

# LG LRFLC2706 SERIES SERVICE MANUAL



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Confidential

# FRENCH DOOR REFRIGERATOR SERVICE MANUAL

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## CAUTION

BEFORE SERVICING THE UNIT, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.

**MODEL: LRFLC2706\***

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# Safety Warning and Cautions

► ‘Cautions for safety’ should be observed since they are for previously prevent accidents and dangers when properly use or repair products in a safe manner.

► Cautions are classified into ‘Warning ’and ‘Caution ’ and meaning of them are as follows

## **WARNING**

Warning means symbol to inform any accidents that may result in large danger such as death or severe injury,etc when violating instructions.

- **Be cautions of air ventilation in case of repairing refrigerator cycle.**

Remove heat source or fire appliance for working since R600a refrigerant is inflammable. (Absolute no-smoking)

- **Be cautious of electric shock.**

Control board uses power supply of about 310V. During the replacement of PWB parts,make sure to pull out the power plug and wait for at least 3 min.,and first pull out the power plug before replacing or repairing other electric parts.

- **Check that power plugs are not pressed by the rear side of refrigerator.**

Damage of power plugs could result in fire or electric shock.

- **If grounding is required,be sure to perform grounding.**

Be sure to perform grounding if deemed there is danger of electric shock by water or moisture.

- **Firstly take power socket out for replacement of indoor lamp.**

Electric shock may occur.

- **Check that dusts are adhered to the power socket and securely insert plugs by the end of pin so that shaking may not occur.**

Dust or incomplete connection may result in fire.

- **When dusts etc are stained to the pin part of the power socket,cleanly wipe out them.**

Fire may occur.

- **Do not expand or modify length of power plugs to use.**

Electric shock or fire may occur due to electrical damage of power cables.

- **Do not touch a refrigerator or socket when gas leaks and open the door for ventilation.**

There is danger of burning due to explosion and sparking.

- **Do not spray water inside or outside of the refrigerator.**

Bad insulation of electrical part may result in electric shock or fire.

# Safety Warning and Cautions

## **⚠ CAUTION**

Caution means symbol to inform any accidents that may result in injury or physical damage of houses or furniture,etc when violating instructions.

- Be sure to rated parts for replacement of electric parts.**

Check marking of model,rated voltage,rated current,operation temperature, etc of electrical parts.

- Accurately arrange wiring of the housing part for failure repair.**

Check that the hanging part of the housing part is firmly suspended.

- Do not damage, process or forcedly bend,take out or twist power cords.**

Damage of power cords may cause fire or electric shock.

- Entirely remove dusts or foreign materials from housing part,wiring part and checking part, etc for failure repair.**

Danger of fire can be prevented from tracking,short, etc.

- Check assembling status of parts after failure repair.**

Parts should show same status before repair.

- Check that there is a track that moisture is penetrated into electric parts.**

If there is a track that moisture is penetrated,replace parts or take a necessary step such as insulation tapping.

- Insert power plug into a socket after more than 3 minutes pass when taking out plugs and then inserting them again.**

Unreasonable operation of a compressor may cause failure.

- While you pull out the power plugs,hold the end of the plug,not the cord.**

Fire may occur due to electric shock or short-circuit.

- Do not use power cords or power plugs when they are damaged or holes of power plugs are loose.**

Fire may occur due to electric shock or short-circuit.

- Install the product at the place where the floor is strong and horizontal.**

If installing the product at unstable place,the refrigerator may upset due to closing or opening of doors of refrigerator and user may be damaged.

- Do not install product at a place with much moisture and where water spatters.**

Deterioration of insulation may cause electrical leakage.

## Safety Warning and Cautions

- **Transport product catching with handles on the bottom side and the top side when transporting.**

If not catching with handles, you can be damaged since the hands are slipped.

- **Do not touch foods or vessels (made of metal)in the freezing room with the wet hands. You may be frostbitten.**

- **Be careful when opening or closing refrigerator door since a person near the refrigerator may be injured.**

Be cautious since the hands or foots are lay between door gaps and children beside the doors may be damaged by the corners of product.

- **Do not put the hands under the bottom of the refrigerator.**

The bottom side of the refrigerator is made of iron plate and so you may be damaged.

# Specifications

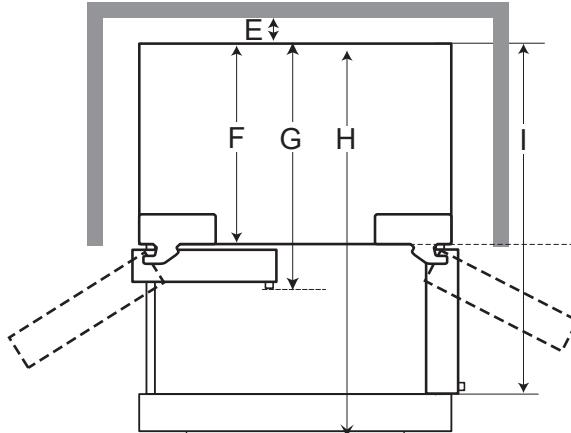
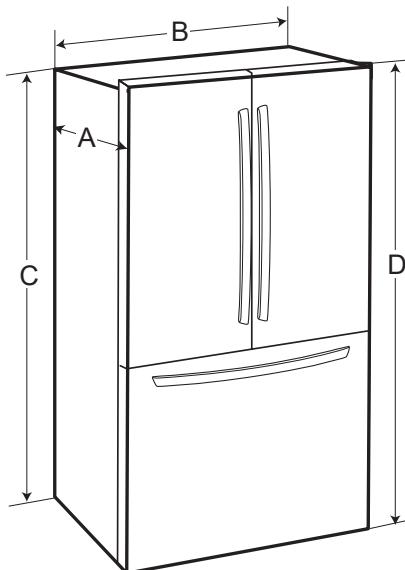
## LRFLC2706\*

### 26.5 cu. ft.

ITEMS	SPECIFICATIONS
<b>Door design</b>	Side Rounded
<b>Dimensions (inches)</b>	35 <sup>3/4</sup> × 31 <sup>5/8</sup> × 70 <sup>1/4</sup> (W×D×H) 26.5 cu.ft.
<b>Net weight (pounds)</b>	254 lb (115 kg)
<b>Cooling system</b>	Indirect Cooling
<b>Temperature control</b>	Micom Control
<b>Defrosting system</b>	Full Automatic Heater Defrost
<b>Door finish</b>	PCM, VCM, Stainless
<b>Handle type</b>	Bar
<b>Inner case</b>	ABS Resin

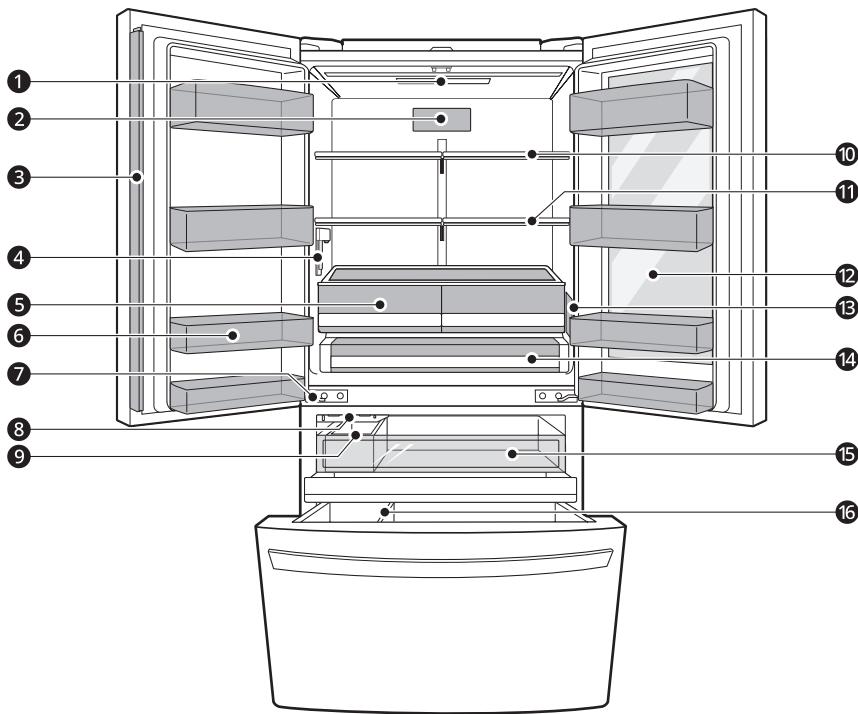
ITEMS	SPECIFICATIONS
<b>Insulation</b>	Polyurethane Foam
<b>Vegetable tray</b>	Clear Drawer Type
<b>Compressor</b>	Smart Inverter
<b>Evaporator</b>	Fin Tube Type
<b>Condenser</b>	MC
<b>Refrigerant</b>	R-600a (78 g)
<b>Lubricating oil</b>	Mineral / S5HFP(5cst)
<b>Defrosting device</b>	Sheath Heater
<b>Lamp</b>	<b>Refrigerator</b> LED Module <b>Freezer</b> LED Module

### Dimensions



Description	LRFLC2706*
Depth without Handle	A 29 1/8 in
Width	B 35 3/4 in
Height to Top of Case	C 68 7/8 in
Height to Top of Hinge	D 70 1/4 in
Back Clearance	E 2 in
Depth without Door	F 24 3/4 in
Depth with Handle	G 31 5/8 in
Depth (Total with Freezer Drawer Open)	H 48 7/8 in
Depth (Total with Door Open 90°)	I 43 5/8 in

# Parts Identification



## ① LED Interior Lighting

Lights up the inside of the refrigerator.

## ② Air Filter

Reduces odors inside the refrigerator compartment.

## ③ Door Mullion

Prevents the cold air in the refrigerator from escaping when the doors are closed.

## ⚠ CAUTION

- To reduce the risk of scratching the door or breaking the center door mullion, make sure that the folding door mullion is folded in before closing the left-hand door.
- The door alarm will sound every 30 seconds if the door remains open longer than one minute.

## ④ Water Dispenser

Dispenses purified water.

## ⑤ Humidity Controlled Crisper<sup>†</sup>

Helps vegetables and fruit to stay crisp and controls humidity.

## ⑥ Fixed Door Bin

Stores chilled food or drinks.

## ⑦ Auto-Closing Hinge

The refrigerator doors and freezer drawers close automatically when pushed slightly. (The door only closes automatically when it is open at an angle of less than 30°.)

## ⑧ Automatic Icemaker (Freezer)

Produces ice automatically.

## ⑨ Ice Bin

If a large amount of ice is needed, transfer the ice in the in-door ice bin to an ice storage bin in the freezer.

## ⑩ Adjustable Refrigerator Shelf

The refrigerator shelves are adjustable to meet individual storage needs.

## ⑪ Folding Shelf<sup>†</sup>

Store taller items, such as gallon containers or bottles, by pushing the front half of the shelf underneath the back half of the shelf.

## ⑫ Instaview<sup>†</sup>

Knock twice on the glass to turn the LED light inside the InstaView on or off.

## ⑬ Control Panel

Sets the refrigerator and freezer temperatures or other functions.

## ⑭ Glide'N'Serve

Stores food items at a different temperature than the regular refrigerator area.

## ⑮ Pullout Drawer

Provides extra storage within the freezer compartment.

## ⑯ Durabase and Durabase Divider

Provides storage for large frozen food items.

# Disassembly

## Removing and Replacing Refrigerator Doors

### ■ Removing Refrigerator Door

#### ⚠ CAUTION

Before you begin, unplug the refrigerator. Remove food and bins from doors.

#### ► Left Door -FIG. 2

1. Open door. Loosen top hinge cover screw (1). Use flat tip screwdriver to pry back hooks on front underside of cover (2). Lift up cover.
2. Disconnect door switch wire harness and remove the cover.
3. Disconnect all 3 wiring harnesses (4). Remove the grounding screw (5).
4. Rotate hinge lever (6) counterclockwise. Lift top hinge (7) free of hinge lever latch (8).

#### ⚠ CAUTION

When lifting hinge free from the latch, be careful that door does not fall forward.

7. Lift door from middle hinge pin and remove door.
8. Place the door with the insides facing up, on a non scratch surface.

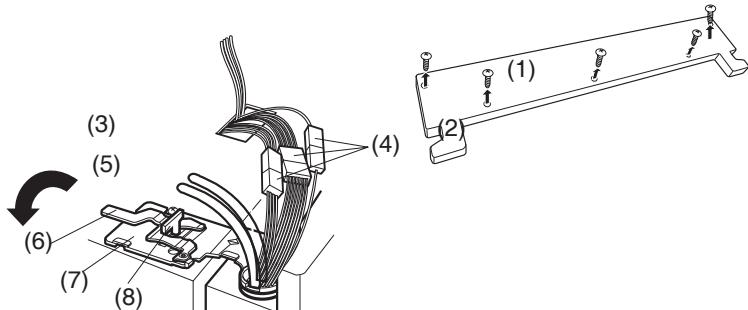


Figure 2

#### ► Right Door -FIG. 3

1. Open the door, Loosen top hinge cover screw (1). Lift up cover (2).
2. Disconnect door switch wire harness (3)
3. Rotate hinge lever (4) clockwise. Lift top hinge (5) free of hinge lever latch (6).
4. Lift door from middle hinge pin and remove door.

#### ⚠ CAUTION

When lifting hinge free from the latch, be careful that the door does not fall forward.

5. Place the door with the insides facing up, on a non scratch surface.

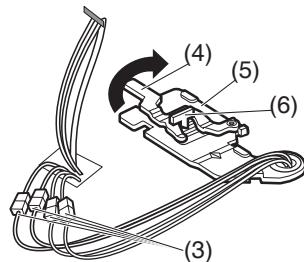


Figure 3

# Disassembly

## Door

### Mullion Removal

1. Remove 2 screws.



2. Lift mullion up carefully.



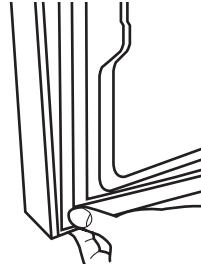
3. Disconnect wire harness.



### Door Gasket Replacement

1. Insert gasket into channel

Insert and press gasket into channels at doorliner.



### Mullion Replacement

1. Connect wire harness.



2. Insert mullion into channel.

Insert the mullion into channel at door as shown below.



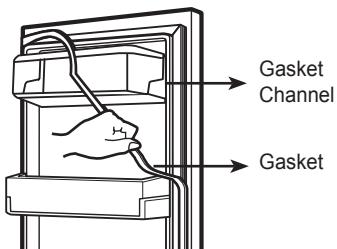
3. Assemble 2 screws.



### Door Gasket Removal

#### 1. Remove gasket

Remove the gasket from gasket channel at doorliner as shown in the illustration below.

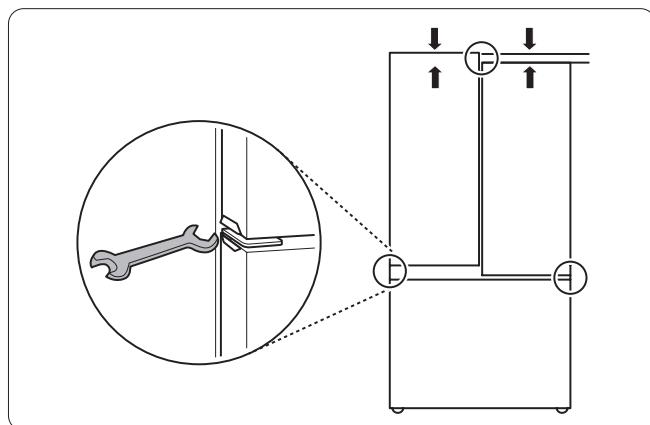


# Disassembly

## Left Door Alignment

If the level of refrigerator doors is uneven, follow the instructions below to align the doors:

Turn the leveling legs (CW) to raise or (CCW) to lower the height of the front of the refrigerator by using flat blade screw driver or 11/32" wrench. Use the wrench (Included with the Owners Manual) to adjust the bolt in the door hinge to adjust the height. (CW to raise or CCW to lower the height.)

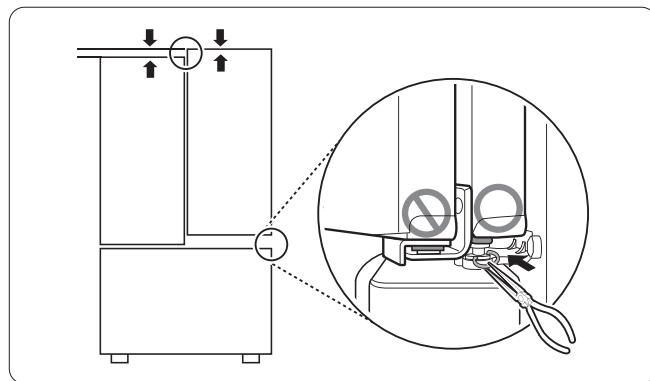


## Right Door Alignment

The right refrigerator door does not have an adjustable nut.

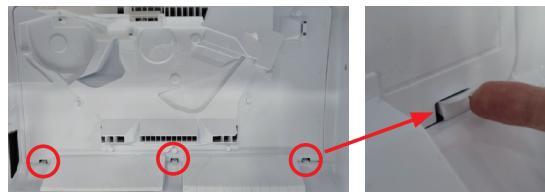
If the space between the doors is uneven, follow the instructions below to align the right door:

1. With one hand, lift up both the inner and outer door sections of the right door to raise them at the middle hinge.  
(It may be easier to lift it with the doors open.)
2. With the other hand, use pliers to insert the snap ring on the middle hinge of the inner door section as shown. Do not insert the ring on the hinge of the outer door section.
3. Insert additional snap rings until the right door is aligned. (Two snap rings are provided with the unit.)



## Grille Assembly

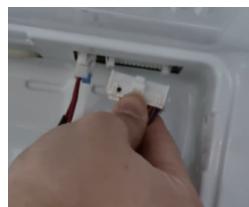
1. Unhook the grille assembly



2. Pull out the grille assembly.



3. Disassemble the wire housing of the grille assembly.



4. Replace the grille assembly.



# Disassembly

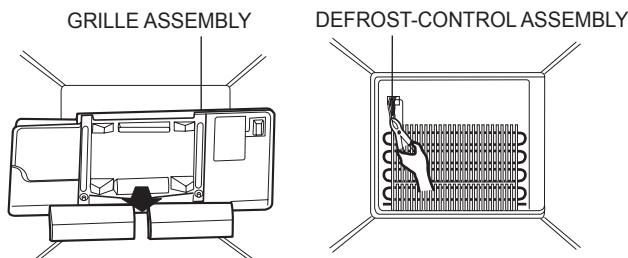
## Defrost Control Assembly

Defrost Control assembly consists of Defrost Sensor and FUSE-M.

The Defrost Sensor works to defrost automatically. It is attached to the metal side of the Evaporator and senses its temperature. At 46F(8°C), it turns the Defrost Heater off.

Fuse-M is a safety device for preventing over-heating of the Heater when defrosting.

1. Pull out the grille assembly. (Figure 1)
2. Separate the connector with the Defrost Control assembly and replace the Defrost Control assembly after cutting the Tie Wrap. (Figure 2)



## Refrigerator Light (Top)

Unplug Refrigerator, or disconnect power at the circuit breaker.

If necessary, remove top shelf or shelves.

1. Unplug refrigerator power cord from electric outlet.
2. Tighten a screw to the cover.



3. Pull a screw using a Plier and disassemble the cover.



4. Remove the LED assembly from connector.



5. Replace LED assembly.



6. Assemble the cover.

# Disassembly

## Cap Decor LED LAMP(Bottom)

1. Unplug refrigerator power cord from electric outlet.
2. Open the refrigerator door to need disassembly.
3. Put flat screwdriver into service hole, remove the cover of cap decor LED LAMP.



4. Remove the LED assembly from connector.



5. Replace LED assembly.



6. Assembly the cover in reverse order.

## Multi Duct

1. Remove 2 screws.



2. Grab bottom right and pull. Unhook right-hand side.



3. Grab the multi duct and pull it down. Unhook left-hand side.



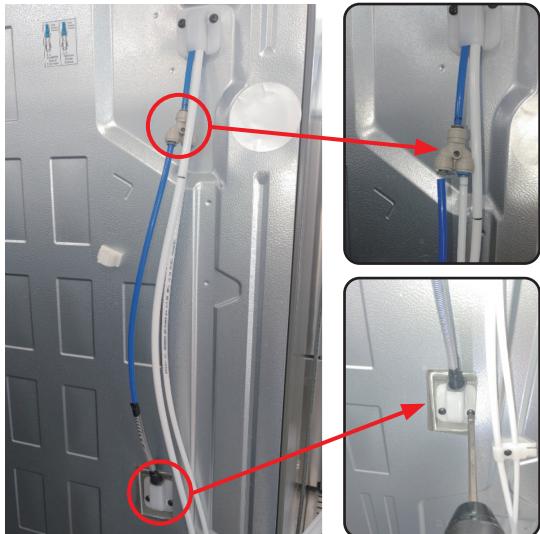
4. Disassemble the wire housing.



# Disassembly

## Tank Assembly Replacement

1. Disconnect the blue tube from the water connector and remove the tube cover at the back.



2. Remove the crispers.



3. Remove the lower shelf.



4. Remove two screws.



5. Tilt the water tank cover.



6. Disconnect the water tube from the water valve and remove the housing.



# Disassembly

## How to Remove and Reinstall the Pullout Drawer

### 1. Follow Steps to Remove

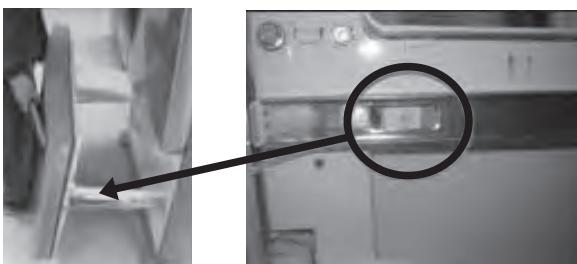
Step 1) Open the freezer door.



Step 2) Remove the lower basket.



Step 3) Remove the two screws from the guide rails (one from each side).



Step 4) Removal of the freezer door is done by lifting clear of the rail support. Fully extend both rails.



Step 5) Remove only 1 screw of gearice, and disassemble the bar and gearice



Step 6) Remove 2 screws of both side of supporter covers tv and disassemble the supporter cover tv.



# Disassembly

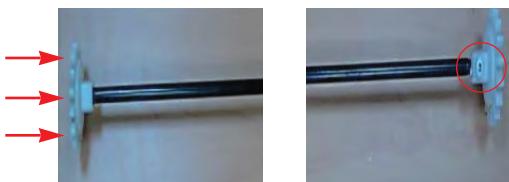
## 2. Follow Steps to Reinstall

Step 1) Insert both side of supporter cover tv into connector rails, and then screw them.



Step 2) ① Assemble a bar and gear ice with screw.

- ② Push the other side of the gear to inside of the bar.



Step 3) Put gear ice assembled with the bar by screw into connector rail's hole.



Step 4) Insert opposite gear ice into connector rail and screw them.



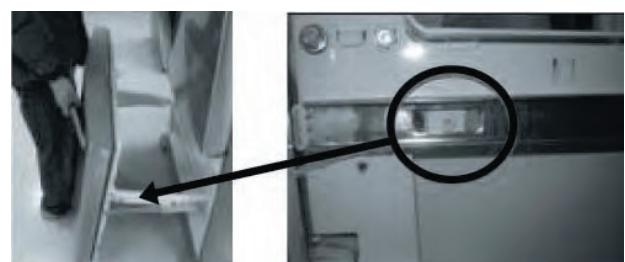
Step 5) The rail system will align itself by pushing the rails all the way into the freezer section.  
Pull the rails back out to full extension.



Step 6) Reinstall the freezer door by inserting the rail tabs into the guide rail.



Step 7) Reinstall the two screws into the guide rails (one from each side).



Step 8) Reinstall the lower basket, and close the freezer door.



# Disassembly

## Water Valve Disassembly Method

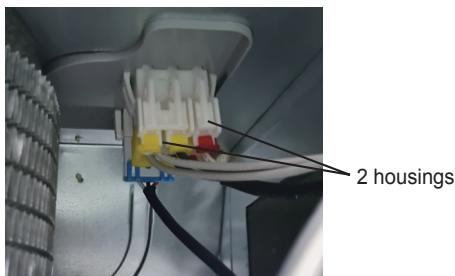
1. Turn off the water to unit. Remove the waterline from the valve.



2. Remove cover and 1 screw from the valve.

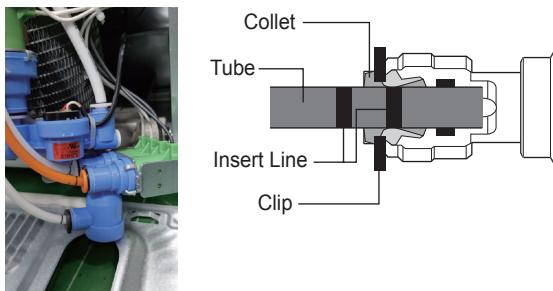


3. Disassemble the wire housing and remove the valve.



4. Remove the clip and press the collet to disassemble the tube from the valve.

NOTE : Water may remain inside the tube.



## Fan Motor Assembly and Disassembly Method

1. Remove screws for the Drain Pipe Assembly and the 1 connected to the Motor Cover.



2. Remove the screw from shroud and Separate the Fan motor assembly and Shroud.



Assemble in reverse order. Taking care to avoid.

1. Do not to bend the tube during assembly.
2. Press the Water Dispenser button letting water pour out, this checks for any leaks in the tube connection, this may vary depending on the water pressure (about 2 minutes.).

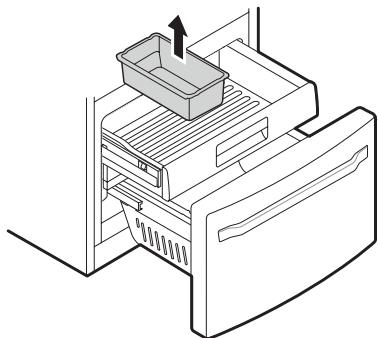
# Disassembly

## Pull Out Drawer

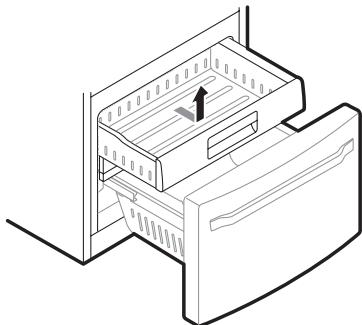
### Top Drawer

1. Pull the drawer open to full extension.

2. Gently lift and pull out the ice bin.



3. Lift the front of the drawer up, then pull it straight out.



# Adjustment

## Compressor

### 1. Role

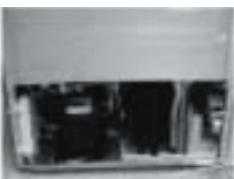
The compressor intakes low temperature and low pressure gas from the evaporator of the refrigerator and compresses this gas to high-temperature and high-pressure gas. It then delivers the gas to the condenser.

### 2. Note for Usage

- (1) Be careful not to allow over-voltage and over-current.
- (2) Do not drop or handle carelessly.
- (3) Keep away from any liquid.  
If liquid such as oil or water enters the Cover PTC Compressor may fail due to breakdown of their insulating capabilities.
- (4) Always use the Parts designed for the compressor and make sure it is properly attached to the compressor. Parts may appear physically identical but could have different electrical ratings. Replace parts by part number and model number. Use only approved substitute parts.

### 3. Remove the cover PTC

- (1) Remove the Cover Back M/C



- (2) Remove two screws on comp base



- (3) Use a L-shaped flap tool to pry off the cover



- (4) Assembly in reverse order of disassembly

## Compressor Protection Logic

- Since linear Comp conducts linear reciprocating motion, we have protection logic for compressor, motor and PCB as the below.

### - Stroke Trip

During the operation, if stroke is above the target value, decrease the target volt by 3V.

### - Current Trip

Current trip is set in order to protect compressor mechanical part and drive from the overcurrent that might arise during the operation.

Check the current for every 416.7us and if the Trip exceeds 1.86Arms more than three times at Comp ON, forcibly stop and restart six minutes later.

### - Lock Piston Trip

If stroke is under 5mm even if the current is more than 14Arms, Take it as 'piston lock' and restart after 2'30" of Comp OFF. Check the current and stroke for every 416.7us and if the condition fits more than three times at Comp ON, the Trip occurs.

### - IPM fault Trip

It occurs if FO signal received from IPM is LOW. For every 416.7us, check whether FO signal is LOW. The trip occurs if it is found three times during the five periods(83ms).

# Adjustment

## How to Adjust the Door level difference (front and rear)

1. Check front and rear step difference.



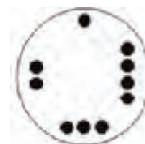
2. Open the door



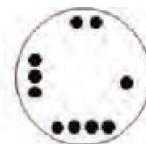
3. After removing the stopper door, turn it and reassemble.



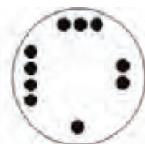
※ control structure shape



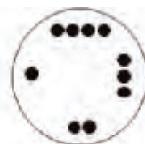
Initial status



0.5 mm raised



1 mm raised



1.5 mm raised

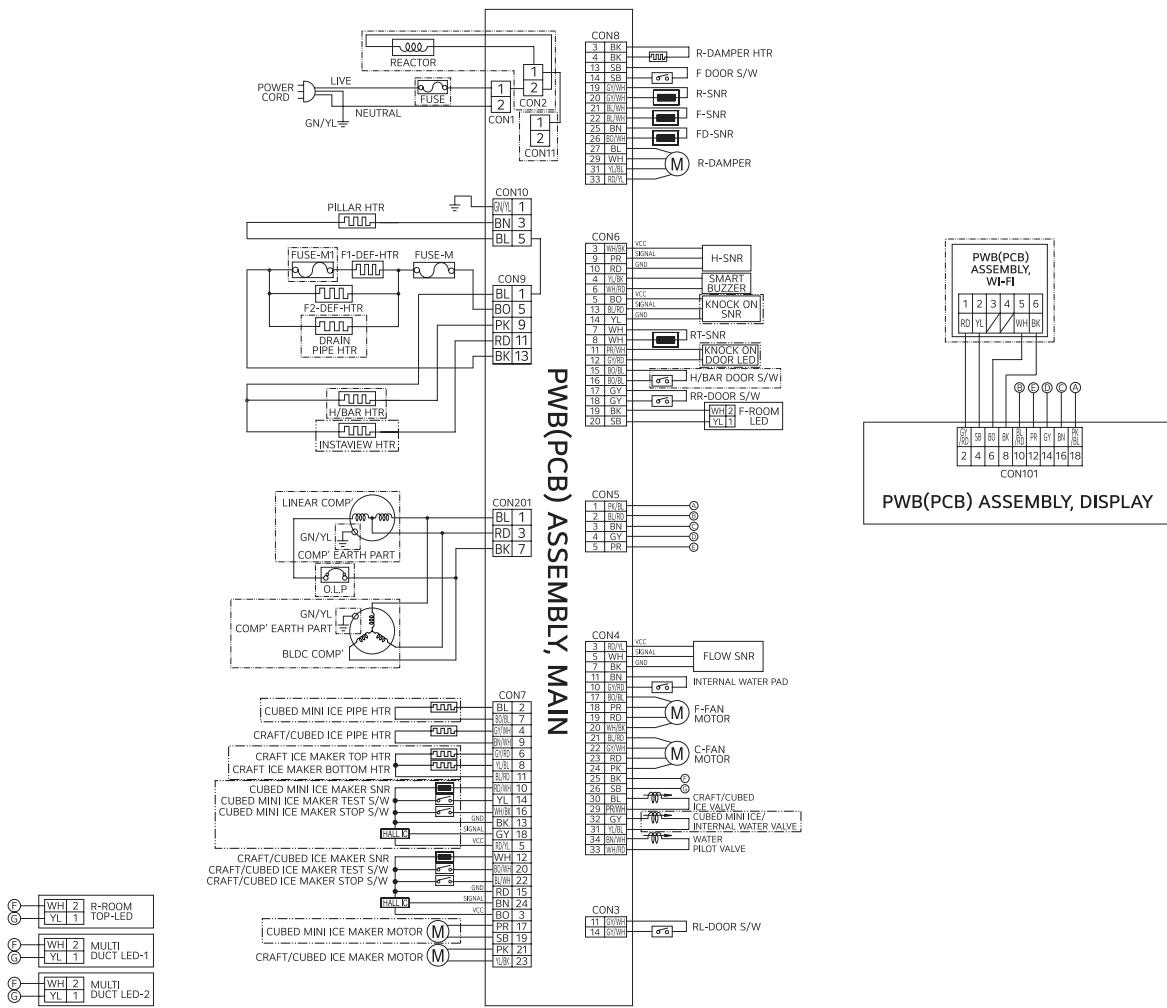
4. Open and close the door 2~3 times.

5. Check front and rear step difference.

# Circuit Diagram



\* EARTH PART, DUCT HEATER, PLUG TYPE AND COMP' EARTH PART,FUSE ON CIRCUIT DIAGRAM ARE SUBJECT TO CHANGE IN DIFFERENT LOCALITIES AND MODEL TYPE.  
- [ ] : OPTIONAL



# Troubleshooting

## Error Code Summary

### **⚠ WARNING**

When checking Resistance values, make sure to turn off the power, and wait for the voltage to discharge.

**NOTE)** Within 3 hours after the error : Press the Ice Plus button and Freezer button simultaneously  
 3 hours after the error : All errors, except for "E rt", "E HS", "E IS"(except for icing room sensor), "E SS", "E Od", "E IU", "E Id", "E gF", "E It", "E IO", "E IC" error, are displayed.



NO	Error Detection Category	Error Display		Error Generation Factors	Remark
		Refrigerator Temperature (Error code ①)	Freezer Temperature (Error code ②)		
1	Normal	Display temperature setting		None	Normal operation of Display
2	Defect of freezer sensor	E	FS	Short-circuit or disconnection of freezer sensor	Check each sensor connection
3	Defect of refrigerator sensor	E	rS	Short-circuit or disconnection of refrigerator sensor	
4	Defect of freezer icemaker sensor	E	IS	Short-circuit or disconnection of ice maker sensor	
5	Defect of freezer defrosting sensor	F	dS	Short-circuit or disconnection of freezer defrosting sensor	
6	Defect of room temperature sensor	E	rt	Short-circuit or disconnection of RT Sensor	
7	Defect of humidity sensor	E	HS	Short-circuit or disconnection of humidity Sensor	
8	Defect of freezer icemaker kit	E	It	Malfunction of ice maker motor	Check operation after entering test mode
9	Defrosting failure	F	dH	the defrosting sensor does not reach 40°F(5°C) within 80 minutes after defrosting starts	- Disconnection of thermal fuse or defrosting heater - Defect of heater relay - Drain tube blockage
10	Defect of BLDC fan motor for freezer	E	FF	there is no feedback signal from fan motor for more than 65 seconds	Defect of BLDC motor connection, Drive IC or TR
11	Defect of BLDC fan motor for machine room	E	CF	there is no feedback signal from fan motor for more than 65 seconds	
12	Communication error	E	CO	Communication error between main MICOM and display MICOM	- Poor communication connection - Defect of Tx or Rx

\*Not to be confused with function Display SVC temperature compensation(5 5).  
 For information on function Display SVC temperature compensation, see page 121.

