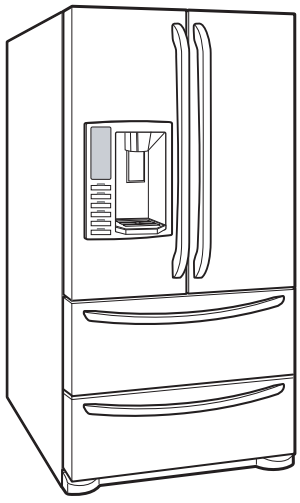
LG

REFRIGERATOR

SERVICE MANUAL

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



MODEL : LMXS27626*

COLOR : STAINLESS(ST)
SMOOTH BLACK(SB)
SUPER WHITE(SW)

CONTENTS

SAFETY PRECAUTIONS

Please read the following instructions before servicing your refrigerator.

1. Unplug the power before handling any elctrical componets.
2. Check the rated current, voltage, and capacity.
3. Take caution not to get water near any electrical components.
4. Use exact replacement parts.
5. Remove any objects from the top prior to tilting the product.

1. SPECIFICATIONS

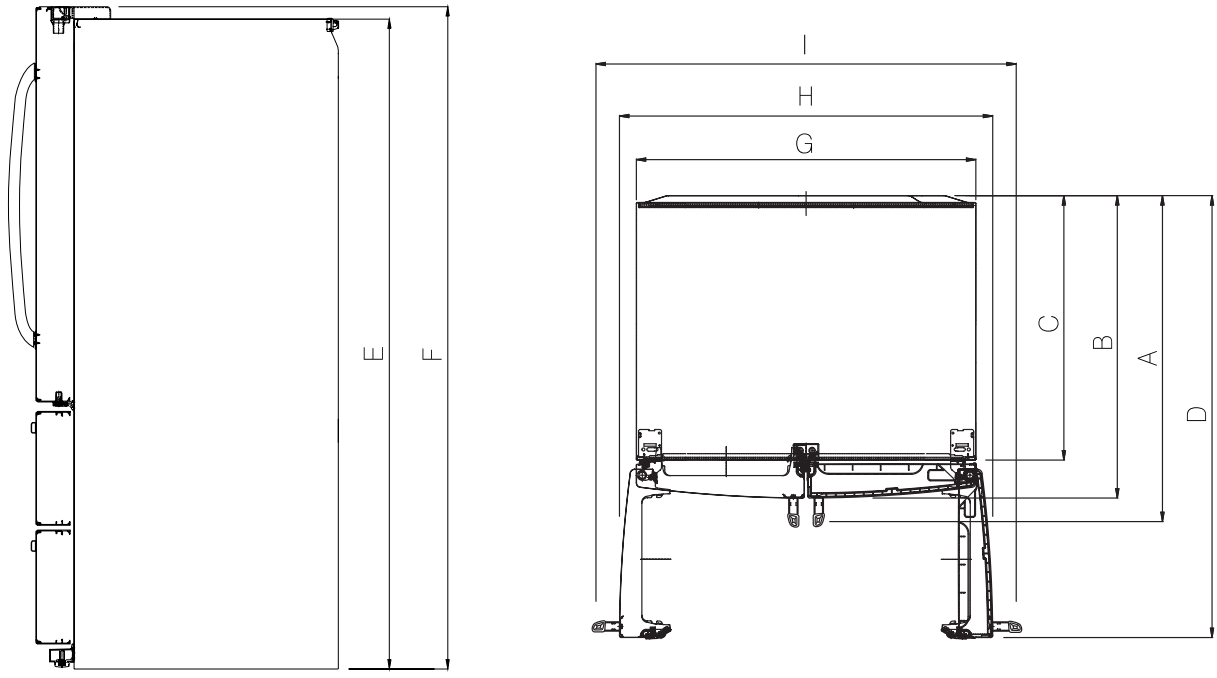
1-1 LMXS27626*

- **27 cu.ft.**

ITEMS	SPECIFICATIONS
DOOR DESIGN	Side Rounded
DIMENSIONS (inches)	35 3/4 X 35 3/8 X 69 3/4 (WXDXH) 27cu.ft.
NET WEIGHT (pounds)	165 kg. (364 lb)
COOLING SYSTEM	Fan Cooling
TEMPERATURE CONTROL	Micom Control
DEFROSTING SYSTEM	Full Automatic
	Heater Defrost
DOOR FINISH	PCM, VCM, Stainless
HANDLE TYPE	Bar
INNER CASE	ABS Resin
INSULATION	Polyurethane Foam

ITEMS		SPECIFICATIONS
VEGETABLE TRAY		Clear Drawer Type
COMPRESSOR		Linear
EVAPORATOR		Fin Tube Type
CONDENSER		Spiral Condenser
REFRIGERANT		R-134a (145 g)
LUBRICATING OIL		ISO10 (280 ml)
DEFROSTING DEVICE		SHEATH HEATER
LAMP	REFRIGERATOR	LED Module(24)
	FREEZER	LED Module(24)

DIMENSIONS



Description		LMX28988**
Depth w/ Handles	A	35 3/8 in
Depth w/o Handles	B	32 7/8 in
Depth w/o Door	C	29 in
Depth (Total with Door Open)	D	47 5/8 in
Height to Top of Case	E	68 3/8 in
Height to Top of Door Hinge	F	69 3/4 in
Width	G	35 3/4 in
Width (door open 90 deg. w/o handle)	H	39 1/4 in
Width (door open 90 deg. w/ handle)	I	44 1/4 in

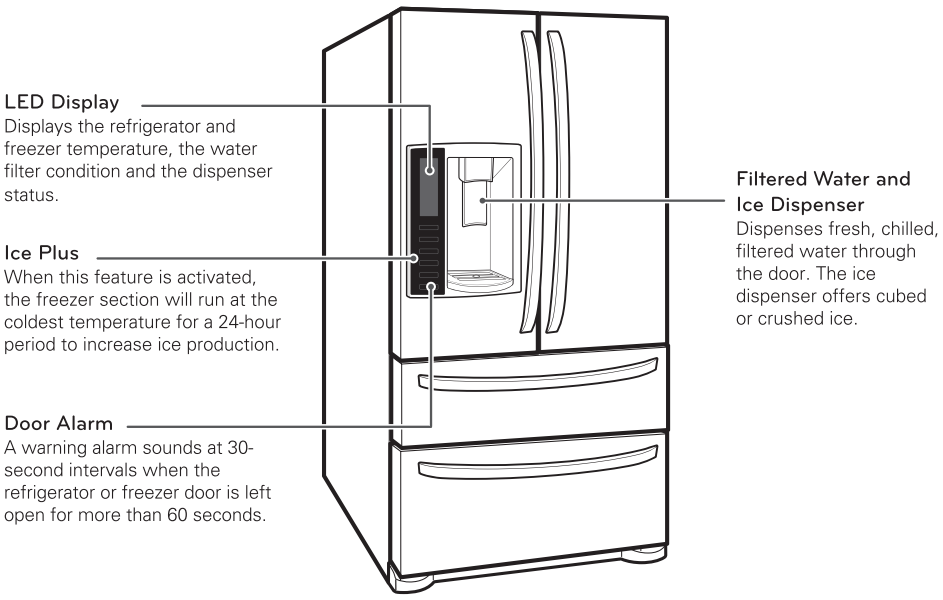
PARTS AND FEATURES

COMPONENTS

Use this page to become more familiar with the parts and features of your refrigerator.
Page references are included for your convenience.

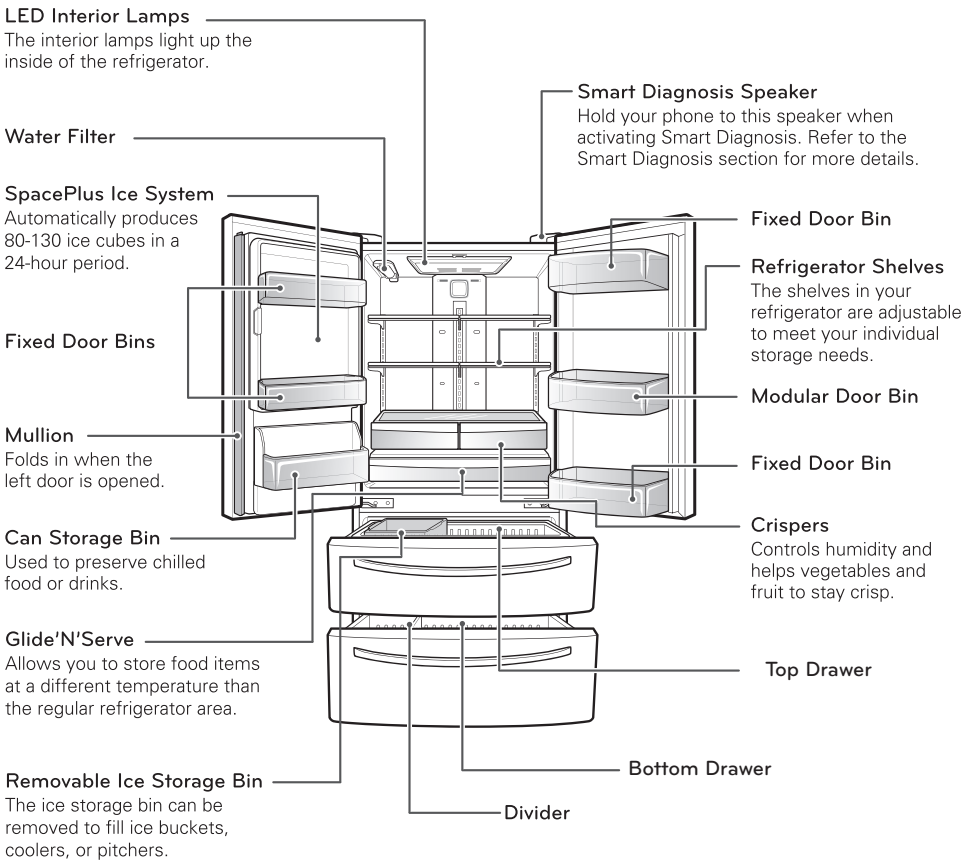
*The appearance and specifications of the actual product may differ depending on the model.

