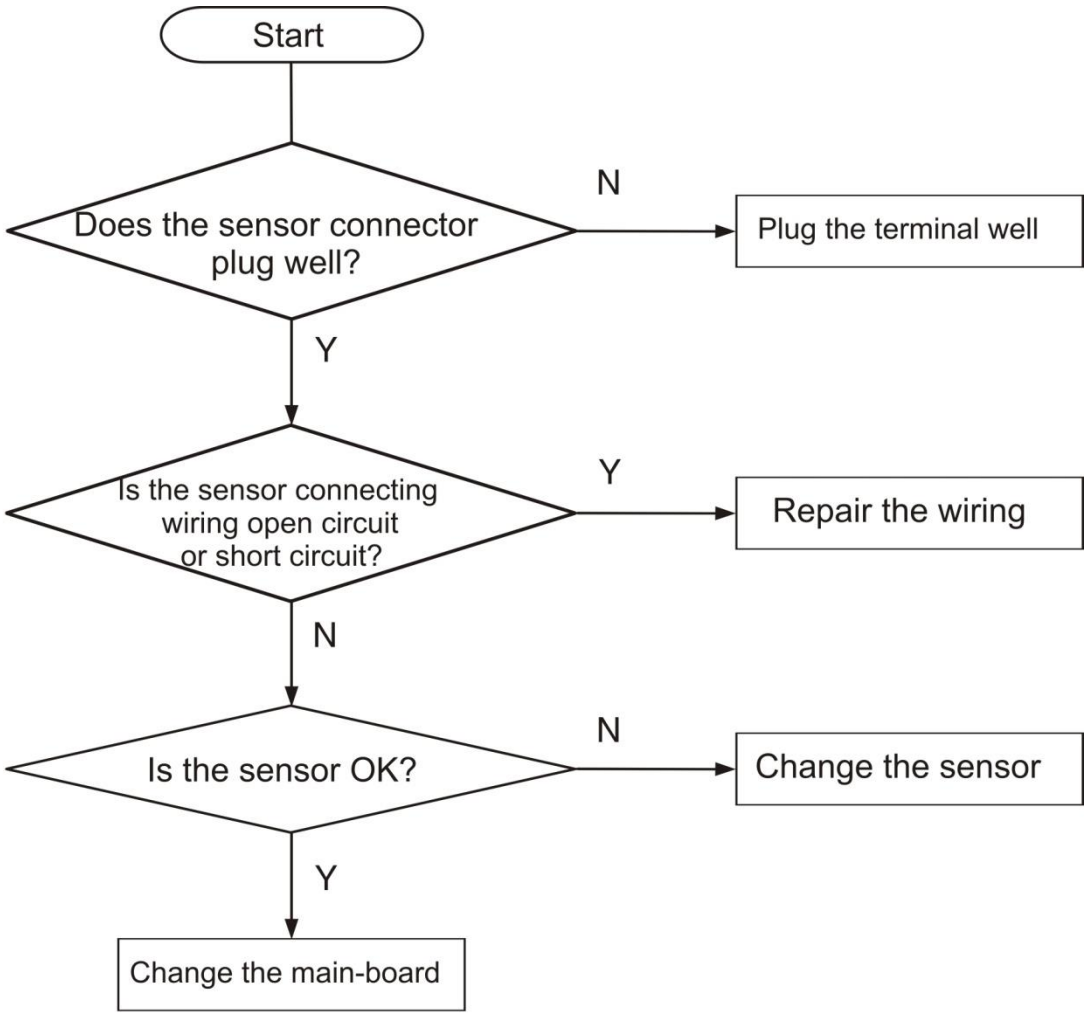
Code	Problem
E0	Environment sensor malfunctions
E1	Refrigerator sensor malfunctions
E3	Freezer sensor malfunctions
E4	Freezer defrost sensor malfunctions
E5	Convertible sensor malfunctions
E6	Convertible defrost sensor malfunctions
E8	Humidity sensor malfunctions
F1	Freezer fan malfunctions
F3	Convertible fan malfunctions
Ec	Communication sending malfunctions
Er	Communication receiving malfunctions

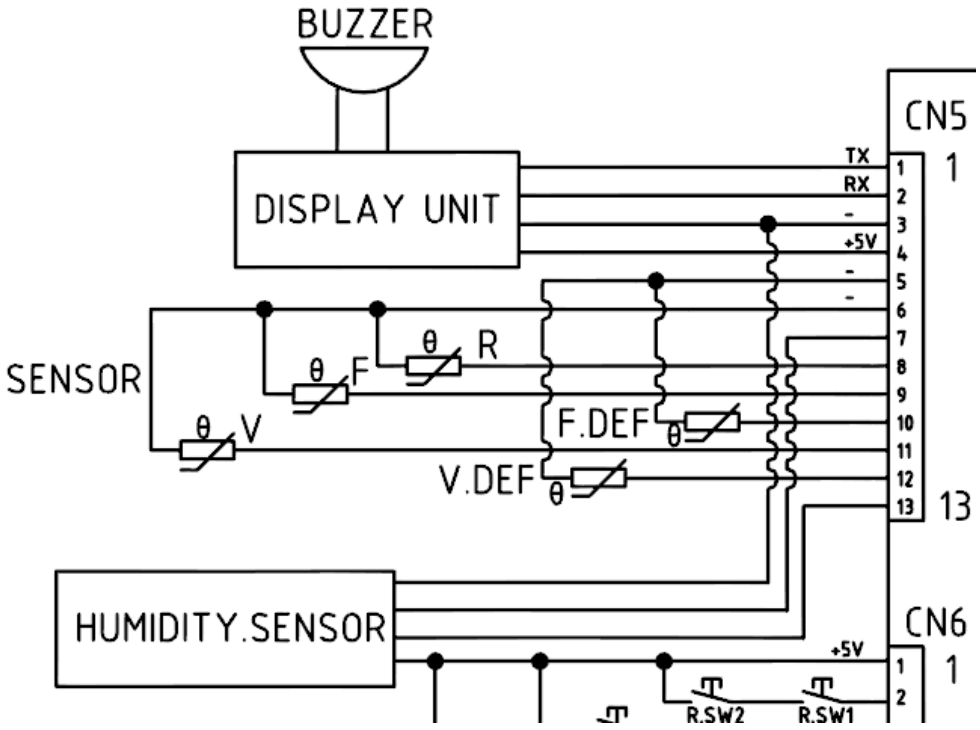
4.7.2 Checking method

4.7.2.1 Environment sensor or Humidity sensor error



4.7.2.2 Other sensors error

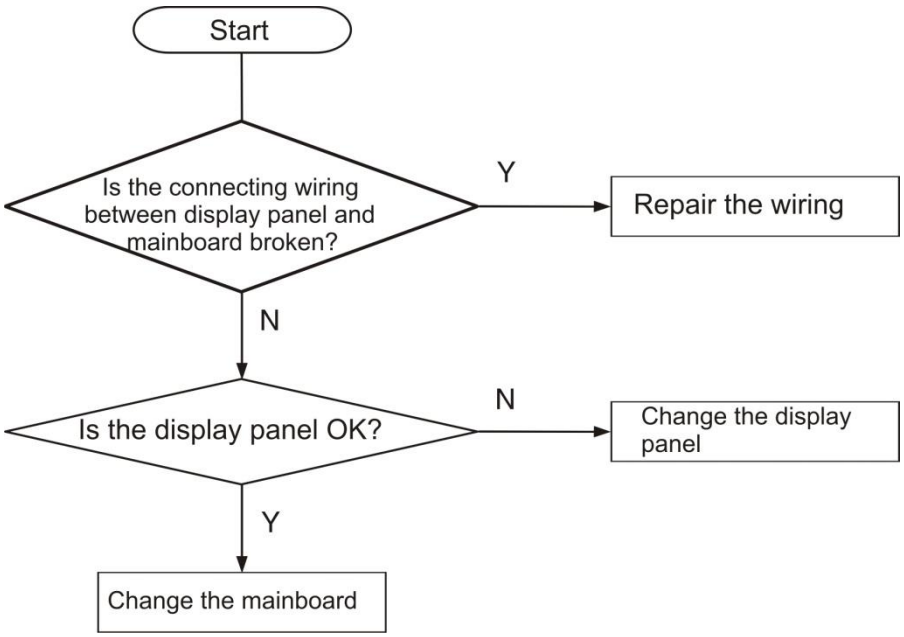




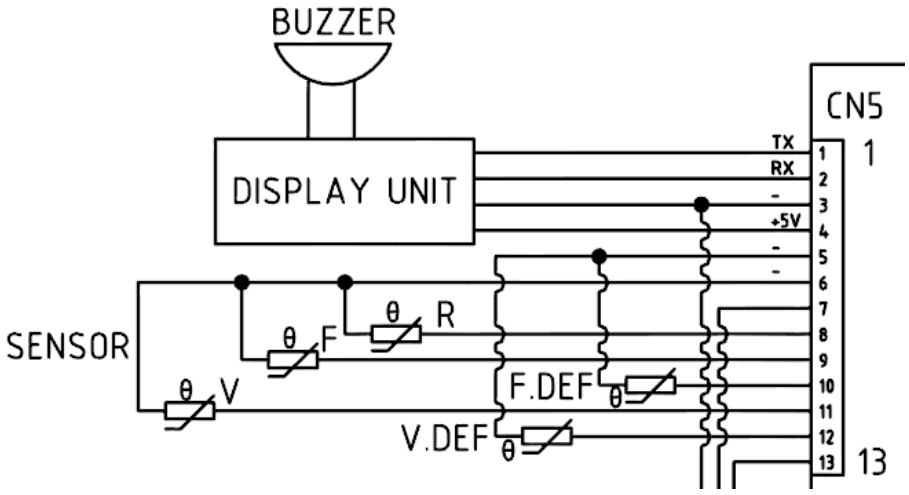
Note:
1. Refrigerator sensor corresponding pin No. 6 and No. 8 on CN5 connector of main-board.
2. Freezer sensor corresponding pin No. 6 and No. 9 on CN5 connector of main-board.
3. Convertible sensor corresponding pin No. 6 and No. 11 on CN5 connector of main-board.
4. Freezer defrost sensor corresponding pin No. 5 and No. 10 on CN5 connector of main-board.
5. Convertible defrost sensor corresponding pin No. 5 and No. 12 on CN5 connector of main-board.
6. Environment sensor corresponding pin No. 7 and No. 3 on CN5 connector of main-board.
7. Humidity sensor corresponding pin No. 13 and No. 3 on CN5 connector of main-board.

4.7.2.3. Communication error

Ec or Er error：



Note:
The display panel corresponding pin No.1~5 on CN8 connector of the main-board as the drawing below.