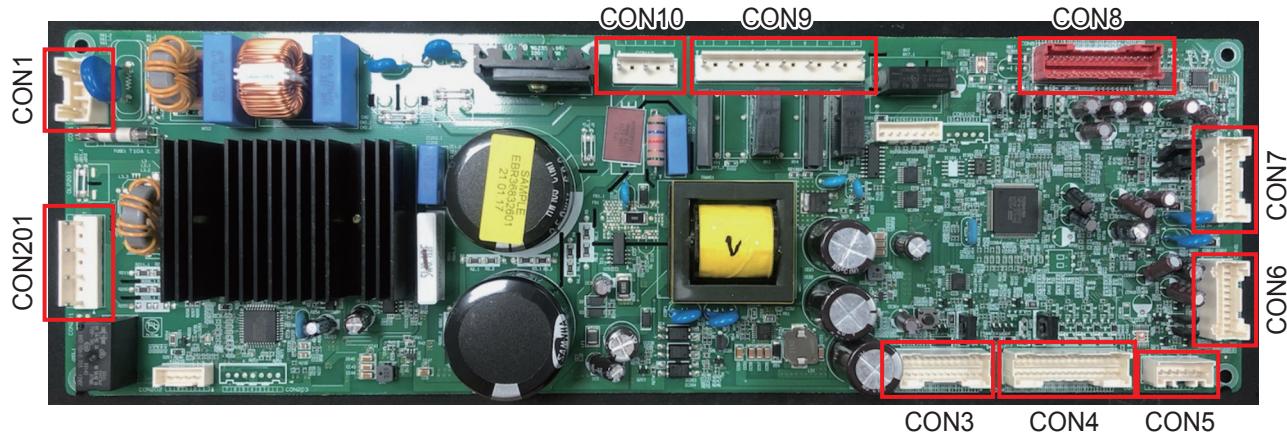
# Troubleshooting

NO	Error Detection Category	Error Display		Error Generation Factors	Remark
		Refrigerator Temperature (Error code ①)	Freezer Temperature (Error code ②)		
13	Wi-Fi Modem Error	E	Od	- Defect of Wi-Fi modem - Communication error between display MICOM and Wi-Fi modem	- Defect of Wi-Fi modem - Poor communication connection - Poor TR of TX/Rx between display and Wi-Fi modem
14	High side cycle leakage	E	CH	Detected by high side refrigerant leak, restriction, bad comp, bad valve, etc.	
15	Low side cycle leakage	E	CL	Detected by low side refrigerant leak, bad comp, long time door open, etc.	

# PCB Picture

## Main PCB

(P/No. : EBR368326\*\*)



## Display PCB

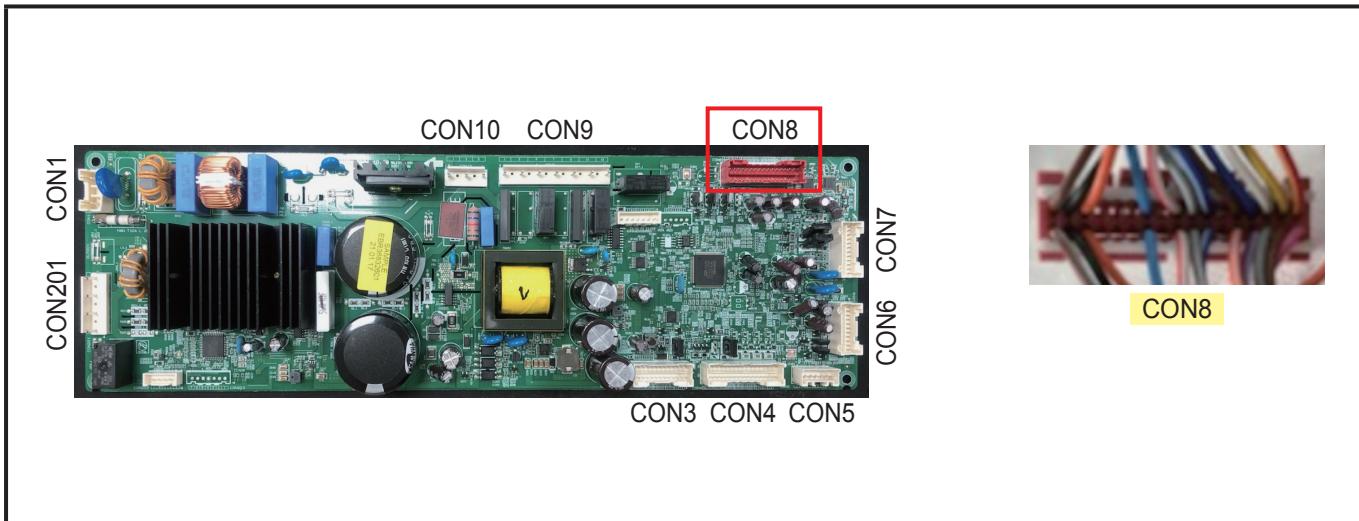
(P/No. : EBR327666\*\*)



# Trouble Shooting with Error Display

## Freezer Sensor Error (E FS)

Symptom	Check Point
1. E FS	1. Check for a loose connection 2. Check Sensor Resistance

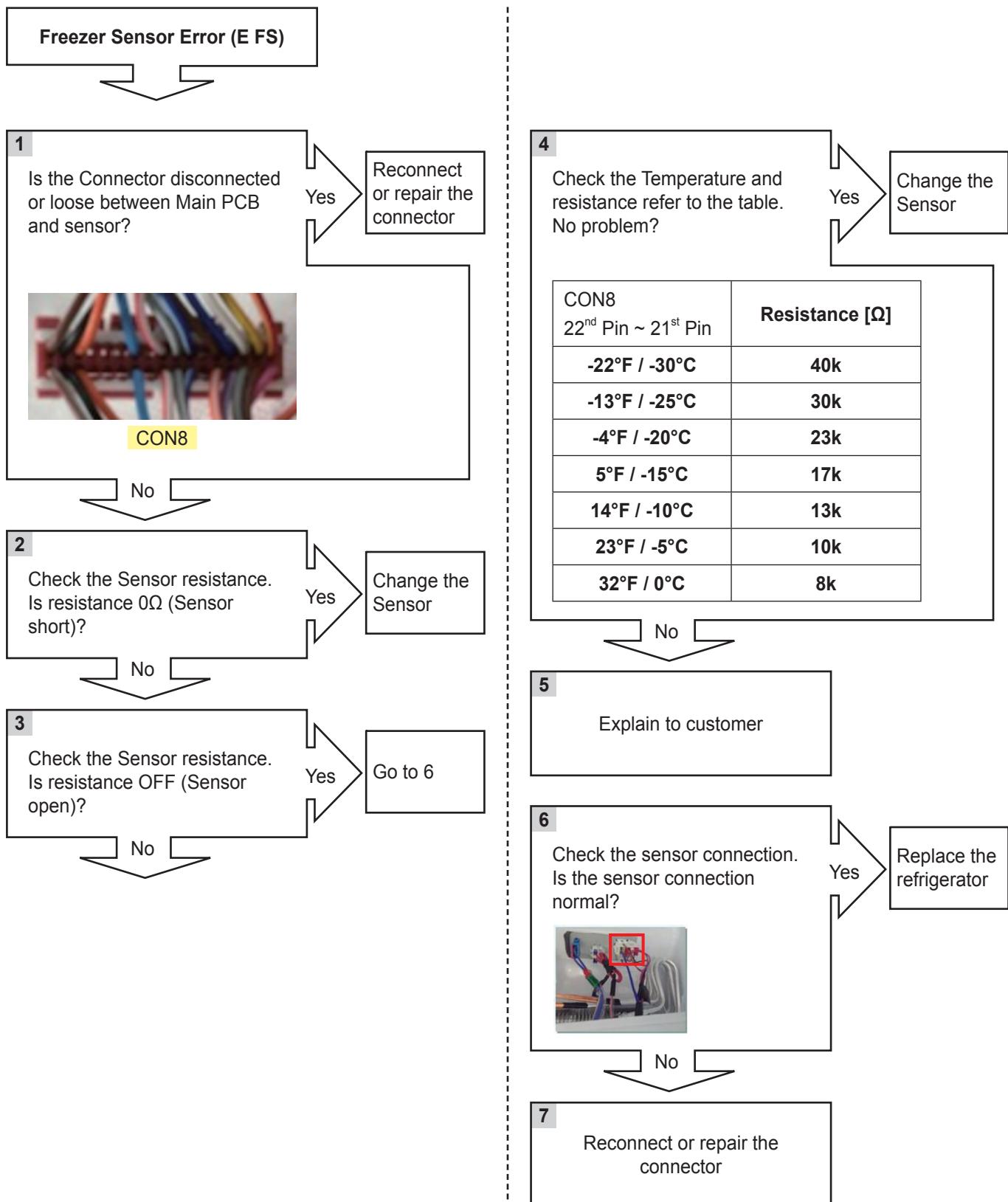


		Resistance [Ω]
CON8 22 <sup>nd</sup> Pin ~ 21 <sup>st</sup> Pin	Short	0
	Open	OFF
	Other	Normal
		Resistance [Ω]
CON8 22 <sup>nd</sup> Pin ~ 21 <sup>st</sup> Pin		-22°F / -30°C      40k
		-13°F / -25°C      30k
		-4°F / -20°C      23k
		5°F / -15°C      17k
		14°F / -10°C      13k
		23°F / -5°C      10k
		32°F / 0°C      8k

Diagram showing the connection of the CON8 pin 22nd to pin 21st. The connections are as follows:

- Pin 3: BK (R-DAMPER HTR)
- Pin 4: BK (F DOOR S/W)
- Pin 13: SB (R-SNR)
- Pin 14: SB (F-SNR)
- Pin 19: GY/WH (R-SNR)
- Pin 20: GY/WH (F-SNR)
- Pin 21: BL/WH (F-SNR)
- Pin 22: BL/WH (FD-SNR)
- Pin 25: BN (R-DAMPER)
- Pin 26: BO/WH (R-DAMPER)
- Pin 27: BL (R-DAMPER)
- Pin 29: WH (R-DAMPER)
- Pin 31: YL/BL (R-DAMPER)
- Pin 33: RD/YL (R-DAMPER)

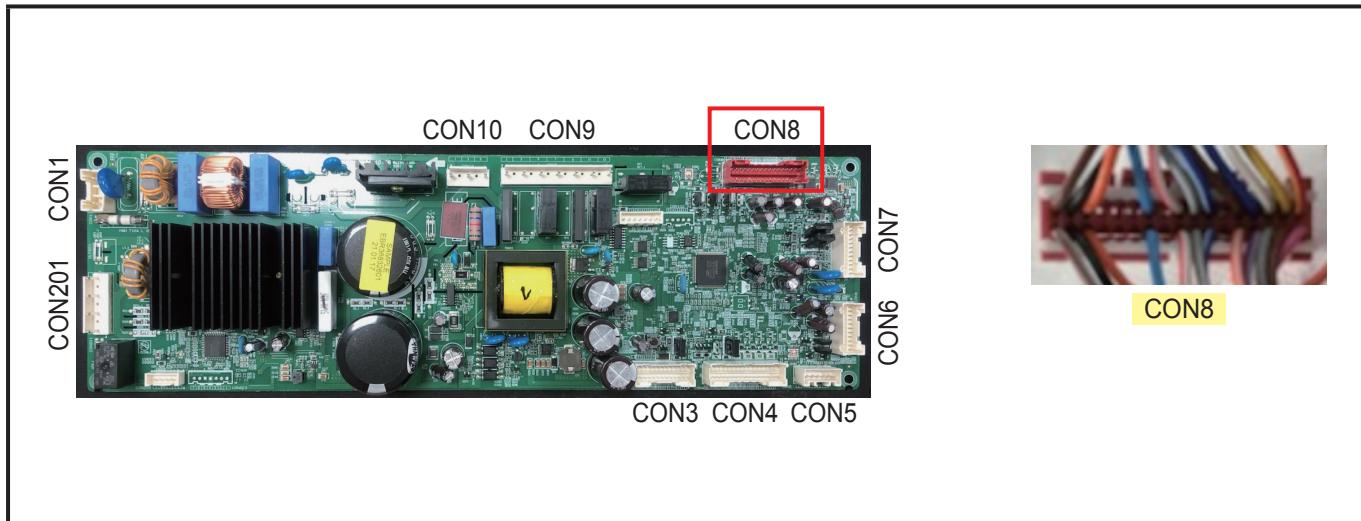
# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## Refrigerator Sensor Error (E rS)

Symptom	Check Point
1. E rS	1. Check for a loose connection 2. Check Sensor Resistance

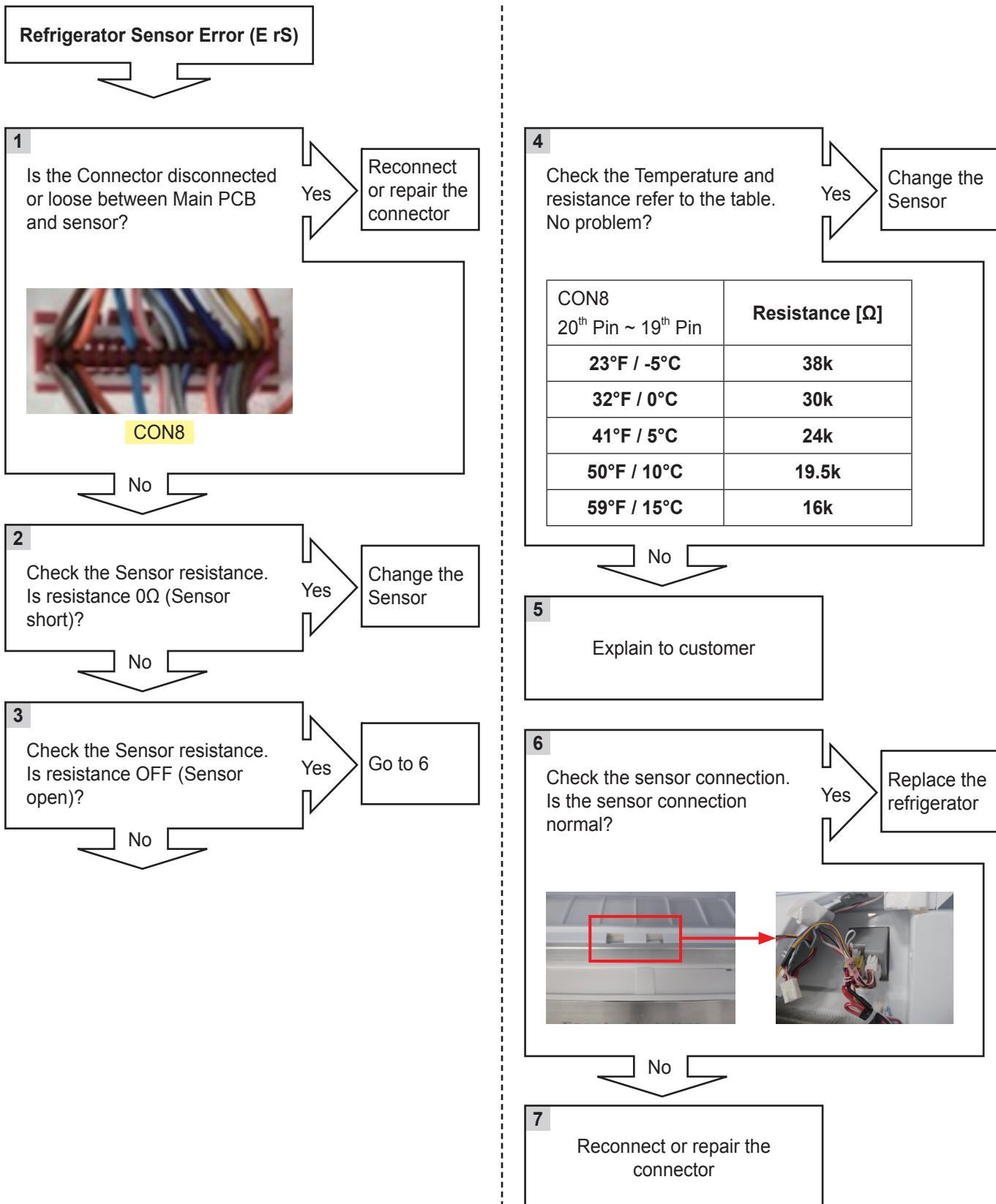


CON8 20 <sup>th</sup> Pin ~ 19 <sup>th</sup> pin	Resistance [Ω]	
	Short	0
	Open	OFF
	Other	Normal
CON8 20 <sup>th</sup> Pin ~ 19 <sup>th</sup> Pin	Resistance [Ω]	
23°F / -5°C	38k	
32°F / 0°C	30k	
41°F / 5°C	24k	
50°F / 10°C	19.5k	
59°F / 15°C	16k	

Diagram showing the connection of CON8 pins to various components:

- Pin 3: BK → R-DAMPER HTR
- Pin 4: BK → F DOOR S/W
- Pin 13: SB → R-SNR (highlighted with a red box)
- Pin 14: SB → F-SNR
- Pin 19: GY/WH → FD-SNR
- Pin 20: GY/WH → R-DAMPER (highlighted with a red box)
- Pin 21: BL/WH → R-DAMPER
- Pin 22: BL/WH → R-DAMPER
- Pin 25: BN → R-DAMPER
- Pin 26: BO/WH → R-DAMPER
- Pin 27: BL → R-DAMPER
- Pin 29: WH → R-DAMPER
- Pin 31: YL/BL → R-DAMPER
- Pin 33: RD/YL → R-DAMPER

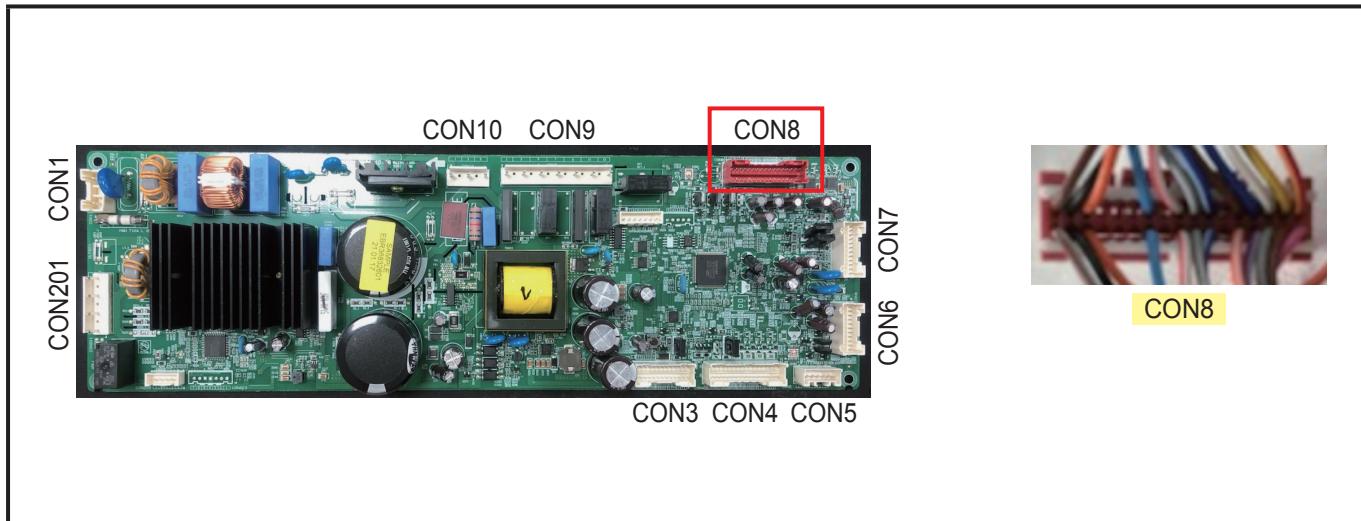
# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## Defrost Sensor Error (F dS)

Symptom	Check Point
1. F dS	1. Check for a loose connection 2. Check Sensor Resistance



	Resistance [Ω]
CON8 26 <sup>th</sup> Pin ~ 25 <sup>th</sup> pin	Short      0
	Open      OFF
	Other      Normal

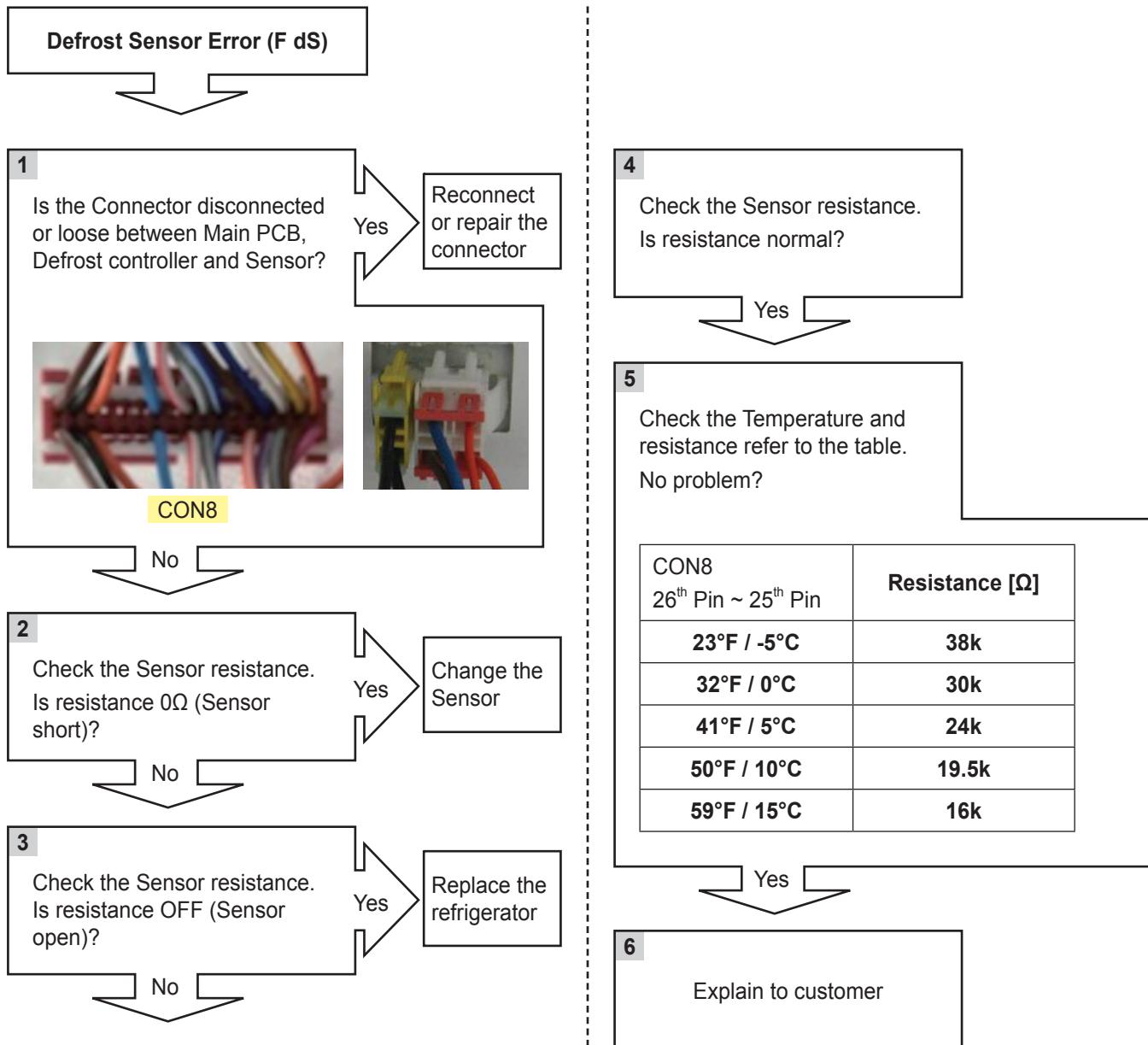
	Resistance [Ω]
CON8 26 <sup>th</sup> Pin ~ 25 <sup>th</sup> Pin	<b>23°F / -5°C</b> 38k
	<b>32°F / 0°C</b> 30k
	<b>41°F / 5°C</b> 24k
	<b>50°F / 10°C</b> 19.5k
	<b>59°F / 15°C</b> 16k

Diagram showing the pinout of connector CON8:

- Pin 3: BK (R-DAMPER HTR)
- Pin 4: BK (F DOOR S/W)
- Pin 13: SB (R-SNR)
- Pin 14: SB (F-SNR)
- Pin 19: GY/WH (FD-SNR)
- Pin 20: GY/WH (R-DAMPER)
- Pin 21: BL/WH (M)
- Pin 22: BL/WH (R-DAMPER)
- Pin 25: BN (FD-SNR)
- Pin 26: BO/WH (R-DAMPER)
- Pin 27: BL (R-DAMPER)
- Pin 29: WH (R-DAMPER)
- Pin 31: YL/BL (R-DAMPER)
- Pin 33: RD/YL (R-DAMPER)

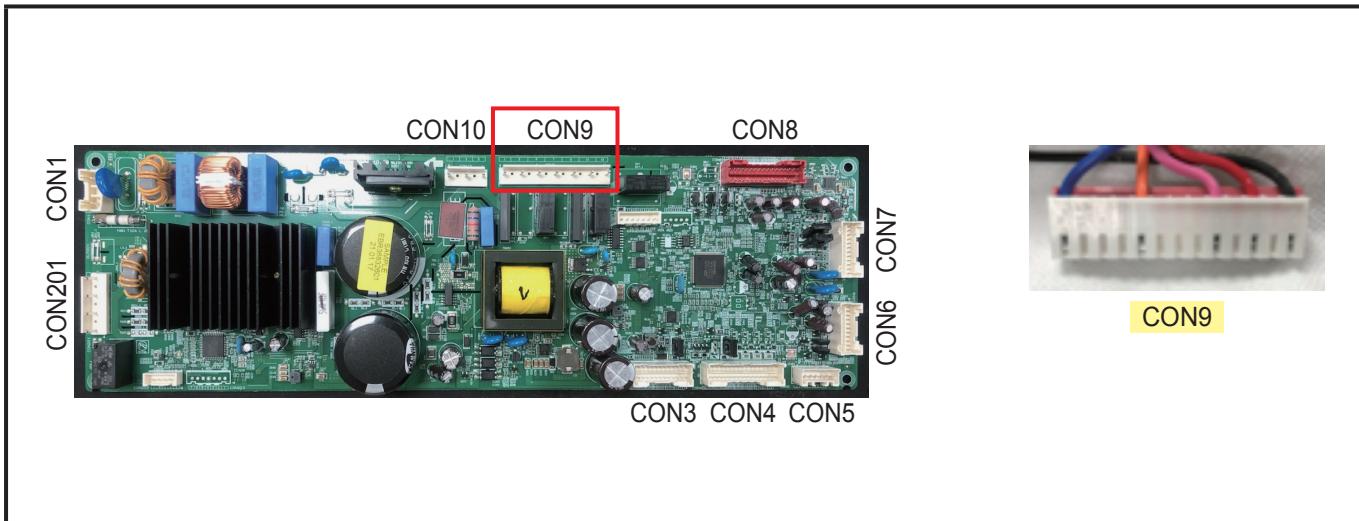
# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## Defrost Heater Error (F dH)

Symptom	Check Point
1. F dH	<ol style="list-style-type: none"> <li>1. Check the door gasket</li> <li>2. Check the Defrost Heater</li> <li>3. Check the PCB output voltage</li> </ol>



Part	Resistance [Ω]
FUSE-M	0
Defrost Heater	(1) 62 ~ 70 (2) 144 ~ 167
Defrost Sensor	22k↑

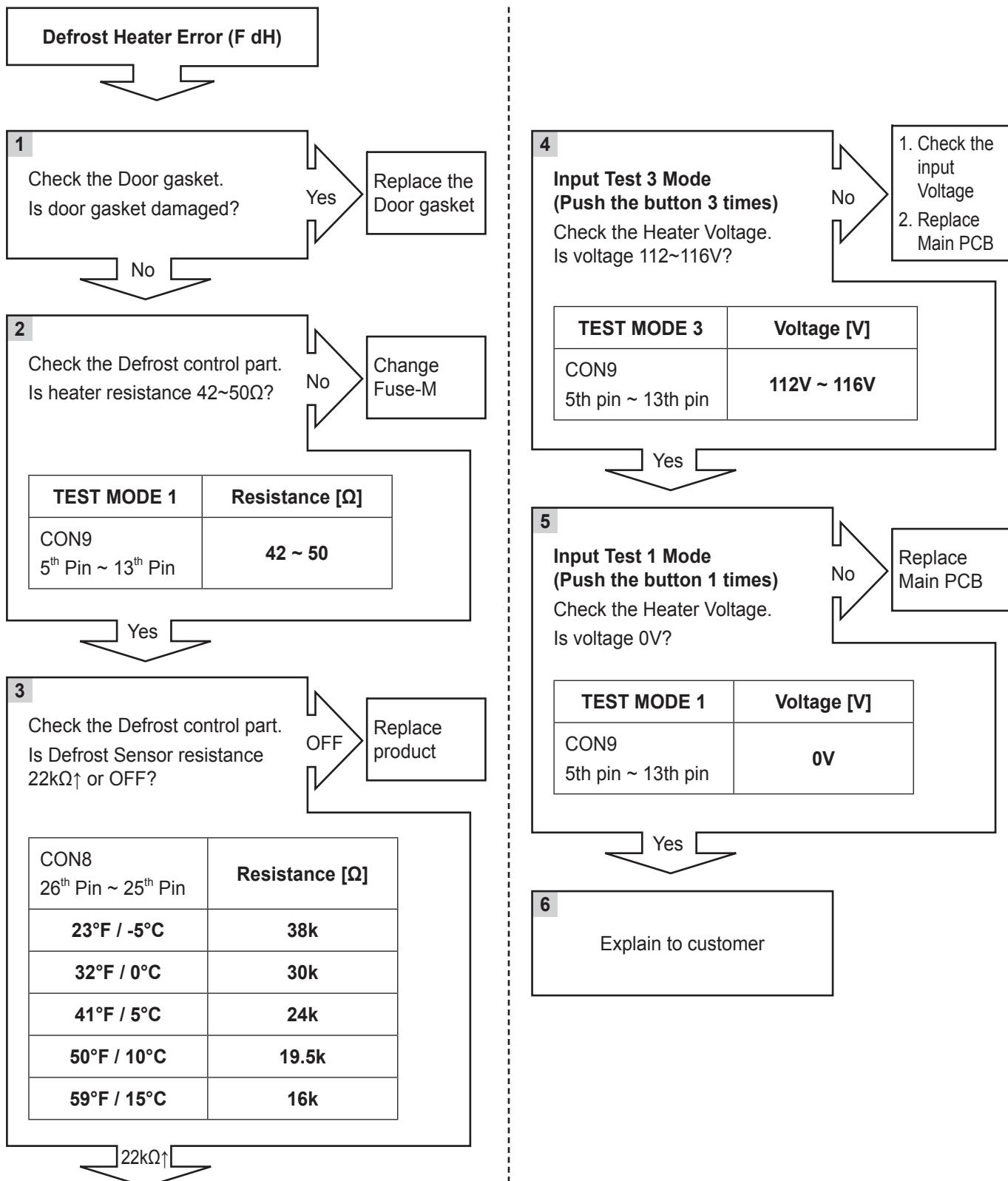
  

TEST MODE 3	Voltage [V]
CON9 5 <sup>th</sup> pin ~ 13 <sup>th</sup> Pin	112V ~ 116V

TEST MODE 1	Voltage [V]
CON9 5 <sup>th</sup> pin ~ 13 <sup>th</sup> Pin	0V

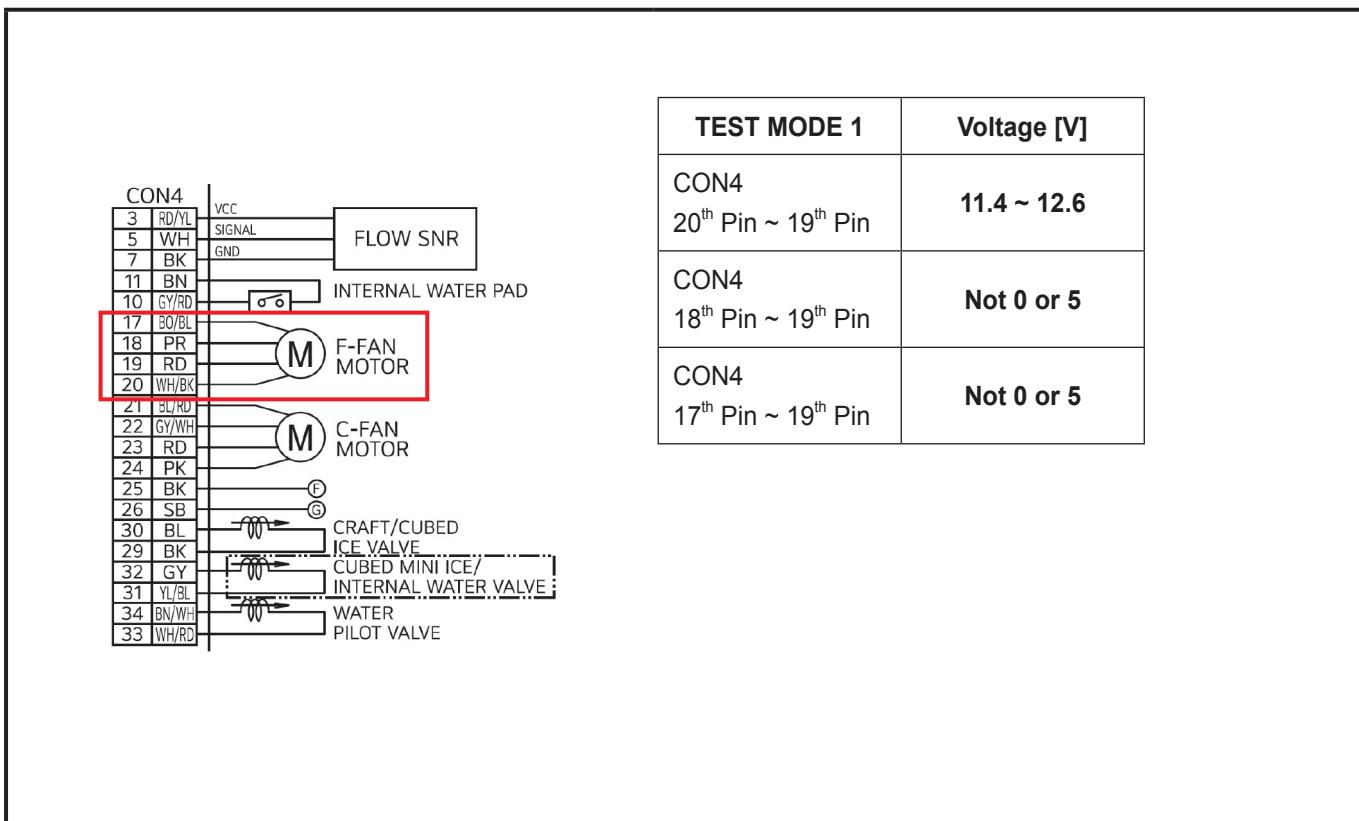
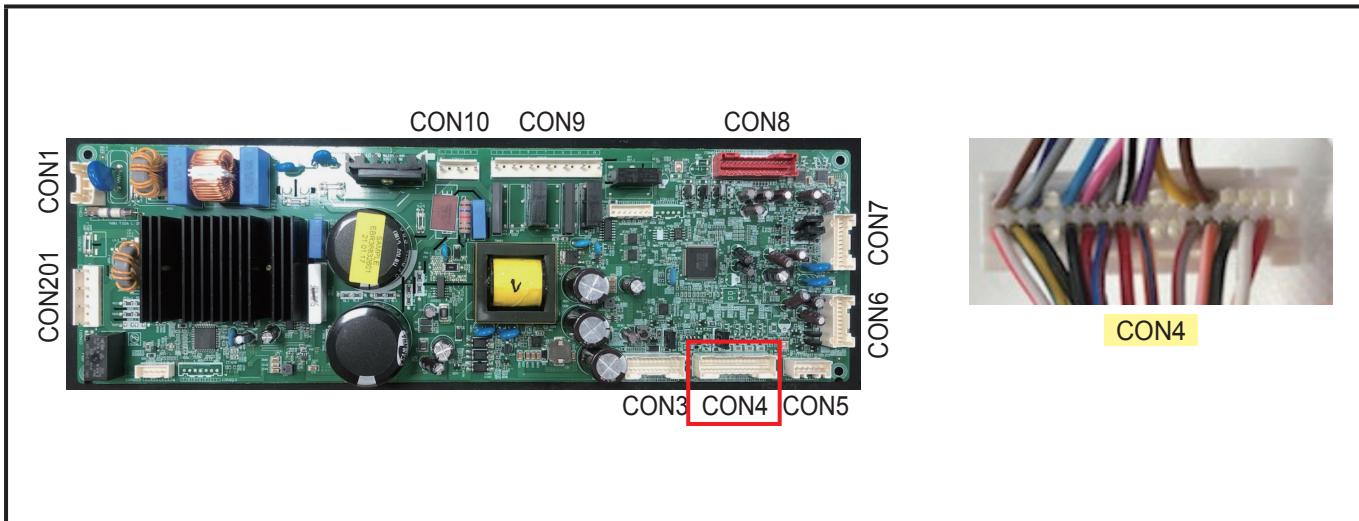
# Trouble Shooting with Error Display