Refrigerator Exterior



PARTS AND FEATURES

Refrigerator Interior



CONTENTS

SAFETY PRECAUTIONS

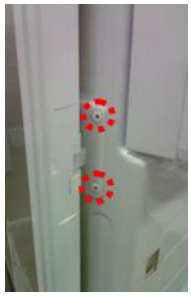
Please read the following instructions before servicing your refrigerator.

1. Unplug the power before handling any elctrical componets.
2. Check the rated current, voltage, and capacity.
3. Take caution not to get water near any electrical components.
4. Use exact replacement parts.
5. Remove any objects from the top prior to tilting the product.

3-2 DOOR

● **Mullion Removal**

1. Remove 2 screws.

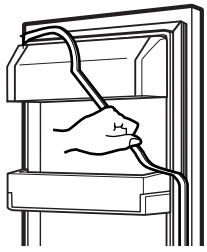


2. Lift Mullion up carefully.

3. Disconnect wire harness.

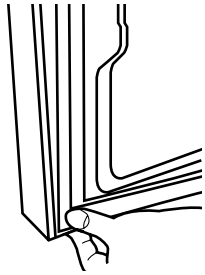
● **Door Gasket Removal**

1. Remove gasket
Pull gasket free from gasket channel on the four remaining sides of door.



● **Door Gasket Replacement**

1. Insert gasket into channel
Press gasket into channels on the four remaining sides of door.

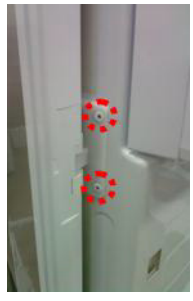


● **Mullion Replacement**

1. Connect wire harness.

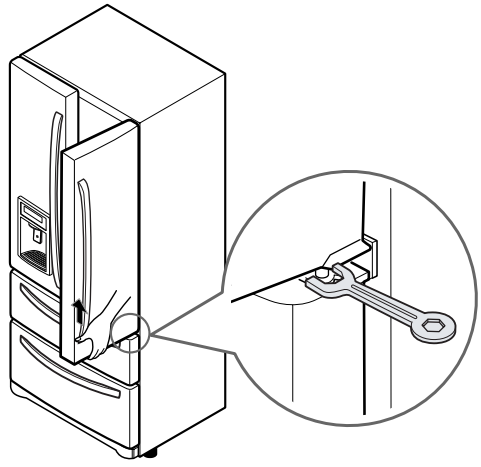
2. Insert mullion into the channel.
Insert the cover assembly into bracket, door.

3. Assemble 2 screws.



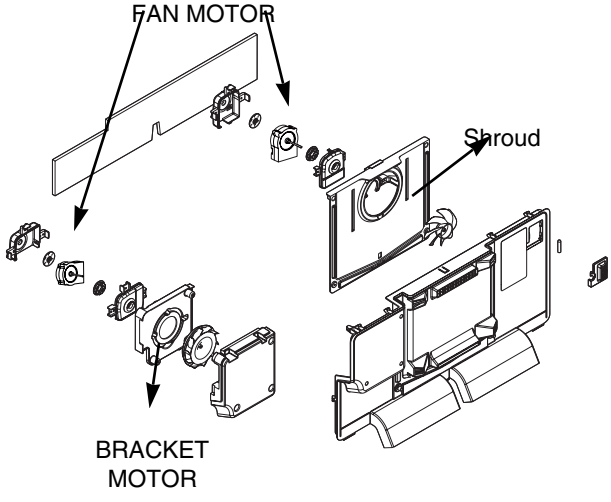
3-3 Door Alignment

If the space between the door are uneven,
follow the instructions to align them.
Remove the Base Grillie. Turn the leveling legs counter clock wise to raise or clock wise 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 User Manual) to adjust the bolt in the door hinge to adjust the height. (CCW to raise or CW to lower the height.)



3-4 FAN AND FAN MOTOR(EVAPORATOR)

1. Remove the freezer drawer. (If your refrigerator has an icemaker, remove the icemaker first)
2. Remove the plastic guide for slides on left side by unscrewing phillips head screws.
3. Remove the grille by removing 4 screws and pulling the grille forward.
4. Remove the Fan Motor assembly by loosening 3 screws and disassembling the shroud.
5. Pull out the fan and separate the Fan Motor and Bracket.



* Ice Fan Scroll Assembly Replacement

1) Remove the plastic guide on the left side, using a phillips screwdriver to remove the screws.
2) Pull off the sensor cover.
3) Remove the grill cover.
4) Gently pull on the grill assembly to remove.
5) Disconnect the wiring harness.
6) Remove all screws on the scroll assembly.


(1)


(2)


(3)


(4)


(5)


(6)

3-5 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)

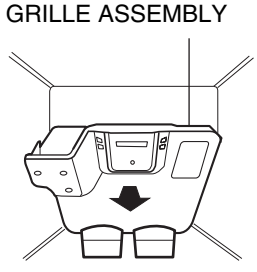


Figure 1

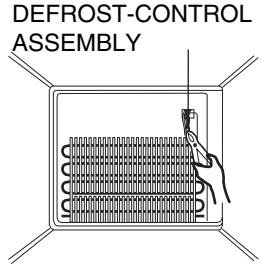


Figure 2

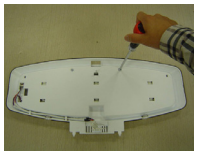
3-6 LAMP

Unplug, or disconnect power at the circuit breaker.
If necessary, remove top shelf or shelves.

3-6-1 Refrigerator Compartment Lamp

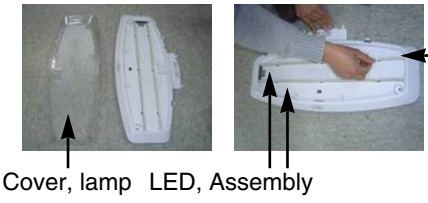
1) Release 2 screws.
2) Hold both ends and pull down to remove.


3) To remove the lamp case and cover, release 2 screws as shown.



4) Use a flat tool as shown below to remove the lamp cover.


5) To remove the LED assembly, pull apart the cover.



3-6-2 Freezer Compartment Lamp

1. Unplug refrigerator power cord form outlet.
2. Remove screw with driver.
3. Grasp the cover Lamp, pull the cover downward.


3-7 MULTI DUCT

1. Romove the upper and lower caps with a flat screwdriver and remove 2 screws. (Figure 3)
2. Disconnect the lead wire on the bottom position.

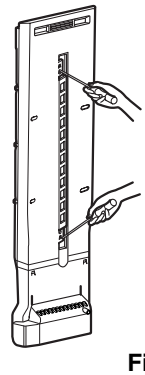


Figure 3

3-8 MAIN PWB

⚠ **WARNING:** Unplug the refrigerator before removing the control board.

1) Loosen the 3 screws on the PWB cover.

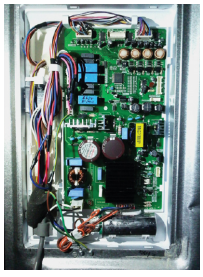
2) Remove the PWB cover

3) Disconnect wire harness and replace the main PWB in the reverse order of removal.

3-8 MAIN PWB

1) Loosen 3 screws on the PWB cover.

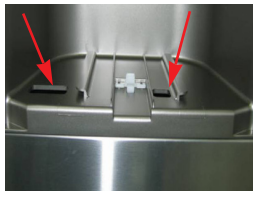
2) Remove the PWB cover



3) Disconnect wire harness and replace the main PWB in the reverse order of removal.

3-9 DISPENSER

1) Pull out the drain



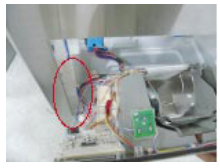
2) Use these 2 holes to pull out the bottom

3) If nozzle is interfered with button, push and pull out the bottom of button and then pull out the right side.

4) Holding the inner side of the dispenser pull forward to remove.

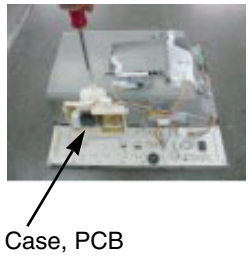
5) Remove the lead wire.

⚠ **CAUTION:** When replacing the dispenser cover make sure the lead wire does NOT come off and the water line is not pinched by the dispenser.