4.7.2.4. Fan error

1. Check the connecting wiring of fan motor is well or not, repair if it is broken.

The freezer fan motor corresponding pin No. 7~9 on CN7 connector of main-board, as the drawing below.

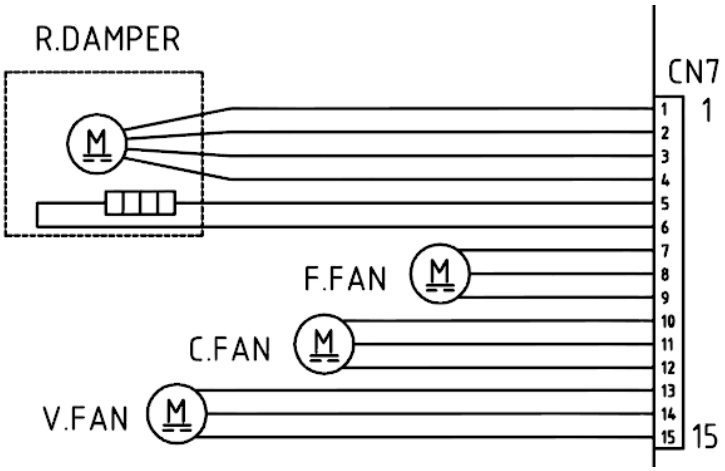
The condenser fan motor corresponding pin No. 10~12 on CN7 connector of main-board, as the drawing below.

The convertible fan motor corresponding pin No. 13~15 on CN7 connector of main-board, as the drawing below.

2. Pin No. 8 connect 12V power and pin No. 9 connect GND, if the freezer fan motor works normally, change the main-board; If not , change the freezer fan motor.

Pin No. 11 connect 12V power and pin No. 12 connect GND, if the condenser fan motor works normally, change the main-board; If not , change the condenser fan motor.

Pin No. 14 connect 12V power and pin No. 15 connect GND, if the convertible fan motor works normally, change the main-board; If not , change the convertible fan motor.



5. Troubleshooting

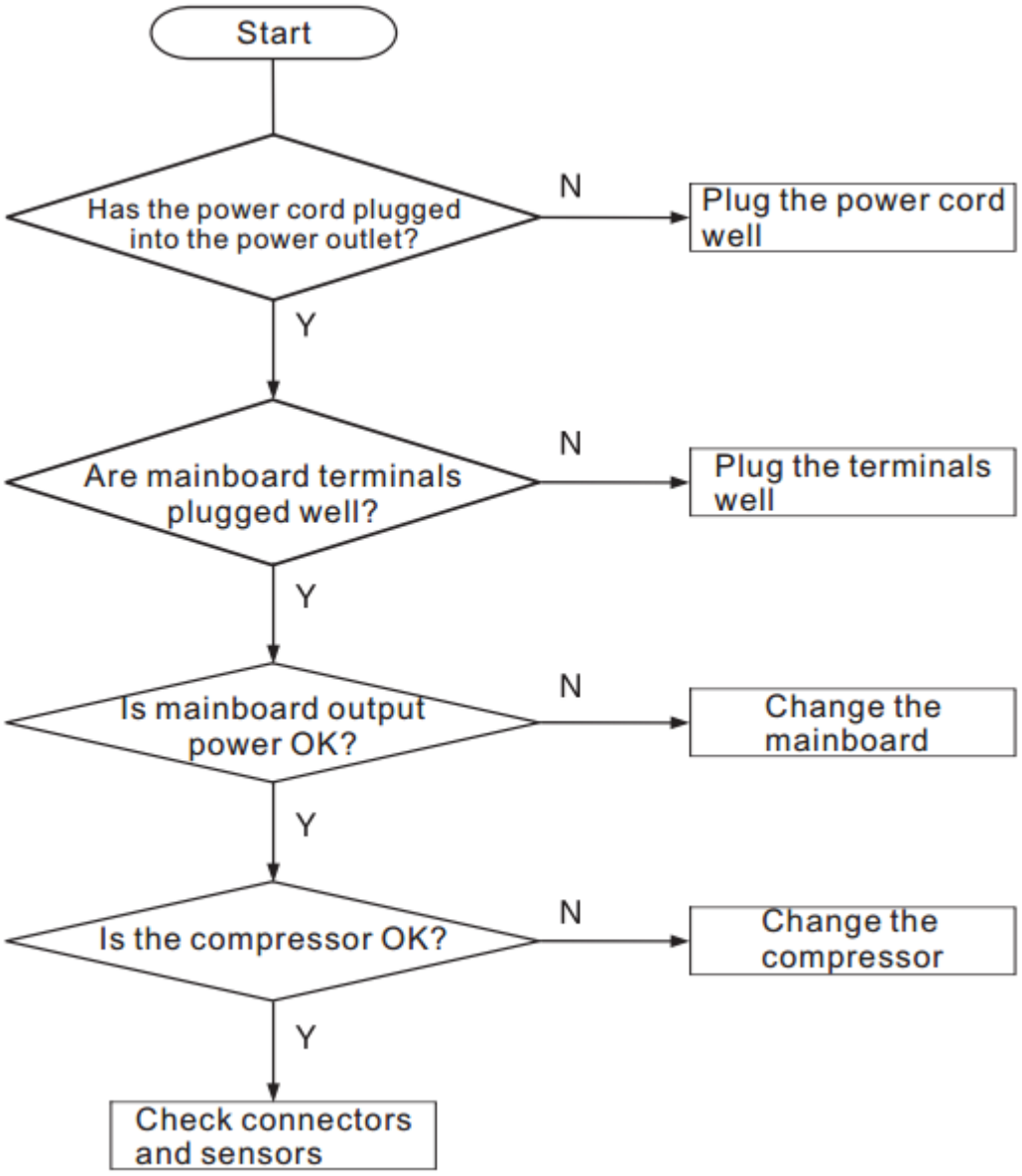
5.1 Common problem and checking

PROBLEM	POSSIBLE CAUSE(S)	SOLUTION
Refrigerator does not run	Refrigerator is unplugged.	Plug refrigerator into a grounded 3 prong outlet.
	Breaker is tripped or turned off, or fuse is blown.	Reset/Turn on breaker or replace fuse.
	Refrigerator is in defrost mode.	Wait for defrost cycle to end and cooling system to restart.
Refrigerator compressor runs frequently or for long periods of time **Note:** This refrigerator is designed to run for longer periods of time at a lower energy usage.	Refrigerator is first plugged in.	This is normal. Allow 24 hours for the Refrigerator has an Odor refrigerator to cool down.
	Warm or large amounts of food added.	This is normal.
	Door is left open, or refrigerator is not level.	Check that an item is not preventing door from closing. Level the refrigerator. See “Level Refrigerator.”
	Hot weather or frequent openings.	This is normal.
	Temperature control set to coldest setting.	Adjust temperature to a warmer setting.
Refrigerator has an odor	Food is not sealed or packaged properly.	Reseal packaging. Place an opened box of baking soda in the refrigerator, replace every3 months.
	Interior needs to be cleaned.	Clean the interior. See “Cleaning.”
	Food stored too long.	Dispose of spoiled food.
Light does not come on	Refrigerator is unplugged.	Plug refrigerator into a grounded 3 prong outlet.
	LED light is burned out.	Contact a qualified technician to replace the burned out LED.
Doors do not close properly	Refrigerator is not level.	See “Level Refrigerator.”
	Something is obstructing door closure.	Check for and remove obstructions.
Vibration or rattling	Refrigerator is not resting firmly on floor.	See “Level Refrigerator.”

Normal Sounds	It sounds like water is flowing from the refrigerator.	Refrigerant flowing in the lines will make this sound when the compressor starts and stops.
		The refrigerator has an automatic defrosting system. The defrosted water will make this sound.
	Humming or buzzing sounds	The compressor and fans used for cold air circulation can make this sound. If the refrigerator is not level, the sound will be louder.
	Cracking or clicking sounds	The interior parts will make this sound as they contract and expand in response to temperature changes.
	Popping noise	May occur during automatic defrosting.
Refrigerator or freezer is too warm	Temperature control is not set cold enough.	Adjust the compartment to a colder setting; allow 24 hours for the temperature to adjust.
	Doors opened frequently or left open.	Limit door openings to maintain the internal temperature. Check that an item is not preventing door from closing
	Warm food added recently.	Allow time for food and refrigerator to cool.
	The space between the back of the refrigerator and the wall is too close.	Allow 5 cm space between the back of the refrigerator and the wall.
	Items against back of compartments are blocking proper airflow.	Store items only inside the trim of the glass shelves; don’t place items against sides of the compartments or directly in front of any vents.
Refrigerator or freezer is too cold	Temperature control is set too cold.	Adjust temperature in the compartment to the next warmer setting; allow 24 hours for temperature to adjust.
Moisture on exterior/ interior of refrigerator	High humidity	This is normal during times of high humidity. Dry surface and adjust temperature to a slightly colder setting
	Doors opened frequently or left open.	Keep door closed. Check that an item is not preventing the door from closing. Level the refrigerator. See “Level Refrigerator.”
	Open container of water in refrigerator.	Cover or seal container