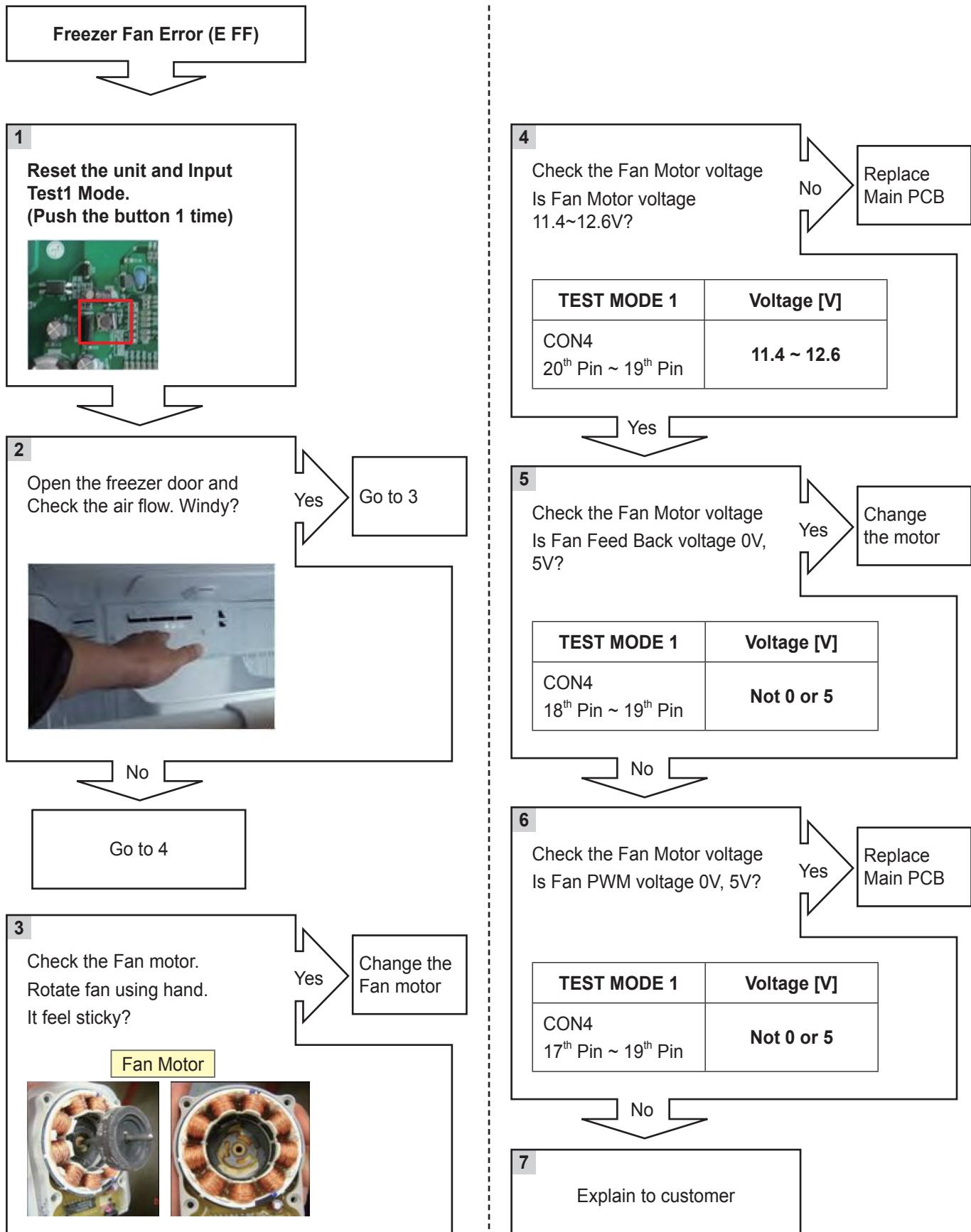
# Trouble Shooting with Error Display

## Freezer Fan Error (E FF)

Symptom	Check Point
1. E FF	<ol style="list-style-type: none"> <li>1. Check the air flow</li> <li>2. Check the Fan Motor</li> <li>3. Check the PCB Fan motor voltage</li> </ol>



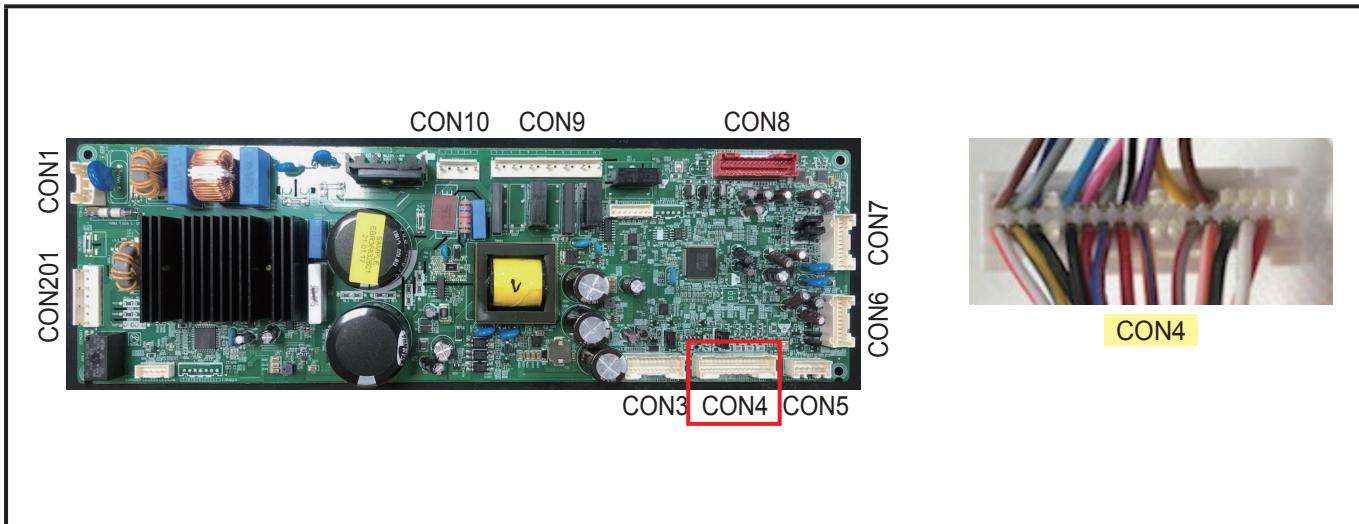
# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## Condenser Fan Error (E CF)

Symptom	Check Point
1. E CF	<ol style="list-style-type: none"> <li>1. Check the air flow</li> <li>2. Check the Connector</li> <li>3. Check the PCB Fan motor voltage</li> </ol>



TEST MODE 1	Voltage [V]
CON4 24 <sup>th</sup> Pin ~ 23 <sup>rd</sup> Pin	11.4 ~ 12.6
CON4 22 <sup>nd</sup> Pin ~ 23 <sup>rd</sup> Pin	Not 0 or 5
CON4 21 <sup>st</sup> Pin ~ 23 <sup>rd</sup> Pin	Not 0 or 5

Diagram illustrating the connection between the PCB and the fan motors:

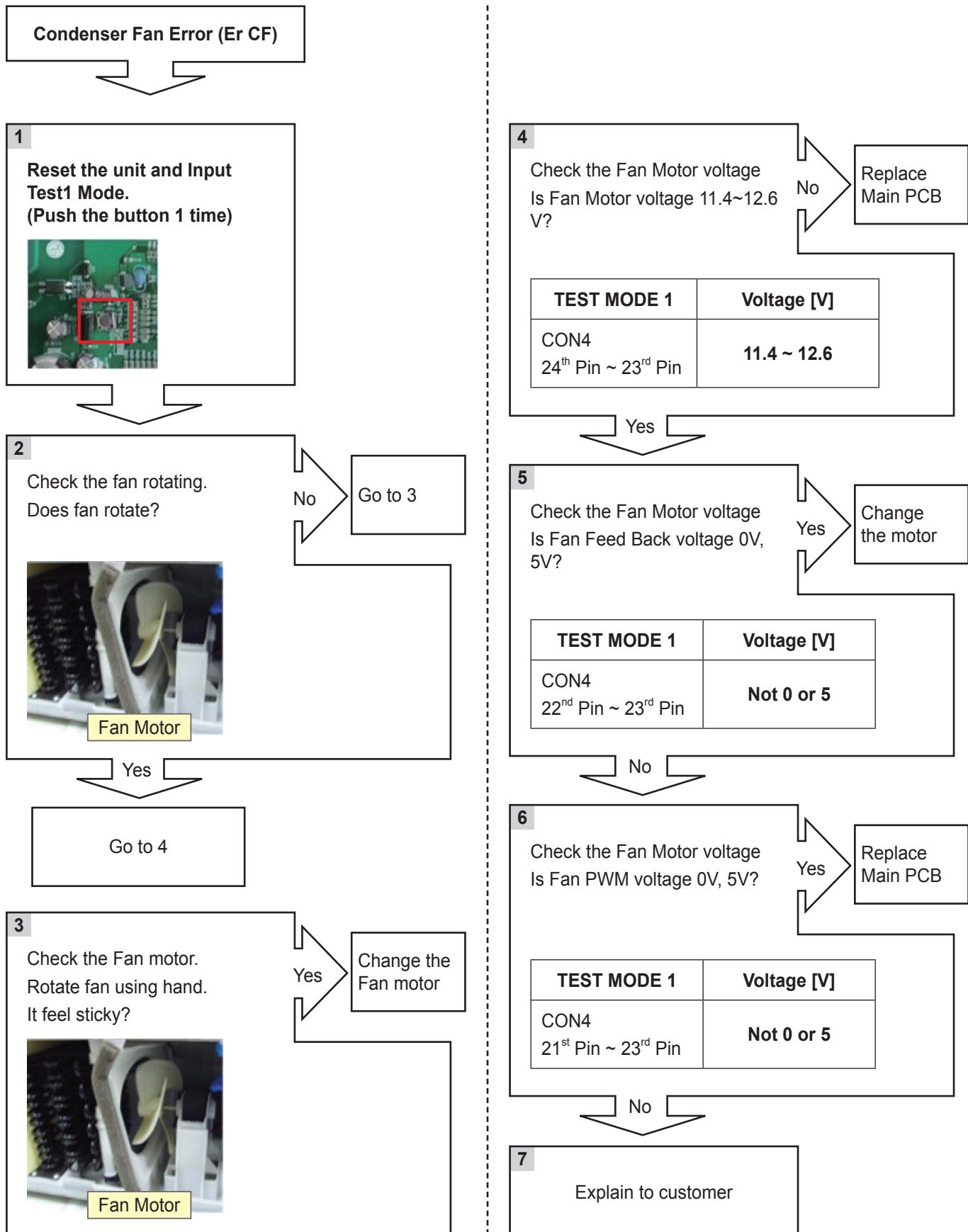
**CON4:**

- Pin 3: RD/YL (VCC)
- Pin 5: WH (SIGNAL)
- Pin 7: BK (GND)
- Pin 11: BN (INTERNAL WATER PAD)
- Pin 10: GY/RD (F-FAN MOTOR)
- Pin 17: B0/BL (C-FAN MOTOR)
- Pin 18: PR (C-FAN MOTOR)
- Pin 19: RD (C-FAN MOTOR)
- Pin 20: WH/BK (C-FAN MOTOR)
- Pin 21: BL/RD (C-FAN MOTOR)
- Pin 22: GY/WH (C-FAN MOTOR)
- Pin 23: RD (C-FAN MOTOR)
- Pin 24: PK (C-FAN MOTOR)

**Other Components:**

- Pin 25: BK (CRAFT/CUBED ICE VALVE)
- Pin 26: SB (CRAFT/CUBED ICE VALVE)
- Pin 30: BL (CRAFT/CUBED ICE VALVE)
- Pin 29: BK (CRAFT/CUBED ICE VALVE)
- Pin 32: GY (CRAFT/CUBED ICE VALVE)
- Pin 31: YL/BL (INTERNAL WATER VALVE)
- Pin 34: BN/WH (WATER PILOT VALVE)
- Pin 33: WH/RD (WATER PILOT VALVE)

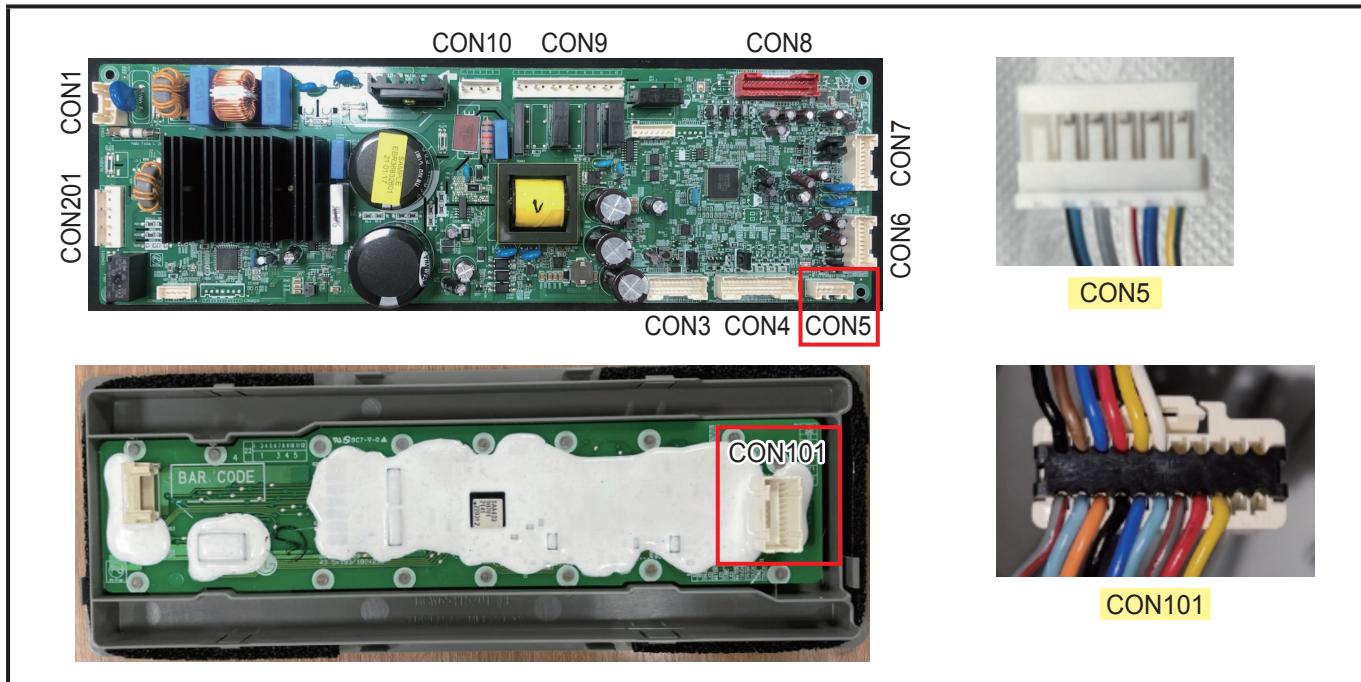
# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## Communication Error (E CO)

Symptom	Check Point
1. E CO	1. Check the loose connection 2. Check the Hinge connection



	Voltage [V]
CON101 18 <sup>th</sup> Pin ~ 16 <sup>th</sup> Pin	12
CON101 14 <sup>th</sup> Pin ~ 16 <sup>th</sup> Pin	Not 0 or 5
CON101 12 <sup>th</sup> Pin ~ 16 <sup>th</sup> Pin	Not 0 or 5
CON101 10 <sup>th</sup> Pin ~ 16 <sup>th</sup> Pin	5
CON5 4 <sup>th</sup> Pin ~ 3 <sup>rd</sup> Pin	Not 0 or 5
CON5 5 <sup>th</sup> Pin ~ 3 <sup>rd</sup> Pin	Not 0 or 5

**CONNECTION DIAGRAMS:**

**CON5:**

(A)	PK/BL	1
(B)	BL/RD	2
(C)	BN	3
(D)	GY	4
(E)	PR	5

**PWB(PCB) ASSEMBLY, WI-FI:**

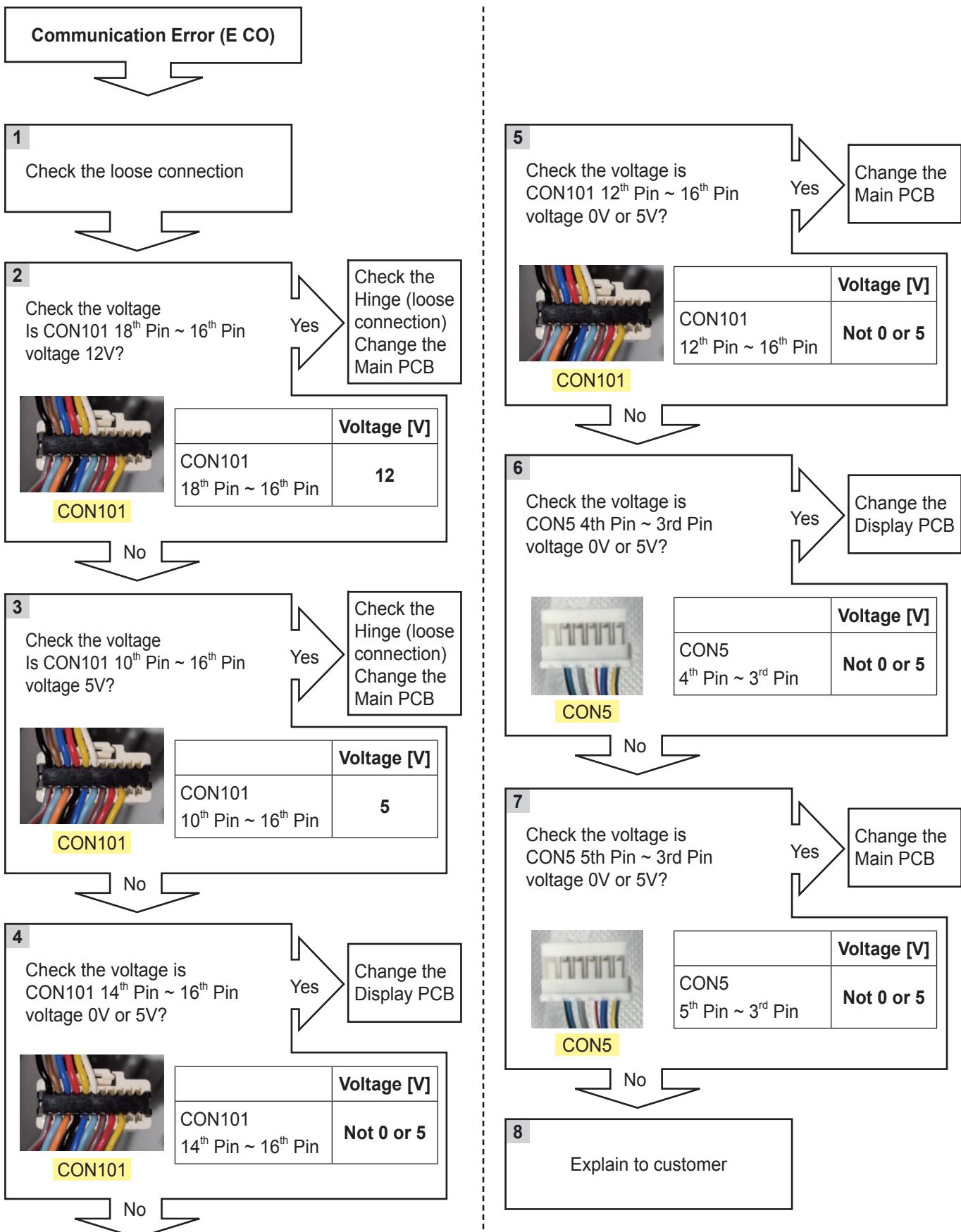
1	2	3	4	5	6
RD	YL			WH	BK

**CON101:**

GY	RD	SB	BO	BL	RD	PR	GY	BN	PK	BL
2	4	6	8	10	12	14	16	18		

**PWB(PCB) ASSEMBLY, DISPLAY:**

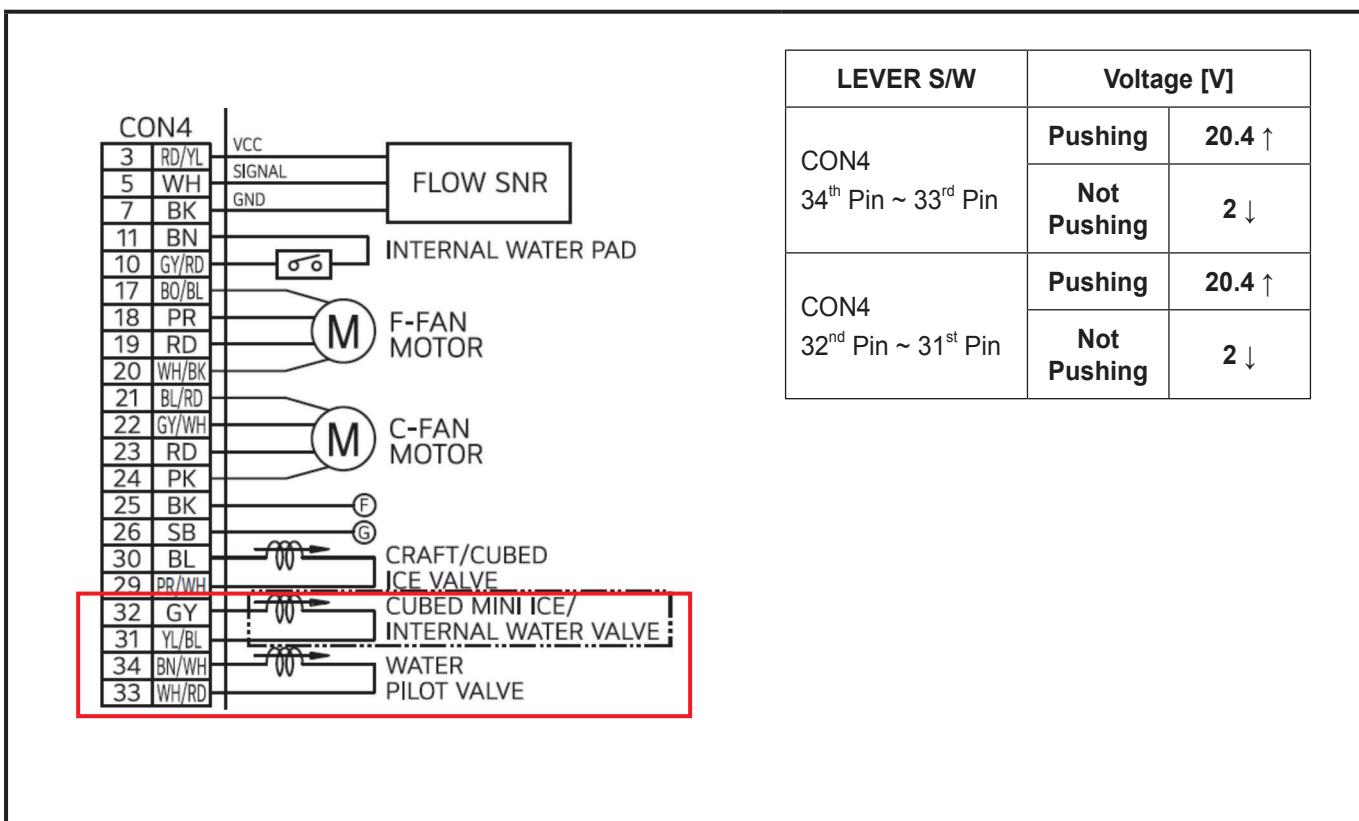
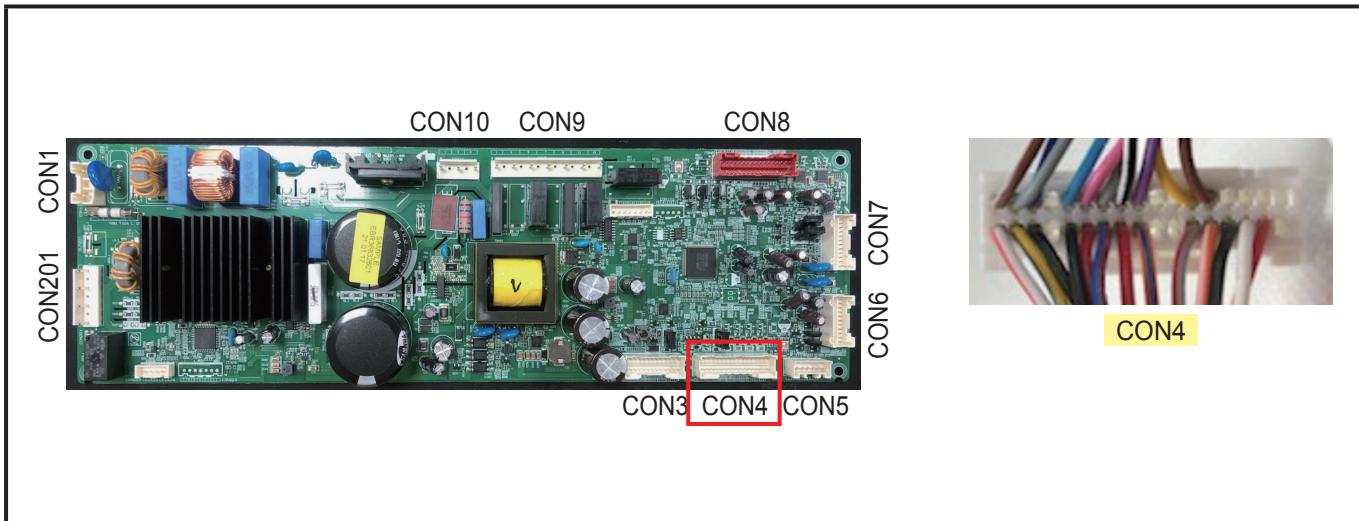
# Trouble Shooting with Error Display



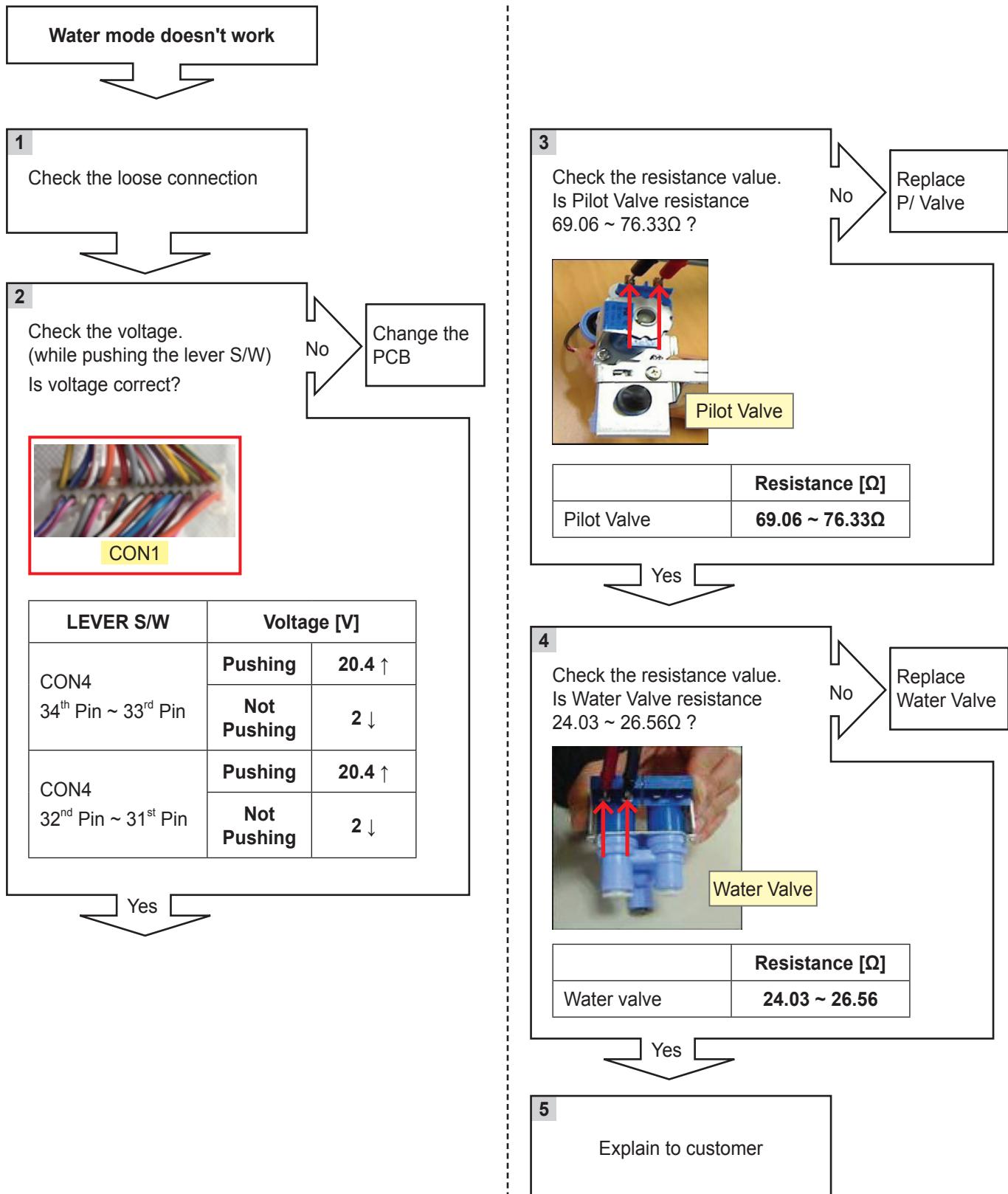
# Trouble Shooting with Error Display

## Internal water dispenser doesn't work

Symptom	Check Point
1. Water mode doesn't work	1. Check the loose connection 2. Check the resistance valve



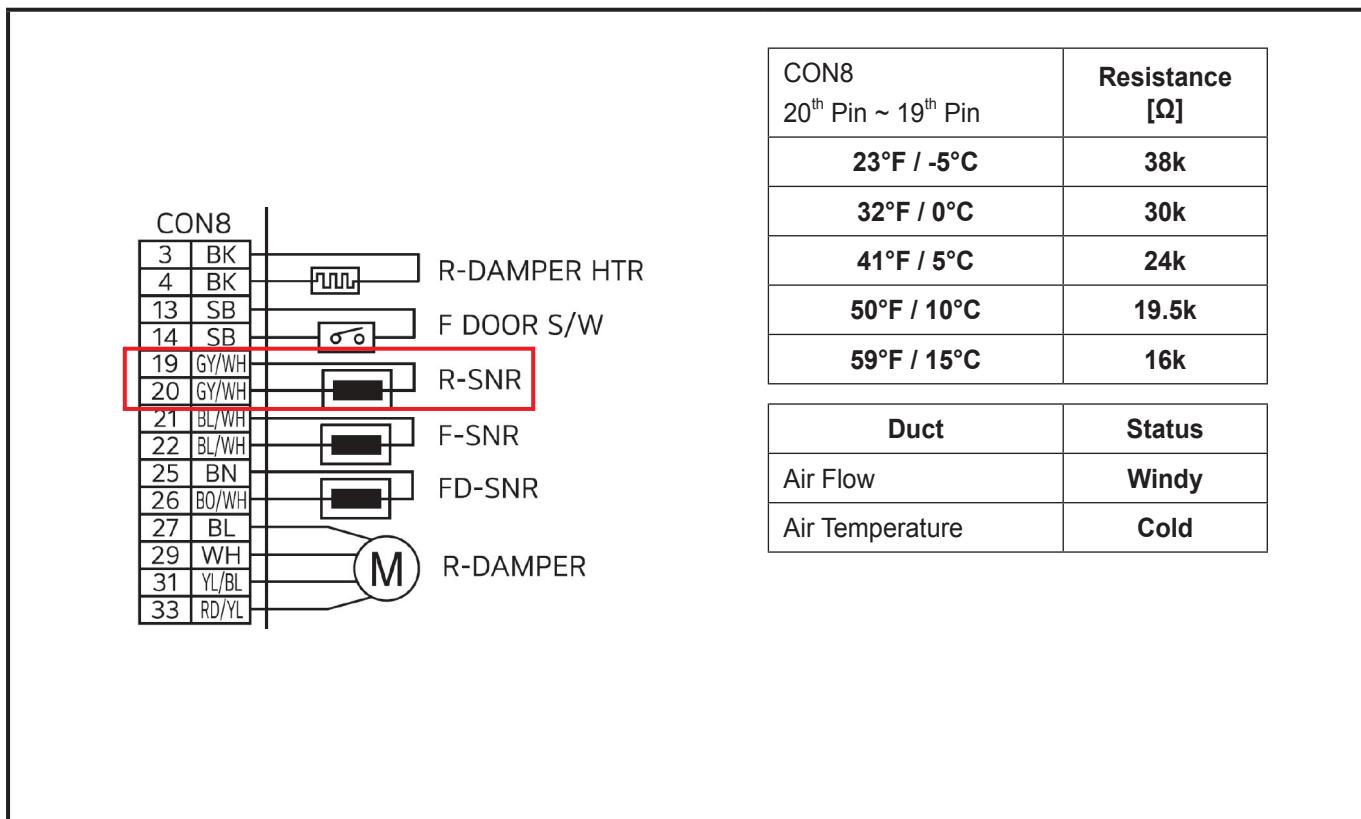
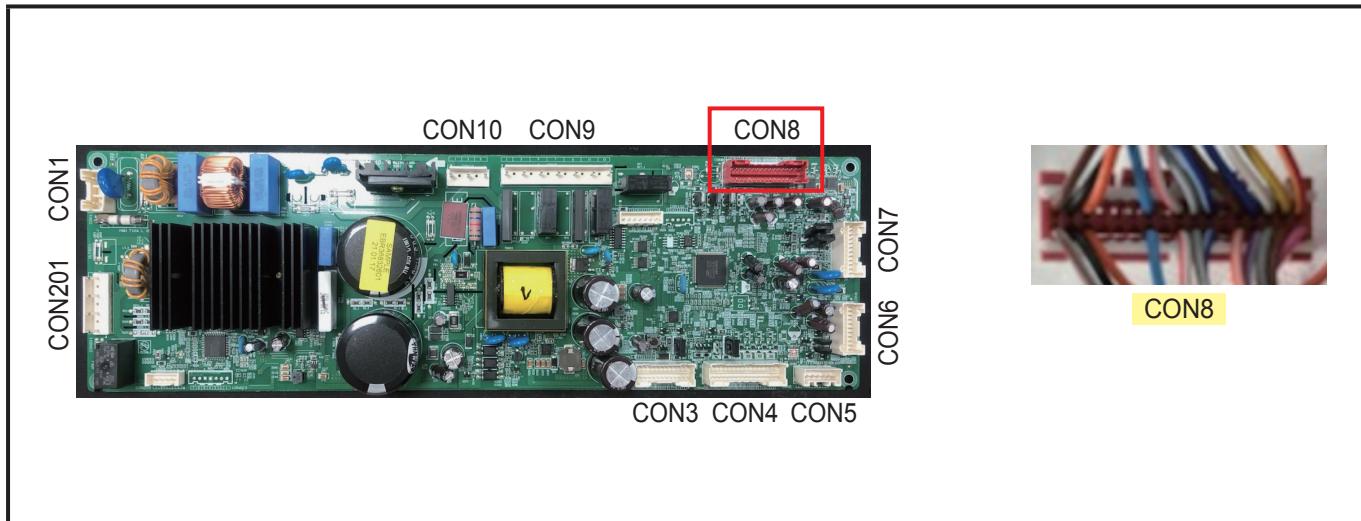
# Trouble Shooting with Error Display