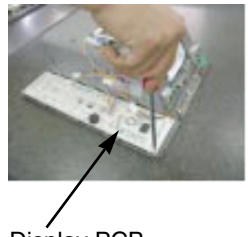


3-10 DISPLAY PCB

As shown below, remove 1 screw on the PCB fixing screw. Remove the display PCB fixing screw.



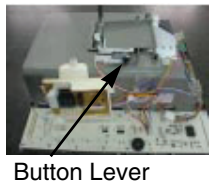
Case, PCB



Display PCB

3-11 ICE BUTTON ASSEMBLY

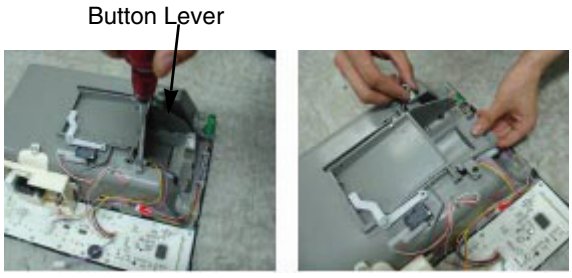
1) Remove the 1 screw holding the lever.
2) Remove the spring from the hook.
3) Push and pull on the tab to remove.



Button Lever

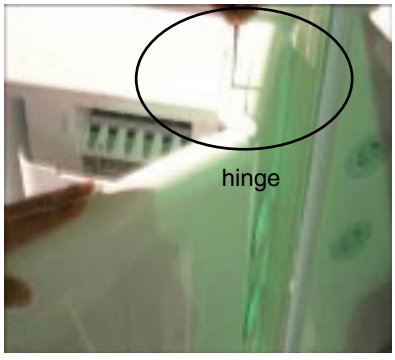
3-12 WATER BUTTON ASSMEBLY

1) Remove screws.
2) Grasp the Button assembly and lift.



3-13 ICE CORNER DOOR REPLACEMENT

1) Loosen the front screw as shown in the picture.
2) Lift up the hinge with one hand.
3) Pull out the Ice Corner Door with the other hand.

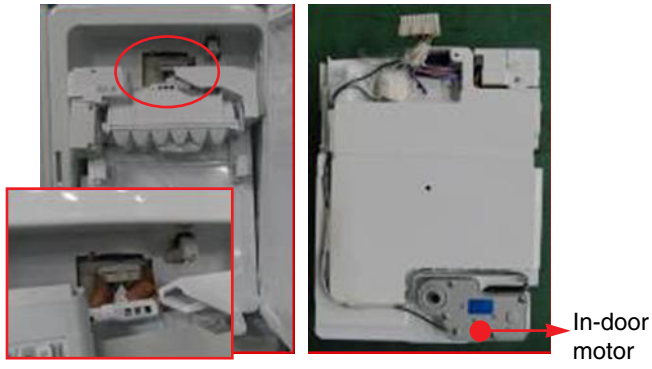


3-14 ICEMAKER REPLACEMENT

1) Remove 4 screws as shown.

2) Grasp the bottom of motor cover assembly and pull slowly.

3) Disconnect wire harness from wall of compartment.

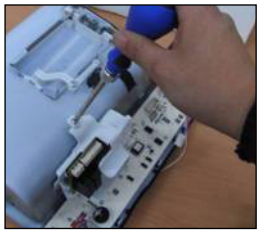


⚠ **CAUTION:** Make sure that the motor housing is taped to the mold, if not positioned correctly the cover will not fit properly.

3-15 SUB PWB FOR WORKING DISPENSER

1) Disconnect the wire harness.

2) Remove 1 screw from PWB and replace with new PWB.

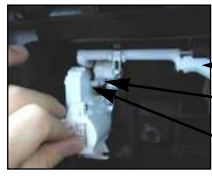


3-16 CAP DUCT MOTOR REPLACEMENT

1) Separate the Housing of the Cap Duct Motor.

2) Unscrew 3 screws to disassemble the motor.

3) When replacing the motor, check the position of the door duct and the link for proper fit.



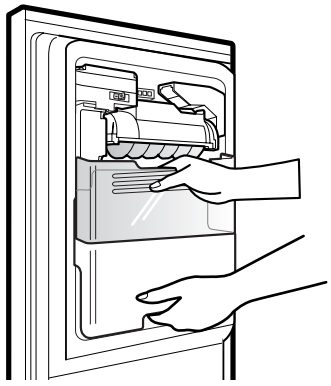
NG Position

4) Insert 2 screws.

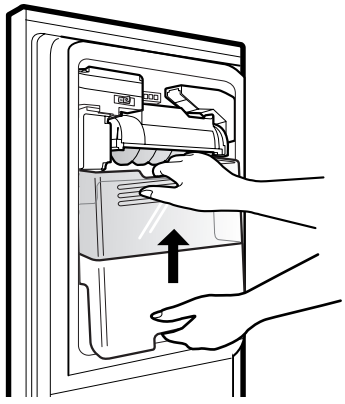
5) Push housing aside.

3-17 HOW TO REMOVE A ICE BIN

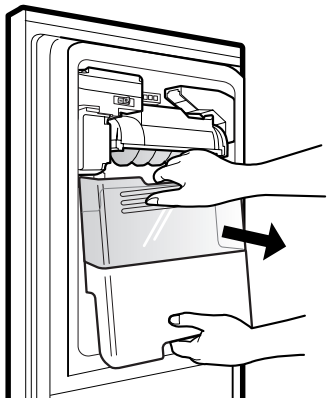
1) Grip the handles, as shown.



2) Tilt and lift slightly as shown.

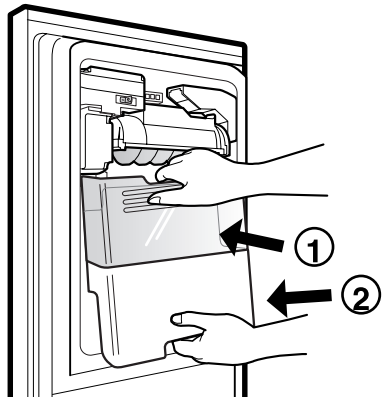


3) Remove ice bin slowly.



3-18 HOW TO INSERT A ICE BIN

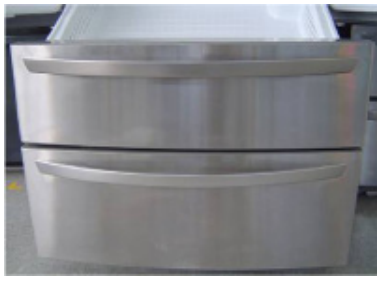
1) Insert the Ice Bin, slightly tilting to avoid touching the Icemaker. (Especially, Ice-Detecting Sensor)



3-19 HOW TO REMOVE AND REINSTALL THE PULLOUT DRAWER

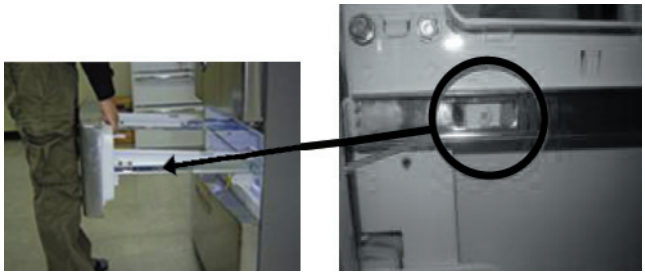
3-19-1 Follow Steps to Remove

Step 1) Open the freezer door.

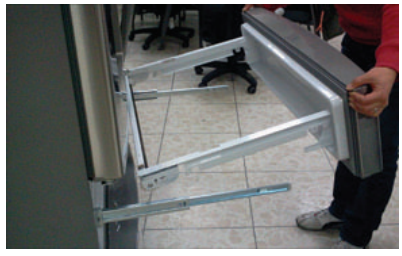


Step 2) Remove the top drawer

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.

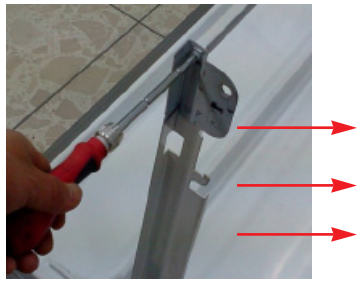


Step 5) Remove only 1 screw of gear ice, and disassemble the bar and gear ice

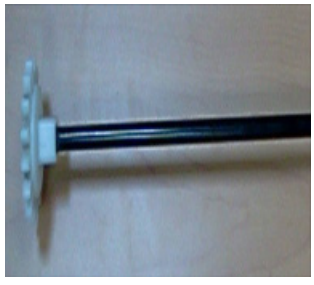
Step 6) Remove 2 screws of both side of supporter covers tv and disassemble the supporter cover tv.

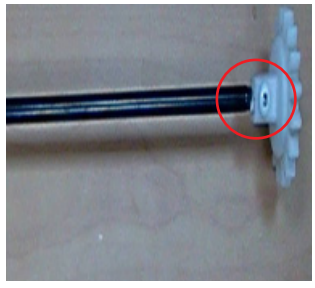
3-19-2 Follow Steps to Reinstall

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

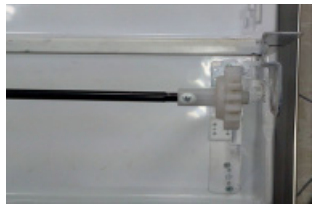


Step 2) ① Assemble a bar and gear ice with screw.
② Push the otherside of the gear to inside of the bar.