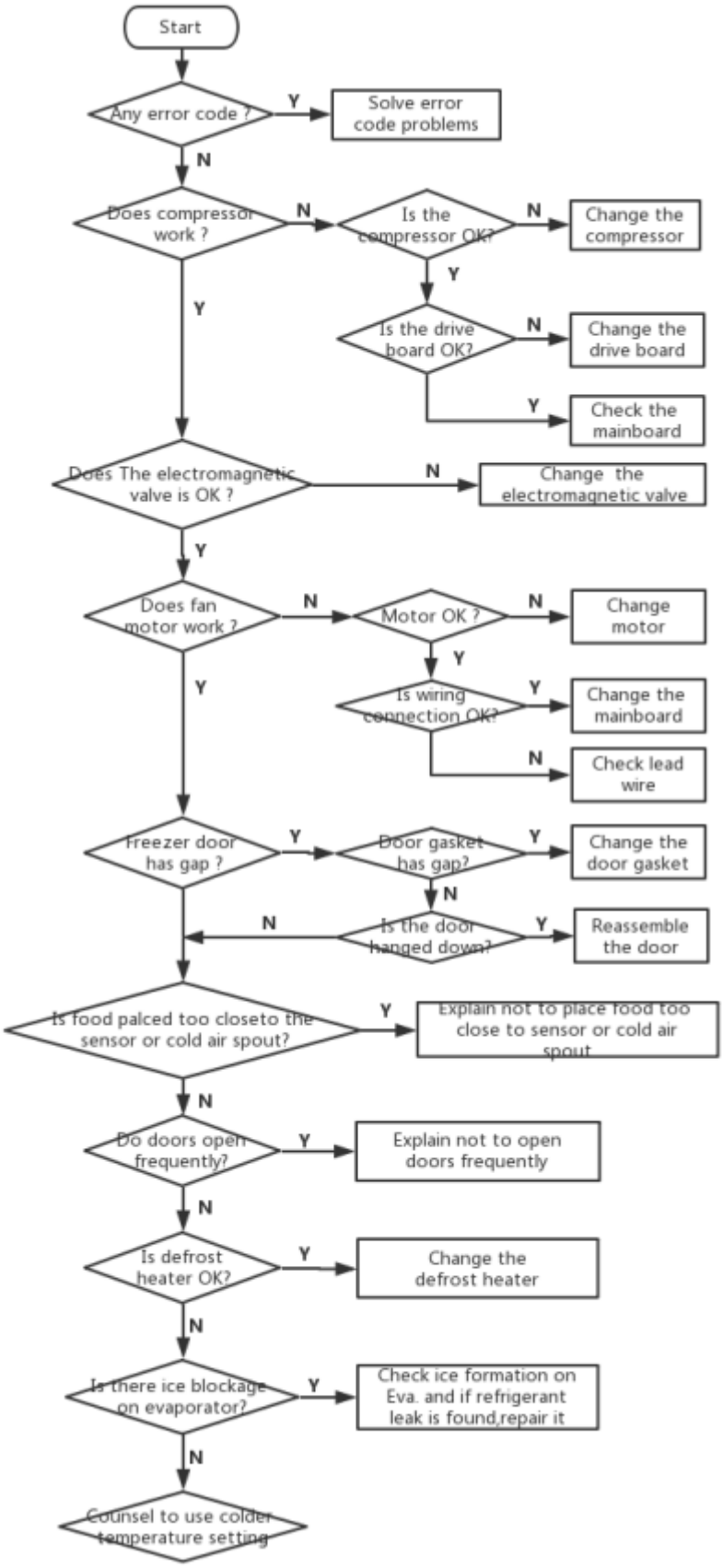
Frost or ice crystals on frozen food	Freezer door left open or opened frequently.	Limit door openings to maintain the internal temperature. Check that an item is not preventing door from closing.
	Refrigerator is not level.	Level the refrigerator. See “Level Refrigerator.”
	Items blocking freezer air vents and preventing proper air flow.	Move items away from rear wall.
Food freezing in refrigerator	Food placed too close to the air vent.	Move items away from back and top of the refrigerator.
	Temperature control set too cold.	Adjust the temperature to a less cold setting.