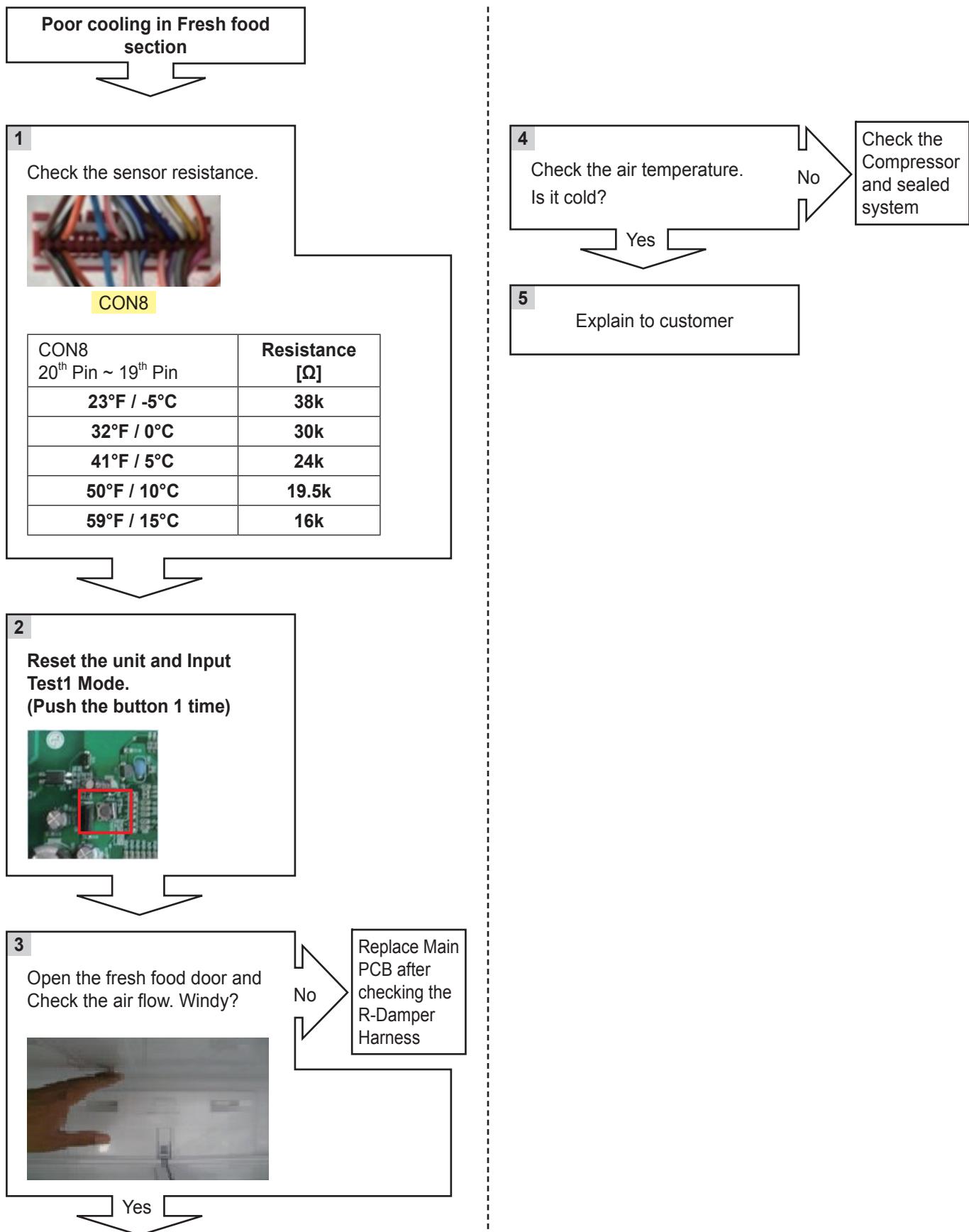
# Trouble Shooting with Error Display

## Poor cooling in Fresh food section

Symptom	Check Point
1. Poor cooling in Fresh food section	1. Check the sensor resistance 2. Check the air flow 3. Check the air Temperature 4. Check the R-Fan motor voltage



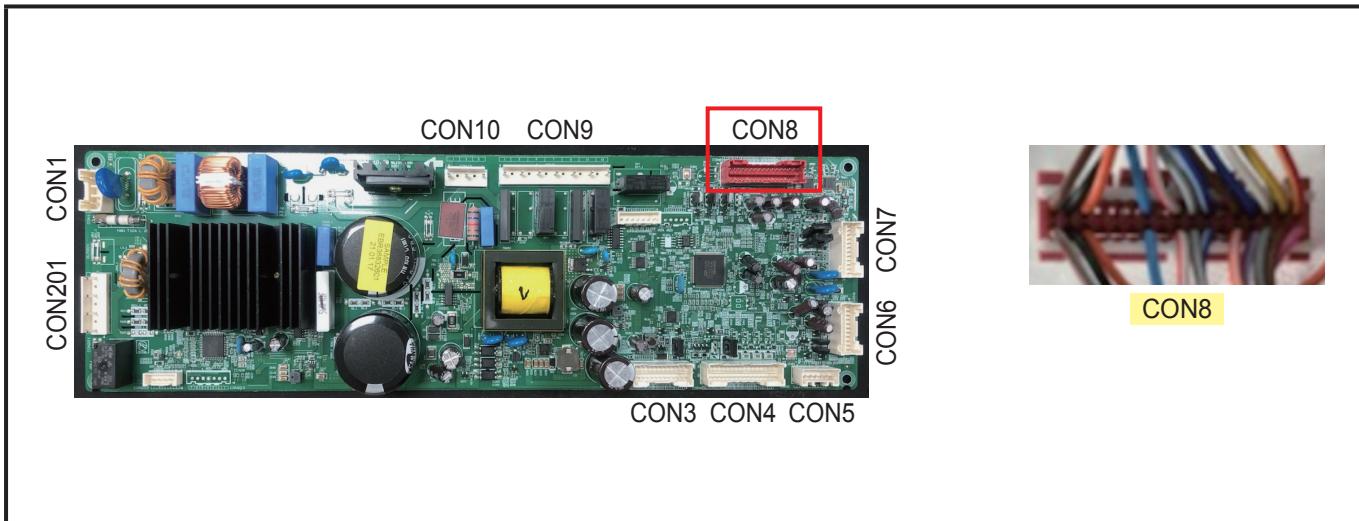
# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## Refrigerator room lamp doesn't work

Symptom	Check Point
1. Refrigerator room lamp doesn't work	1. Check the Refrigerator door switch 2. Check the door S/W resistance 3. Check the LED Lamp



		Resistance [Ω]
Door S/W	Closed	0
	Open	Infinity
Door Open		Voltage [V]
CON4	26 <sup>th</sup> Pin ~ 25 <sup>th</sup> Pin	11.4 ~ 12.6
		Voltage [V]
LED Lamp	Door Closed	0 ~ 2
	Door Open	11.4 ~ 12.6

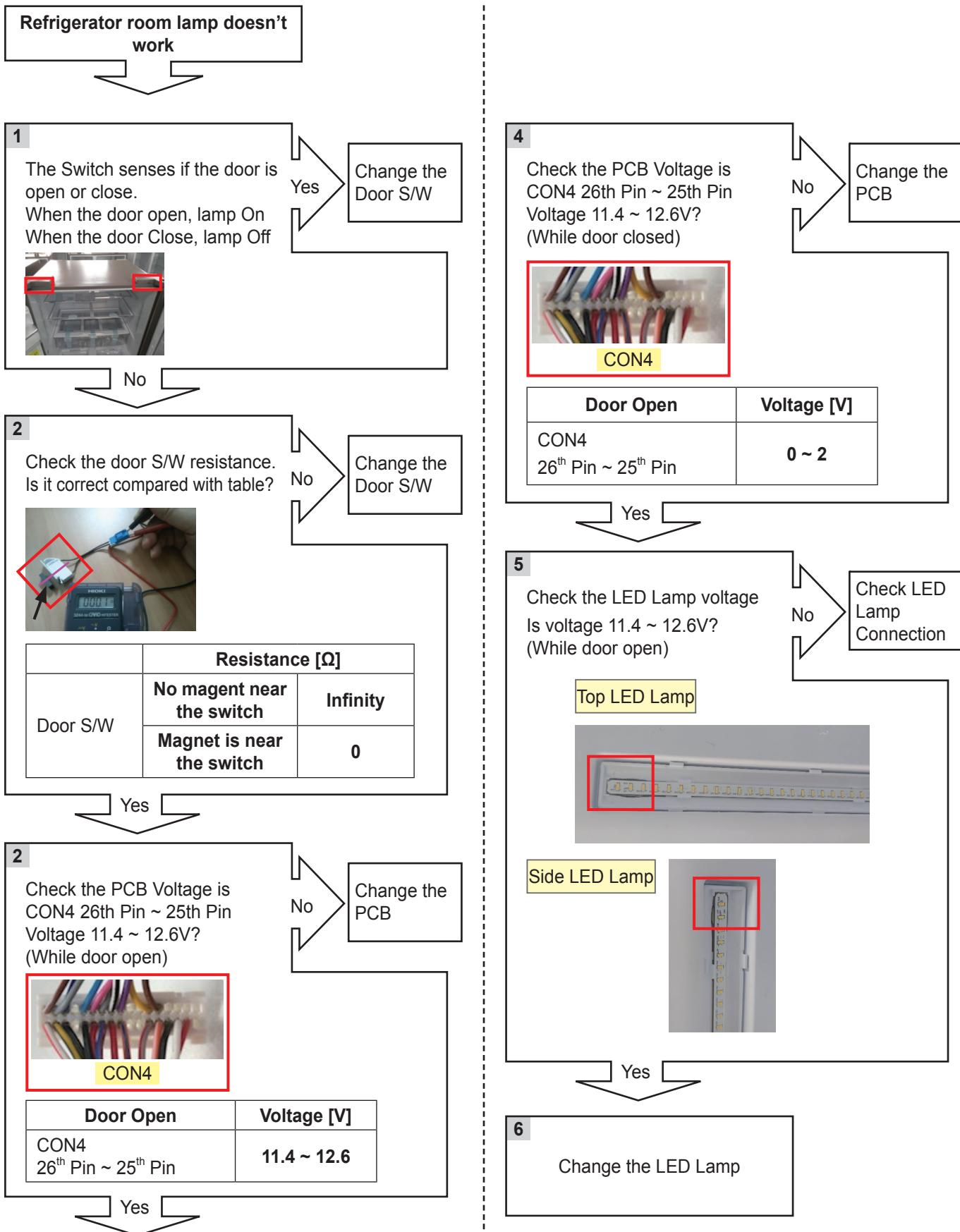
**CON4 Pinout:**

3 RD/YL	VCC
5 WH	SIGNAL
7 BK	GND
11 BN	
10 GY/RD	
17 B0/BL	
18 PR	
19 RD	
20 WH/BK	
21 BL/RD	
22 GY/WH	
23 RD	
24 PK	
25 BK	F
26 SB	G
30 BL	0W
29 BK	0W
32 GY	0W
31 YL/BL	0W
34 BN/VH	0W
33 WH/RD	0W

**Component Connections:**

- Pin 3 (RD/YL) connects to FLOW SNR.
- Pin 5 (WH) connects to INTERNAL WATER PAD.
- Pin 10 (GY/RD) connects to F-FAN MOTOR.
- Pin 22 (GY/WH) connects to C-FAN MOTOR.
- Pin 25 (BK) connects to CRAFT/CUBED ICE VALVE.
- Pin 26 (SB) connects to CUBED MINI ICE/INTERNAL WATER VALVE.
- Pin 30 (BL) connects to WATER PILOT VALVE.

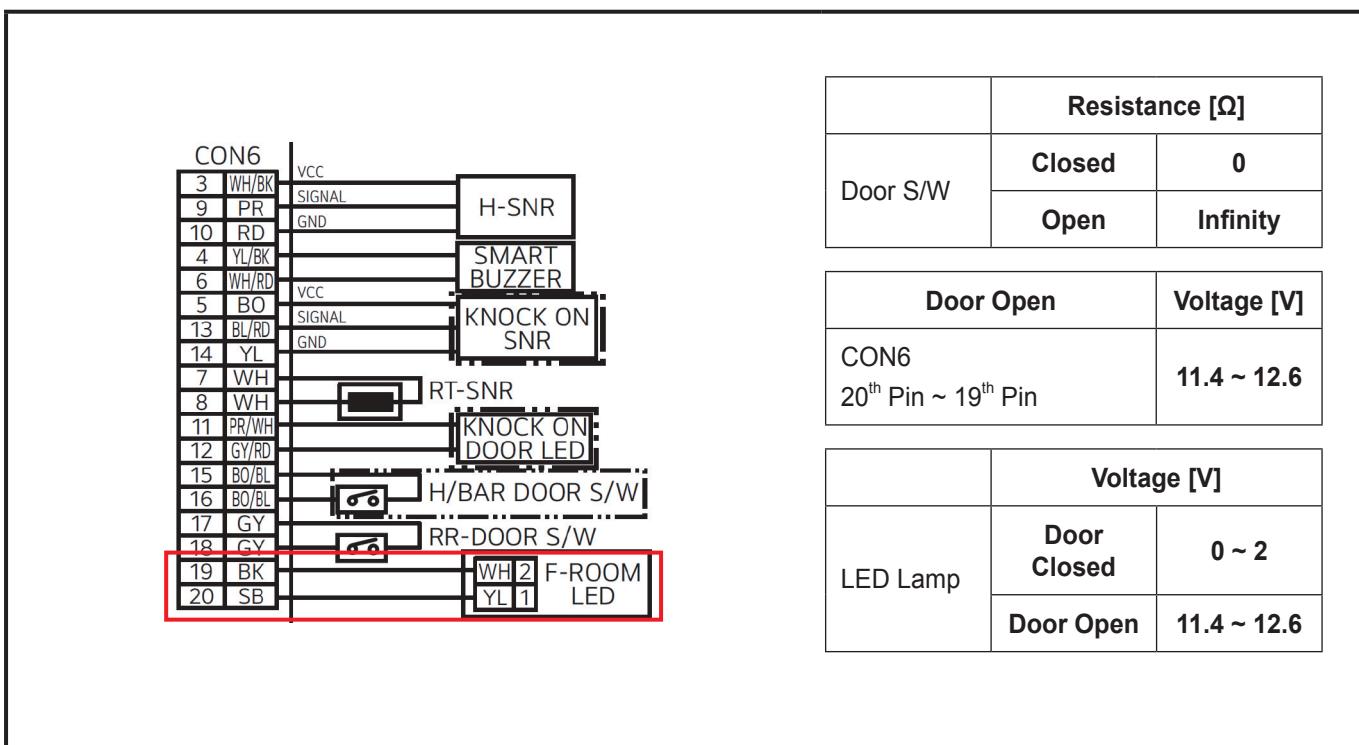
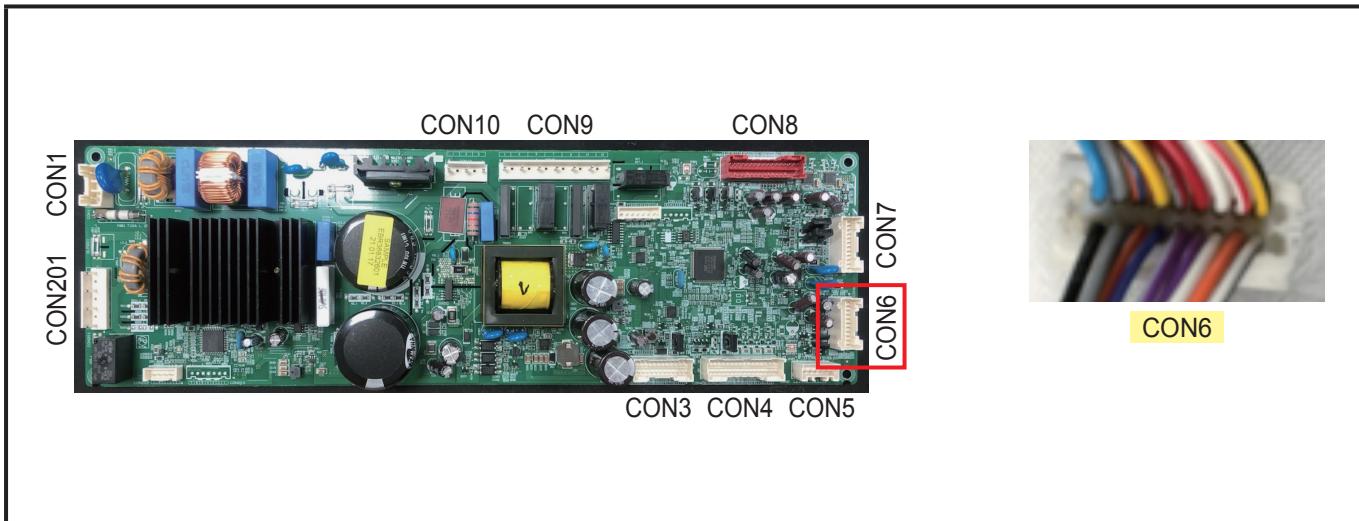
# Trouble Shooting with Error Display



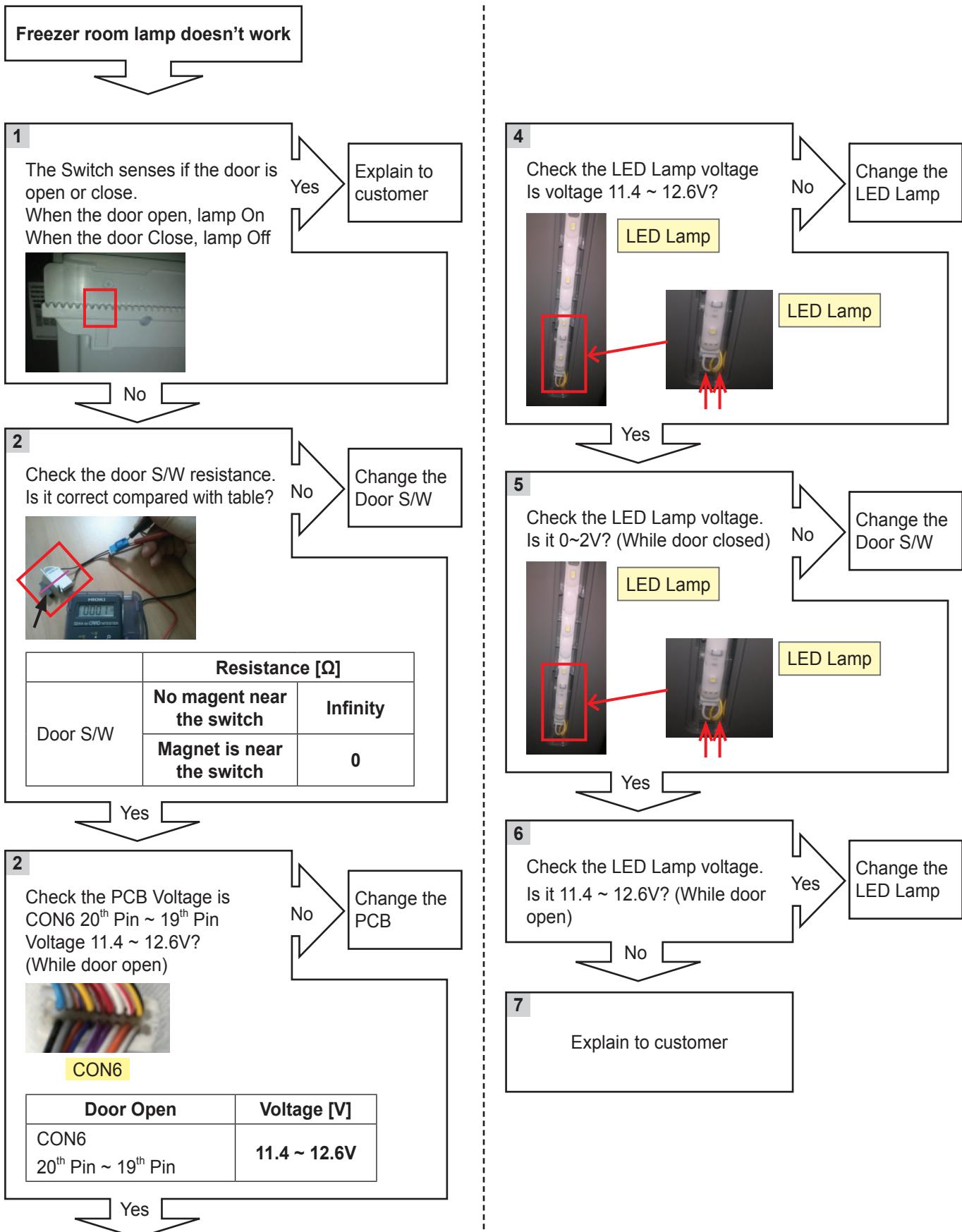
# Trouble Shooting with Error Display

## Freezer lamp doesn't work

Symptom	Check Point
1. Freezer room lamp doesn't work	<ol style="list-style-type: none"> <li>1. Check the freezer door switch</li> <li>2. Check the door S/W resistance</li> <li>3. Check the LED Lamp</li> </ol>



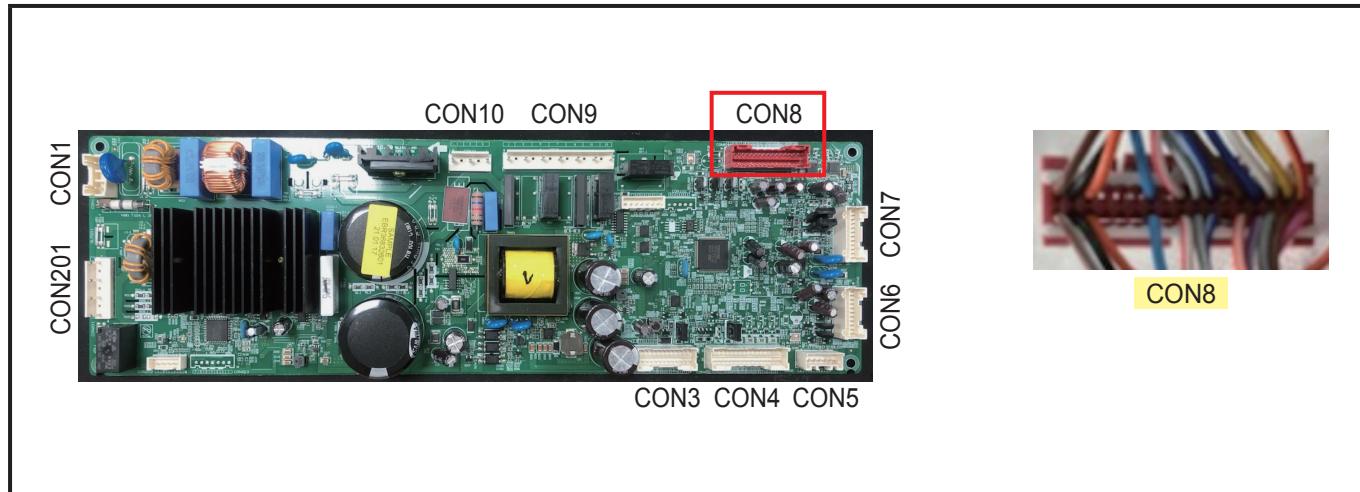
# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## Poor cooling in Freezer compartment

Symptom	Check Point
1. Poor cooling in Freezer compartment	<ol style="list-style-type: none"> <li>1. Check the sensor resistance</li> <li>2. Check the air flow</li> <li>3. Check the air Temperature</li> <li>4. Check the Fan motor sticky</li> <li>5. Check the Fan motor voltage</li> </ol>



CON8 22 <sup>nd</sup> Pin ~ 21 <sup>st</sup> Pin	Resistance [Ω]
-22°F / -30°C	40k
-13°F / -25°C	30k
-4°F / -20°C	23k
5°F / -15°C	17k
14°F / -10°C	13k
23°F / -5°C	10k
32°F / 0°C	8k

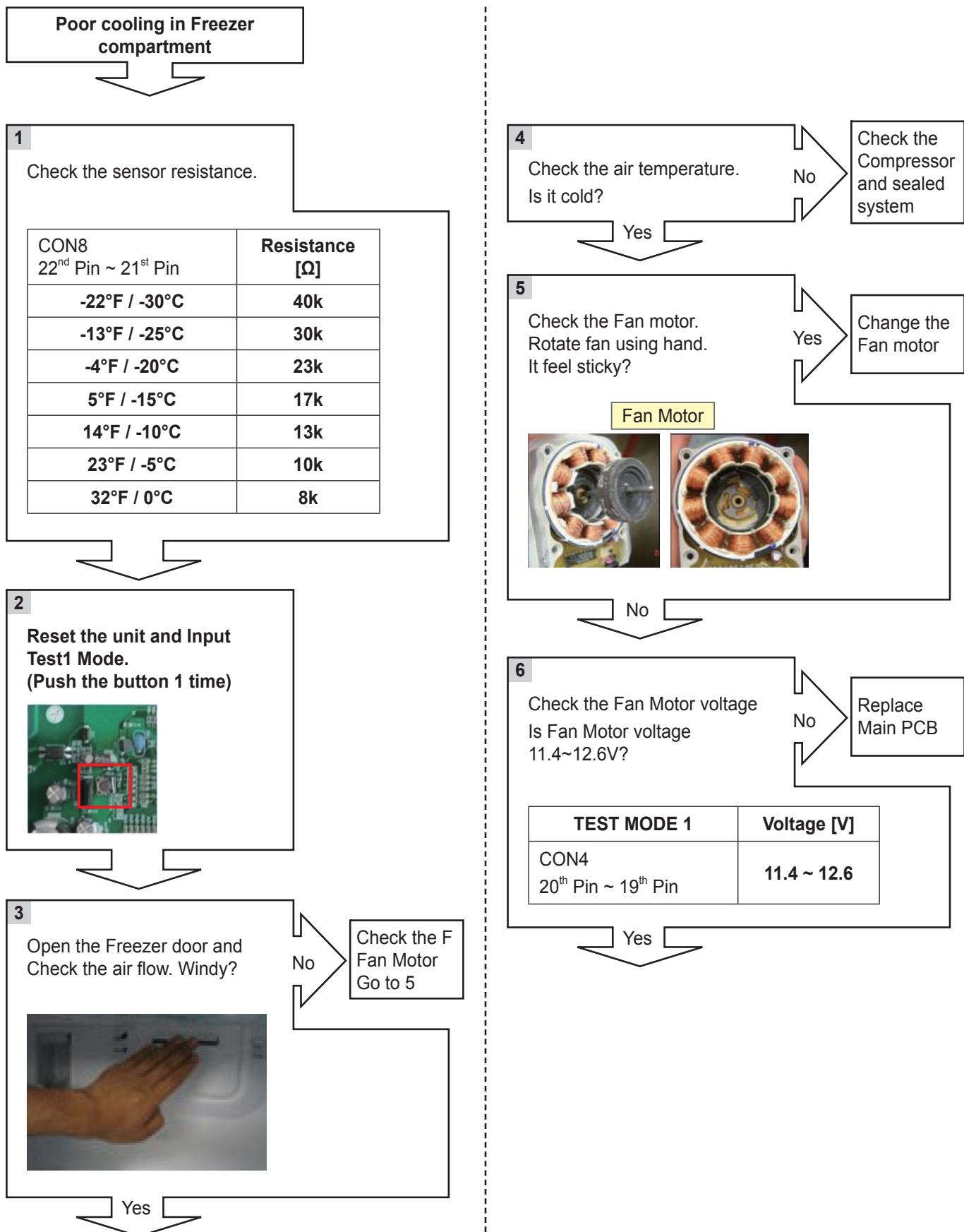
  

TEST MODE 1	Voltage [V]
CON4 20 <sup>th</sup> Pin ~ 19 <sup>th</sup> Pin	11.4 ~ 12.6
CON4 18 <sup>th</sup> Pin ~ 19 <sup>th</sup> Pin	0 or 5
CON4 17 <sup>th</sup> Pin ~ 19 <sup>th</sup> Pin	0 or 5

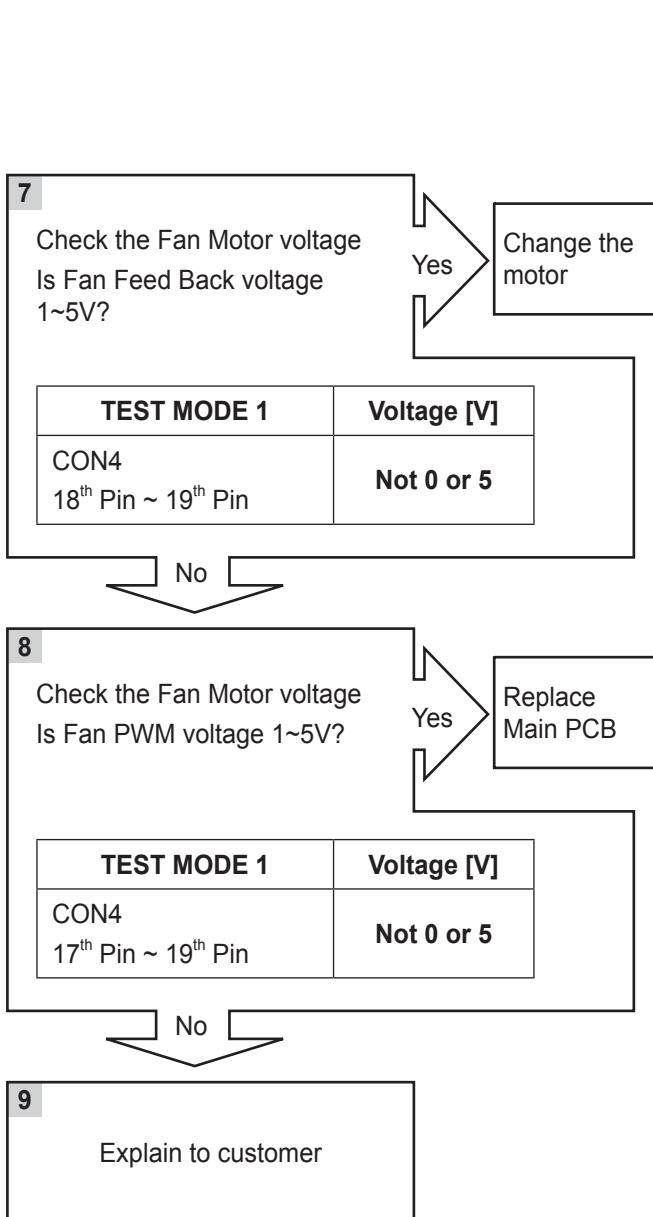
  

Duct	Status
Air Flow	Windy
Air Temperature	Cold

# Trouble Shooting with Error Display



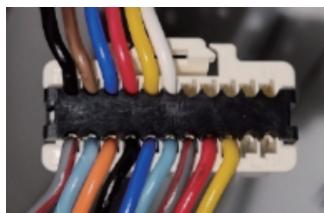
# Trouble Shooting with Error Display



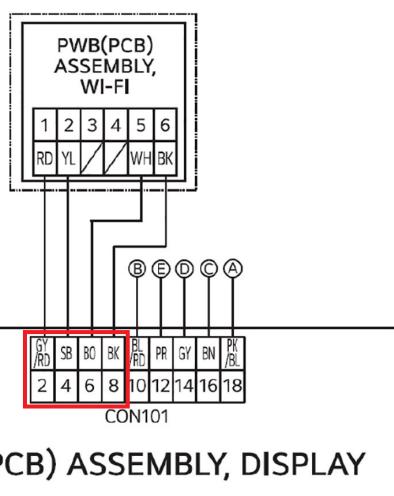
# Trouble Shooting with Error Display

## Wi-Fi Modem Error (E Od)

Symptom	Check Point
1. Wi-Fi modem doesn't work	1. Check connector 2. Display PCB 3. Wi-Fi modem PCB

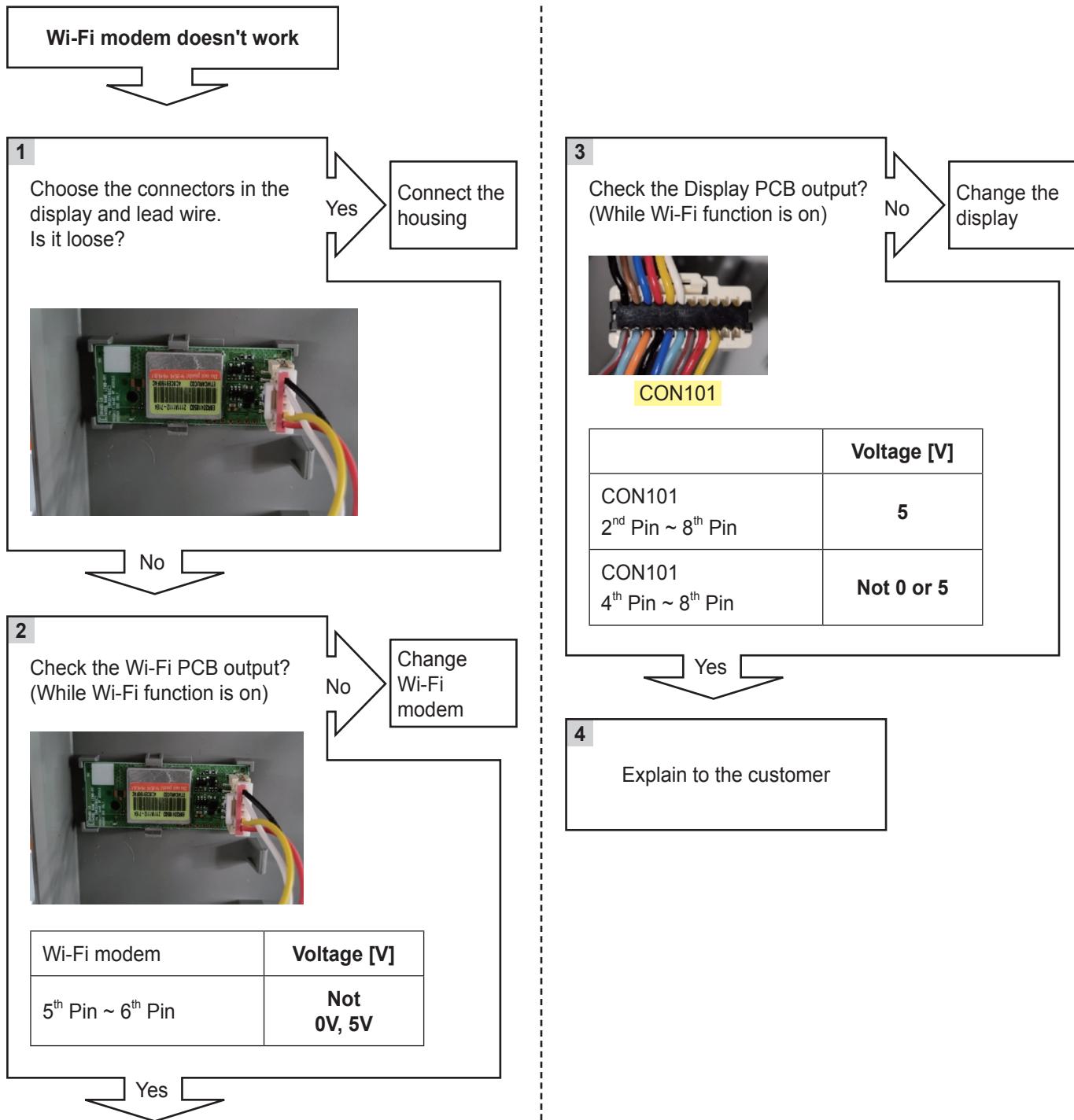


CON101



	Voltage [V]
CON101 2 <sup>nd</sup> Pin ~ 8 <sup>th</sup> Pin	5
CON101 4 <sup>th</sup> Pin ~ 8 <sup>th</sup> Pin	Not 0 or 5
CON101 6 <sup>th</sup> Pin ~ 8 <sup>th</sup> Pin	Not 0 or 5

# Trouble Shooting with Error Display



# Trouble Shooting with Error Display

## High/Low side Cycle leakage(Refrigerant leak or Sealed system problem) Error (E CH/E CL)

- Error CH or CL might be detected by refrigerant leak, sealed system, etc. Please follow smart svc process.