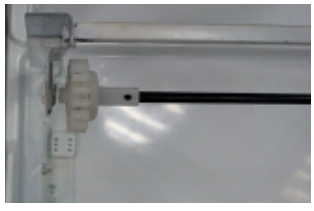




Step 3) Put gear ice assembled with the bar by screw into connector rail's hole.



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

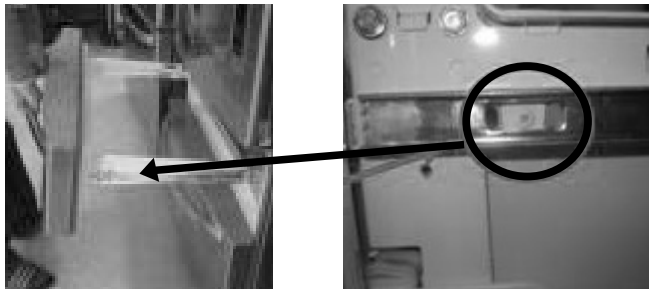


Step 5) The rail system will align itself by pushing the rails all the way into the freezer section.
Pull the rails back out to full extension.


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

* Assemble them like as pictures


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



Step 8) Reinstall the top drawer, and close the freezer door.

3-20 WATER VALVE DISASSEMBLY METHOD

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

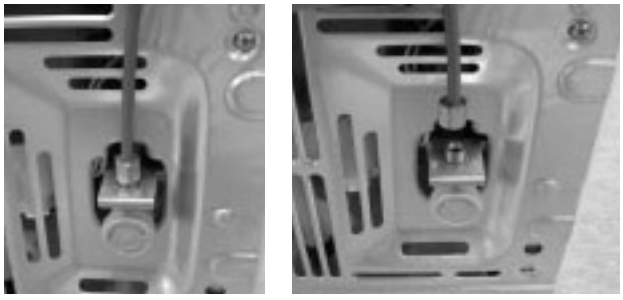


Figure 59

2) Remove cover and 1 screw from the valve.

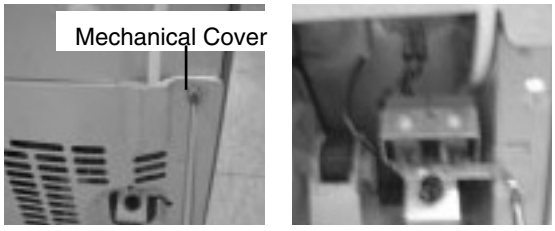


Figure 60

3) Separate the housing and remove the valve.

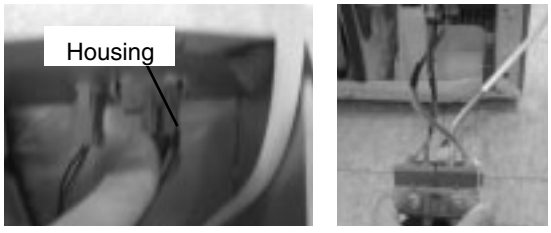


Figure 61

4) Remove the clip, and press the collet to separate the tube from the connector. Note: there maybe some water in the line.

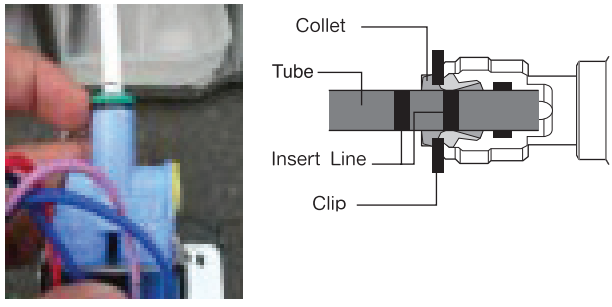


Figure 62

3-21 FAN AND FAN MOTOR DISASSEMBLY METHOD

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

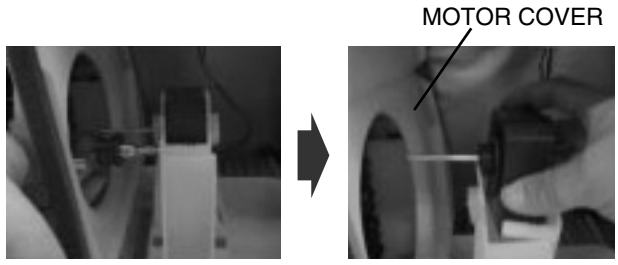


Figure 63

2) Separate the Fan Assembly and Motor, turn counter clockwise to remove from the motor shaft.

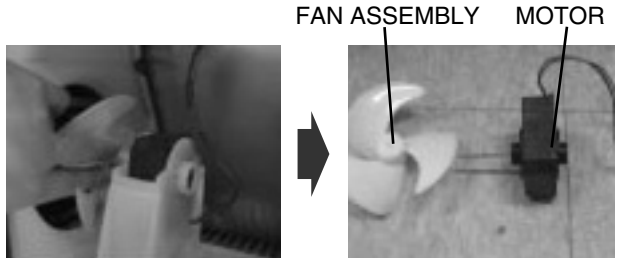


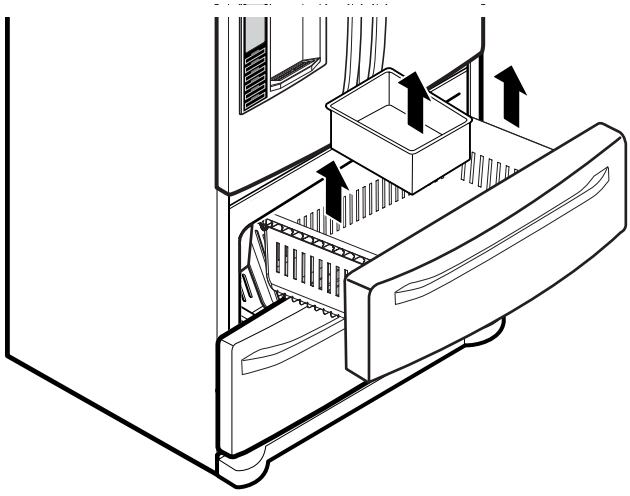
Figure 64

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.).

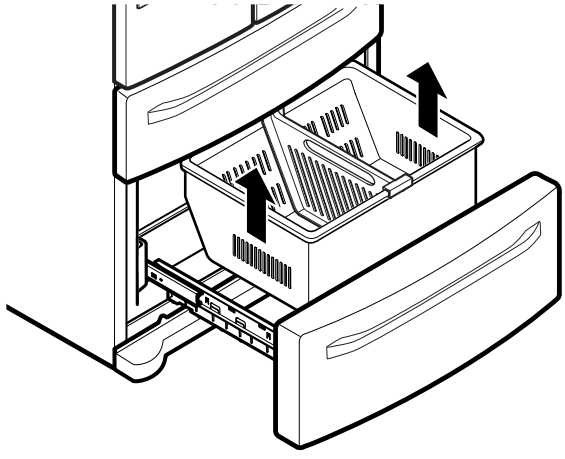
3-22 TOP DRAWER

To remove the freezer drawer, pull the drawer open to full extension. Remove the drawer and Ice Bin lifting the basket from the rail system.



3-23 BOTTOM DRAWER

To remove the freezer drawer, pull the drawer open to full extension. Remove the lower DuraBase ®basket by lifting the basket from the rail system.



4. ADJUSTMENT

4-1 COMPRESSOR

4-1-1 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.

4-1-2 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.

4-1-3 Remove the cover PTC


(1) Remove the Cover Back M/C


(2) Loosen two screws on comp base


(3) Use a L-shaped flap tooll to pry off the cover
(4) Assembly in reverse order of disassembly

4-2-3 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).