5.2 Faulty start

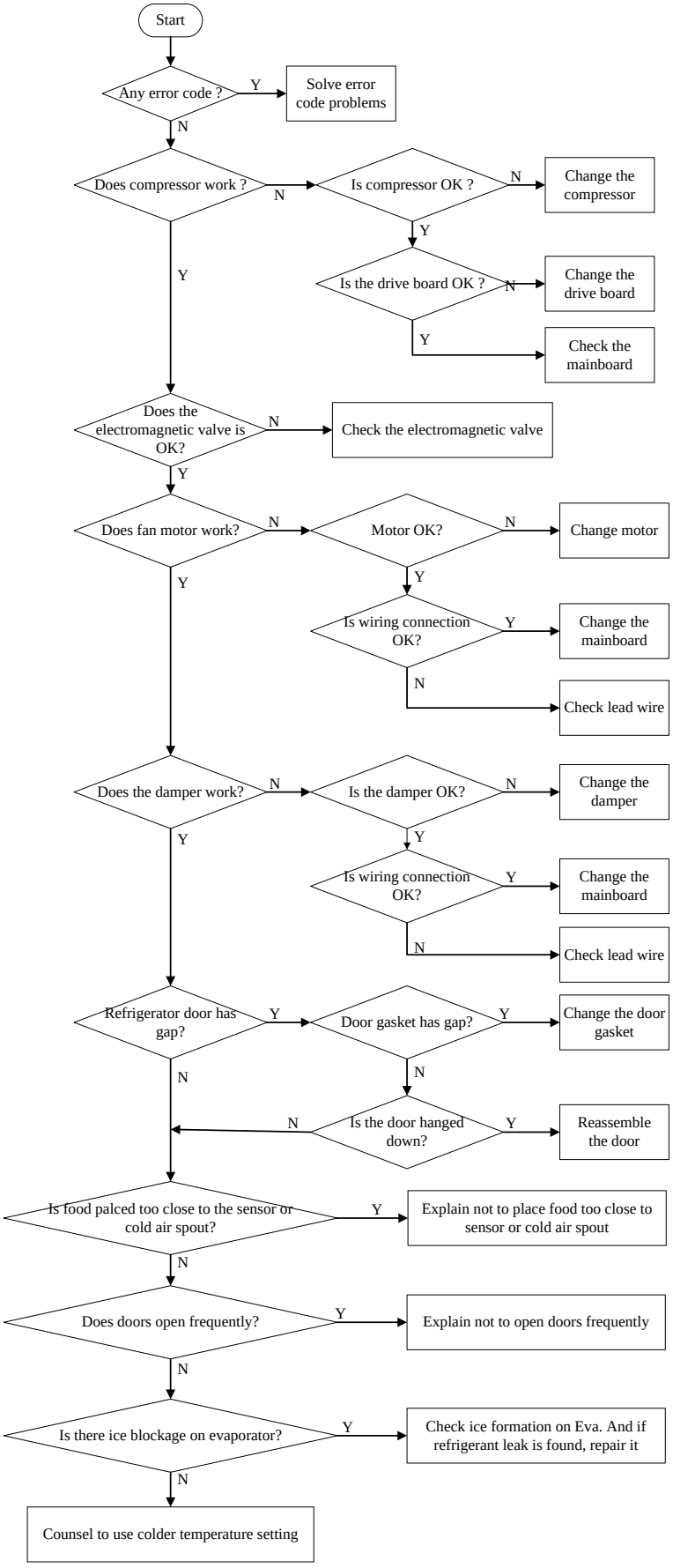


5.3 Refrigeration failure

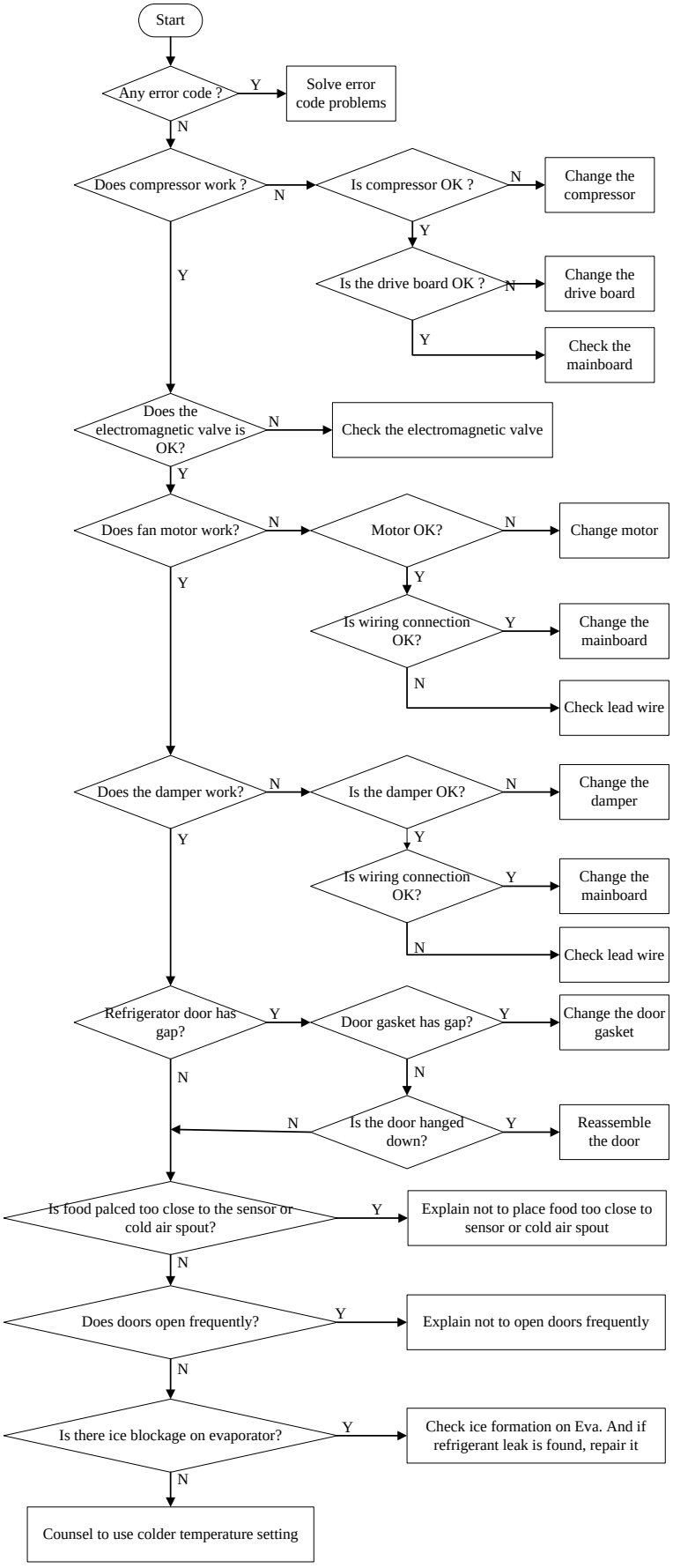
5.3.1 Freezer compartment



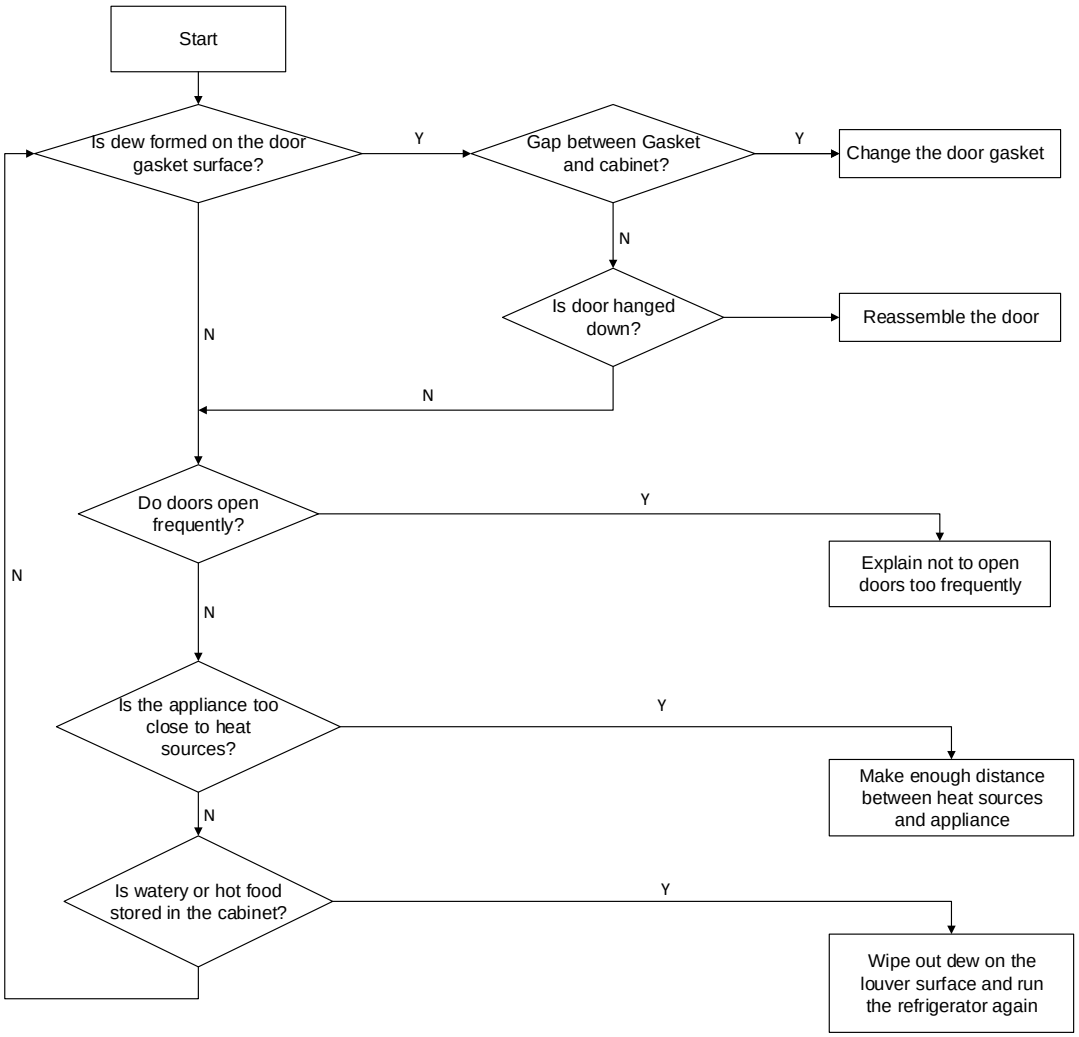
5.3.2 Refrigerator compartment



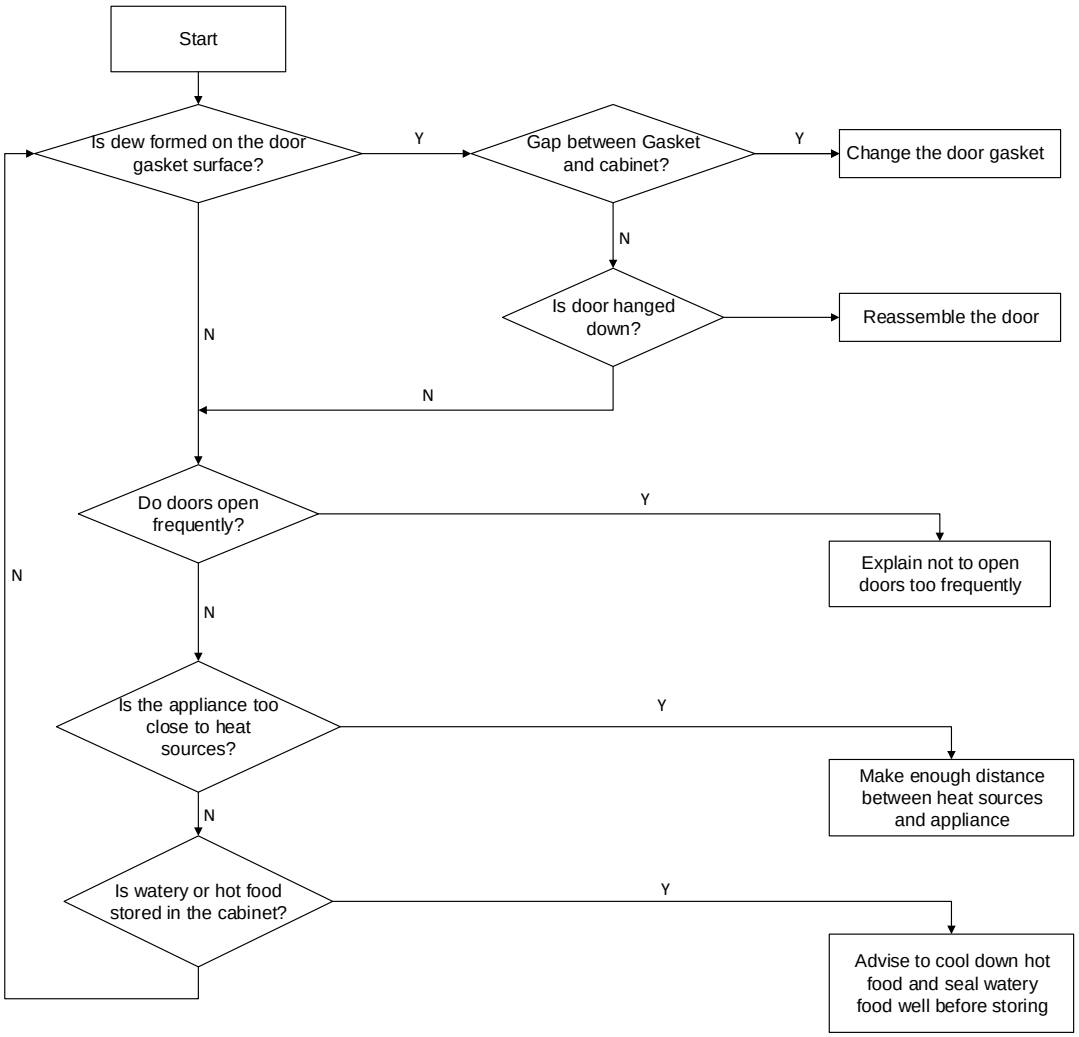
5.3.3 Variation compartment



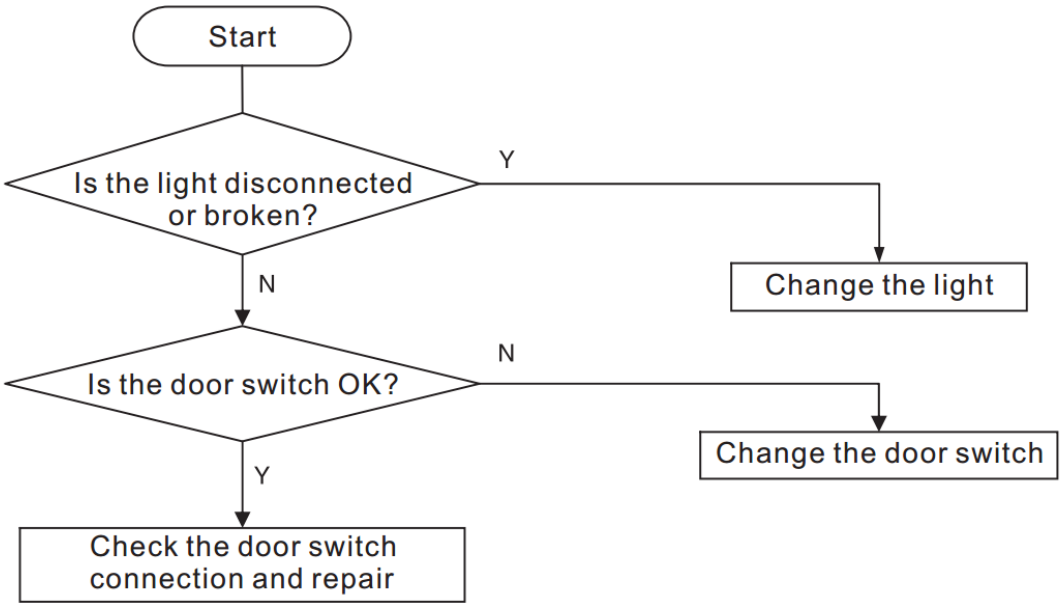
5.4 Thick frost in freezer compartment



5.5 Dew in refrigerator compartment

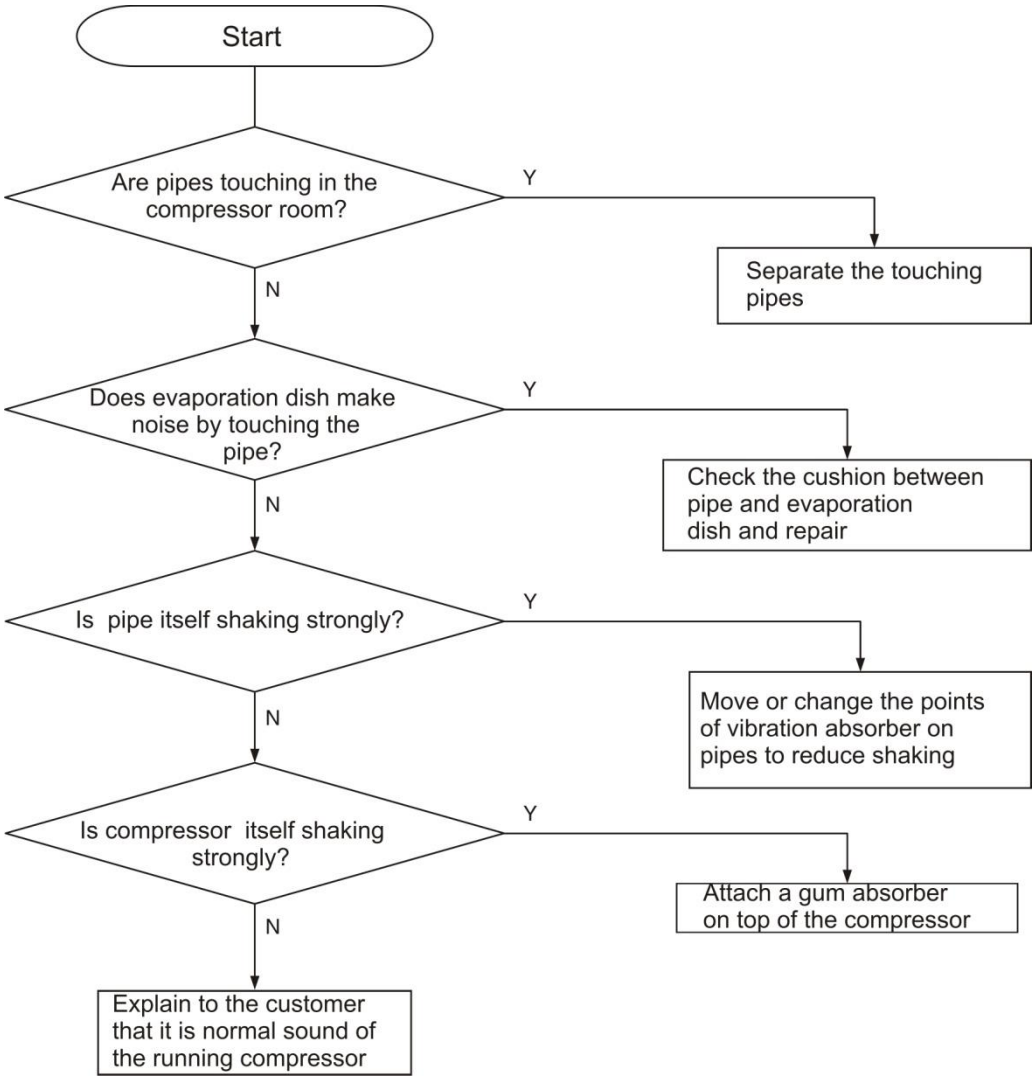


5.6 Breaking of light



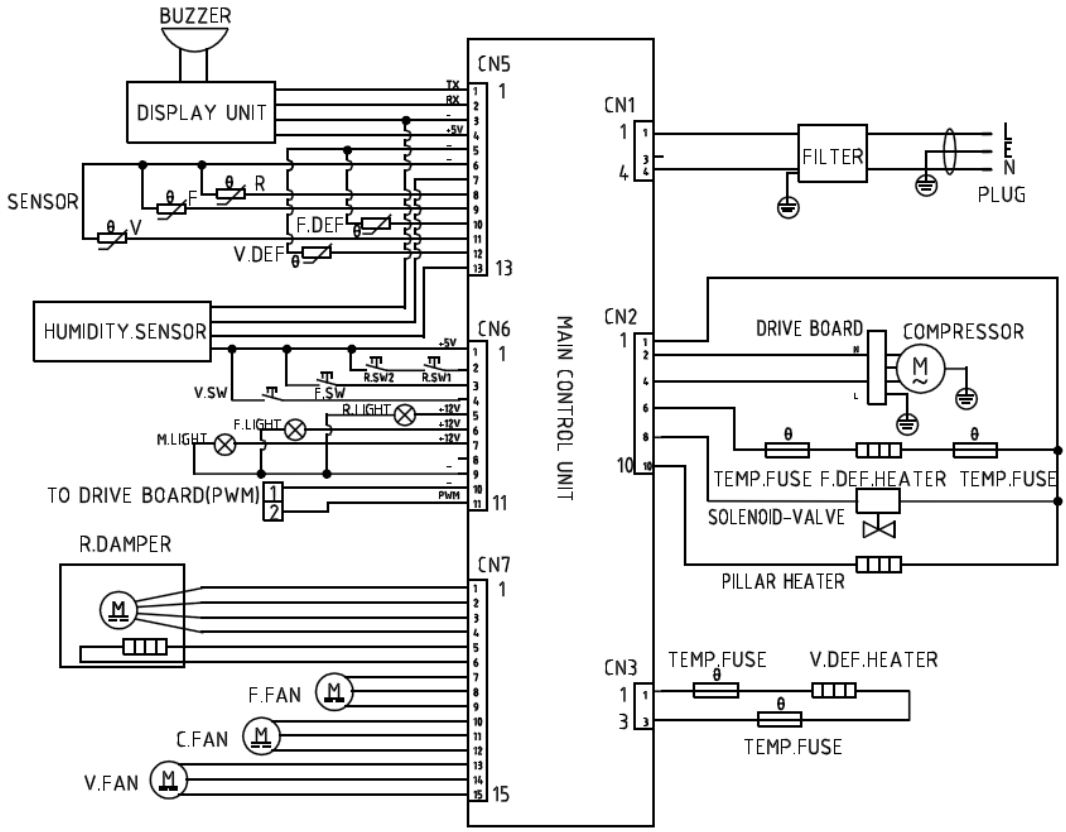
5.7 Noise

5.7.1 Pipe noise



6. Circuit and checking

6.1 Circuit diagram



6.2 Mainboard

6.2.1 Checking method

If the problem is probably caused by the mainboard, change it directly to confirm.

6.2.2 Removing the mainboard

1. Unplug the appliance
2. Remove the screws by screwdriver and remove the electric box cover, as picture 1.
3. Remove the screw, then remove the mainboard, as picture 2.

	
Picture1	**Picture2**

6.3 Compressor

6.3.1 Basic parameters

Input voltage:230V

Input frequency:25Hz ~ 135Hz

6.3.2 Checking method

1. Power on the Refrigerator, when the cooling fan is working, Check if the compressor is working If not, remove the electric box cover and check. It should be note that when it is power-off, the normal compressor will not start in 5 minutes after power-on at the second time.

2. Use a multi-meter to test the resistance between C & S, M&S and M&C.

Normal range of C&S : About 10.6±5%Ω

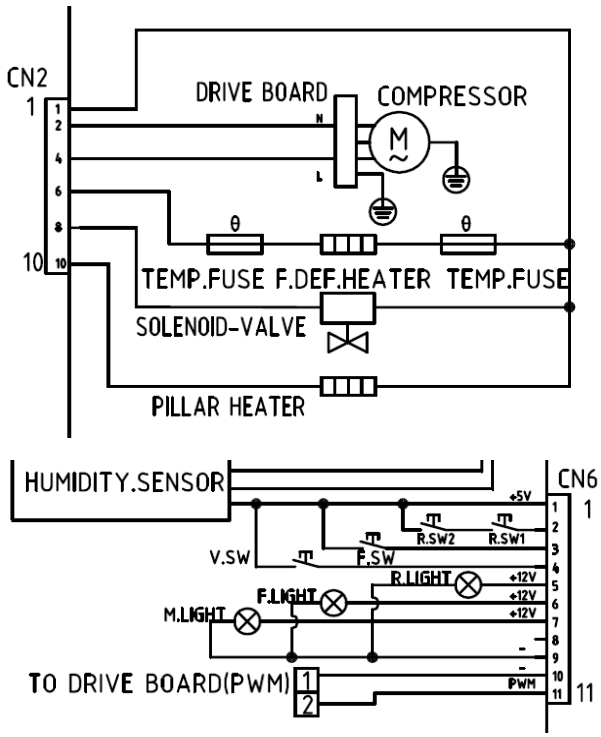
Normal range of M&S : About 10.6±5%Ω

Normal range of M&C : About 10.6±5%Ω

If the test result is not in this range then it means the inner coil has some problem and the compressor cannot work properly.