Symptom	Check Point
E CH (No cooling)  ※ This logic might be detected by high side refrigerant leak, restriction, bad comp, bad valve, etc.	<p>① The LG Refrigerator displays an error code on the display for sealed system problem. Through this error code(E CH or E CL), please follow svc process.</p> <p>② Through Step 1 using SVC App, you can know it is compressor or sealed system problem, or you can know it is normal(customer's emotional fault). If you have no SVC App jig, please check temperature using temperature gun.</p> <p>③ You check voltage to know whether it is a PCB problem or not.</p> <p>④ By checking the return time to the equilibrium pressure after measuring the pressure of the high pressure part (drier) and the low pressure part (comp processing pipe) of the sealed system, You can find sealed system is blocked or not. When there is clogging, it takes long time (15min ↑) to return to the equilibrium pressure.</p> <p>⑤ By checking equilibrium pressure, it is confirmed that there is sufficient refrigerant in the sealed system. Then it can be known that cause of "Not cooling" is whether compressor fault or sealed system leak.</p> <p>⑥ In case of leak of sealed system, leak test is carried out using refrigerant or nitrogen.</p> <p>⑦ Check the leak of high- pressure parts (Condenser, Drier, etc.).</p> <p>⑧ If there is no leak of high- pressure parts, Check the leak of low pressure parts (Evaporator, Suction pipe, etc.)</p> <p>⑨ <b>After sealed system repair, when freezer temperature is 14°F ↓, the error code will disappear automatically.</b> Check the leak using UV Drier (for next visit)</p>

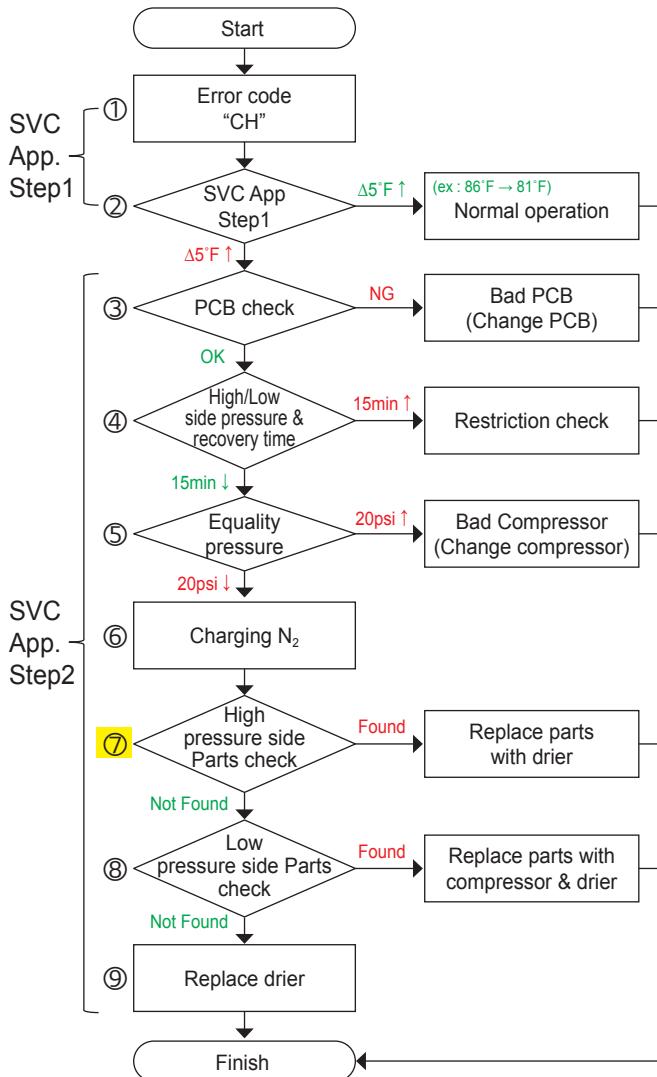
Symptom	Check Point
E CL (No cooling)  ※ This logic might be detected by low side refrigerant leak, bad comp, long time door open, etc.	<p>① The LG Refrigerator displays an error code on the display for sealed system problem. Through this error code(E CH or E CL), please follow svc process.</p> <p>② Through Step 1 using SVC App, you can know it is compressor or sealed system problem, or you can know it is normal(customer's emotional fault). If you have no SVC App jig, please check temperature using temperature gun.</p> <p>③ You check voltage to know whether it is a PCB problem or not.</p> <p>④ By checking the return time to the equalized pressure after measuring the pressure of the high pressure part(drier) and the low pressure part (comp processing pipe) of the sealed system, You can find sealed system is blocked or not. When there is clogging, it takes long time (15min ↑) to return to the equalized pressure.</p> <p>⑤ By checking equalized pressure, it is confirmed that there is sufficient refrigerant in the sealed system. Then it can be known that cause of "Not cooling" is whether compressor fault or sealed system leak.</p> <p>⑥ In case of leak of sealed system, leak test is carried out using refrigerant or nitrogen.</p> <p>⑦ Check the leak of low- pressure parts (Evaporator, Suction pipe, etc.)</p> <p>⑧ If there is no leak of low- pressure parts, Check the leak of high- pressure parts (Condenser, Drier, etc.)</p> <p>⑨ <b>After sealed system repair, when freezer temperature is 14°F ↓ , the error code will disappear automatically.</b> Check the leak using UV Drier (for next visit)</p>

# Trouble Shooting with Error Display

## Error CH, CL SVC Process

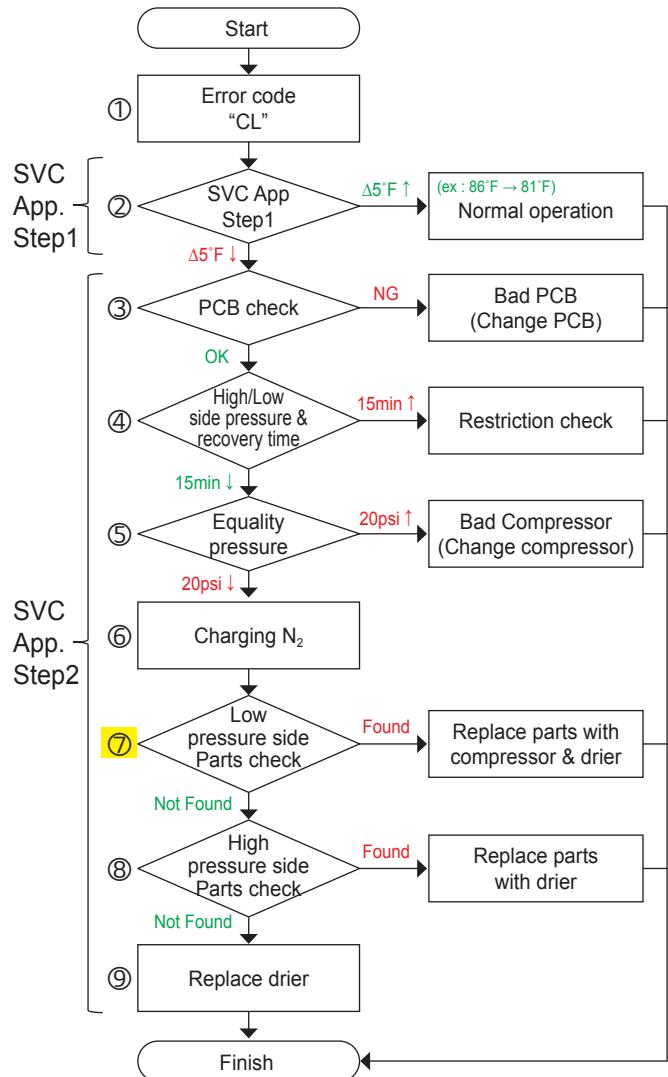
### 1. E CH : No Cooling

(High side refrigerant leak, Restriction, Bad comp, Bad valve, etc.)



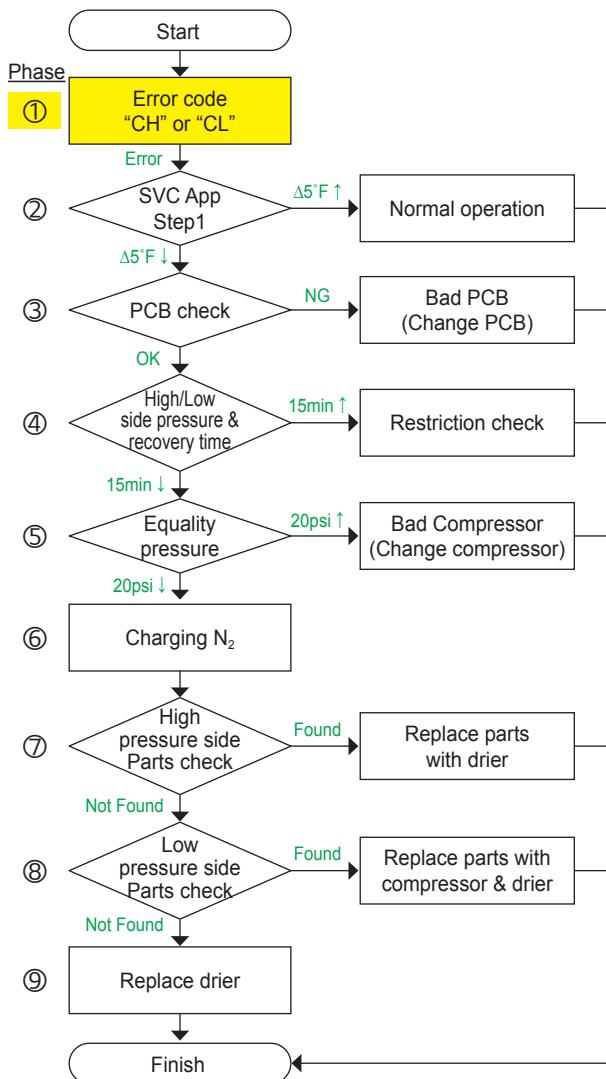
### 2. E CL : No Cooling

(Low side refrigerant leak, Bad comp, Long time door open, etc.)



# Trouble Shooting with Error Display

## STEP 1. Check Error Code

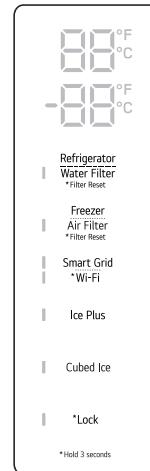


The LG Refrigerator displays an error code on the display for defrost or other electrical problems.

Press "Ice Plus" + "Freezer Temp" button for 3 seconds continuously until the beep sounds 3 times.

(these 2 buttons must be pressed within 10 minutes after plug in)

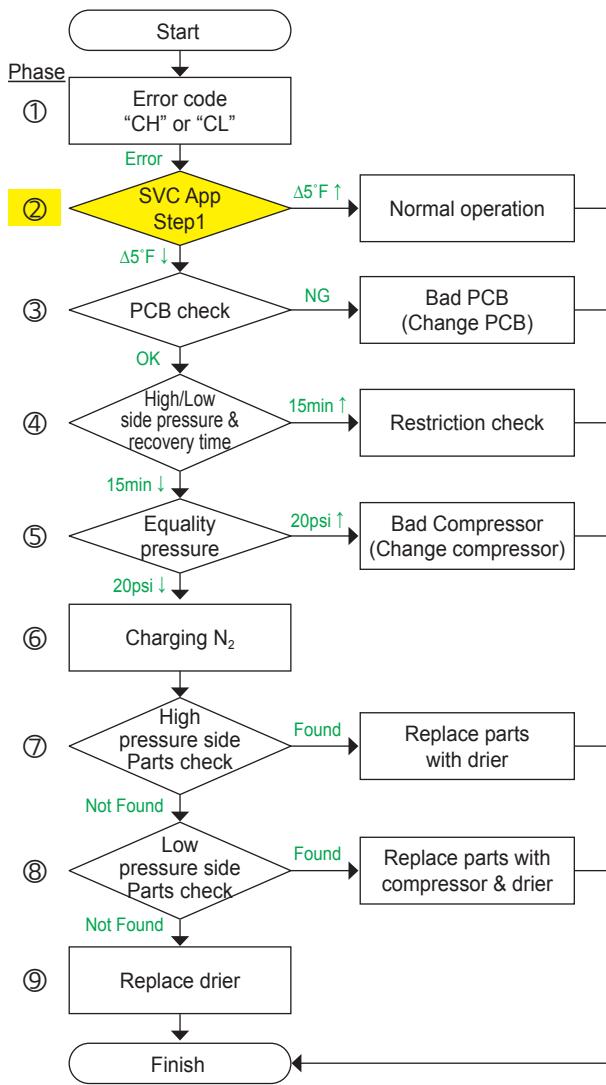
All On Mode



No	Error Detection Category	Error Display
1	Normality	88 88
2	Freezer sensor error	E FS
3	Refrigerator sensor error	E rS
4	Freezer defrost sensor error	F dS
5	Humidity sensor error	E HS
6	Freezer Icemaker sensor error	E IS
7	Room temp. sensor error	E rt
8	Freezer Icemaker kit defect	E lt
9	Freezer defrosting error	F dH
10	Abnormality of BLDC fan motor for freezer	E FF
11	Abnormality of BLDC fan motor for machine room	E CF
12	Communication error	E CO
13	Wi-Fi modem error	E Od
14	High side cycle leakage	E CH
15	Low side cycle leakage	E CL

# Trouble Shooting with Error Display

## STEP 2. Check sealed system

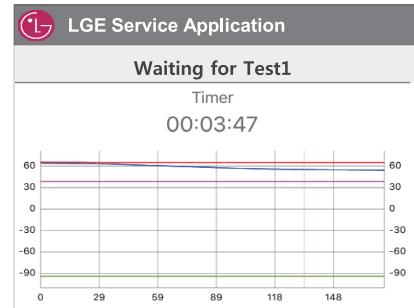


Through the SVC App Step1, we can determine whether the sealed system problem or not. The temperature measured in Step1 is the temperature from the sensor of the evaporator. The temperature of freezer or refrigerator has remained virtually unchanged for a short time. So we can determine the reason of No cool is if sealed system problem or other problem through the temperature of evaporator.

[The Wi-Fi Module](#)



[SVC App](#)



[SVC App, check temp. of eva.](#)

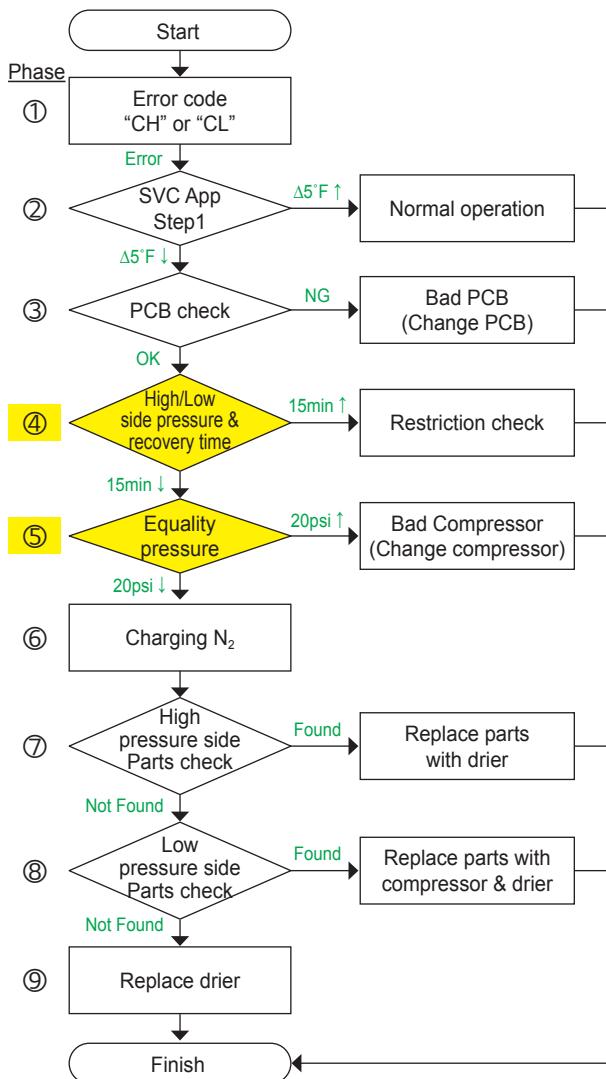


Only R evaporator be cooled during 5 minute in this test.  
Need to wait 6.5 minute.  
Please check temperature change while you are waiting.  
\*3Way parameter indicate status of valve position.

Next

# Trouble Shooting with Error Display

## STEP 3~4. Check restriction or comp



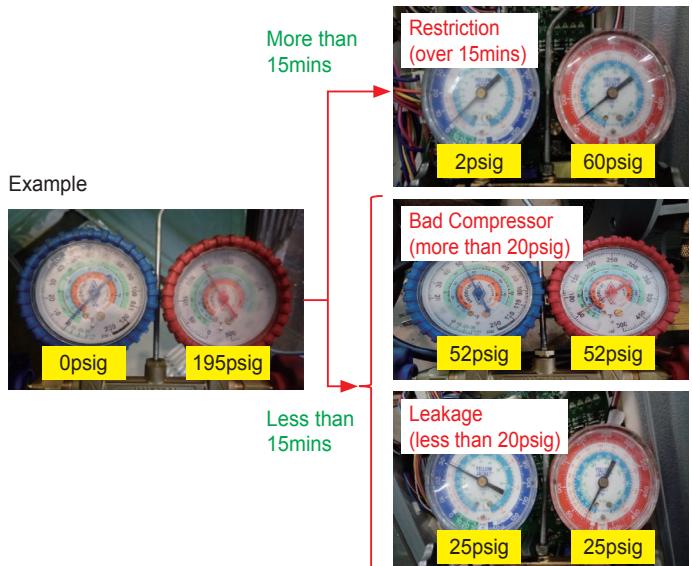
Through phase4 and 5, we can see major defects in the sealed system.

In phase 4, we can see whether the sealed system is blocked or not.

In phase 5, we can see whether it is bad Compressor or leakage problem.

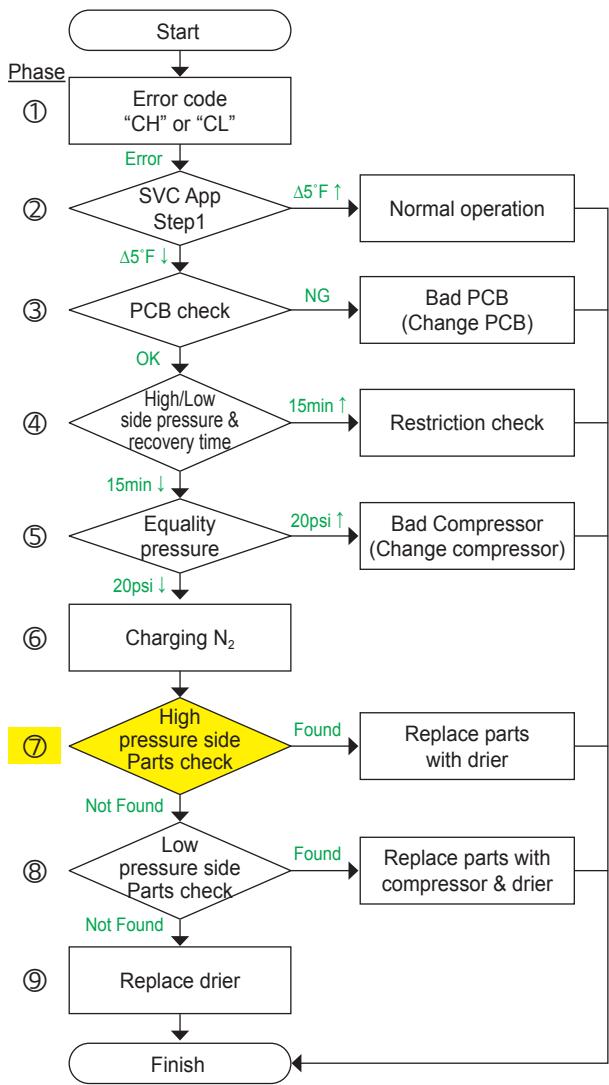
If the time for equilibrium between high pressure side and low pressure side after power off in phase 4 is more than 15 minutes, we judge it is a blockage. Normally, it take time within about 5 minutes.

If the equilibrium pressure is more than 20psi in phase 5, it is determined that the refrigerant is normally charged and the compressor is defective. However, if the equilibrium pressure is 20psi or less, it is judged that the refrigerant is leaked and we have to move the process of finding the leakage point and parts.



# Trouble Shooting with Error Display

## STEP 5. Check high pressure side parts



E CH: Check Phase 7. If high pressure side is no problem, please check Phase 8.

E CL : Check Phase 8. If low pressure side is no problem, please check Phase 7.

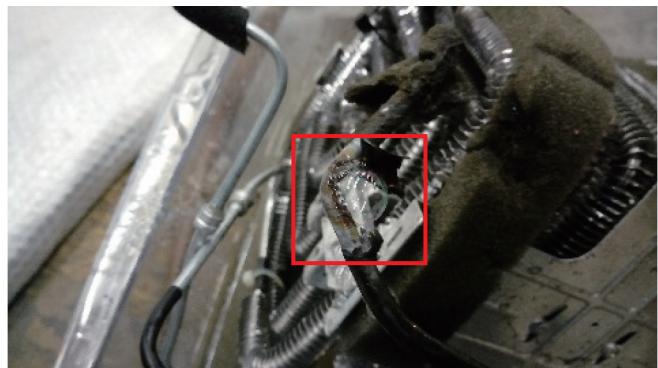
If the equilibrium pressure is less than 20psi in phase5, it should be determined that the refrigerant is leaked and we have to find leakage point and parts.

First of all, check from the high pressure part which is easy to find the leakage part.

Through bubble or refrigerant leak detector, we can check compressor discharge pipe, drier and condenser.

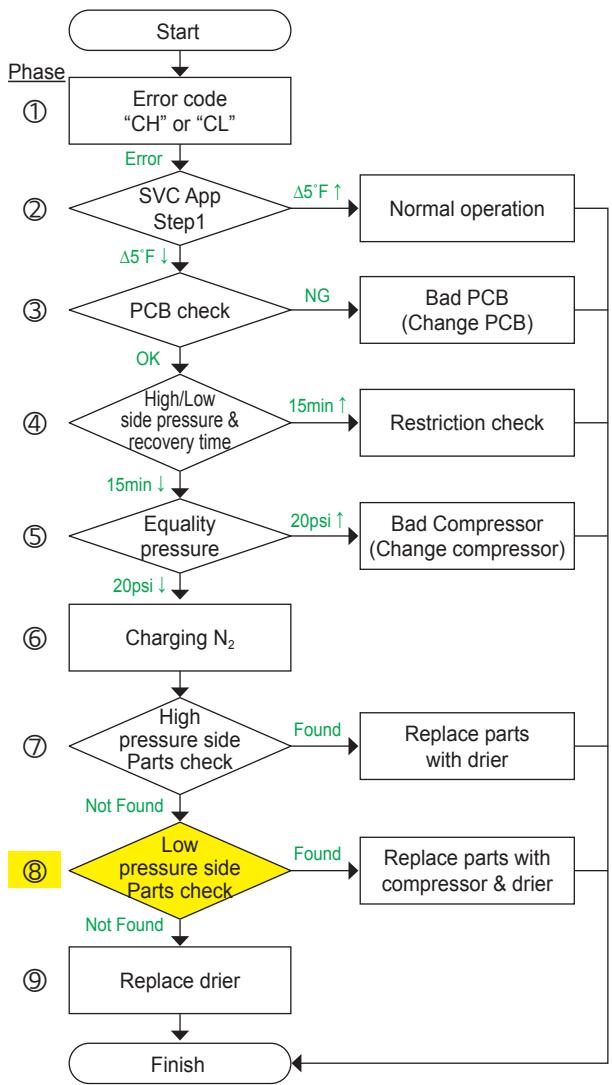
If you see a leak, replace the part and drier. After repairing all sealed systems, replace drier.

Because the moisture of air can lead to carbonization of compressor oil and corrosion of sealed system components.



# Trouble Shooting with Error Display

## STEP 6. Check low pressure side parts



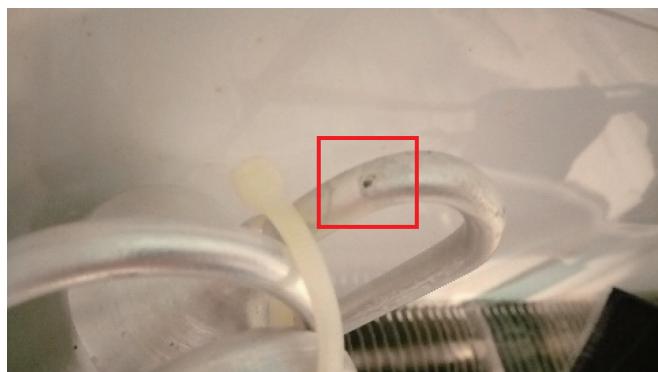
E CH : Check Phase 7. If high pressure side is no problem, please check Phase 8.

E CL : Check Phase 8. If low pressure side is no problem, please check Phase 7.

If leakage is not found during the high pressure side leak test in phase7, the low pressure side leakage should be inspected.

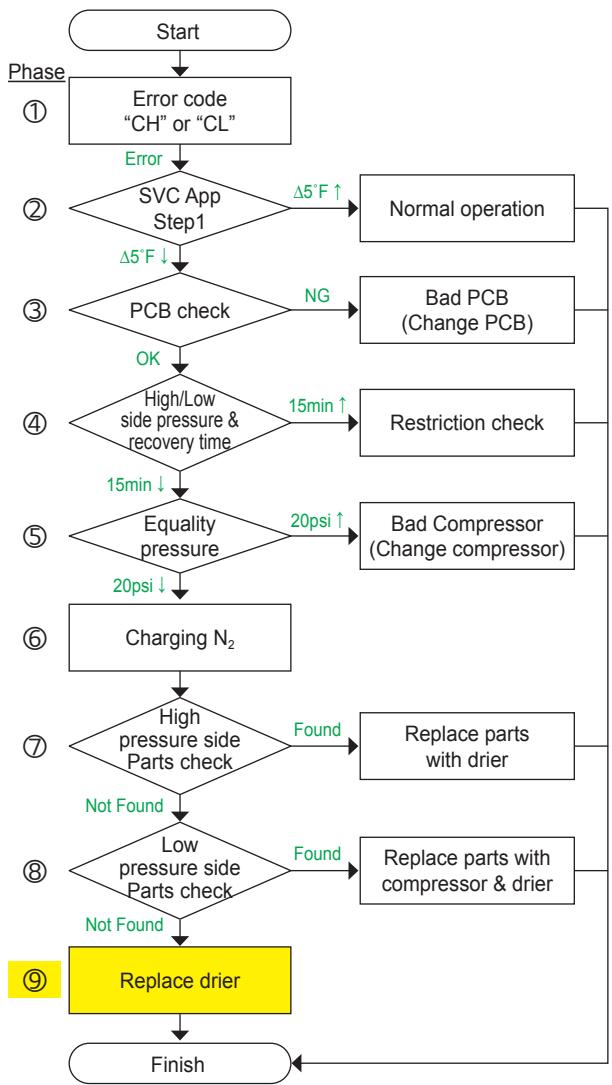
Use the bubble and refrigerant leak detector in the same way as the high pressure leak test, and look for the leakage point. Because the low pressure side is lower than the atmospheric pressure at the time of leakage, it is very likely that the moisture in the air has entered.

Therefore, if you find leakage in the low pressure side parts, replace both the drier and compressor, too.



# Trouble Shooting with Error Display

## STEP 7. Check the leak using UV Driver



The SVC drier contains UV fluorescent material. So it is called UV drier and also called Dye drier.

The refrigerant leakage is certain but we can not find the refrigerant leakage part, there is a way to check the leakage parts at the next SVC after using the UV drier.

Fluorescent materials melt in the compressor oil and refrigerant. It travel around the sealed system and leak out when the compressor oil and refrigerant leaks out.

Through UV light and UV goggles, you can see the leaked parts

※ After sealed system repair,

When freezer temperature is 14°F ↓ (after a day), the error code will disappear.

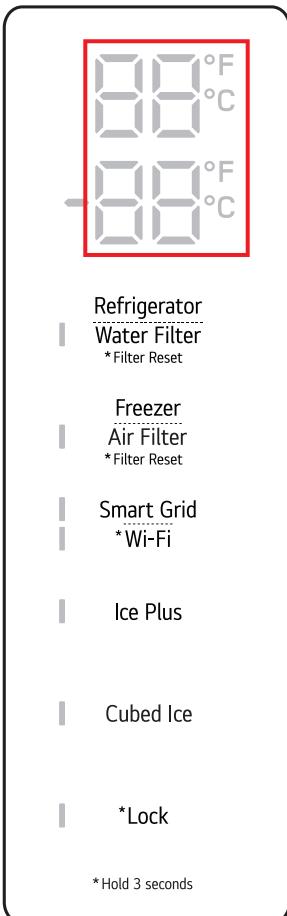


# Reference

## TEST MODE and Removing TPA



Main PCB



\* 1 time : Comp/Damper/All FAN on  
(All things displayed)

88  
-88

\* 2 times : Damper closed  
(22 22 displayed)

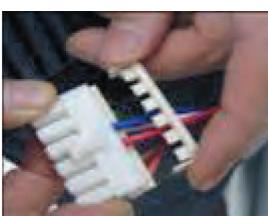
22  
22

\* 3 times : Forced defrost mode  
(33 33 displayed)

33  
33

## 2. How to remove Terminal Position Assurance (TPA)

<AC TPA>



<DC TPA>



After measure the values, you should put in the TPA again.