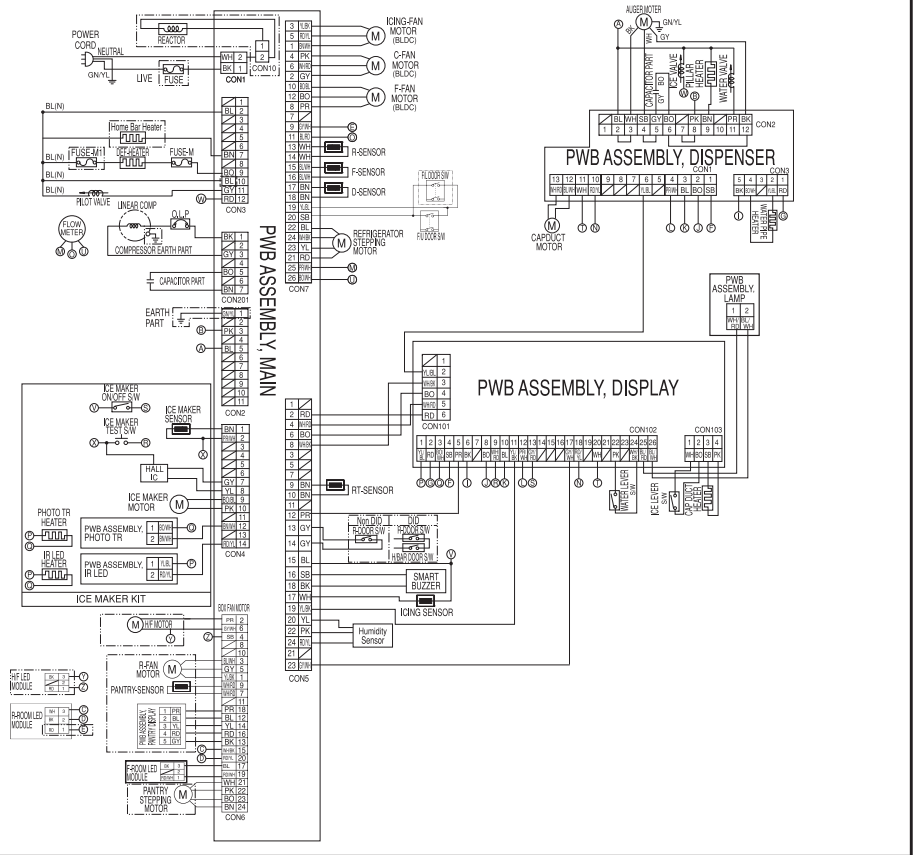
5. CIRCUIT DIAGRAM

5-1

MEZ62581591

CIRCUIT DIAGRAM

*EARTH PART, REACATOR PART, F-LAMP, F-ROOM LED MODULE, PLUG TYPE AND COMPEARTH PART, FUSE ON CIRCUIT DIAGRAM ARE SUBJECT TO CHANGE IN DIFFERENT LOCALITIES AND MODEL TYPE.



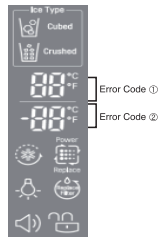
BK(BLACK) : NOIR BL(BLUE):BLEU BN(BROWN) : MARRON BO(BRIGHT ORANGE) : ORANGE BRILLANT GY(GRAY) : GRIS
YL(YELLOW) : JAUNE GN(GREEN) : VERT PR(PURPLE) : PURPLE WH(WHITE) : BLANC
SB(SKY BLUE) : BLEU/BLANC PK(PINK) : ROSE GN/YL(GREEN/YELLOW) : VERT/JAUNE BL/WH(BLUE/WHITE) : BLEU/BLANC

RD(RED) : ROUGE WH/RD(WHITE/RED) : BLANC/ROUGE BN/WH(BROWN/WHITE) : MARRON/BLANC
WH/BK(WHITE/BLACK) : LANC/NOIR YL/BK(YELLOW/BLACK) : JAUNE/NOIR PR/WH(PURPLE/WHITE) : VIOLET/BLANC
RD/WH(RED/WHITE) : ROUGE/BLANC GY/WH(GRAY/WHITE) : GRIS /BLANC BO/BL(BRIGHT ORANGE/BLUE) : ORANGE BRILLANT/BLEU

RD/YL(RED/YELLOW) : ROUGE/JAUNE
BL/RD(BLUE/RED) : BLEU/ROUGE
BO/WH(BRIGHT ORANGE/WHITE) : ORANGE BRILLANT/BLANC

6. TROUBLESHOOTING

6-1 Error Code Summary



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

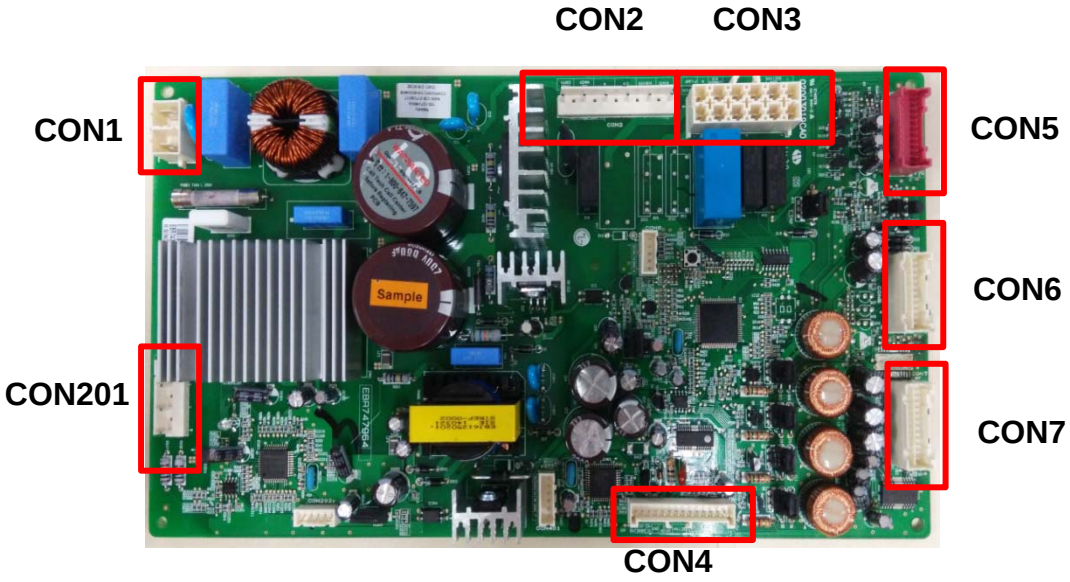
NOTE) Within 3 hours after the error : Press the Ice Plus button and Freezer button simultaneously
3 hours after the error : All errors, except for "E rt", "E SS",
"E IS(except for Icing sensor)", "E gF", "E It" error, are displayed.
"E IS" which is displayed without input of user is the error of Icing Sensor.

NO	Error Detection Category	Error Display		Error Generation Factors	Remark
		Freezer Temperature (Error code ①)	Refrigerator Temperature (Error code ②)		
1	Normal			None	Normal operation of display
2	Freezer Sensor Error	E	FS	Short or Disconnection of Freezer Sensor	Check each sensor at it's connector.
3	Refrigerator Sensor Error	E	rS	Short or Disconnection of Refrigerator Sensor	
4	Defrosting Sensor Error	F	dS	Short or Disconnection of Defrosting Sensor	
5	Icing Sensor Error	E	IS	Short or disconnection of the sensor about Ice maker (Icing sensor, Ice maker sensor)	
6	Pantry sensor error	E	SS	Short or Disconnection of Pantry Sensor	
7	Room Temp Sensor Error	E	rt	Short or Disconnectoin of Room temp.sensor	
8	Ice maker kit defect	E	It	Other Electric system error such as moter, gear, Hall IC, operation circuit within I/M kit	When the ice does not drop even when the I/M Test S/W is pressed
9	Flow Meter(Sensor) Defect	E	gF	Error of flow meter or water input or low water pressure	Error of flow meter or water input or low water pressure or flow meter connection
10	Poor Defrosting	F	dH	Even though it is passed 1 hour since then Defrosting, if Defrosting sensor is not over 46°F(8°C), it is caused	Temperature Fuse Disconnection, Heater disconnection, DRAIN Jam, Poor Relay for Heater
11	Abnormality of BLDC FAN Motor for Ice Making	E	IF	It is caused when feedback signal isn't over 65 seconds during BLDC FAN motor operating	Poor BLDC Motor connection, DRIVE IC, and TR
12	Abnormality of BLDC FAN Motor for Freezer	E	FF	It is caused when feedback signal isn't over 65 seconds during BLDC FAN motor operating	Poor BLDC Motor connection, DRIVE IC, and TR
13	Abnormality of BLDC FAN MOTOR For Refrigerator	E	rF	It is caused when feedback signal isn't over 65 seconds during BLDC FAN motor operating	Poor BLDC Motor connection, DRIVE IC, and TR
14	Abnormality of BLDC FAN Motor for Mechanic Room	E	CF	It is caused when feedback signal isn't over 65 seconds during BLDC FAN motor operating	Poor BLDC Motor connection, DRIVE IC, and TR
15	Communication Error	E	CO	Communication Error between Micom of Main PCB and Display Micom	Poor Communication connection,Poor TR of Transmitter and Receiver Tx/Rx between display and main board.