3. Check the connecting wiring between compressor and main control board behind the refrigerator back and repair if it is broken.

4、Use a multimeter to measure voltage between pin No.2 and No.4 on CN2 connector of main control board; then measure frequency between pin pin No.10 and No.11 on CN6 connector. If the voltage equal to electric supply power and there is stabilized frequency within 25 to 135Hz, it means the main control board is OK, to change the Compressor or drive borad of Compressor , otherwise change the main control board.



6.3.3 Opening the electric box cover

1. Unplug the appliance.
2. Use a screwdriver to remove the protector box as picture 1
3. The terminals connected the compressor as picture 2

	
Picture1	**Picture2**

6.4 Fan motor

6.4.1 Basic parameters

Rated voltage:

R.FAN, C.FAN,F.FAN: DC12V

6.4.2 Checking method

1. Check the connecting wiring of fan motor is well or not, repair if it is broken.

The freezer fan motor corresponding pin No. 7~9 on CN7 connector of main-board, as the drawing below.

The condenser fan motor corresponding pin No. 10~12 on CN7 connector of main-board, as the drawing below.

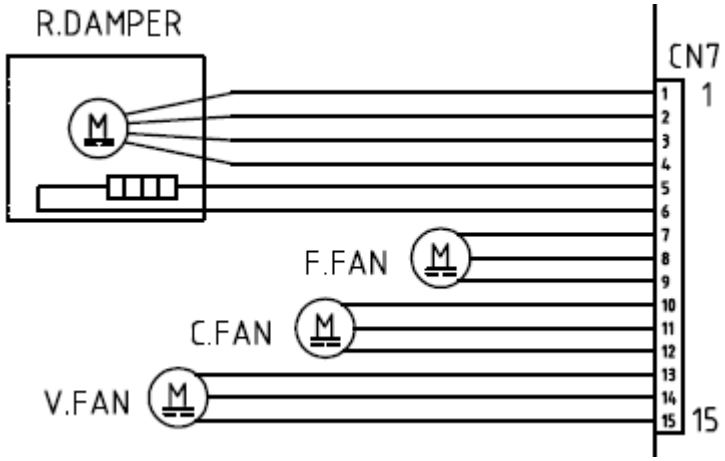
The convertible fan motor corresponding pin No. 13~15 on CN7 connector of main-board,

as the drawing below.

2. Pin No. 8 connect 12V power and pin No. 9 connect GND, if the freezer fan motor works normally, change the main-board; If not change the freezer fan motor.

Pin No. 11 connect 12V power and pin No. 12 connect GND, if the condenser fan motor works normally, change the main-board; If not change the condenser fan motor.

Pin No. 14 connect 12V power and pin No. 15 connect GND, if the convertible fan motor works normally, change the main-board; If not , change the convertible fan motor.