# Reference

## Temperature Chart - Freezer and Icing Sensor

TEMP	RESISTANCE	VOLTAGE
-39°F (-40°C)	73.29 kΩ	4.09 V
-30°F (-35°C)	53.63 kΩ	3.84 V
-30°F (-21°C)	39.66 kΩ	3.55 V
-13°F (-25°C)	29.62 kΩ	3.23 V
-4°F (-20°C)	22.33 kΩ	2.89 V
5°F (-15°C)	16.99 kΩ	2.56 V
14°F (-10°C)	13.05 kΩ	2.23 V
23°F (-5°C)	10.10 kΩ	1.92 V
32°F (0°C)	7.88 kΩ	1.63 V
41°F (+5°C)	6.19 kΩ	1.38 V
50°F (+10°C)	4.91 kΩ	1.16 V
59°F (+15°C)	3.91 kΩ	0.97 V
68°F (+20°C)	3.14 kΩ	0.81 V
77°F (+25°C)	2.54 kΩ	0.67 V
86°F (+30°C)	2.07 kΩ	0.56 V
95°F (+35°C)	1.69 kΩ	0.47 V
104°F (+40°C)	1.39 kΩ	0.39 V

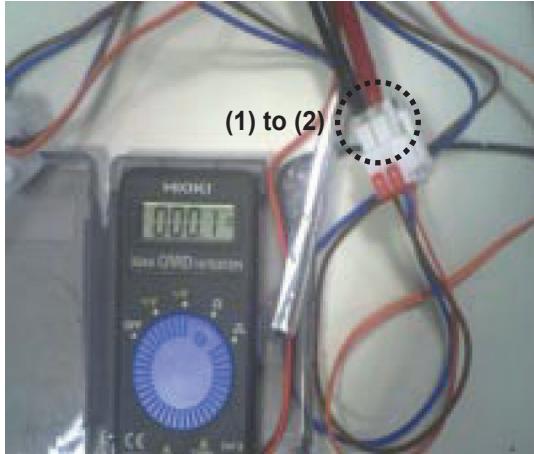
# Reference

## Temperature Chart - Refrigerator and Defrost Sensor

TEMP	RESISTANCE	VOLTAGE
-39°F (-40°C)	225.1 kΩ	4.48 V
-30°F (-35°C)	169.8 kΩ	4.33 V
-30°F (-21°C)	129.3 kΩ	4.16 V
-13°F (-25°C)	99.30 kΩ	3.95 V
-4°F (-20°C)	76.96 kΩ	3.734 V
5°F (-15°C)	60.13 kΩ	3.487 V
14°F (-10°C)	47.34 kΩ	3.22 V
23°F (-5°C)	37.55 kΩ	2.95 V
32°F (0°C)	30 kΩ	2.67 V
41°F (+5°C)	24.13 kΩ	2.40 V
50°F (+10°C)	19.53 kΩ	2.14 V
59°F (+15°C)	15.91 kΩ	1.89 V
68°F (+20°C)	13.03 kΩ	1.64 V
77°F (+25°C)	10.74 kΩ	1.45 V
86°F (+30°C)	8.89 kΩ	1.27 V
95°F (+35°C)	7.40 kΩ	1.10 V
104°F (+40°C)	6.20 kΩ	0.96 V

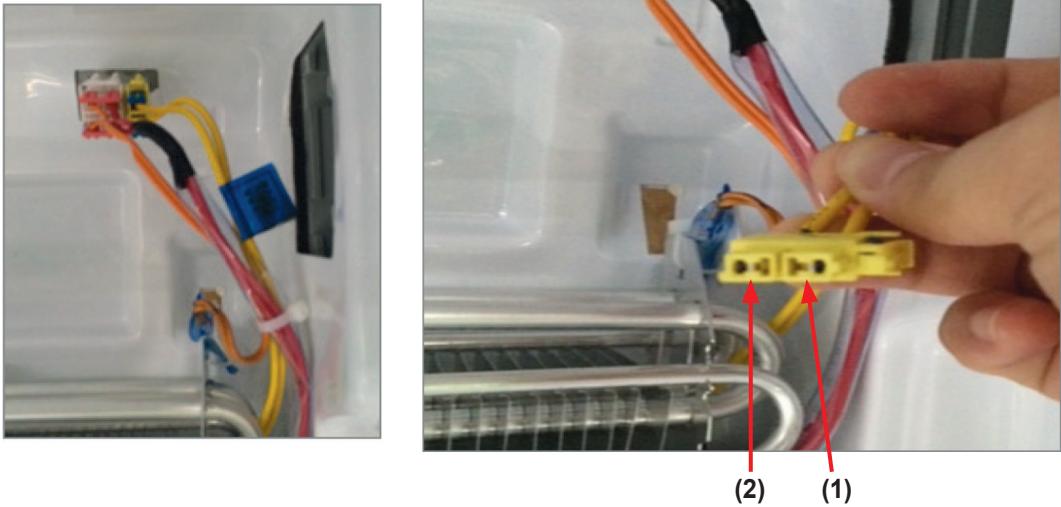
# Component Testing Information

## Defrost Controller Assembly

<b>Function</b>	The controller assembly is made up of two different kinds of parts. The fuse and the sensor. To determine if these parts are defective, check for resistance. The fuse will cut power to the defrost heater at very high temperatures.										
<b>How to Measure (Fuse-M)</b>	 <p>Set a ohmmeter to the 2 housing pin. Measure the 2 pin connected to Fuse-M. If the ohmmeter indicate below 0.1ohm fuse-m is a good condition, But if infinite the part is bad.</p>										
<b>How to Measure (Sensor)</b>	 <p>Set a ohmmeter to The 2housing pin. Measure the 2 pin connected to Sensor. If the ohmmeter indicate 11 kΩ (at room temperature) Sensor is good. When check the ohm at other temperatures Check the sensor manual.</p>										
<b>Standard</b>	<b>Fuse-M (at all temperature)</b> <table border="1"> <thead> <tr> <th>Test Point</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>(1) to (2)</td> <td>0 ~ 0.1 Ω</td> </tr> </tbody> </table>		Test Point	Result	(1) to (2)	0 ~ 0.1 Ω	<b>Sensor (at room temperature)</b> <table border="1"> <thead> <tr> <th>Test Point</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>(1) to (2)</td> <td>11 Ω</td> </tr> </tbody> </table>	Test Point	Result	(1) to (2)	11 Ω
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# Component Testing Information

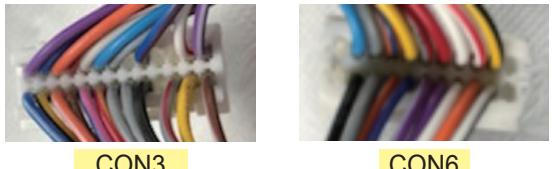
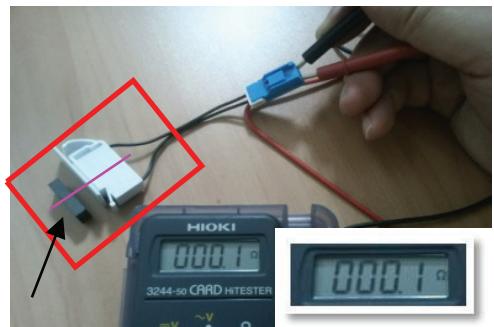
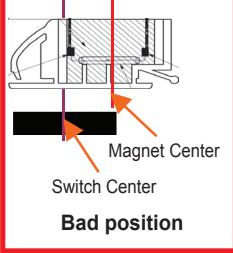
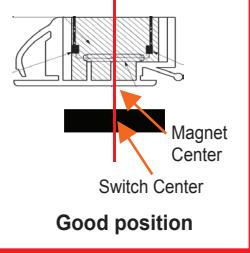
## Sheath Heater (Freezer Room)

<b>Function</b>	Sheath heater is the part for defrost. All heating wire is connected to only one line. So we can decide part is defective or not when we check the resistance.				
<b>How to Measure</b>	 <p>Set a ohmmeter connect to The housing pins. Measure the pins connected to Sheath Heater. If the ohmmeter indicates <math>(V \times V)/P = R</math> (<math>V</math>=voltage, <math>P</math>=watt, <math>R</math>=Resistance) is on a good condition, ex) watt=200W, voltage=115V <math>R=(115 \times 115)/200=66 \Omega</math> Infinitive value implies sheath heater is disconnected.</p>				
<b>Standard</b>	<p><b>Sheath heater (at all temperature)</b></p> <table border="1"><thead><tr><th>Test Point</th><th>Result(<math>\Omega</math>)</th></tr></thead><tbody><tr><td>(1) to (2)</td><td>62 ~ 70</td></tr></tbody></table>	Test Point	Result( $\Omega$ )	(1) to (2)	62 ~ 70
Test Point	Result( $\Omega$ )				
(1) to (2)	62 ~ 70				

# Component Testing Information

## Door Switch

### 1. Door Switch,R

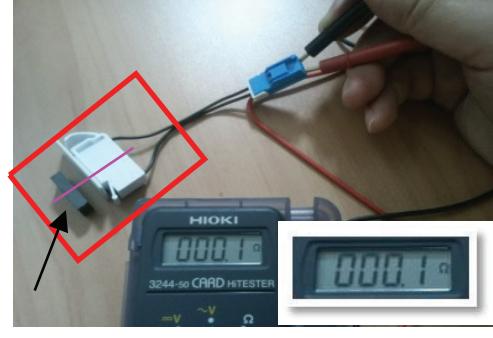
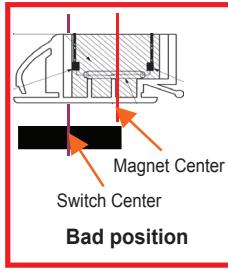
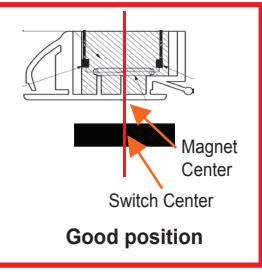
No.	Checking Flow	Result & SVC Action																				
1	<p>► Check Reed Switch</p> 	<p>The Switch senses if the door is open or close.</p> <ul style="list-style-type: none"> <li>• When the door open, lamp On</li> <li>• When the door Close, lamp Off</li> </ul> <p>※ close Door and check the lamp Through the gap</p>																				
2	<p>► Check the voltage Between CON3 14<sup>th</sup> Pin and 11<sup>th</sup> Pin, CON6 18<sup>th</sup> Pin and 17<sup>th</sup> Pin</p>  <p>CON3                          CON6</p>	<table border="1"> <thead> <tr> <th>Status</th> <th>Result</th> <th>SVC Action</th> </tr> </thead> <tbody> <tr> <td>In case of Door Close</td> <td>1V ↑</td> <td>1. Check Reed S/W 2. Check Harness disconnection 3. If No.1,2 ok, change PCB</td> </tr> <tr> <td>In case of Door Open</td> <td>0V</td> <td>1. Check Reed S/W 2. Check Harness disconnection 3. If No.1,2 ok, change PCB</td> </tr> </tbody> </table>			Status	Result	SVC Action	In case of Door Close	1V ↑	1. Check Reed S/W 2. Check Harness disconnection 3. If No.1,2 ok, change PCB	In case of Door Open	0V	1. Check Reed S/W 2. Check Harness disconnection 3. If No.1,2 ok, change PCB									
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3	<p>► Check the Reed S/W resistance</p> <p>- No Magnet</p>  <p>- Magnet Near the Switch</p> 	<p>- Magnet must be center of Switch</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Magnet Center</p> <p>Switch Center</p> <p>Bad position</p> </div> <div style="text-align: center;">  <p>Magnet Center</p> <p>Switch Center</p> <p>Good position</p> </div> </div> <p>(X)                          (O)</p> <p>- Resistance &amp; Service Action</p> <table border="1"> <thead> <tr> <th>Status</th> <th>Resistance</th> <th>Result</th> <th>SVC Action</th> </tr> </thead> <tbody> <tr> <td rowspan="2">No magnet near the Switch</td> <td><math>\infty\Omega</math></td> <td>O.K</td> <td>Go to 2</td> </tr> <tr> <td>10Ω ↓</td> <td>N.G</td> <td>Go to 4</td> </tr> <tr> <td rowspan="2">Magnet is near the Switch</td> <td>1Ω ↓</td> <td>O.K</td> <td>Go to 2</td> </tr> <tr> <td>10Ω ↑</td> <td>N.G</td> <td>Go to 4</td> </tr> </tbody> </table>			Status	Resistance	Result	SVC Action	No magnet near the Switch	$\infty\Omega$	O.K	Go to 2	10Ω ↓	N.G	Go to 4	Magnet is near the Switch	1Ω ↓	O.K	Go to 2	10Ω ↑	N.G	Go to 4
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	10Ω ↑	N.G	Go to 4																			

# Component Testing Information

No.	Checking Flow	Result & SVC Action
4	<p>► Change Reed S/W</p> <ul style="list-style-type: none"> <li>- Remove screw</li> </ul>  <ul style="list-style-type: none"> <li>- Disassemble Housing</li> </ul>  <ul style="list-style-type: none"> <li>- Check Resistance of Reed S/W. if it is NG, change it(Number3)</li> <li>- Assemble Reed S/W to hinge cover and Assemble Reed S/W Housing</li> </ul>  <ul style="list-style-type: none"> <li>- Assemble Screw to hinge cover</li> </ul> 	

# Component Testing Information

## 2. Door Switch,F

No.	Checking Flow	Result & SVC Action																				
1	<p>► Check the Freezer door switch</p> 	<p>The Switch senses if the door is open or close.</p> <ul style="list-style-type: none"> <li>• When the door open, lamp On</li> <li>• When the door Close, lamp Off</li> </ul> <p>※ close Door and check the lamp Through the gap</p>																				
2	<p>► Check the voltage Between CON8 14<sup>th</sup> Pin and 13<sup>th</sup> Pin</p>  <p>CON8</p>	<table border="1"> <thead> <tr> <th>Status</th> <th>Result</th> <th>SVC Action</th> </tr> </thead> <tbody> <tr> <td>In case of Door Close</td> <td>1V ↑</td> <td>           1. Check Reed S/W            2. Check Harness disconnection            3. If No.1,2 ok, change PCB         </td> </tr> <tr> <td>In case of Door Open</td> <td>0V</td> <td>           1. Check Reed S/W            2. Check Harness disconnection            3. If No.1,2 ok, change PCB         </td> </tr> </tbody> </table>			Status	Result	SVC Action	In case of Door Close	1V ↑	1. Check Reed S/W 2. Check Harness disconnection 3. If No.1,2 ok, change PCB	In case of Door Open	0V	1. Check Reed S/W 2. Check Harness disconnection 3. If No.1,2 ok, change PCB									
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3	<p>► Check the Reed S/W resistance</p> <ul style="list-style-type: none"> <li>- No Magnet</li> </ul>  <ul style="list-style-type: none"> <li>- Magnet Near the Switch</li> </ul> 	<ul style="list-style-type: none"> <li>- Magnet must be center of Switch</li> </ul> <div style="display: flex; justify-content: space-around;">   </div> <p><b>(X)      (O)</b></p> <ul style="list-style-type: none"> <li>- Resistance &amp; Service Action</li> </ul> <table border="1"> <thead> <tr> <th>Status</th> <th>Resistance</th> <th>Result</th> <th>SVC Action</th> </tr> </thead> <tbody> <tr> <td rowspan="2">No magnet near the Switch</td> <td><math>\infty\Omega</math></td> <td>O.K</td> <td>Go to 2</td> </tr> <tr> <td><math>10\Omega \downarrow</math></td> <td>N.G</td> <td>Go to 4</td> </tr> <tr> <td rowspan="2">Magnet is near the Switch</td> <td><math>1\Omega \downarrow</math></td> <td>O.K</td> <td>Go to 2</td> </tr> <tr> <td><math>10\Omega \uparrow</math></td> <td>N.G</td> <td>Go to 4</td> </tr> </tbody> </table>			Status	Resistance	Result	SVC Action	No magnet near the Switch	$\infty\Omega$	O.K	Go to 2	$10\Omega \downarrow$	N.G	Go to 4	Magnet is near the Switch	$1\Omega \downarrow$	O.K	Go to 2	$10\Omega \uparrow$	N.G	Go to 4
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# Component Testing Information

No.	Checking Flow	Result & SVC Action
4	<p>► Change Reed S/W</p> <ul style="list-style-type: none"> <li>- Remove 3 screw and divide housing</li> </ul>   <ul style="list-style-type: none"> <li>- Divide Reed S/W</li> </ul>   <ul style="list-style-type: none"> <li>- Push the part of hook and divide Reed S/W</li> <li>- Check the Reed S/W resistance and if it is NG. Change it (Number 3)</li> <li>- Push the Reed S/W to direction of the arrow</li> </ul>   <ul style="list-style-type: none"> <li>- Assemble 3 Screw after Assemble Reed Switch housing</li> </ul>  	

# Component Testing Information

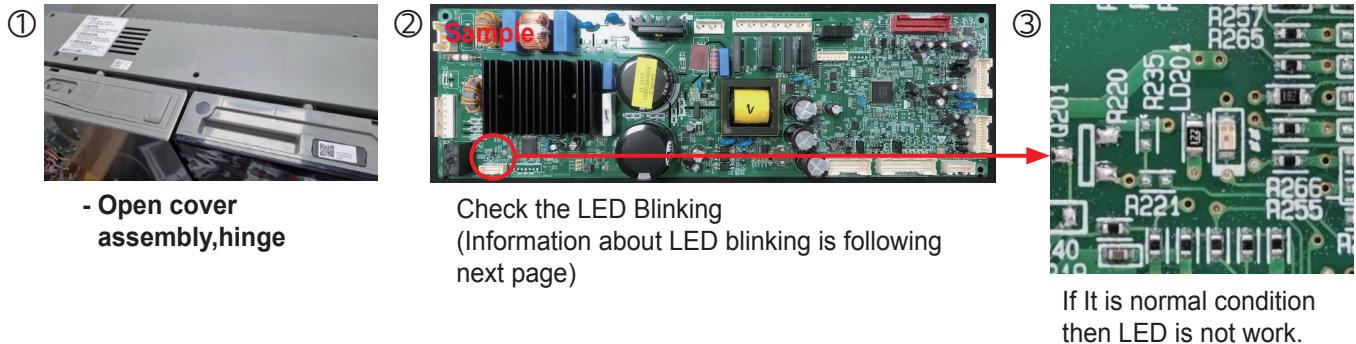
## Damper

<b>Function</b>	The damper supplies cold air from the freezer to the chill room using the damper plate. The chill room is colder when the damper plate is open. When the damper is closed the chill rooms temperature will rise.																										
<b>How to Measure</b>	<p><b>Table(1) : 결선도(Wirering)</b></p> <p><b>Table(2) : 2-2상 여자손사(CW Rotation)</b></p> <table border="1"> <thead> <tr> <th>Housing No. &amp; L/Wire Color</th> <th>Step</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>1- Blue (A)</td> <td>+</td> <td>-</td> <td>-</td> <td>+</td> </tr> <tr> <td>2- Red (B)</td> <td>+</td> <td>+</td> <td>-</td> <td>-</td> </tr> <tr> <td>3- White (AT)</td> <td>-</td> <td>+</td> <td>+</td> <td>-</td> </tr> <tr> <td>4- Yellow (B)</td> <td>-</td> <td>-</td> <td>+</td> <td>+</td> </tr> </tbody> </table> <p style="text-align: center;"><b>&lt; Damper Circuit &gt;</b></p> <p><b>Check the (1), (3)</b></p> <p><b>Check the (2), (4)</b></p> <p><b>Check the (1), (3)</b></p> <p>Check to see if there is electrical current, if there is resistance the damper is good.</p>	Housing No. & L/Wire Color	Step	1	2	3	4	1- Blue (A)	+	-	-	+	2- Red (B)	+	+	-	-	3- White (AT)	-	+	+	-	4- Yellow (B)	-	-	+	+
Housing No. & L/Wire Color	Step	1	2	3	4																						
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3- White (AT)	-	+	+	-																							
4- Yellow (B)	-	-	+	+																							
<b>Standard</b>	<p><b>Damper</b></p> <table border="1"> <thead> <tr> <th>Test Points</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Red and Yellow</td> <td>270~330 Ω</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Test Points</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Blue and White</td> <td>270~330 Ω</td> </tr> </tbody> </table>	Test Points	Result	Red and Yellow	270~330 Ω	Test Points	Result	Blue and White	270~330 Ω																		
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# Compressor Troubleshooting

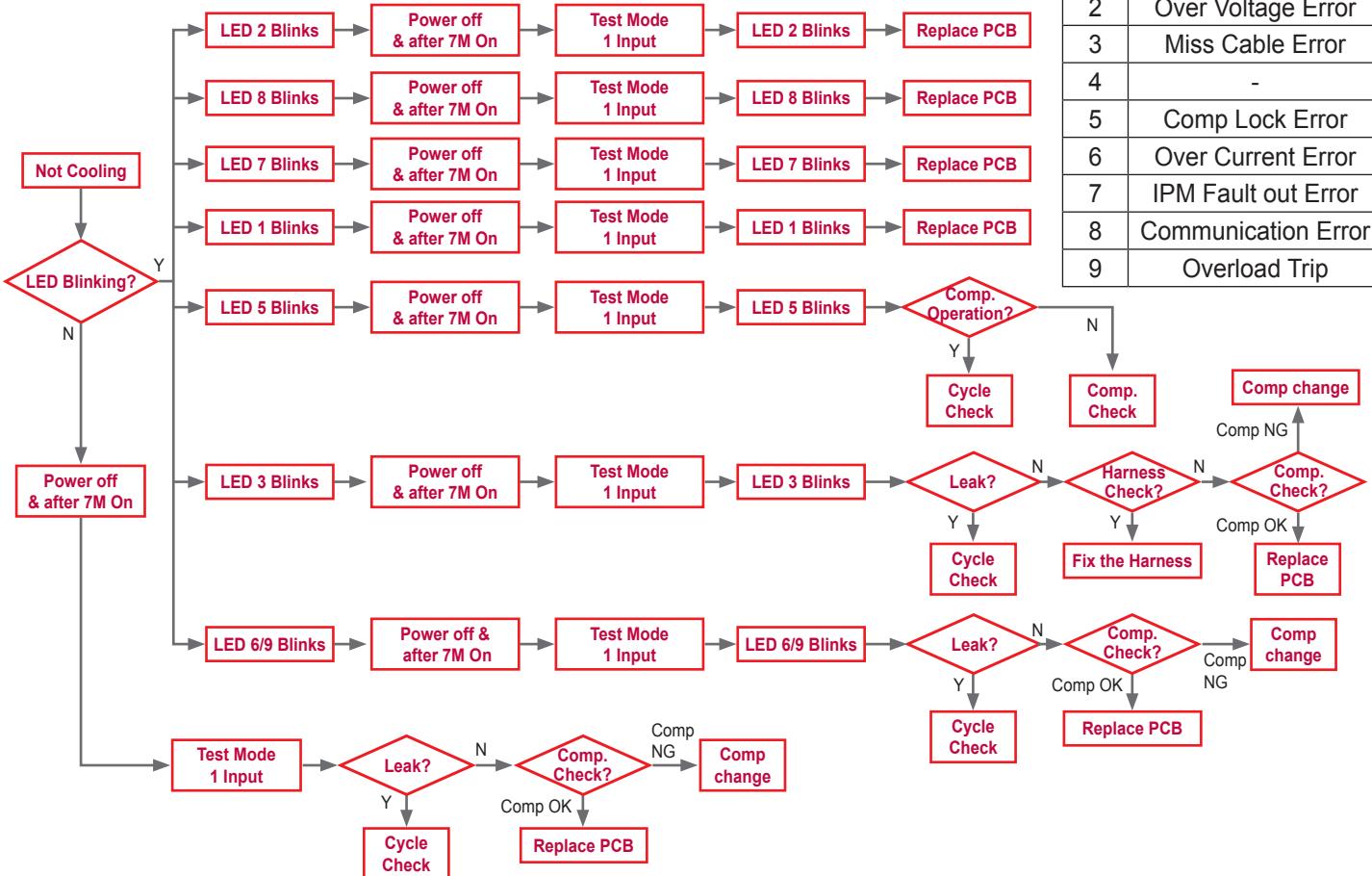
## Linear Inverter LED Blinking Troubleshooting

### Comp Operation Defect



If the Comp & Fan is not operated then input the test mode and check the comp condition.  
(Operation or not)

### - Simple Check Flow Chart



# Compressor Troubleshooting

## Trip & LED Blinking Information

### 1. FCT0 Trip & LED 1 Blink (FCT0 Fault)



- Purpose : Sensing fault check
- Logic: Comp Off & restart every 30s.



### 2. Over Voltage Trip & LED 2 Blink (Over Voltage Fault)

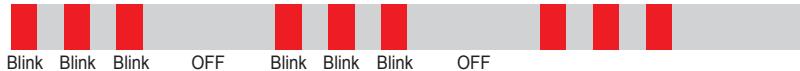


- Purpose : For protection from Over Voltage
- Reason : Over Voltage input to DC Links(Over 450Vdc)
- Logic: Comp Off & restart every 240s

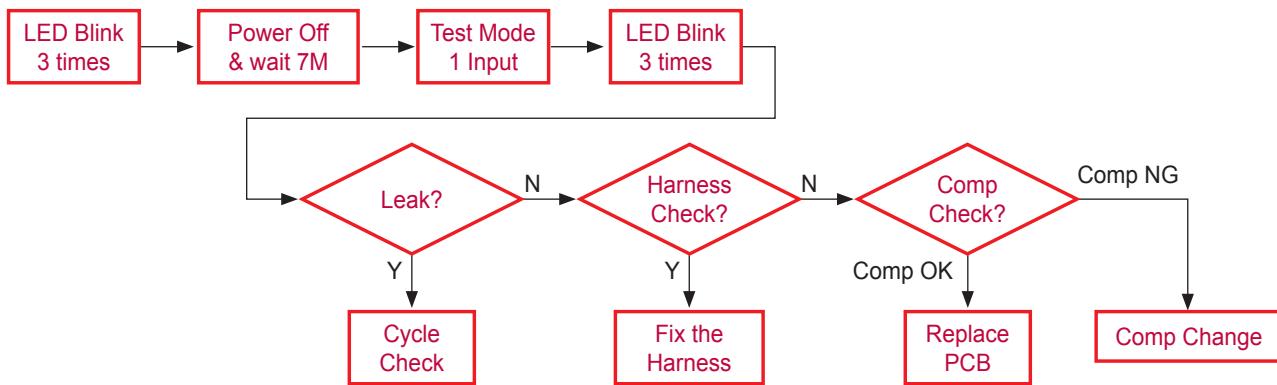


# Compressor Troubleshooting

## 3. Miss Cable Trip & LED 3 blink (Miss Cable Error)



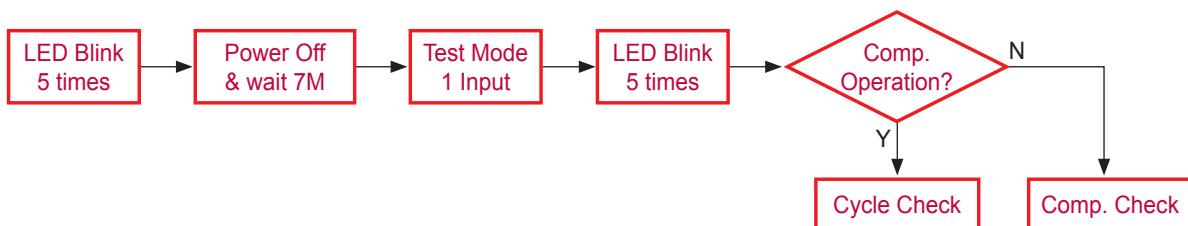
- Purpose : For protection from Miss cable
- Reason : The fault Harness that between PCBA and Comp
- Logic : Comp. Off & restart every 270s



## 4. Locked Rotor Trip & LED 5 Blink (Locked Rotor)



- Purpose : Check the rotor's locked condition
- Reason : Oil empty in cylinder, damaged cylinder or piston, discharge valve clogged, foreign in the comp inside
- Logic : Comp. Off & restart every 330s



# Compressor Troubleshooting

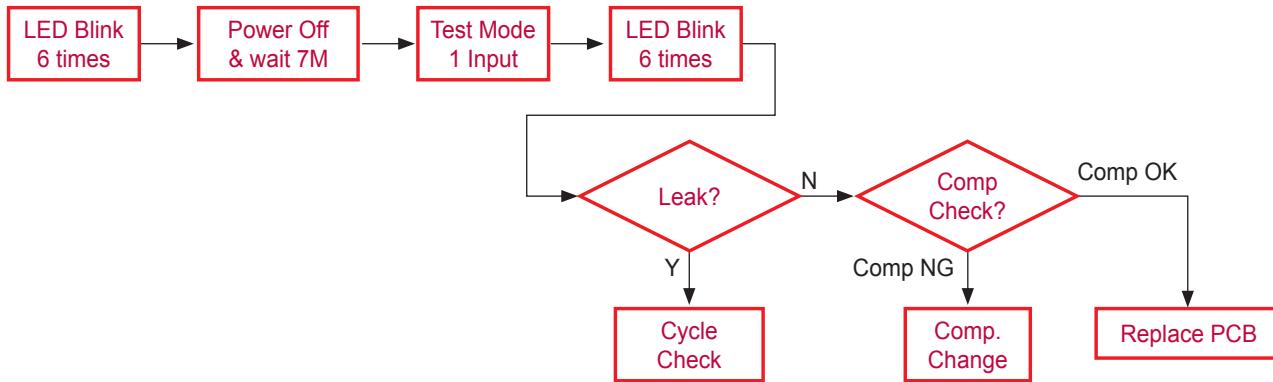
## 5. Over Current Trip & LED 6 blink (Over Current)



→ Purpose : Protection from Over Current

→ Reason : High temperature, Environment condition, C-Fan Error, Comp Error, PCBA Error(IPM burnt), etc

→ Logic : Comp. Off & restart Every 360s



## 6. IPM Fault Trip & LED 7 blink (IPM Fault)



→ Purpose : Protection Over Current that occurred by IPM short or malfunction.

→ Reason : IPM Short, malfunction

→ Logic : Comp. Off & restart Every 300s



# Compressor Troubleshooting

## 7. Communication Error Trip & LED 8 Blink (Communication Error)



→ Purpose : Check the Communication error between Main & Comp Micom

→ Reason : Communication error

→ Logic : There are no Comp off, just LED blink 8 times(Comp will drive last order from Main Micom)



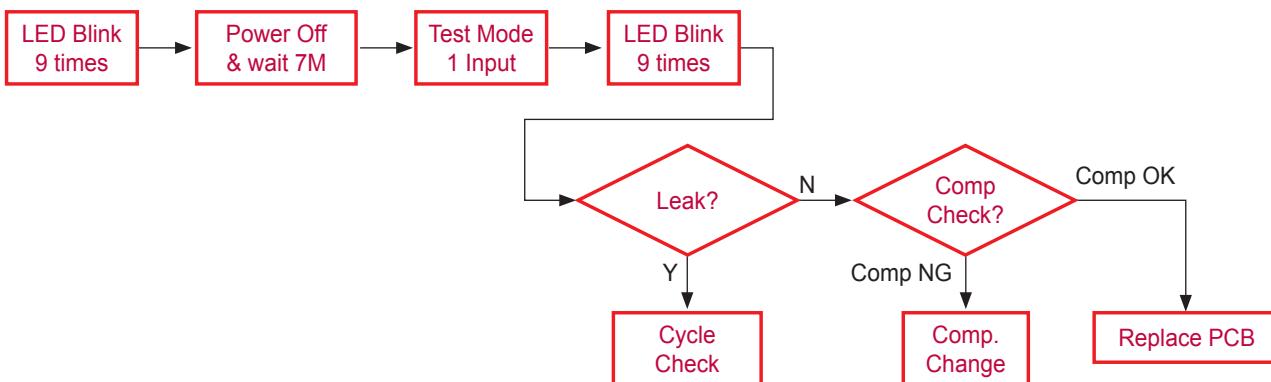
## 8. Overload Trip & LED 9 Blink (Overload)



→ Purpose : Protection from Overload

→ Reason : High temperature, Environment condition, C-Fan Error, Comp Error, PCBA Error(IPM burnt), etc

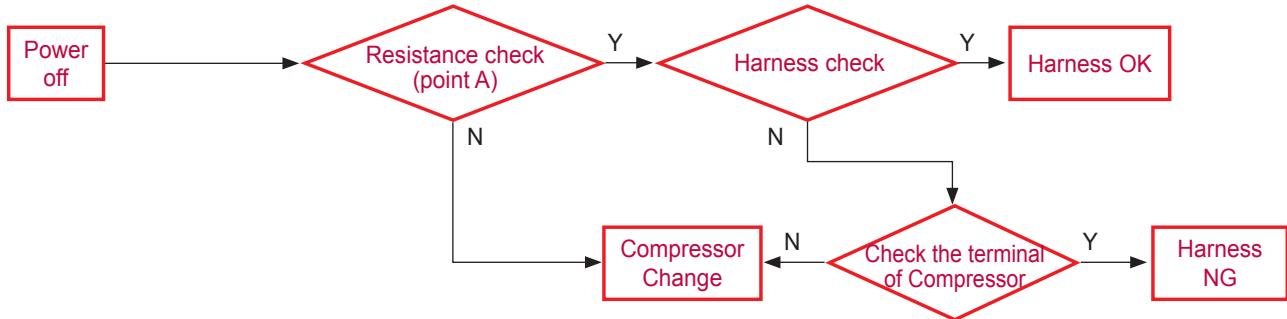
→ Logic : Comp. Off & restart Every 360s



# Compressor Troubleshooting

## Check the Compressor & Harness

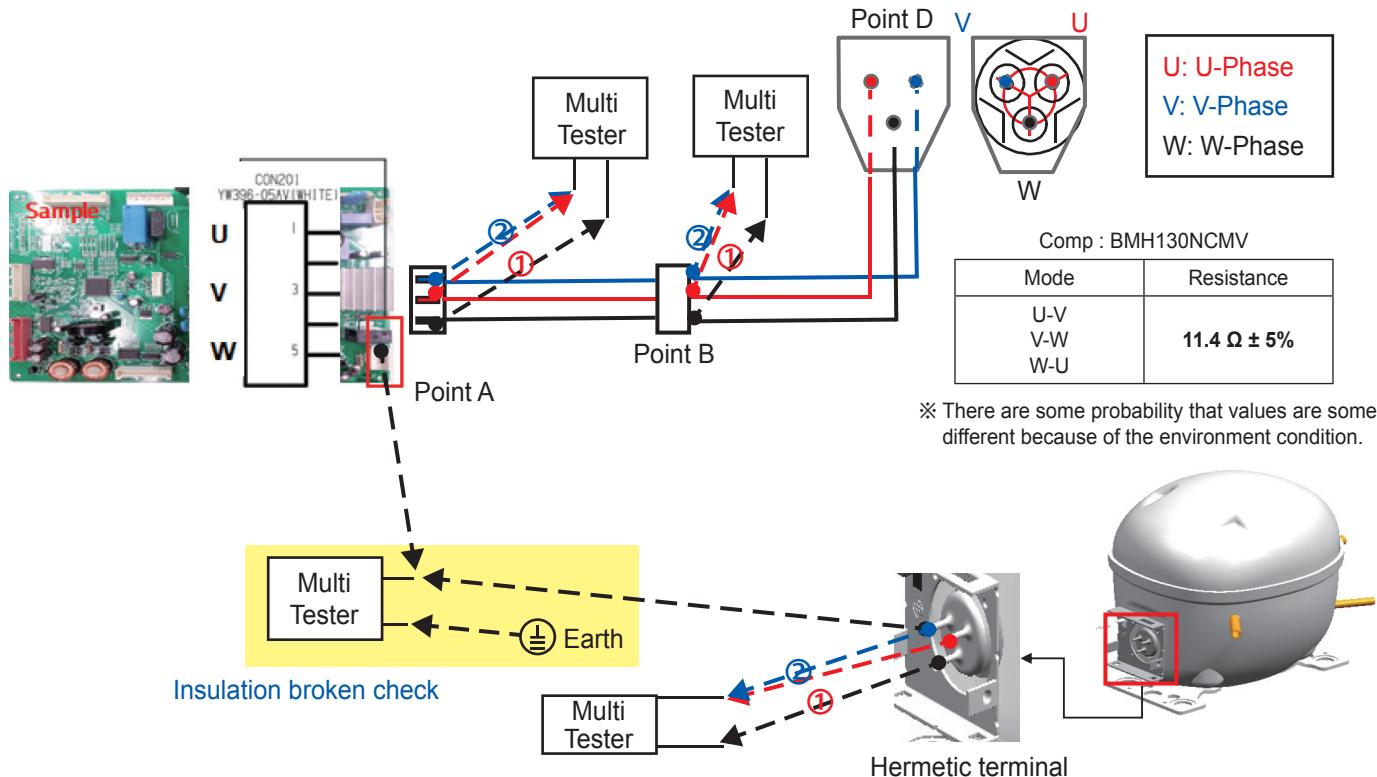
1. Check the Harness connection → Step 1. Power off.
2. Check the Compressor      Step 2. Check the Resistance(U-V,V-W,W-U → Every Resistance)  
Step 3. Check the Harness(INF ohm).