7. PCB Picture

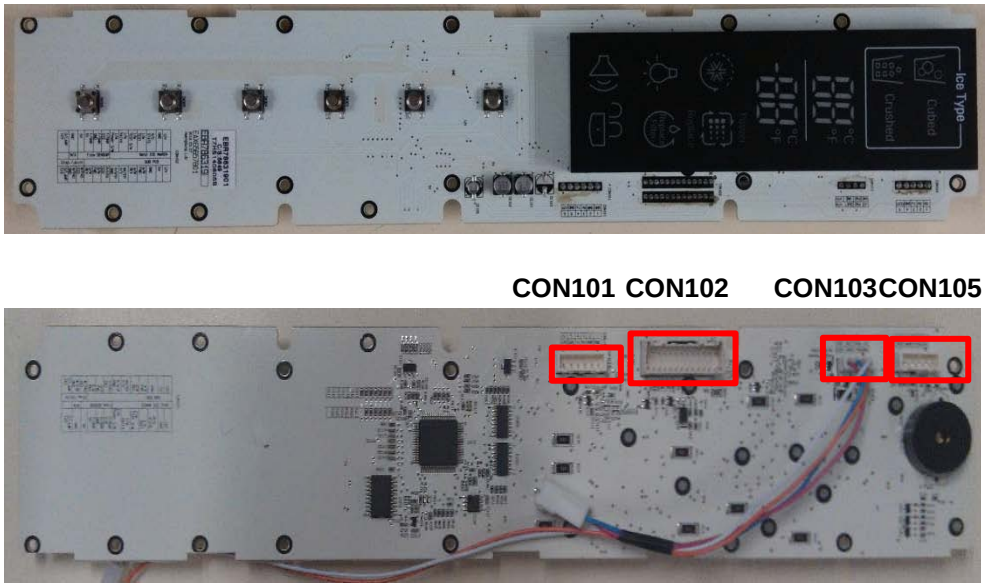
7-1. Main PCB

*(P/N : EBR747964**)*



7-2. Display PCB

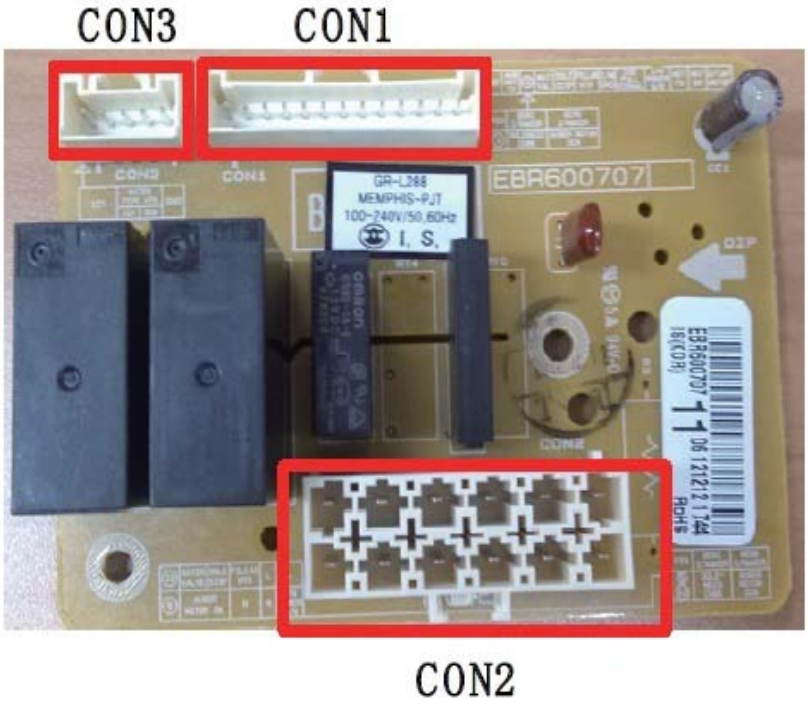
*(P/N : EBR786319**)*



7. PCB Picture

7-3. Sub PCB

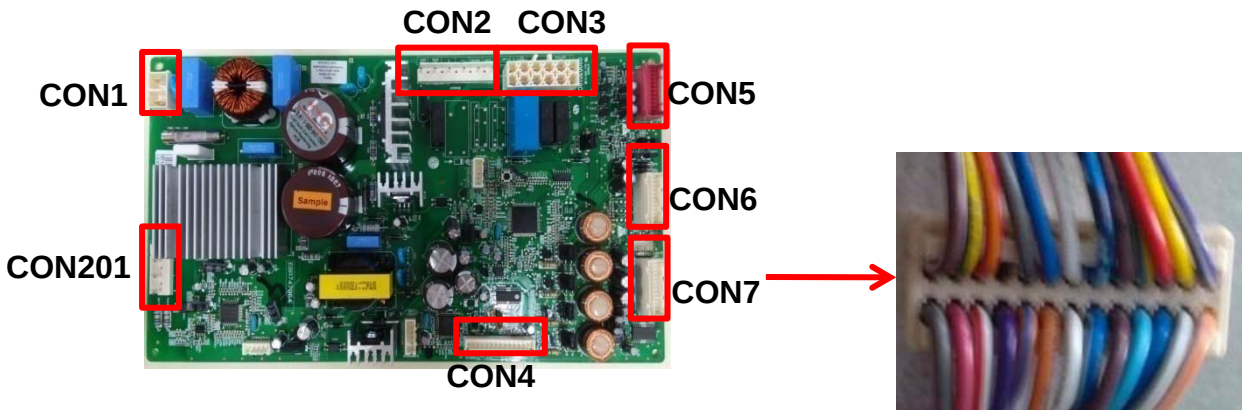
(P/N : EBR60070711/33)

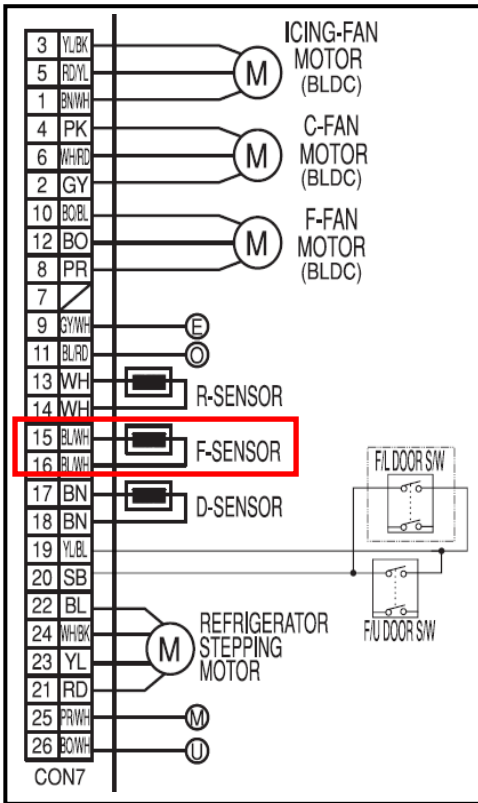


8. Trouble Shooting

8-1. Freezer Sensor Error (E FS)

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





	Resistance [Ω]	
CON7 15th pin ~ 16th pin	**Short**	**0**
	Open	**OFF**
	Other	**Normal**

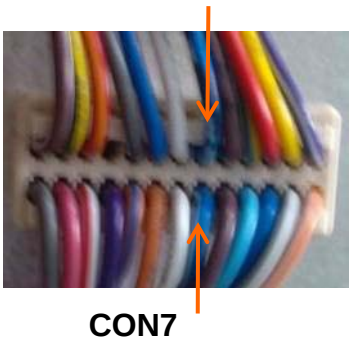
CON7 15th pin ~ 16th pin	Resistance [Ω]
-22°F / -30°C	**40k**
-13°F / -25°C	**30k**
-4°F / -20°C	**23k**
5°F / -15°C	**17k**
14°F / -10°C	**13k**
23°F / -5°C	**10k**
32°F / 0°C	**8k**

Freezer Sensor Error (E FS)

1

Is the Connector disconnected or loose between Main PCB and sensor?

Yes → Reconnect or repair the connector



CON7

No

2

Check the Sensor resistance.
Is resistance 0Ω (Sensor short)?

Yes → Change the Sensor

No

3

Check the Sensor resistance.
Is resistance OFF (Sensor open)?

Yes → Replace the refrigerator

No

4

Check the Sensor resistance.
Is resistance normal?

Yes

5

Check the Temperature and resistance refer to the table.
No problem?

CON7 15th pin ~ 16th pin	**Resistance [Ω]**
-22ºF / -30ºC	**40k**
-13ºF / -25ºC	**30k**
-4ºF / -20ºC	**23k**
5ºF / -15ºC	**17k**
14ºF / -10ºC	**13k**
23ºF / -5ºC	**10k**
32ºF / 0ºC	**8k**

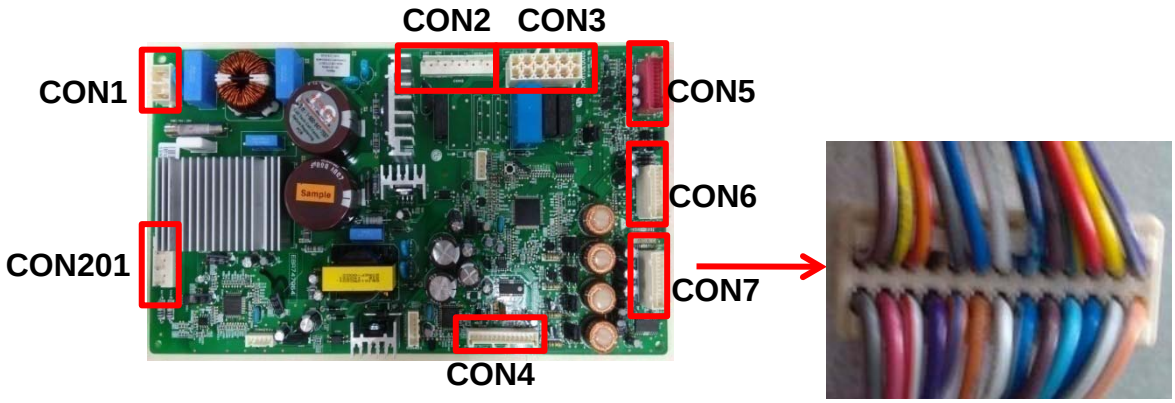
Yes

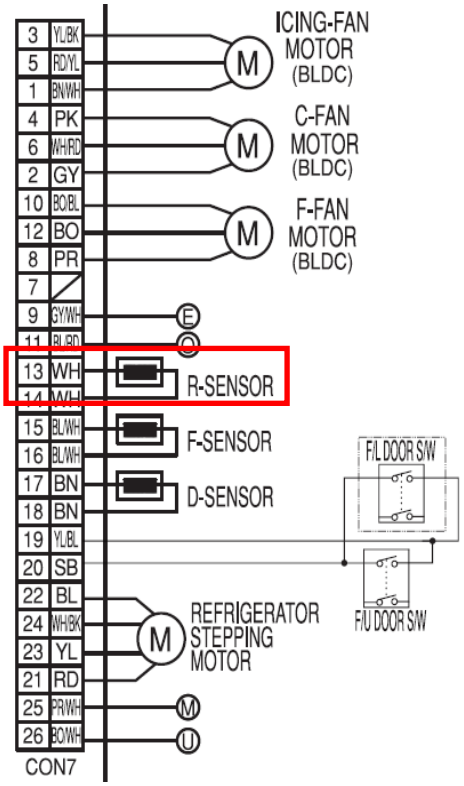
6

Explain to customer

8-2. Refrigerator Sensor Error (E rS)