6.4.3 Removing the fan motor

6.4.3.1 Removing the fridge fan motor

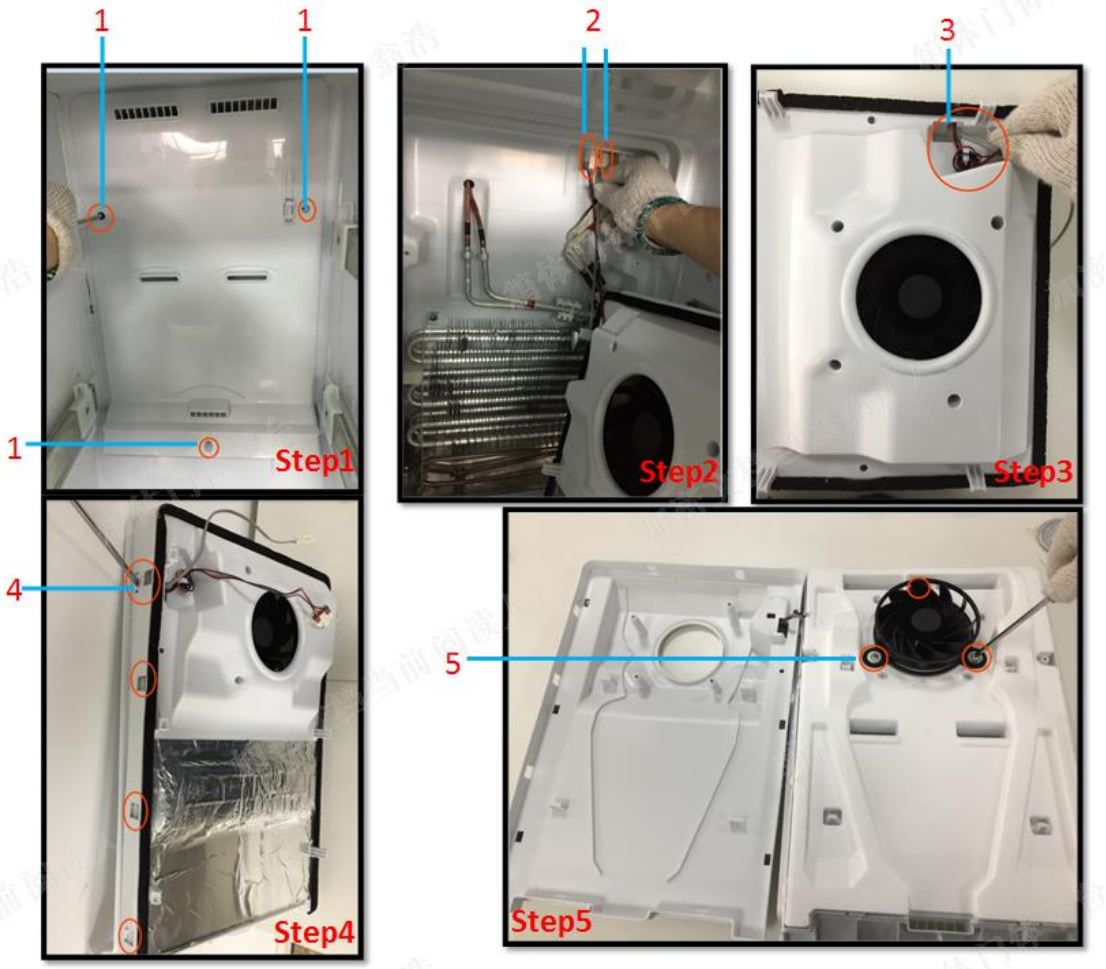
Step 1: Remove the three screws (1) holding the fridge air duct with a Philips screwdriver.

Step 2: Remove the two wire connector (2) by pressing the top of them.

Step 3: Tidy the wire harness (3) after you remove the fridge air duct.

Step 4: Remove the cover (4) with a Philips screwdriver and your both hands.

Step 5: Remove the three screws (5) holding the fan motor with a Philips screwdriver.



6.4.3.2 Removing the freezer fan motor

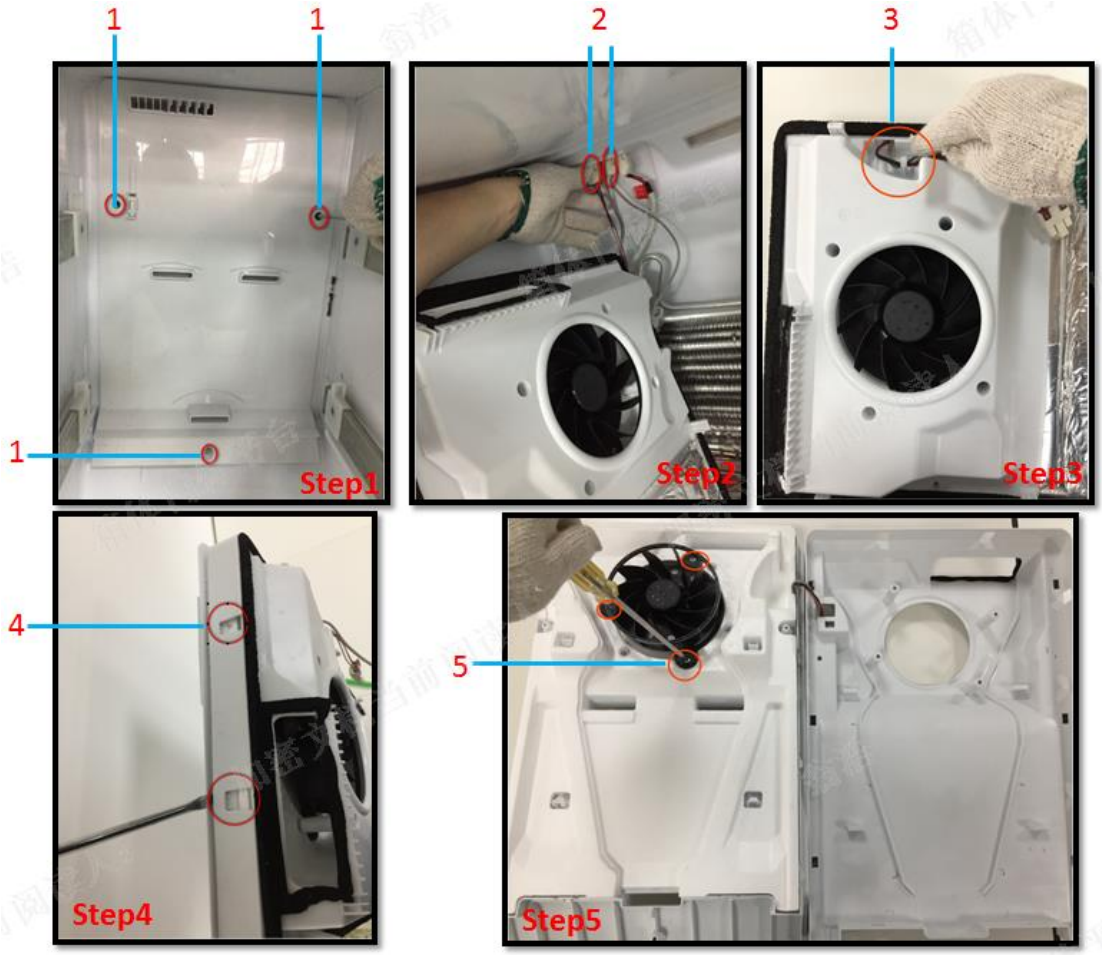
Step 1: Remove the three screws (1) holding the fridge air duct with a Philips screwdriver.

Step 2: Remove the two wire connector (2) by pressing the top of them.

Step 3: Tidy the wire harness (3) after you remove the **freezer** air duct.

Step 4: Remove the cover (4) with a Philips screwdriver and your both hands.

Step 5: Remove the three screws (5) holding the fan motor with a Philips screwdriver.



6.5 Damper

6.5.1 Basic parameters

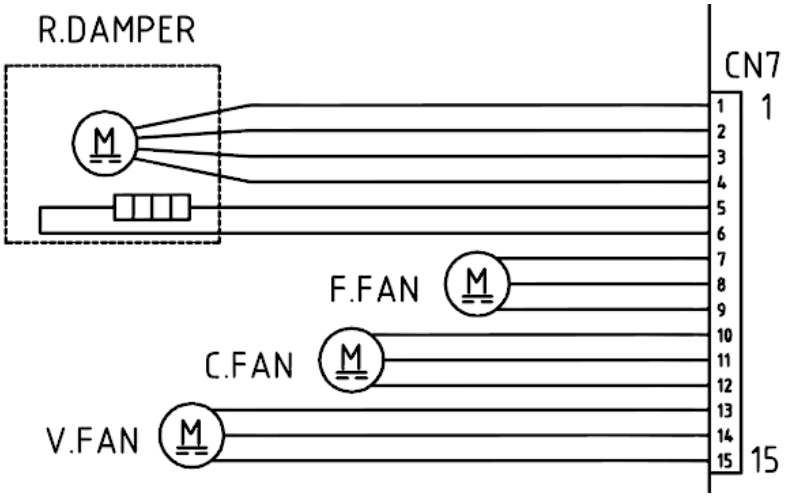
Rated voltage: DC12V

Rated current: 60mA

6.5.2 Checking method

1. Check the connecting wiring of the damper is well or not, repair if it is broken. The damper corresponding pin No.1~6 on CN7 connector of mainboard, as the drawing below.

2. The damper will turn on and off for one time after power-on, if not, change the mainboard first and change the damper if problem remains



6.5.3 Removing the damper

After you have removed the freezer fan motors, you can remove the damper in the following steps:

Step 1: Remove the foam block.

Step 2: Remove the damper after you have tidied the wire harness.

6.6 Light

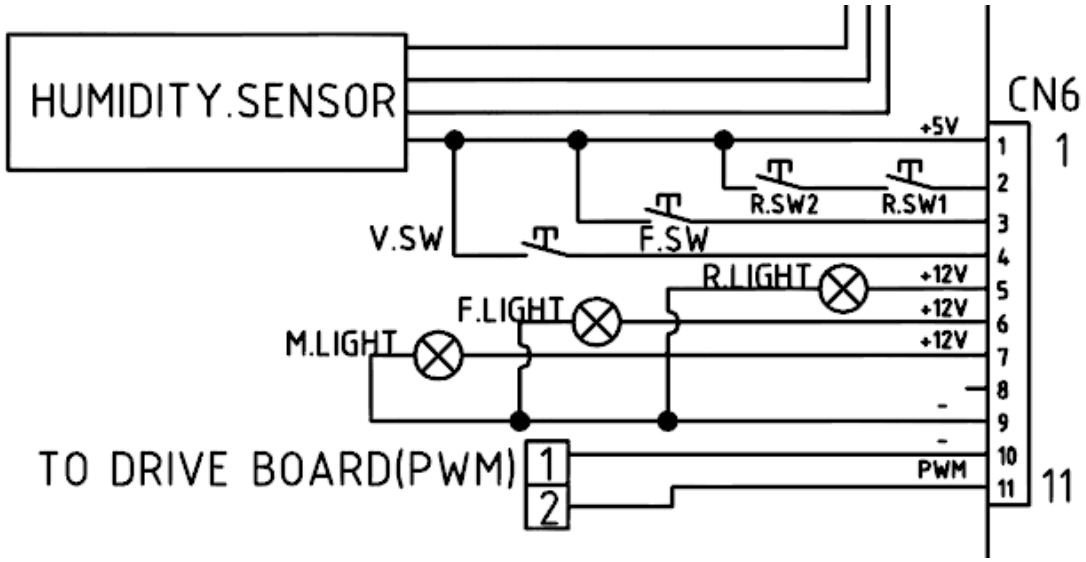
6.6.1 Basic parameters

Rated voltage: DC12V

6.6.2 Checking method

Check the connecting wiring between light and mainboard is well or not. Repair if it is broken. Refrigerator light corresponding pin No.5 and No.9 on CN6 connector of mainboard,freezer light corresponding pin No.6 and No.9 on CN6 connector of the mainboard, variable light corresponding pin No.7 and No.9 on CN6 connector of mainboard, as the drawing below.