# Compressor Troubleshooting

## Check the Compressor & Harness

- Check the resistance (U/V/W)
- Check the broken-down insulation : Check the resistance between Comp. terminal and earth

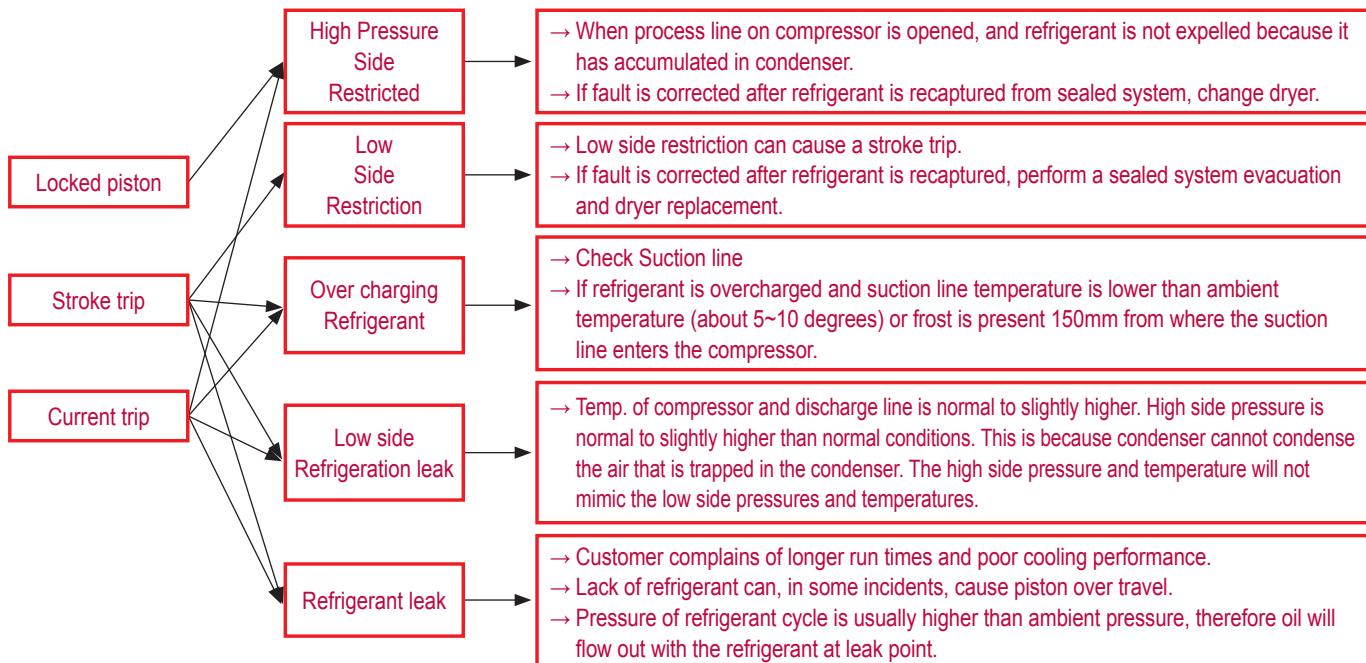


# Compressor Troubleshooting

## Check D

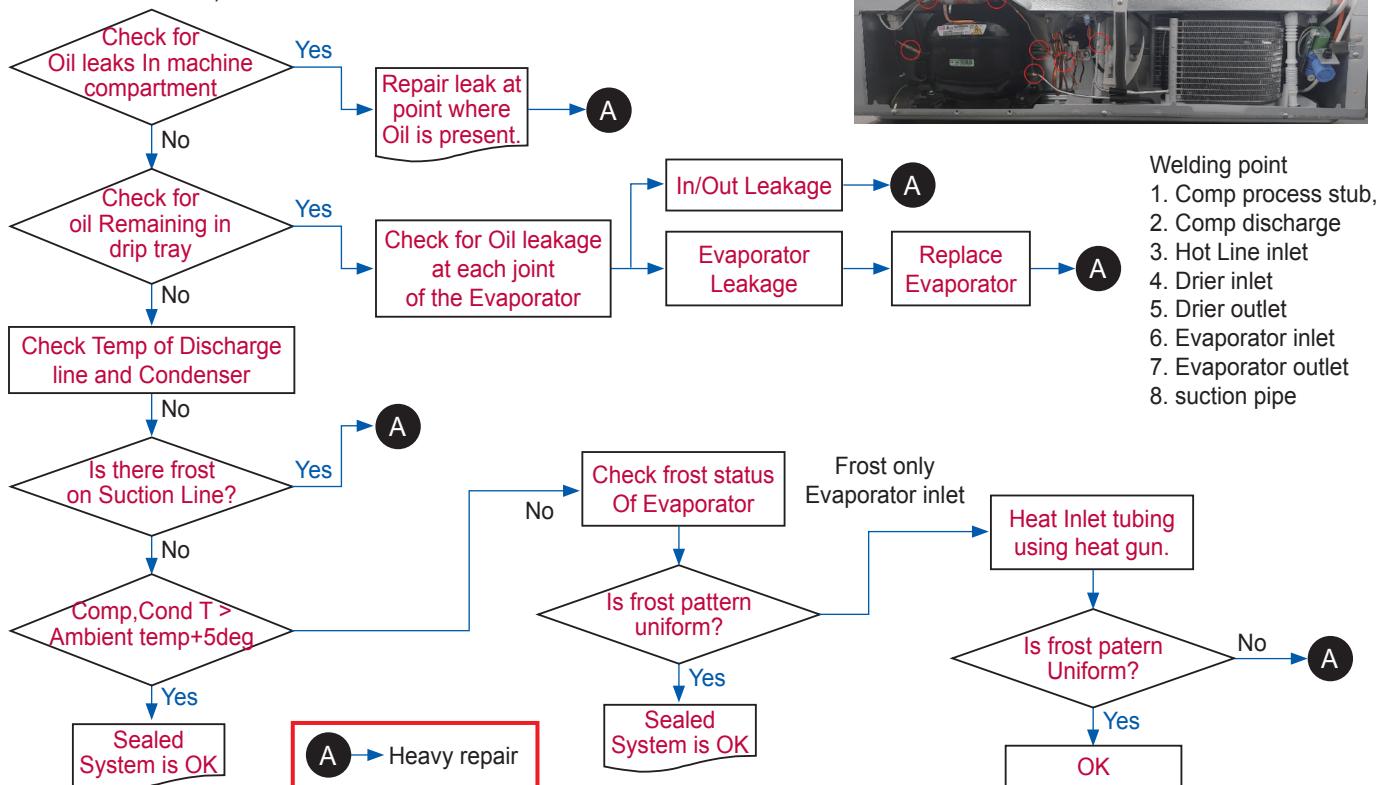
### D1. Activate Protection logic

- We have to check Condenser fan and Freezer fan before performing Check D
- Locked Piston, Current trip and stroke trip can be activated by other problems then the driver or compressor.



### D2. sealed system diagnosis

- Check as follows;

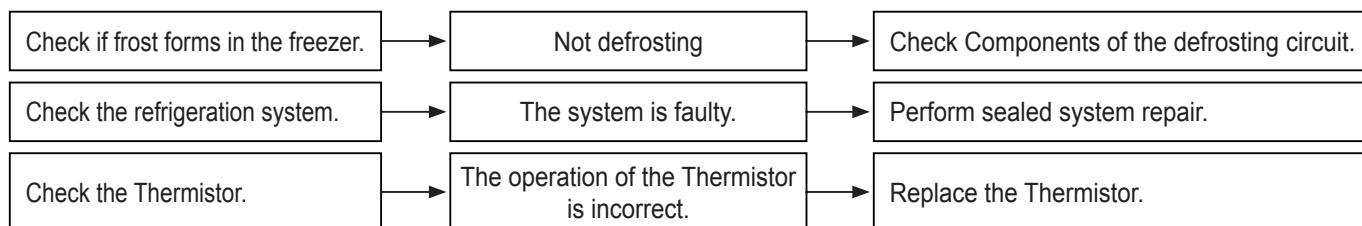


# Compressor Troubleshooting

## Service Diagnosis Chart

COMPLAINT	POINTS TO BE CHECKED	REMEDY
No Cooling.	<ul style="list-style-type: none"> <li>Is the power cord unplugged from the outlet?</li> <li>Check if the power switch is set to OFF.</li> <li>Check if the fuse of the power switch is shorted.</li> <li>Measure the voltage of the power outlet.</li> </ul>	<ul style="list-style-type: none"> <li>Plug into the outlet.</li> <li>Set the switch to ON.</li> <li>Replace the fuse.</li> <li>If the voltage is low, correct the wiring.</li> </ul>
Cools poorly.	<ul style="list-style-type: none"> <li>Check if the unit is placed too close to the wall.</li> <li>Check if the unit is placed too close to the stove, gas cooker, or in direct sunlight.</li> <li>Is the ambient temperature too high or the room door closed?</li> <li>Check if food put in the refrigerator is hot.</li> <li>Did you open the door of the unit too often or check if the door is sealed properly?</li> <li>Check if the Control is set to <b>Warm position</b>.</li> </ul>	<ul style="list-style-type: none"> <li>Place the unit about 4 inches (10 cm) from the wall.</li> <li>Place the unit away from these heat sources.</li> <li>Lower the ambient temperature.</li> <li>Put in foods after they have cooled down.</li> <li>Don't open the door too often and close it firmly.</li> <li>Set the control to <b>Recommended position</b>.</li> </ul>
Food in the Refrigerator is frozen.	<ul style="list-style-type: none"> <li>Is food placed in the cooling air outlet?</li> <li>Check if the control is set to <b>colder position</b>.</li> <li>Is the ambient temperature below 41°F(5°C)?</li> </ul>	<ul style="list-style-type: none"> <li>Place foods in the high-temperature section. (front part)</li> <li>Set the control to <b>Recommended position</b>.</li> <li>Set the control to <b>Warm position</b>.</li> </ul>
Condensation or ice forms inside the unit.	<ul style="list-style-type: none"> <li>Is liquid food sealed?</li> <li>Check if food put in the refrigerator is hot.</li> <li>Did you open the door of the unit too often or check if the door is sealed properly?</li> </ul>	<ul style="list-style-type: none"> <li>Seal liquid foods with wrap.</li> <li>Put in foods after they have cooled down.</li> <li>Don't open the door too often and close it firmly.</li> </ul>
Condensation forms in the Exterior Case.	<ul style="list-style-type: none"> <li>Check if the ambient temperature and humidity of the surrounding air are high.</li> <li>Is there a gap in the door gasket?</li> </ul>	<ul style="list-style-type: none"> <li>Wipe moisture with a dry cloth. It will disappear in low temperature and humidity.</li> <li>Fill up the gap.</li> </ul>
There is abnormal noise.	<ul style="list-style-type: none"> <li>Is the unit positioned in a firm and even place?</li> <li>Are any unnecessary objects placed in the back side of the unit?</li> <li>Check if the Drip Tray is not firmly fixed.</li> <li>Check if the cover of the compressor enclosure in the lower front side is taken out.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the Leveling Screw, and position the refrigerator in a firm place.</li> <li>Remove the objects.</li> <li>Fix the Drip Tray firmly in the original position.</li> <li>Place the cover in its original position.</li> </ul>
Door does not close well.	<ul style="list-style-type: none"> <li>Check if the door gasket is dirty with an item like juice.</li> <li>Is the refrigerator level?</li> <li>Is there too much food in the refrigerator?</li> </ul>	<ul style="list-style-type: none"> <li>Clean the door gasket.</li> <li>Position in a firm place and level the Leveling Screw.</li> <li>Make sure food stored in shelves does not prevent the door from closing.</li> </ul>
Ice and foods smell unpleasant.	<ul style="list-style-type: none"> <li>Check if the inside of the unit is dirty.</li> <li>Are foods with a strong odor unwrapped?</li> <li>The unit smells of plastic.</li> </ul>	<ul style="list-style-type: none"> <li>Clean the inside of the unit.</li> <li>Wrap foods that have a strong odor.</li> <li>New products smell of plastic, but this will go away after 1-2 weeks.</li> </ul>

Other possible problems:



# Compressor Troubleshooting

## Refrigeration Cycle

### • Troubleshooting Chart

CAUSE		STATE OF THE UNIT	STATE OF THE EVAPORATOR	TEMPERATURE OF THE COMPRESSOR	REMARKS
LEAKAGE	PARTIAL LEAKAGE	Freezer compartment and Refrigerator don't cool normally.	Low flowing sound of Refrigerant is heard and frost forms in inlet only.	A little higher than ambient temperature.	<ul style="list-style-type: none"> <li>Refrigerant level is low due to a leak.</li> <li>Normal cooling is possible by restoring the normal amount of refrigerant and repairing the leak.</li> </ul>
	COMPLETE LEAKAGE	Freezer compartment and Refrigerator don't cool normally.	Flowing sound of refrigerant is not heard and frost isn't formed.	Equal to ambient temperature.	<ul style="list-style-type: none"> <li>No discharging of Refrigerant.</li> <li>Normal cooling is possible by restoring the normal amount of refrigerant and repairing the leak.</li> </ul>
CLOGGED BY DUST	PARTIAL CLOG	Freezer compartment and Refrigerator don't cool normally.	Flowing sound of refrigerant is heard and frost forms in inlet only.	A little higher than ambient temperature.	<ul style="list-style-type: none"> <li>Normal discharging of the refrigerant.</li> <li>The capillary tube is faulty.</li> </ul>
	WHOLE CLOG	Freezer compartment and Refrigerator don't cool.	Flowing sound of refrigerant is not heard and frost isn't formed.	Equal to ambient temperature.	Normal discharging of the Refrigerant.
MOISTURE CLOG		Cooling operation stops periodically.	Flowing sound of refrigerant is not heard and frost melts.	Lower than ambient temperature.	• Cooling operation restarts when heating the inlet of the capillary tube.
DEFECTIVE COMPRESSION	COMPRESSION	Freezer and Refrigerator don't cool.	Low flowing sound of refrigerant is heard and frost forms in inlet only.	A little higher than ambient temperature.	• Low pressure at high side of compressor due to low refrigerant level.
	NO COMPRESSION	No compressing operation.	Flowing sound of refrigerant is not heard and there is no frost.	Equal to ambient temperature.	• No pressure in the high pressure part of the compressor.

### 1. Cleaning

There is no need for routine condenser cleaning in normal Home operating environments. If the environment is particularly greasy or dusty, or there is significant pet traffic in the home, the condenser should be cleaned every 2 to 3 months to ensure maximum efficiency.

If you need to clean the condenser:

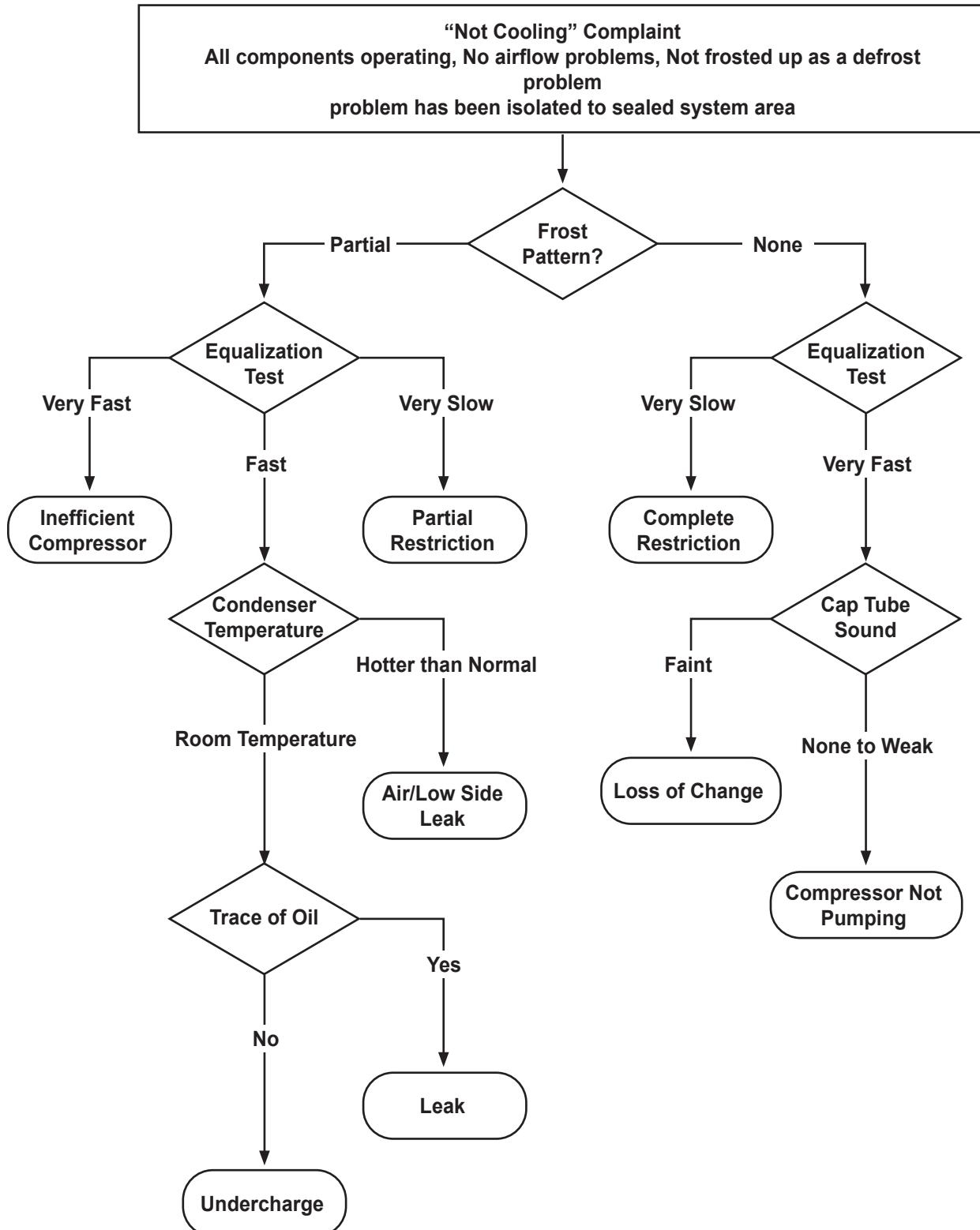
: Remove the mechanical cover.

Use a vacuum cleaner with a soft brush to clean the grille, the open areas behind the grille and the front surface area of the condenser.

: Replace the mechanical cover.

# Compressor Troubleshooting

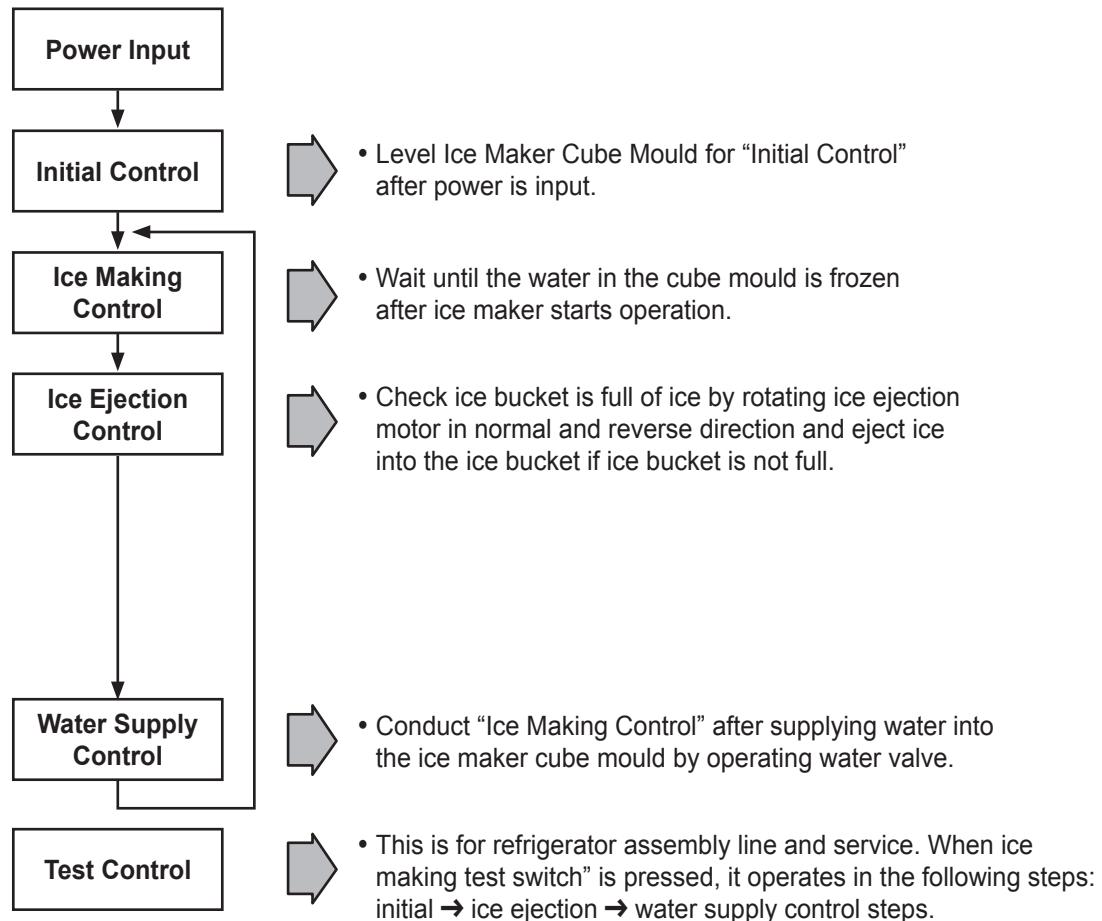
## 2. Sealed System Diagnosis



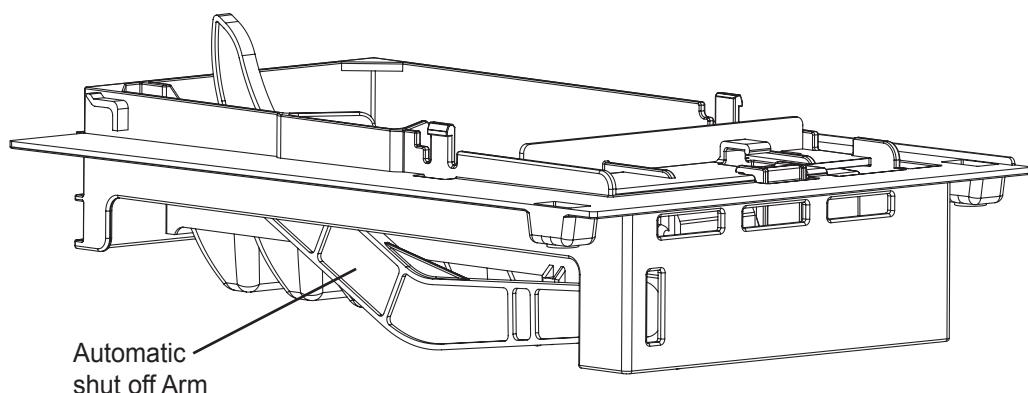
(The equalization test is trying to restart a compressor using a start kit after it has been operating.)

# Ice Maker(Freezer Room) Operating Method and Trouble Shoot

## 1. Working Principles



1. Turning the Icemaker stop switch off (O) stops the Icemaking function.
2. Setting the Icemaker switch to OFF and then turning it back on will reset the Icemaker control.



# **Ice Maker(Freezer Room) Operating Method and Trouble Shoot**

## **2. Function of Ice Maker**

### **2-1. Initial Control Function**

1. When power is initially applied or reapplied after power cut, it detects level of ice maker cube mould after completion of MICOM initialization. The detecting lever moves up and down.
2. The level of ice maker cube mould is judged by output signal, high and low signal, of Hall IC. Make the cube mould to be horizontal by rotating ice ejection motor in normal or reverse direction.
3. If there is no change in signals one minute after the geared motor starts to operate, it stops icemaker operation and check the signal every hour. It resets initialization of icemaker when it becomes normal.
4. It judges that the initial control is completed when it judges the ice maker cube mould is horizontal.
5. Ice ejection conducts for 1 cycle irrespect of ice in the ice bucket when power is initially applied.

### **2-2. Water Supply Control Function**

1. This is to supply water into the ice maker cube mould by operating water valve in the machine room when ice ejection control is completed and ice maker mould is even.
2. The quantity of water supplied is determined by DIP switch and time.

**<Water Supply Quantity Table>**

No	DIP SWITCH SETTING		WATER SUPPLY TIME	REMARKS
	S1	S2		
1	OFF	OFF	9 SEC	* The quantity of water supplied depends on DIP switch setting conditions and water pressure as it is a direct tap water connection type. (the water supplied is generally 60 cc to 100 cc)  * DIP switch is on the main PCB.
2	ON	OFF	8 SEC	
3	OFF	ON	10 SEC	
4	ON	ON	11 SEC	

3. If water supply quantity setting is changed while power is on, water supplies for the amended time. If DIP switch is changed during water supply, water shall be supplied for the previous setting time. But it will supply for the amended time from the next supply.
4. When water supply signal is applied to water and ice valves at the same time during water supply, water shall be supplied to water valve. If water supply signal is applied to ice valve during water supply, water shall be supplied to both water and ice valves.

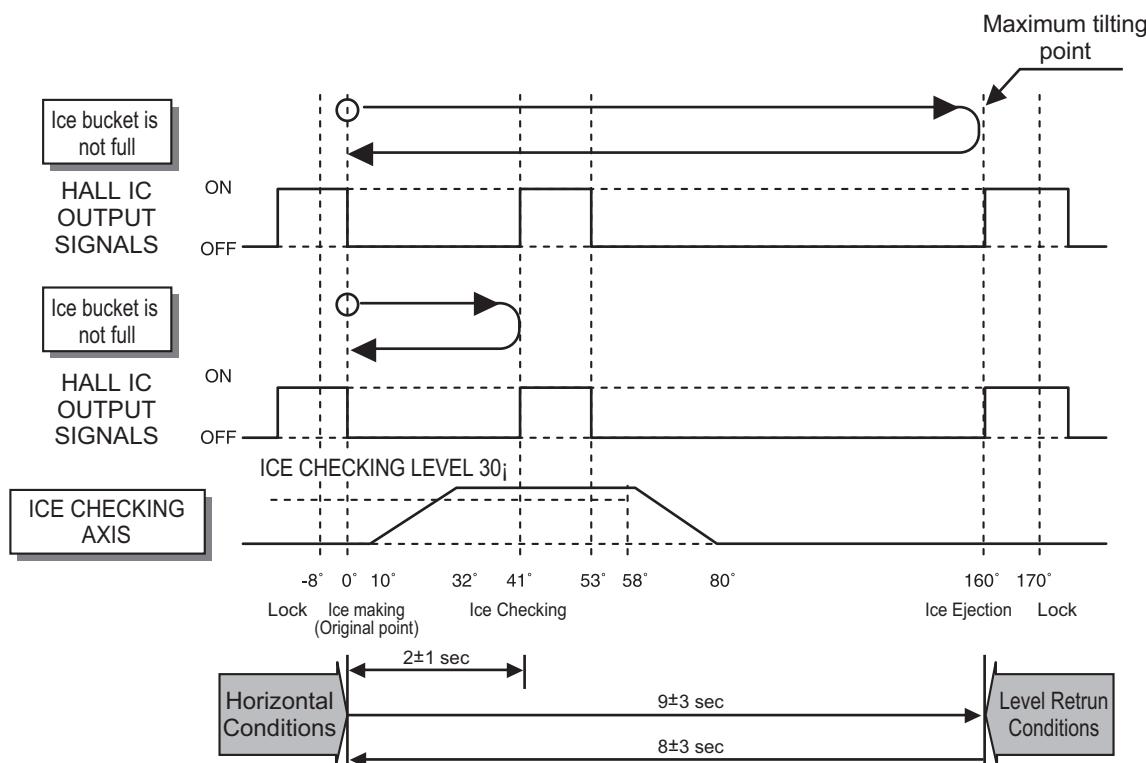
### **2-3. Ice Making Control Function**

1. Ice making control is carried out from the completion of water supply to the completion of ice making in the cube mould. Ice making sensor detects the temperature of cube mould and completes ice making. (ice making sensor is fixed below ice maker cube mould)
2. Ice making control starts after completion of water supply control or initial control.
3. At first, It is judged that ice making is completed when ice making sensor temperature reaches at -8°C after 70 minutes when water is supplied to ice maker cube mould.
4. Finally, It is judged that ice making is completed when ice maker sensor temperature reaches below -8 °C after 10 minutes in condition 3.

# Ice Maker(Freezer Room) Operating Method and Trouble Shoot

## 2-4. Ice Ejection Control Function

1. This is to eject ice from ice maker cube mould after ice making is completed.
2. If Hall IC signal is on within 3.6 seconds after ice ejection motor rotates in normal direction, it does not proceed ice ejection but waits. If the ice bucket is full, ice ejection motor rotates in normal direction in every hour to check the condition of ice bucket. If the ice bucket is not full, the water supply control starts after completion of ice ejection control. If the ice bucket is full, ice ejection motor rotates in reverse direction and stops under ice making or waiting conditions.
3. If ice bucket is not full, ice ejection starts. The cube mould tilts to the maximum and ice is separated from the mould and ice checking lever raises.
4. Ice ejection motor stops for 1 second if Hall IC signal changes from OFF (low) to ON (high) after 3.6 seconds when ice ejection motor rotates in normal direction. If there is no change in Hall IC signals within 1 minute after ice ejection motor operates, ice ejection motor stops as ice ejection motor or hall IC is out of order.
5. If ice ejection motor or Hall IC is abnormal, ice ejection motor rotates in normal direction to exercise initial operation. It resets the ice maker if ice ejection motor or Hall IC is normal.
6. The mould stops for 1 second at maximum tilted conditions.
7. The mould returns to horizontal conditions as ice ejection motor rotates in reverse direction.
8. When the mould becomes horizontal, the cycle starts to repeat:  
Water Supply → Ice Making → Ice Ejection → Mould Returns to Horizontal
9. When freezer door is open, ice ejection don't operating, and after 1 minute of Freezer door closing, ejection control function is operated.



<Timing Chart During Ice Ejection>

# **Ice Maker(Freezer Room) Operating Method and Trouble Shoot**

## **2-5. Test Function**

1. It is to force the operation during operation test, service, and cleaning. The test switch is mounted under the automatic ice maker. The test function starts when the test switch is pressed for more than 0.5 second.
2. Test button does not work during ice ejection and water supply. It works when it is in the horizontal conditions. If mould is full of ice during test function operation, ice ejection control and water supply control do not work.
3. When test switch is pressed for more than 0.5 second in the horizontal conditions, ice ejection starts irrespect of the mould conditions. Water shall be splashed if test switch is pressed before the water in the mould freezes.  
Water shall be supplied while the mould returns to the horizontal conditions after ice ejection. Therefore the problems of ice ejection, returning to the horizontal conditions, and water supply can be checked by test switch.  
When test function performs normally, buzzer sounds and water supply shall carry out. Check it for repair if buzzer does not sound.
4. When water supply is completed, the cycle operates normally as follows: Ice maki → Ice ejection → Returning to horizontal conditions → Water supply 5. Remove ice from the ice maker cube mould and press test switch when ice maker cube mould is full of ice as ice ejecti and water supply control do not work when cube mould is full of ice

# Description of Function & Circuit of Micom

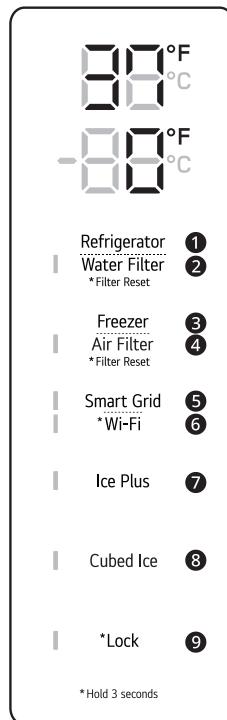
## Function

### Control Panel

Depending on the model, some of the following functions may not be available.

The actual control panel may differ from model to model.

#### Control Panel Features



#### ① Refrigerator

Indicates the set temperature of the refrigerator compartment in Celsius (°C) or Fahrenheit (°F). The default refrigerator temperature is 37 °F (3 °C). Press the **Refrigerator** button repeatedly to select a new set temperature from 33 °F to 43 °F (1 °C to 7 °C).

#### NOTE

- To change the temperature mode from °F to °C (or vice versa) press and hold the **Refrigerator** and **Freezer** buttons simultaneously for approximately five seconds. The temperature indicator on the display window switches between Celsius and Fahrenheit.
- The displayed temperature is the target temperature, and not the actual temperature of the refrigerator. The actual refrigerator temperature depends on the food inside the refrigerator.

#### ② Water Filter

Replace the water filter when the **Water Filter** indicator turns on. After replacing the water filter, press and hold the **Water Filter** button for three seconds to turn the indicator light off. Replace the water filter approximately every six months.

# Description of Function & Circuit of Micom

## ③ Air Filter

The air filter helps remove odors from the refrigerator.

### NOTE

- Replace the air filter when the air filter indicator turns on. After replacing the air filter, press and hold the **Air Filter** button for 3 seconds to turn the indicator off. Replace the air filter approximately every six months.

## ④ Freezer

Indicates the set temperature of the freezer compartment in Celsius (°C) or Fahrenheit (°F). The default freezer temperature is 0 °F (-18 °C). Press the **Freezer** button repeatedly to select a new set temperature from -7 °F to 5 °F (-23 °C to -15 °C).

## ⑤ Smart Grid

Press the **Smart Grid** button to turn the function On/Off. When the function is on, the indicator illuminates. The function automatically turns on when the refrigerator is connected to the Wi-Fi network. The Smart Grid function is only available if your electric utility company supports the function.

When the refrigerator is responding to a Demand Response (DR) message from the electric company, the indicator blinks.

## ⑥ Wi-Fi

The Wi-Fi button, when used with the **LG ThinQ** app, allows the refrigerator to connect to a home Wi-Fi network. Refer to Smart Functions for information on the initial setup of the app.

The Wi-Fi indicator shows the status of the refrigerator's network connection. The indicator illuminates when the refrigerator is connected to the Wi-Fi network.

Press and hold the Wi-Fi button for 3 seconds to connect to the network. The indicator blinks while the connection is being made and then turns on once the connection is successfully made.

## ⑦ Ice Plus<sup>†</sup>

This function increases both ice making and freezing capabilities.

- Press the **Ice Plus** button to illuminate the icon and activate the function for 24 hours. The function automatically shuts off after 24 hours.
- Stop the function manually by pressing the button once more.

## ⑧ Cubed<sup>†</sup>

Press and hold the **Cubed Ice** button for three seconds to turn the Cubed Ice maker on/off.

## ⑨ Lock

The lock function disables every other button on the display.

- When power is initially connected to the refrigerator, the lock function is off.
- To lock the control panel buttons, press and hold the **Lock** button until the indicator appears in the display and the function is activated.
- To disable the function, press and hold the **Lock** button for approximately three seconds.

# Description of Function & Circuit of Micom

## NOTE

### Display Mode and InstaView Display Mode (For Store Use Only)

- The **Display Mode** disables all cooling in the refrigerator and freezer sections to conserve energy while on display in a retail store. When activated, OFF is displayed on the control panel and the display remains on for 20 seconds.
  - To deactivate/activate the Display Mode:  
Open either refrigerator door. Press the **Ice Plus** button 3 times while pressing and holding the **Refrigerator** button. The control panel beeps and the temperature settings display to confirm that Display Mode is deactivated. Use the same procedure to activate Display Mode.
- The **InstaView Display Mode** automatically turns the LED light inside the InstaView Door-in-Door on and off in cycles of 10 seconds ON and 2 minutes 50 seconds OFF.
  - To activate the InstaView Display Mode:  
Activate the Display Mode first. Then open all refrigerator and freezer doors and within 5 seconds knock 3 times on the door glass.
  - To deactivate the InstaView Display Mode:  
Open all refrigerator and freezer doors and within 5 seconds knock 3 times on the door glass. The refrigerator is now in Display Mode.
- To deactivate the Display Mode and InstaView Display Mode at once:  
Open either refrigerator door. Press the **Ice Plus** button 3 times while pressing and holding the **Refrigerator** button.

# Description of Function & Circuit of Micom

## Control of Freezer Fan Motor

1. Freezer fan motor has high and standar speed.
2. When refrigerator is overloaded, fan motor runs in high speed as powered-up Standard speeds is used for general purposes.
3. To improve cooling speed, the RPM of freezer fan motor changes from normal speed to high.

## Cooling Fan Motor

1. The cooling fan is switched ON and OFF in conjunction with the compressor.
2. The Failure sensing method is the same as in the fan motor of the freezing fan motor(refer to failure diagnosis function table for failure display).

## Ice Compartment Fan

1. The Icing Fan is controlled by the sensor on the top of the ice compartment.
2. The Failure sensing method is the same as in the fan motor of the freezer  
(refer to failure diagnosis function table for failure display)

## Refrigeration room Fan Motor

1. The refrigeration room fan is switched ON and OFF in conjunction with the refrigeration room temperature.
2. The Failure sensing method is the same as in the fan motor of the freezing fan motor (refer to failure diagnosis function table for failure display).