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





	Resistance [Ω]	
CON7 13th pin ~ 14th pin	**Short**	**0**
	Open	**OFF**
	Other	**Normal**

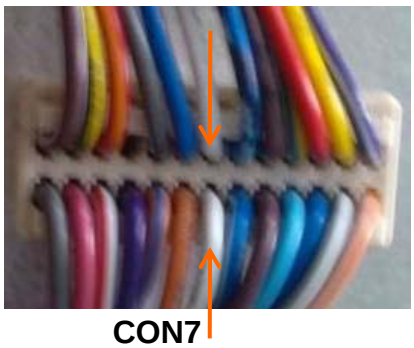
CON7 13th pin ~ 14th pin	Resistance [Ω]
23°F / -5°C	**38k**
32°F / 0°C	**30k**
41°F / 5°C	**24k**
50°F / 10°C	**19.5k**
59°F / 15°C	**16k**

Refrigerator Sensor Error (E rS)

1

Is the Connector disconnected or loose between Main PCB and sensor?

Yes → Reconnect or repair the connector



No

2

Check the Sensor resistance.
Is resistance 0Ω (Sensor short)?

Yes → Change the Sensor

No

3

Check the Sensor resistance.
Is resistance OFF (Sensor open)?

Yes → Replace the refrigerator

No

4

Check the Sensor resistance.
Is resistance normal?

Yes

5

Check the Temperature and resistance refer to the table.
No problem?

CON7 13th pin ~ 14th pin	**Resistance [Ω]**
23ºF / -5ºC	**38k**
32ºF / 0ºC	**30k**
41ºF / 5ºC	**24k**
50ºF / 10ºC	**19.5k**
59ºF / 15ºC	**16k**

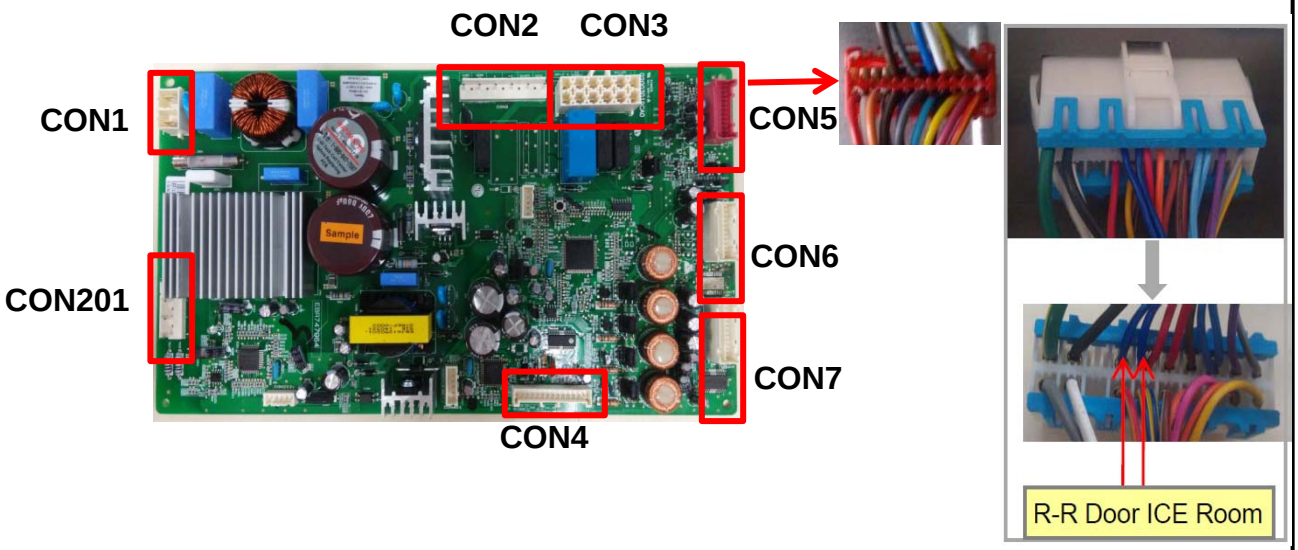
Yes

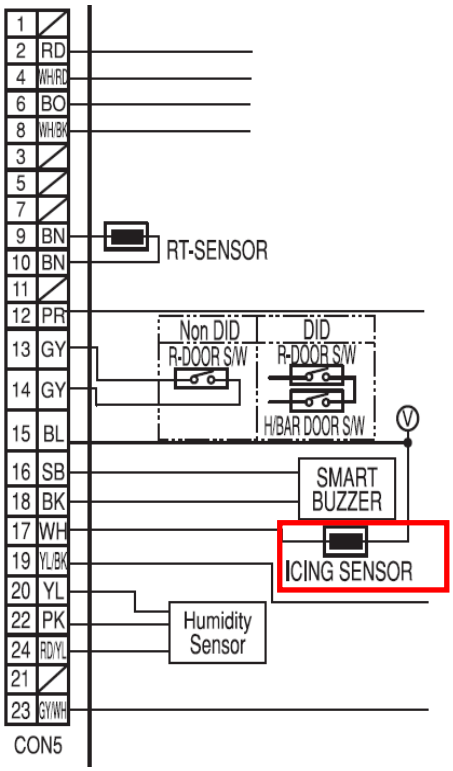
6

Explain to customer

8-3. Icing Sensor Error (E IS)

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





	Resistance [Ω]	
CON5 15th pin ~ 17th pin	**Short**	**0**
	Open	**OFF**
	Other	**Normal**

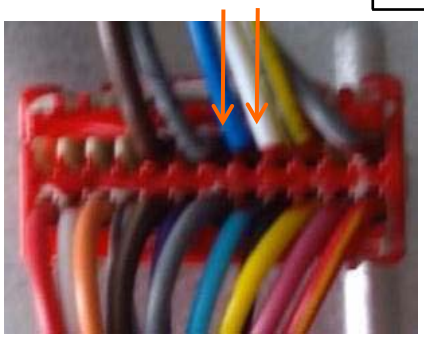
CON5 15thpin ~ 17th pin	Resistance [Ω]
-22°F / -30°C	**40k**
-13°F / -25°C	**30k**
-4°F / -20°C	**23k**
-13°F / -25°C	**17k**
14°F / -10°C	**13k**
23°F / -5°C	**10k**
32°F / 0°C	**8k**

Icing Sensor Error (E IS)

1

Is the Connector disconnected or loose between Main PCB and sensor?

Yes → Reconnect or repair the connector



CON5

No

2

Check the Sensor resistance.
Is resistance 0Ω (Sensor short)?

Yes → Change the Sensor

No

3

Check the Sensor resistance.
Is resistance OFF (Sensor open)?

Yes → Replace the refrigerator

No

4

Check the Sensor resistance.
Is resistance normal?

Yes

5

Check the Temperature and resistance refer to the table.
No problem?