Check output voltage corresponding light of the mainboard, if it is 12V, it means the mainboard is OK, change the light; If not, it means the mainboard is not OK, change it.



6.6.3 Removing the light

1. Unplug the appliance.
2. Remove the light cover, as picture 1 and 2.
3. Remove the light, as picture 3 and4.

1. The location of the LED light. 2.Use a screwdriver to pry open LED light shade card buckle.		

3. Disconnect the wire of terminal. 4. Take out the LED light.		

6.7 Door switch

6.7.1 Basic parameters

Load voltage: DC24V

Load current: 0.05A

Rated operating voltage: DC5V

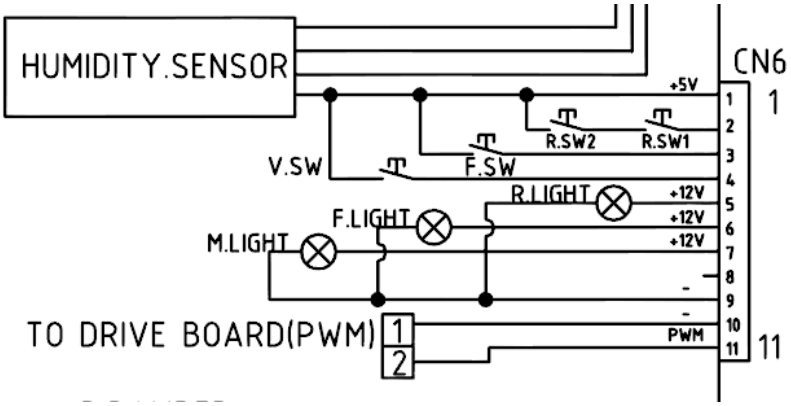
6.7.2 Checking method

Check the connecting wiring of door switch is well or not, repair if it is broken. Refrigerator /freezer /variation door switch corresponding pins as the drawing below.

Check the magnet on the door is dropped out or not.

3. Normally, when the door is closed, the two pins of door switch should be short circuit; When the door is open, the two pins should be open circuit. If the result is not abnormal, change the door switch.

If all above is OK, change the mainboard.



1. Use a screwdriver to pry open reed pip cover. 2. Take out the switch		

6.8 Defrost heater

6.8.1 Basic parameters

Freezer heater

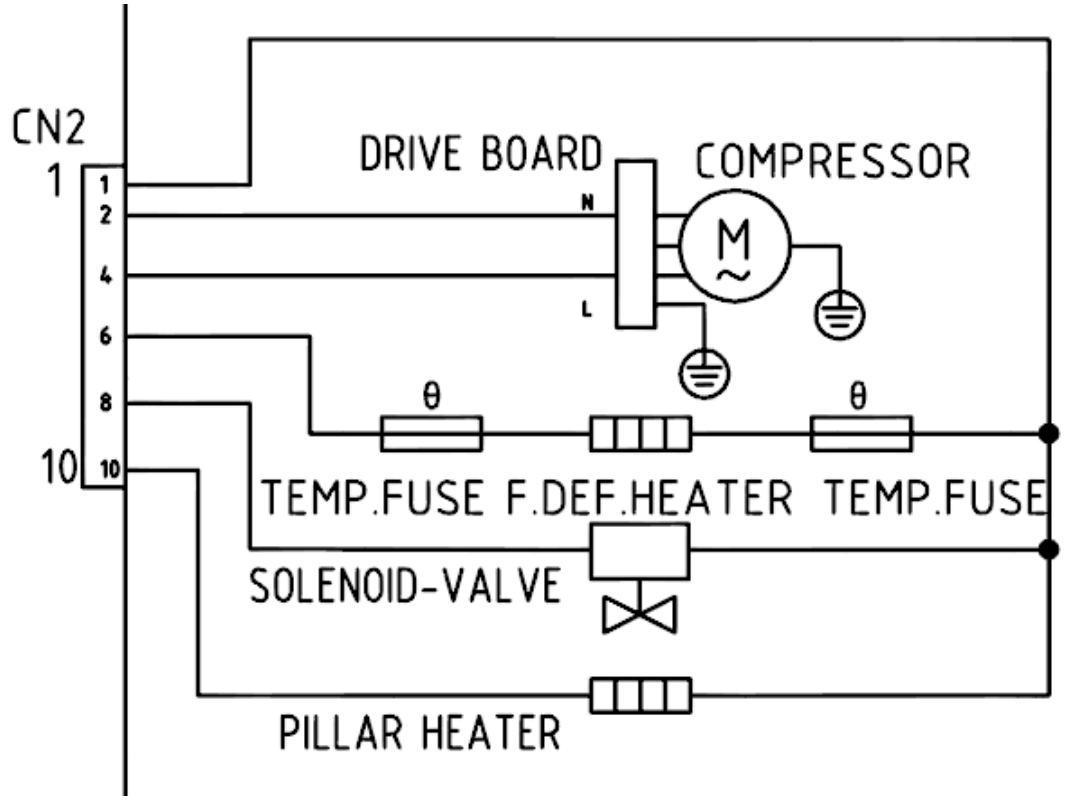
Rated voltage: AC230V

Rated power: 140W

1.Enter compulsory defrost mode, use a multimeter to measure the voltage between pin No.1 and No.6 on CN2 connector of the mainboard ,if the voltage doesn't equal to electric supply power, it means the heater is broken, change it.

2.Use a multimeter to measure resistance of the heater, if the value isn't 378Ω ±5%,it is

broken, change the heater.



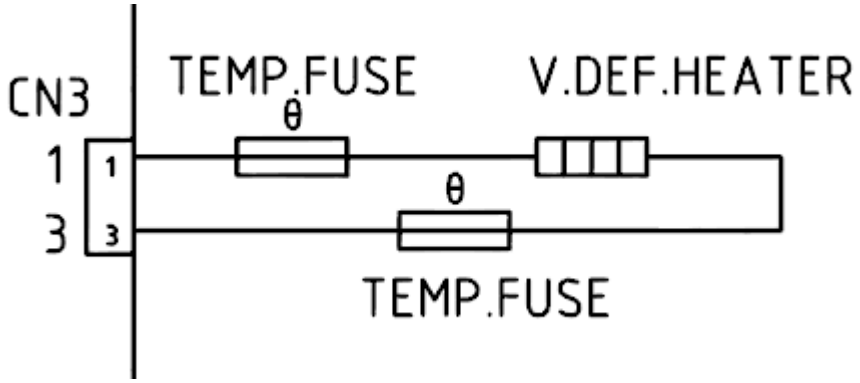
Variable heater

Rated voltage: AC230V

Rated power: 120W

1.Enter compulsory defrost mode, use a multimeter to measure the voltage between pin No.1 and No.3 on CN3 connector of the mainboard ,if the voltage doesn't equal to electric supply power, it means the heater is broken, change it.

2.Use a multimeter to measure resistance of the heater, if the value isn't 440Ω ±5%,it is broken, change the heater.



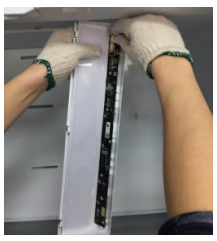
6.8.3 Removing the defrost heater

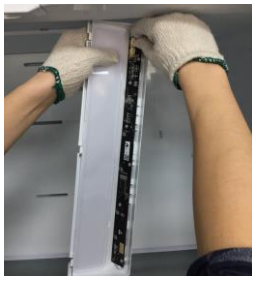
1. Unplug the appliance.
2. Remove the freezer door and variation door, as picture 1.
3. Remove the Cover plate, as picture 2.
4. Remove the freezer heater, as picture 3.
5.. Remove the variable heater, as picture 4.

	
Picture1	**Picture2**
	
Picture3	**Picture4**

6.9 Removing the Display Component

1. Unplug the appliance
2. Catch the light cover with two hands and pull down it as picture 1.
3. Unplug the terminal of the display panel as picture 2.
4. Take the LED light out and unplug the terminal as picture 3 and 4

	
Picture1	**Picture2**

	
Picture3	**Picture4**

6.10 Checking the electromagnetic valve

Fault phenomenon 1：Leak

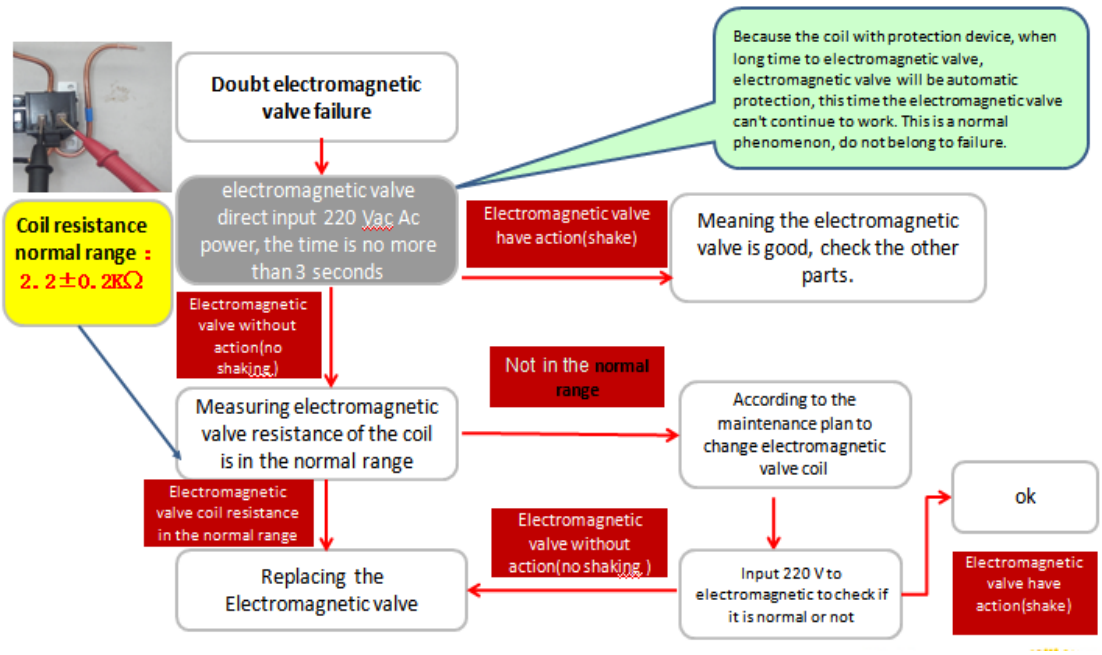
Detection method ：Use soap water coating on the welding place of the electromagnetic valve, pour the refrigerants into the system, to see if having the bubble, If yes, meaning the electromagnetic valve itself has the leakage.