## Ice PLUS

1. The purpose of this function is to intensify the cooling speed of freezer and to increase the amount of ice.
2. Whenever selection switch is pressed, selection/release, the Icon will turn ON or OFF.
3. If there is a power outage and the refrigerator is powered on again, Ice PLUS will be canceled.
4. To activate this function, press the Ice PLUS key and the Icon will turn ON. This function will remain activated for 24 hrs.
  - (1) control temperature of freezer room is to set -2°F notch temperature.
  - (2) If ice bin is full of ice, no change logic of ice compartment fan.
  - (3) If function is activated and de-ice status to be, ice compartment fan is operated by force.
    - Upper RT 18°C, Standard RPM
    - Below RT 18°C, operate low speed RPM

## How to set the display mode and cancel it

1. With the refrigerator door open, press the Ice Plus button 3 times consecutively while pressing the Refrigerator button, then it goes to the display mode with Special Beep Sound With Special Beep Sound.
2. Perform the same way again to cancel the display mode.
3. All Freezing unit will be turned off at display mode (Exceptions : Lamp, Display)

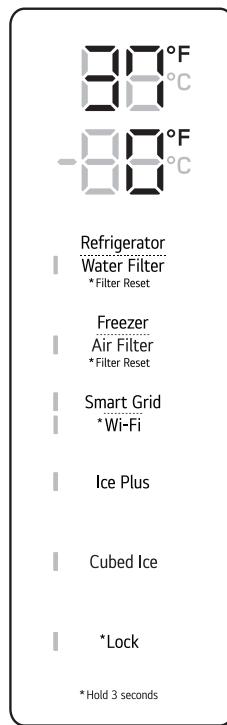
# Description of Function & Circuit of Micom

## Defrosting (removing frost)

1. Defrosting starts each time the COMPRESSOR running time Between 7~50 hours.
2. Defrosting stops if the sensor temperature reaches 41°F(5°C) or more. If the sensor doesn't reach 41°F(5°C) in 1 hours, the defrost mode is malfunctioning. (Refer to the defect diagnosis function)
3. Defrosting won't function if its sensor is defective (wires are cut or short circuited)

## Defect Diagnosis Function

1. Automatic diagnosis makes servicing the refrigerator easy.
2. When a defect occurs, the buttons will not operate.
3. When the defect CODE removes the sign, it returns to normal operation (RESET).
4. The defect CODE shows on the Refrigerator and Freezer Display.



\* Display check function: If simultaneously pressing Ice Plus button and freezing temperature adjustment button for a second, display LCD graphics on. If releasing the button, the LCD graphic displays the previous status.  
You can check the error code Within 3-hour Period from initial error

# Description of Function & Circuit of Micom

## Display SVC temperature compensation

This function allows additional compensation for temperature control in the refrigerator(fridge) and the freezer through SVC temperature compensation setting mode on the display.

**Input :** When pressing ‘Freezer’ + ‘Ice Plus.’ for 5 seconds in normal Mode

**Action :**

- 1.
- 1) Refrigerator temperature Seg. : Display of compensation step indication for each compensation item
- 2) Freezer temperature Seg. : Display of compensation items (Freezer, Refrigerator)

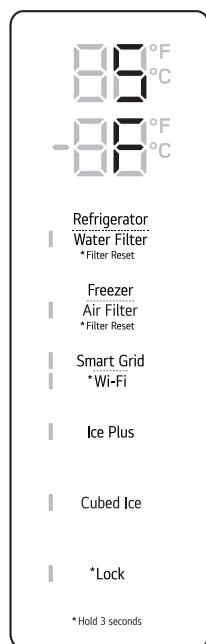
**2.**

- 1) When the freezer button is pressed, compensation item is displayed on the freezer segment in order of F → r → F → r → ...
  - 2) When the refrigerator button is pressed, the compensation item step is displayed with a blink. After that, when the refrigerator button is pressed, it is changed in order of 5 → 4 → ... → 1 → 9 → 8 → ... → 5.
- If the refrigerator button is pressed for 3 seconds, the step is confirmed.

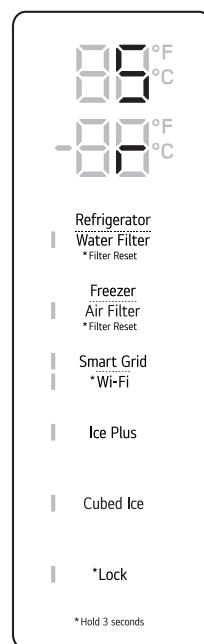
※ If you press the freezer button while the compensation item step is blinking, the step is not confirmed and the compensation item is changed.

※ If there is no input in 5 seconds, the temperature compensation setting mode is disabled.

Compartment	Displayed Step	Compensation Temp.
Refrigerator (Fridge)	9	+2.0
	8	+1.5
	7	+1.0
	6	+0.5
	5	+0.0
	4	-0.5
	3	-1.0
	2	-1.5
	1	-2.0
Freezer	9	+2.0
	8	+1.5
	7	+1.0
	6	+0.5
	5	+0.0
	4	-0.5
	3	-1.0
	2	-1.5
	1	-2.0



Freezer Temperature Compensation



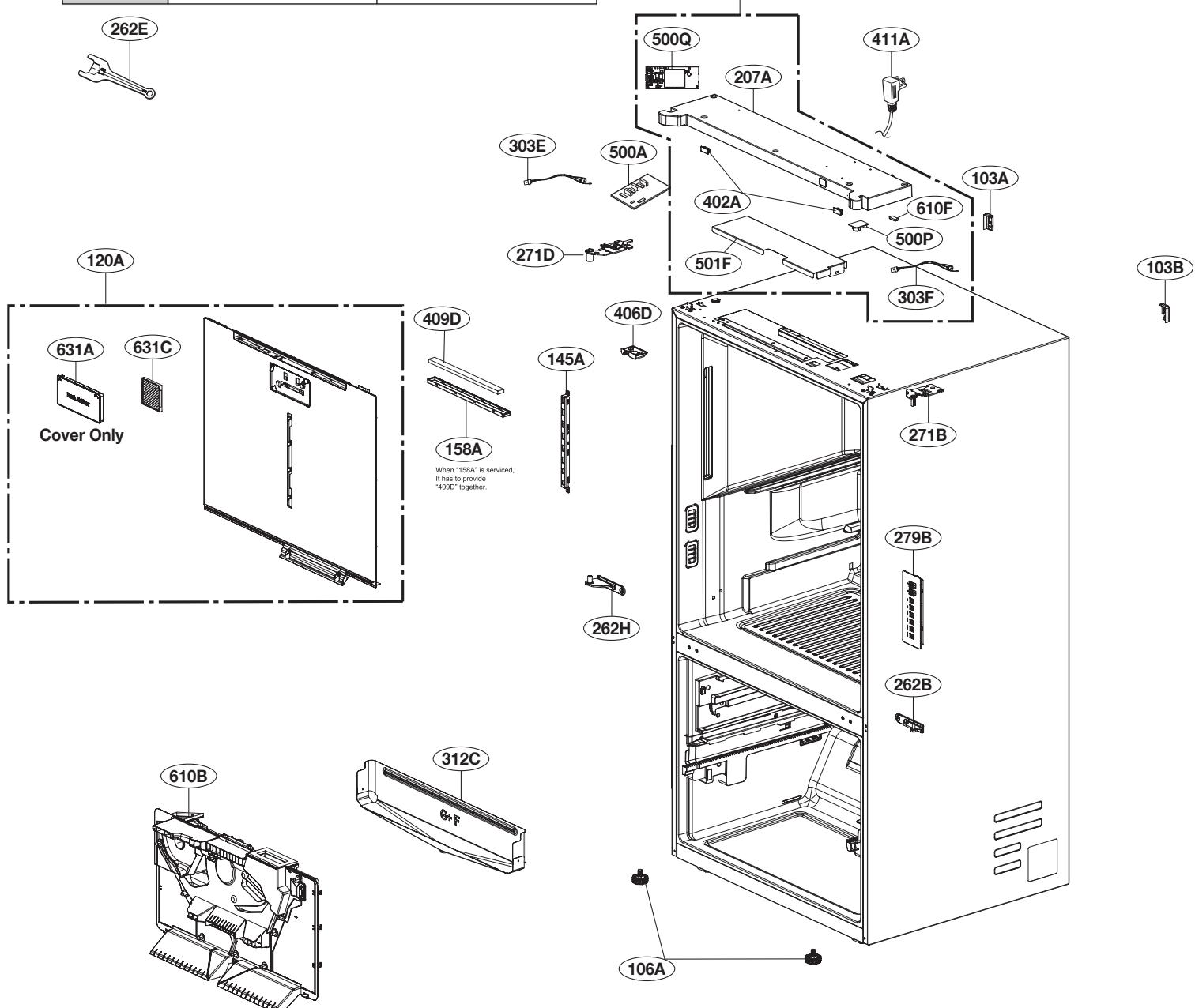
Refrigerator Temperature Compensation

# Exploded view & Replacement Parts list

## CASE PARTS

CAUTION: Use the part number to order part, not the position number.

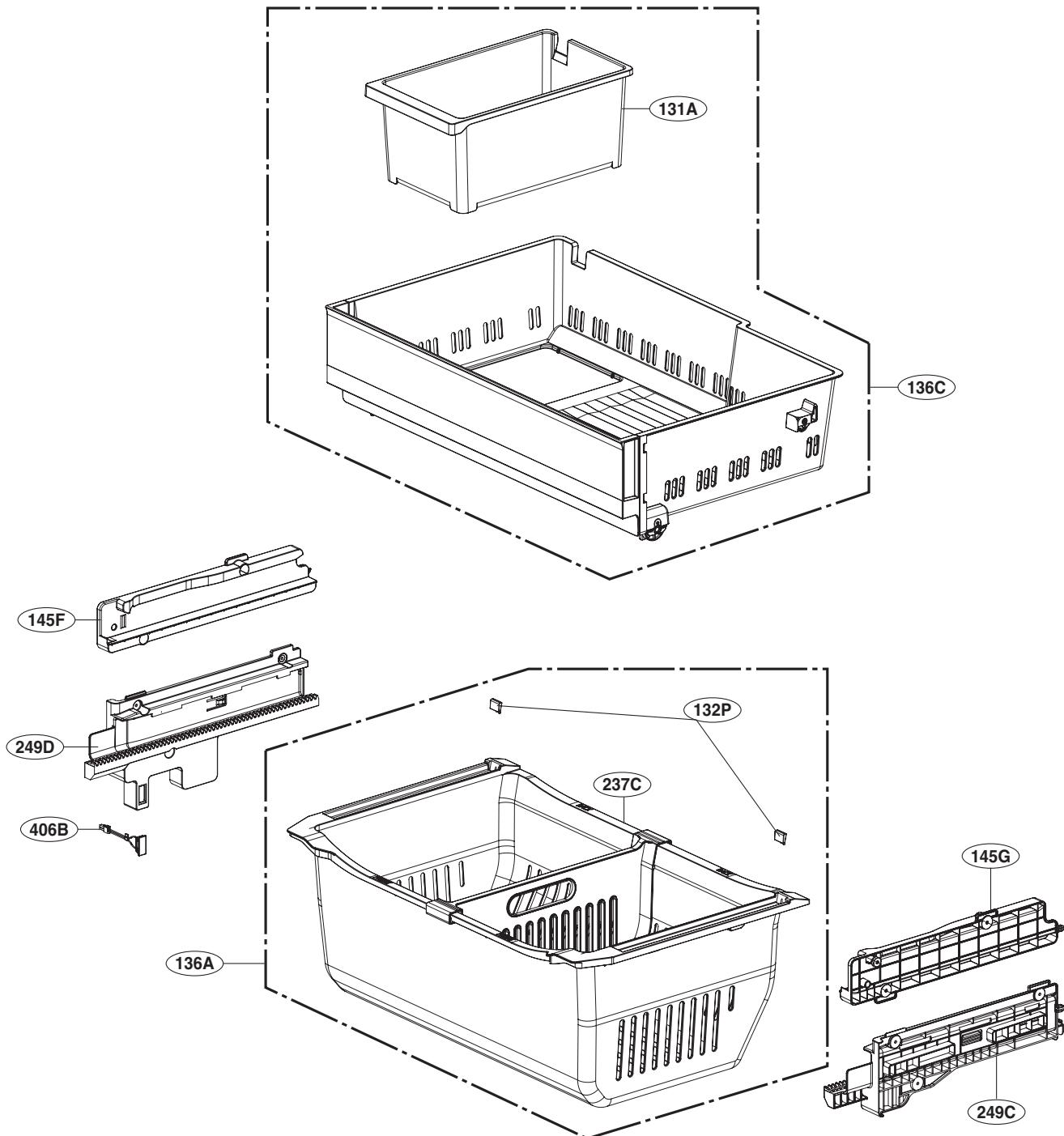
SVC Loc.	Until 303KR*****	From 304KR*****
500A	EBR36832610	EBR36832612



# Exploded view & Replacement Parts list

## FREEZER PARTS

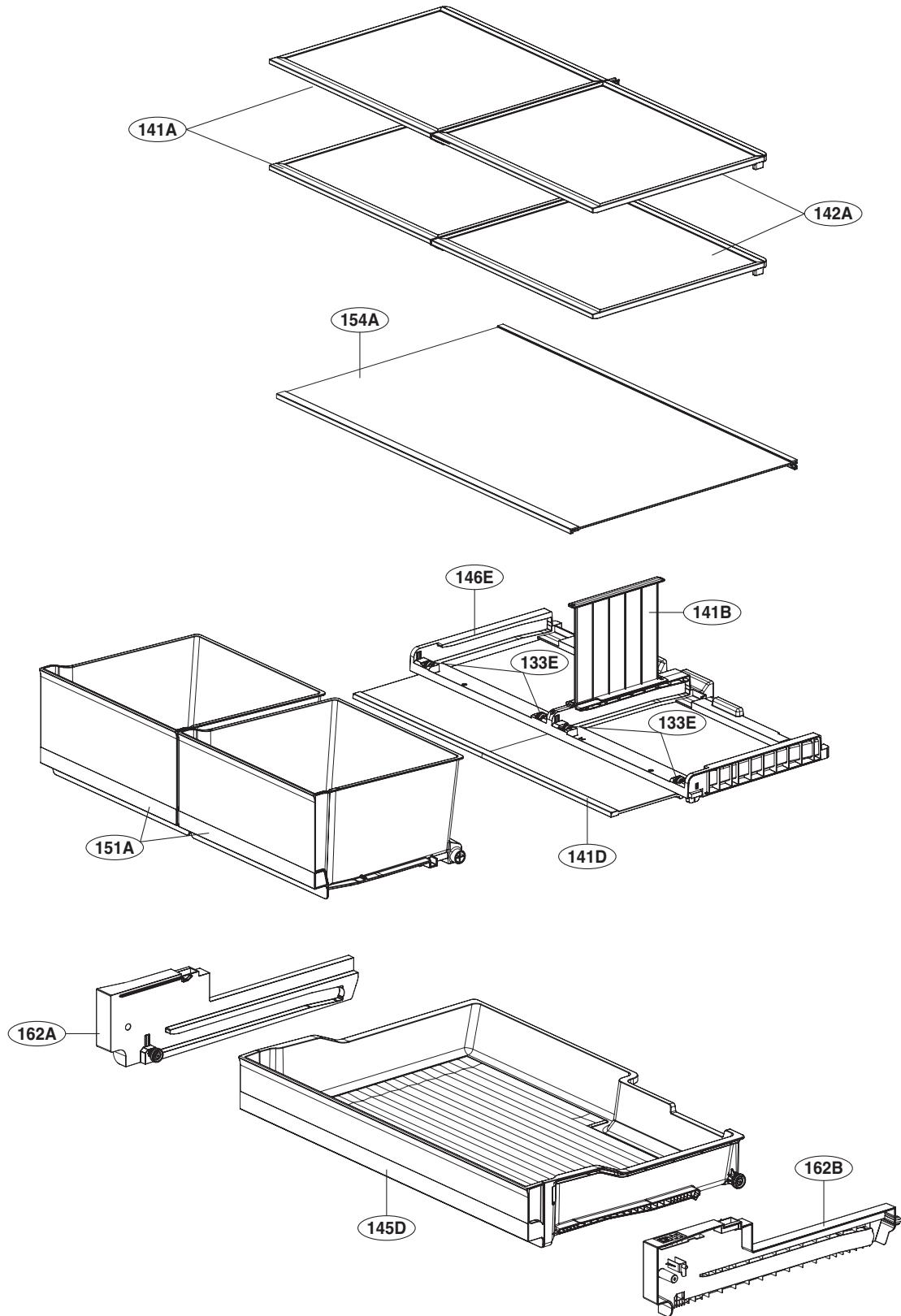
CAUTION: Use the part number to order part, not the position number.



# Exploded view & Replacement Parts list

## REFRIGERATOR PARTS

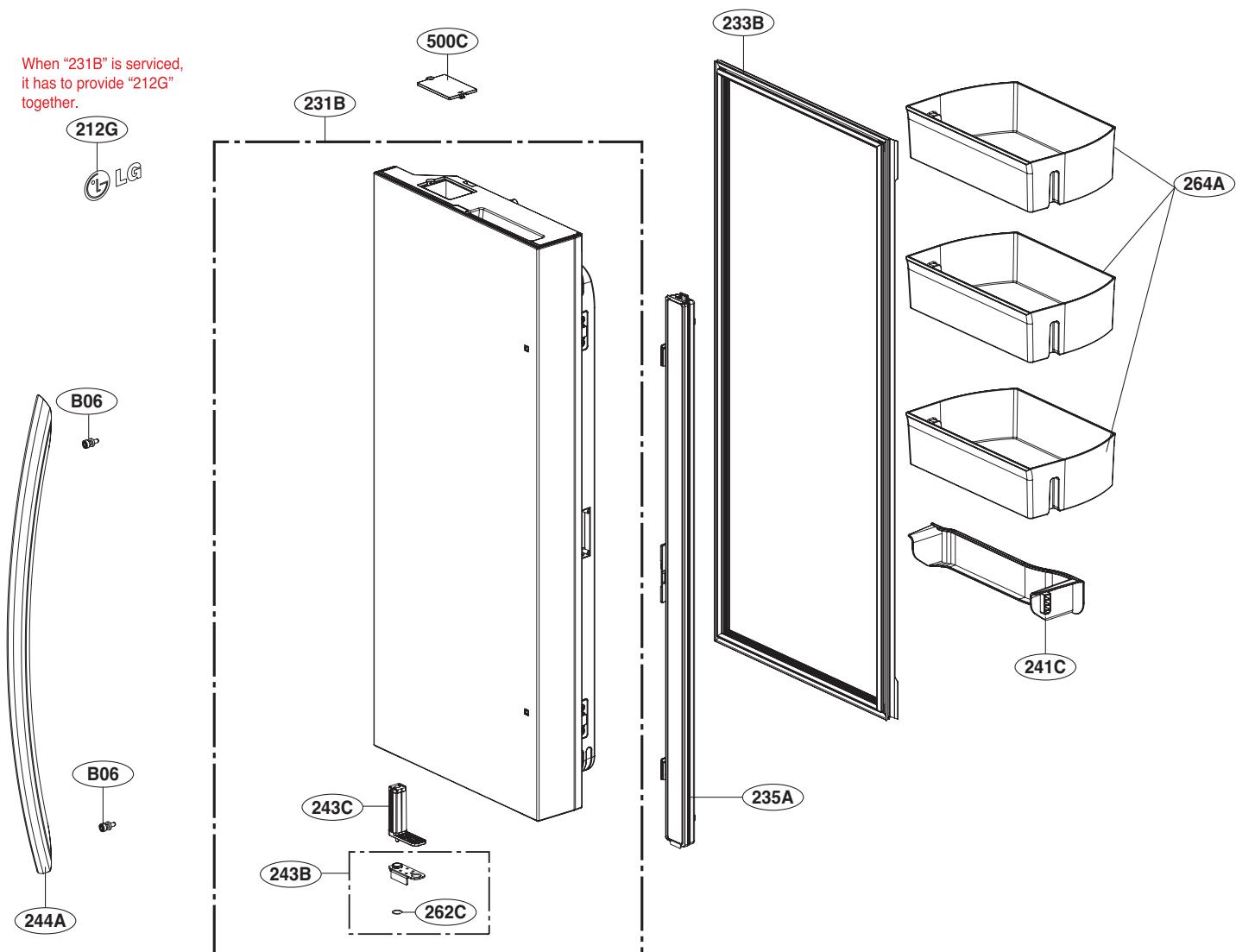
CAUTION: Use the part number to order part, not the position number.



# Exploded view & Replacement Parts list

## DOOR PARTS

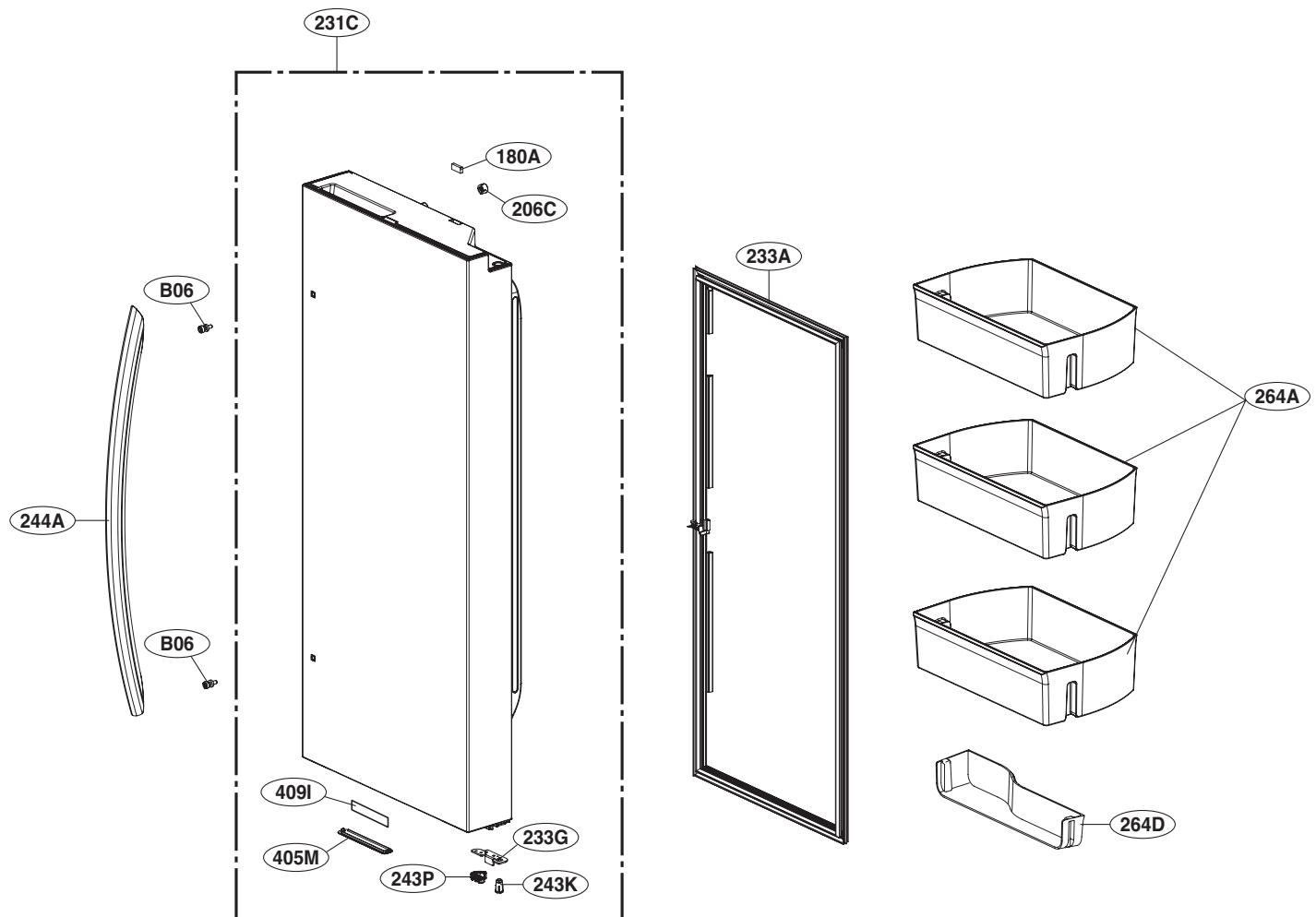
CAUTION: Use the part number to order part, not the position number.



# Exploded view & Replacement Parts list

## DOOR PARTS

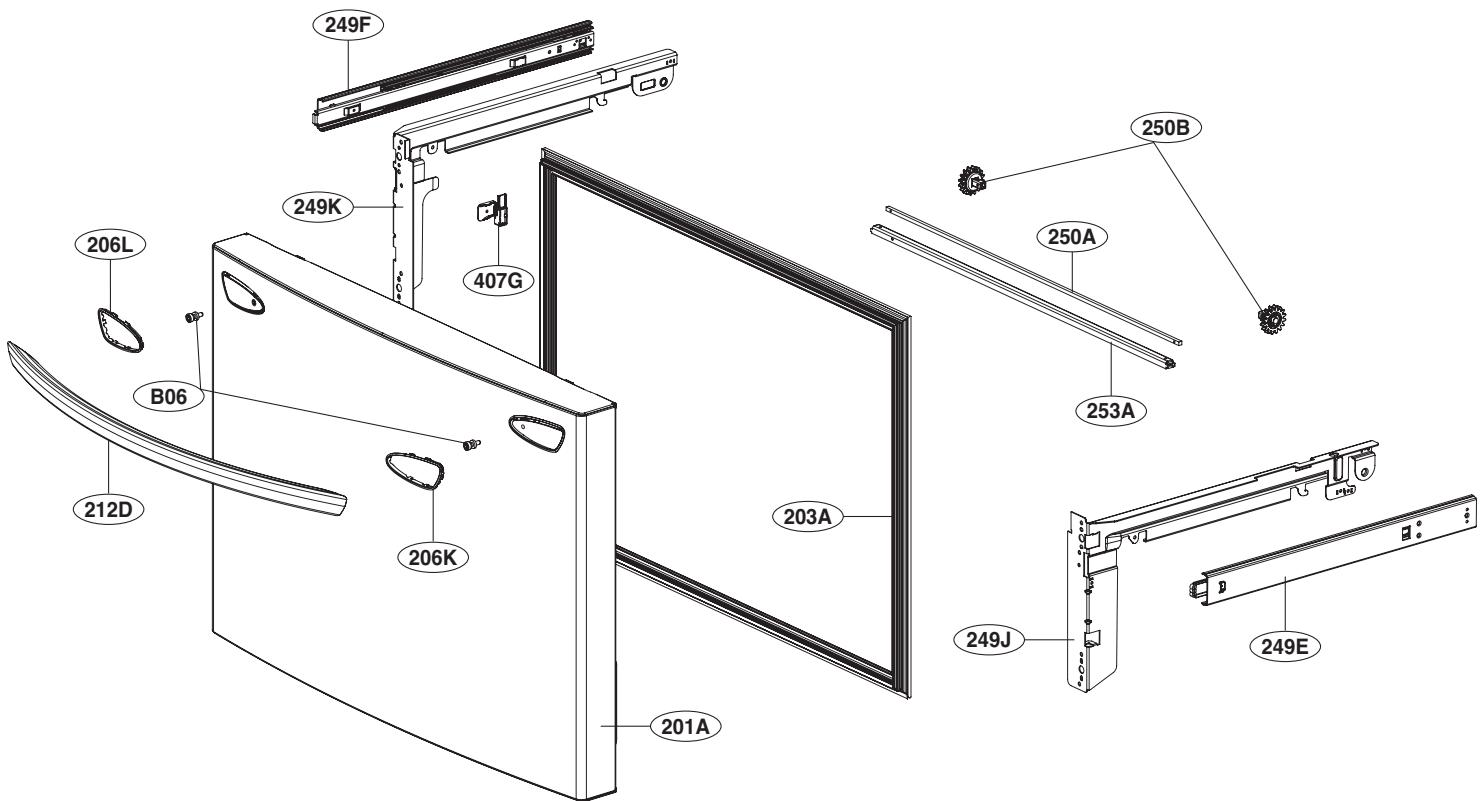
CAUTION: Use the part number to order part, not the position number.



# Exploded view & Replacement Parts list

## DOOR PARTS

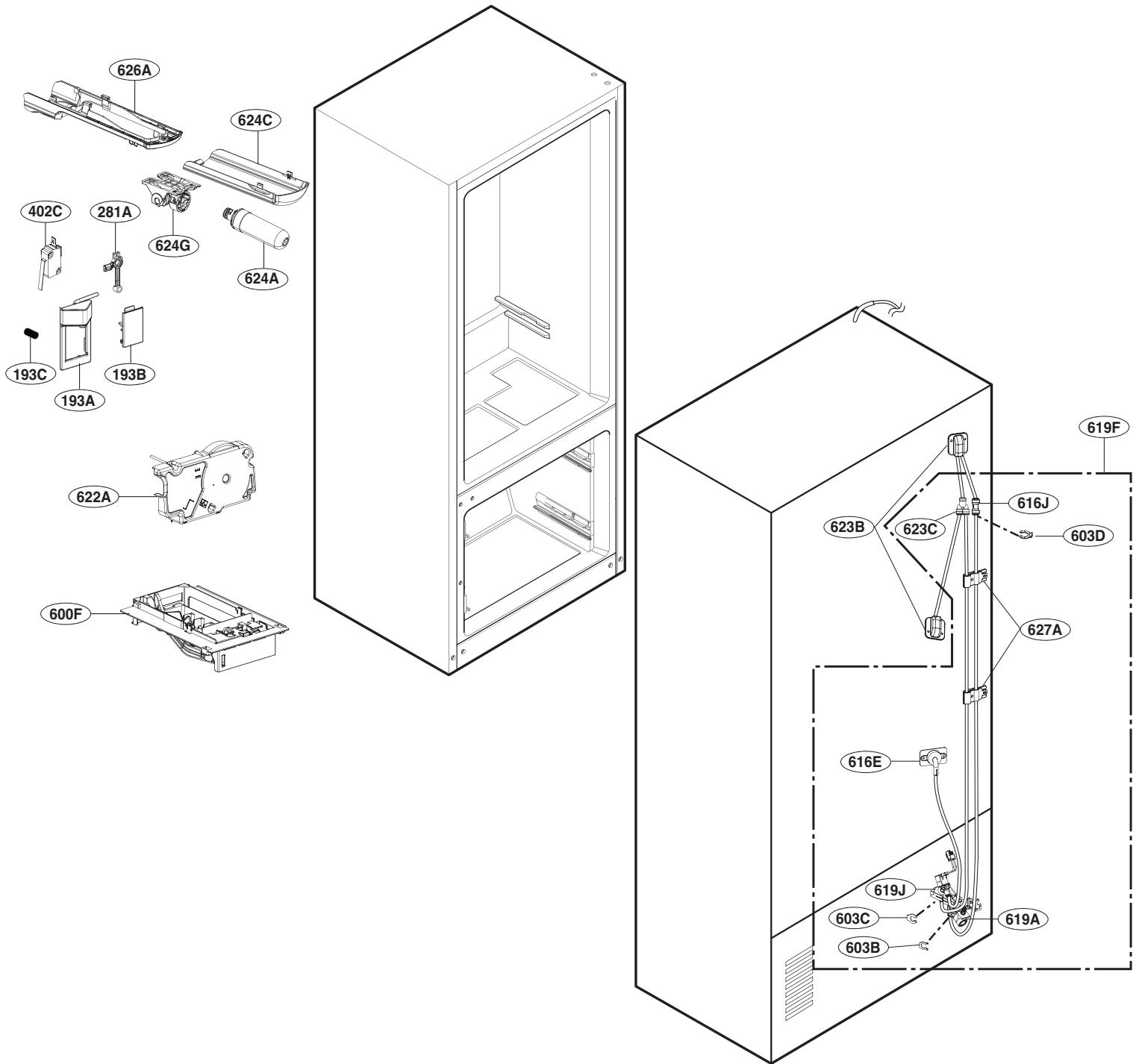
CAUTION: Use the part number to order part, not the position number.



# Exploded view & Replacement Parts list

## ICE MAKER, VALVE & WATER TUBE PARTS

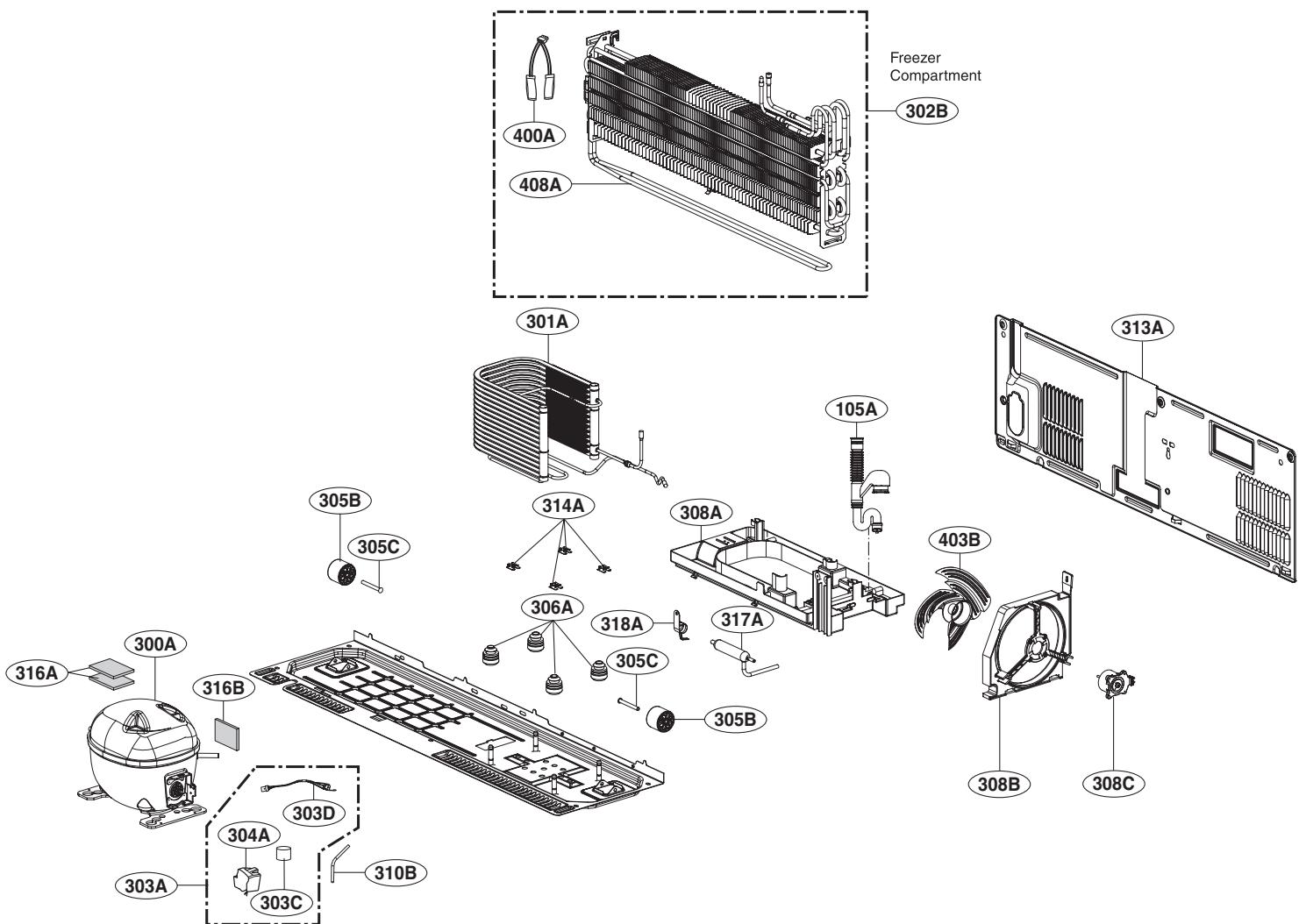
CAUTION: Use the part number to order part, not the position number.



# Exploded view & Replacement Parts list

## CYCLE PART

CAUTION: Use the part number to order part, not the position number.





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