Fault phenomenon 2：Not reversing

Detection method ：With the hand to touch the electromagnetic valve, and power on it ,the voltage is 220-240V, then to fell if the electromagnetic valve has reversing action or hear if the electromagnetic valve has the sound of reversing action, If yes, meaning the electromagnetic valve is good.

Fault phenomenon 3：Reversing not reliable.

Detection method ：After power on the electromagnetic valve, With the hand to touch the electromagnetic valve, when fell the electromagnetic valve already action, stop power on, , with the hand to touch the electromagnetic valve should no longer have the reversing action feeling.



Note：

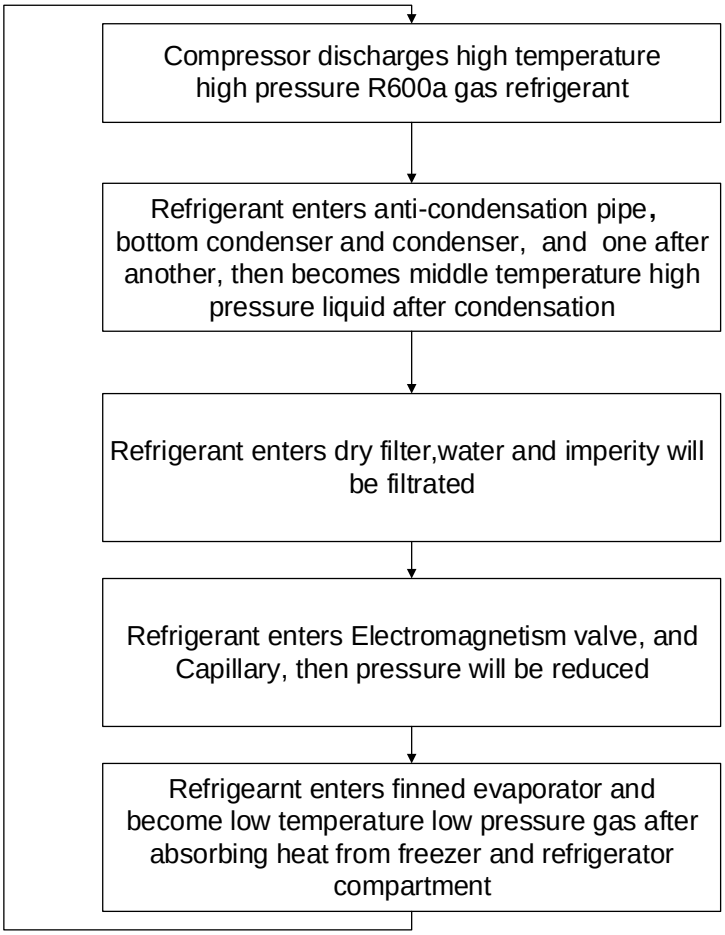
When assembly the electromagnetic valve, pay attention to mark the pipeline, avoid connection error；

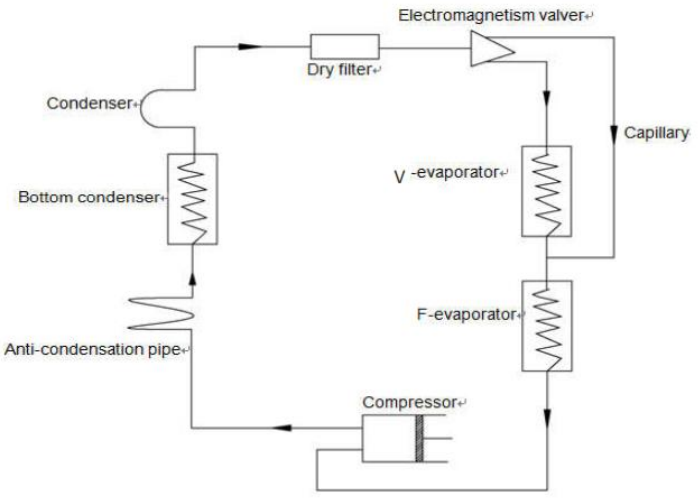
Due to the electromagnetic valve internal seal uses rubber material, so when welding the electromagnetic valve , the time should be not more than 5S. Long time to weld will lead to high temperature and will be transfer to electromagnetic valve internal rubber, causes the change of rubber, and may lead to electromagnetic valve abnormal work. (when welding, winding some wet cloth on pipe and drench it at the same time).

7. Cooling system repairing

7.1 Refrigeration system

The refrigerator system is double cycle wind cooling system:

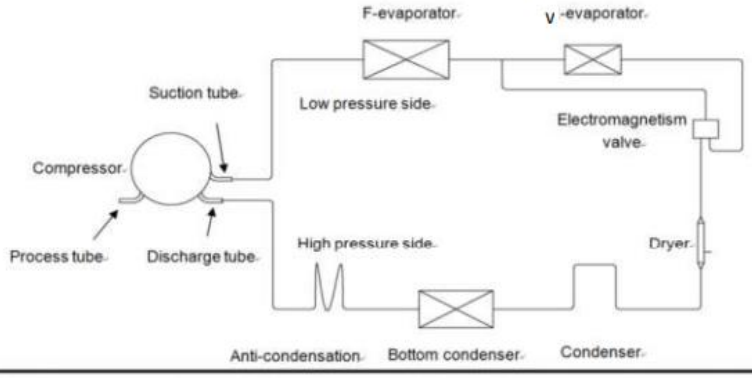




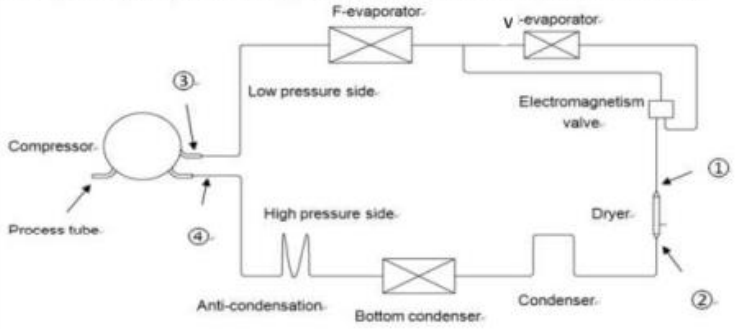
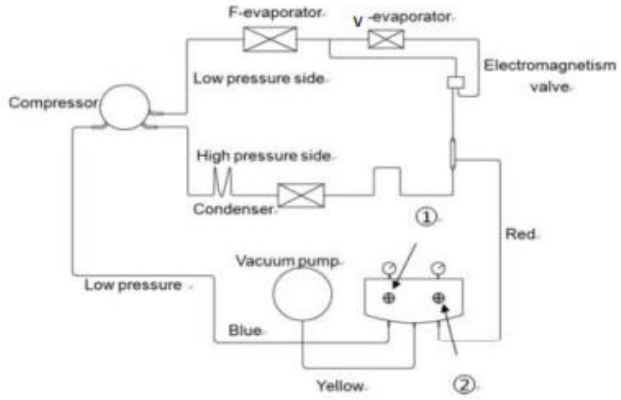
7.2 Summary of repair

Process	Contents	Tools
Remove refrigerant Residuals	* Cut charging pipe ends (Comp. & Dryer) and discharge refrigerant from drier and compressor.	* Nipper, side cutters
Parts replacement and welding	* Confirm refrigerant (R-134a or R-600a) and oil for compressor and drier. * Confirm N2 sealing and packing conditions before use. Use good one for welding and assembly. * Repair in a clean and dry place.	* Pipe Cutter, Gas welder, N2 gas
Vacuum	* Evacuate for more than forty minutes after connecting manifold gauge hose and vacuum pump to high (drier) and low (compressor) pressure sides.	* Vacuum pump , Manifold gauge.
Refrigerant charging and charging inlet welding	* Weigh and control the bombe in a vacuum conditions with electronic scales and charge through compressor inlet (Process tube). * Charge while refrigerator operates). * Weld carefully after inlet pinching.	* Bombe (mass cylinder), refrigerant manifold gauge, electronic scales, punching off flier, gas welding machine
Check refrigerant leak and cooling capacity	* Check leak at weld joints. Note :Do not use soapy water for check. * Check cooling capacity → Check condenser manually to see if warm. → Check hot pipe manually to see if warm. → Check frost formation on the whole surface of the evaporator.	* Electronic Leak Detector, Driver.
Compressor compartment and tools arrangement	* Remove flux from the silver weld joints with soft brusher wet rag. (Flux may be the cause of corrosion and leaks.) *Clean tools and store them in a clean tool box or in their place.	* Copper brush, Rag, Tool box
Transportation and installation	* Installation should be conducted in accordance with the standard installation procedure. (Leave space of more than 5 cm from the wall for compressor compartment cooling fan mounted model.)	

7.3 Regulation of repair

Items	Precautions
Use of tools.	1) Use special parts and tools for R-134a or R-600a
Removal of retained refrigerant.	1) Remove retained refrigerant more than 5 minutes after turning off a refrigerator. (If not, oil will leak inside.) 2) Remove retained refrigerant by cutting first high pressure side (drier part) with a nipper and then cut low pressure side. (If the order is not observed, oil leak will happen.) 
Replacement of drier.	1) Be sure to replace drier when repairing pipes and injecting refrigerant.
Nitrogen blowing welding.	1) Weld under nitrogen atmosphere in order to prevent oxidation inside a pipe. (Nitrogen pressure : 0.1~0.2 kg/cm2.)
Others.	1) Nitrogen only should be used when cleaning inside of cycle pipes inside and sealing. 2) Check leakage with an electronic leakage tester. 3) Be sure to use a pipe cutter when cutting pipes. 4) Be careful not the water let intrude into the inside of the cycle.

7.4 Practical work of repair

Items	Precautions
1. Removal of residual refrigerant.	1) Remove residual refrigerant more than 5 minutes later after turning off the refrigerator. (If not, compressor oil may leak inside.) 2) Remove retained refrigerant slowly by cutting first high pressure side (drier part) with a nipper and then cut low pressure side. 
2. Nitrogen blowing welding.	 * **When replacing a drier:** Weld 1 and 2 parts by blowing nitrogen (0.1~0.2kg/cm2) to high pressure side after assembling a drier. * **When replacing a compressor:** Weld 3 and 4 parts by blowing nitrogen to the low pressure side. Note) For other parts, nitrogen blowing is not necessary because it does not produce oxidized scales inside pipe because of its short welding time. - **KEYPOINTING** Welding without nitrogen blowing produces oxidized scales inside a pipe, Which affect on performance and reliability of a product.

7.5 Brazing reference drawing