CON5 15thpin ~ 17th pin	**Resistance [Ω]**
-22ºF / -30ºC	**40k**
-13ºF / -25ºC	**30k**
-4ºF / -20ºC	**23k**
-13ºF / -25ºC	**17k**
14ºF / -10ºC	**13k**
23ºF / -5ºC	**10k**
32ºF / 0ºC	**8k**

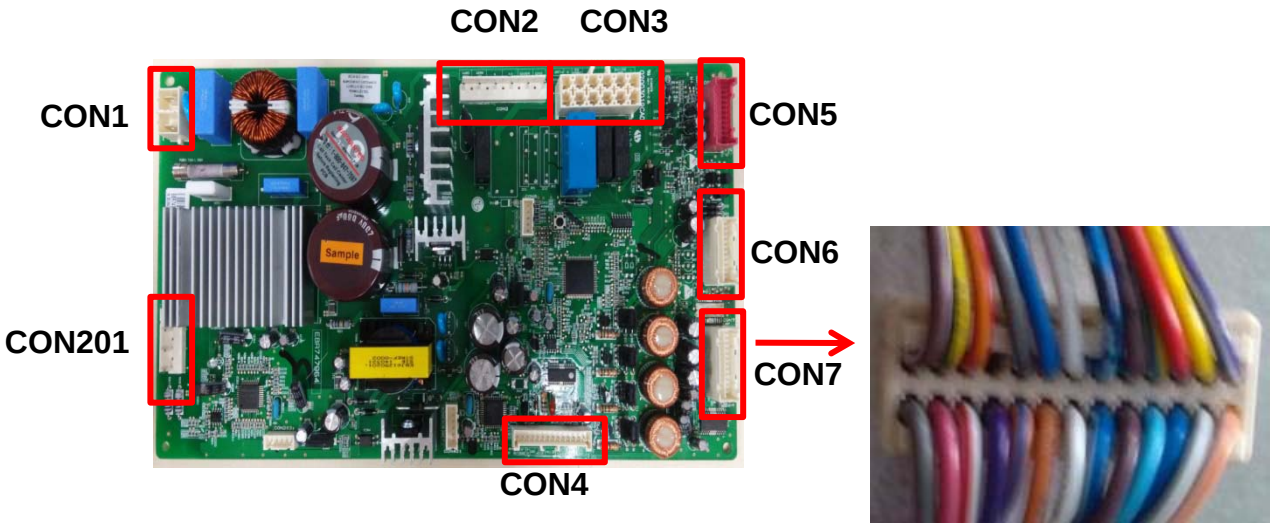
Yes

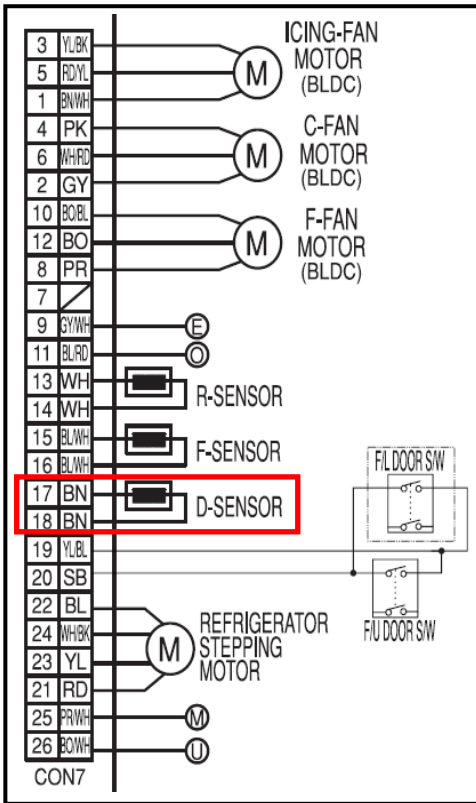
6

Explain to customer

8-4. Defrost Sensor Error (F dS)

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





	Resistance [Ω]	
CON7 17th pin ~ 18h pin	**Short**	**0**
	Open	**OFF**
	Other	**Normal**

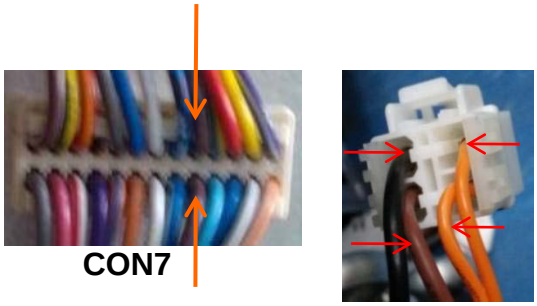
CON7 17th pin ~ 18th pin	Resistance [Ω]
23°F / -5°C	**38k**
32°F / 0°C	**30k**
41°F / 5°C	**24k**
50°F / 10°C	**19.5k**
59°F / 15°C	**16k**

Defrost Sensor Error (F dS)

1

Is the Connector disconnected or loose between Main PCB, Defrost controller and Sensor?

Yes → Reconnect or repair the connector



No

2

Check the Sensor resistance.
Is resistance 0Ω (Sensor short)?

Yes → Change the Sensor

No

3

Check the Sensor resistance.
Is resistance OFF (Sensor open)?

Yes → Replace the refrigerator

No

4

Check the Sensor resistance.
Is resistance normal?

Yes

5

Check the Temperature and resistance refer to the table.
No problem?

CON7 17th pin ~ 18th pin	**Resistance [Ω]**
23ºF / -5ºC	**38k**
32ºF / 0ºC	**30k**
41ºF / 5ºC	**24k**
50ºF / 10ºC	**19.5k**
59ºF / 15ºC	**16k**

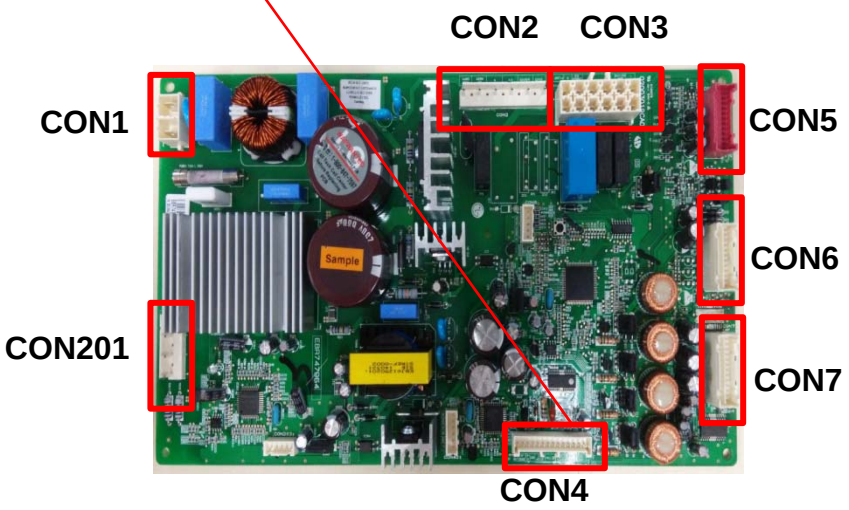
Yes

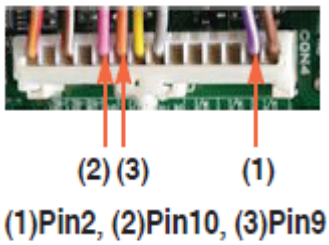
6

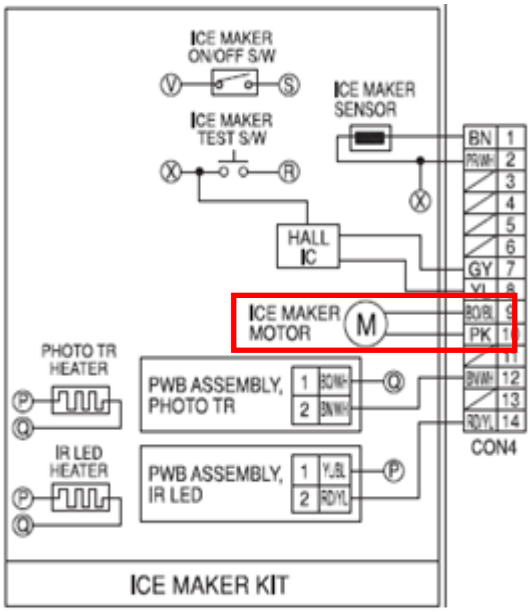
Explain to customer

8-5. Ice Maker Motor Error (E It)

Symptom	Check Point
1. E It	1. Check the Ice maker rotation 2. Check the motor voltage







Ice Maker Motor Error (E It)

1

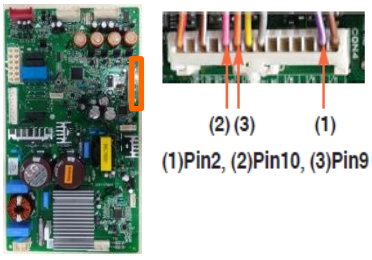
Input Ice Maker test mode(Push The ice maker test button),check The Ice Tray,Ice maker motor Rotate?

Yes → Explain to customer

No

2

Check the ice maker forward status The voltage (1)~(2) point 11~12V?

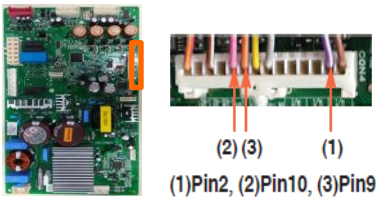


Yes → Change the Ice maker kit

OR

3

Check the ice maker reverse status The voltage (1)~(3) point 11~12V?

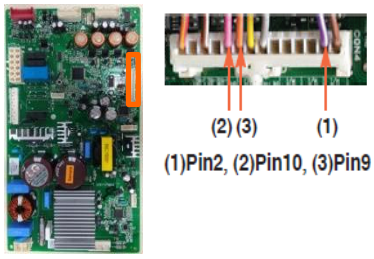


Yes → Change the Ice maker kit

OR

4

Check the ice maker forward status The voltage (1)~(2) point 0V?

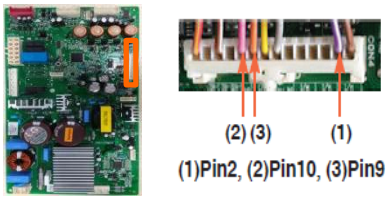


Yes → Change the Main PCB

OR

5

Check the ice maker reverse status The voltage (1)~(3) point 0V?

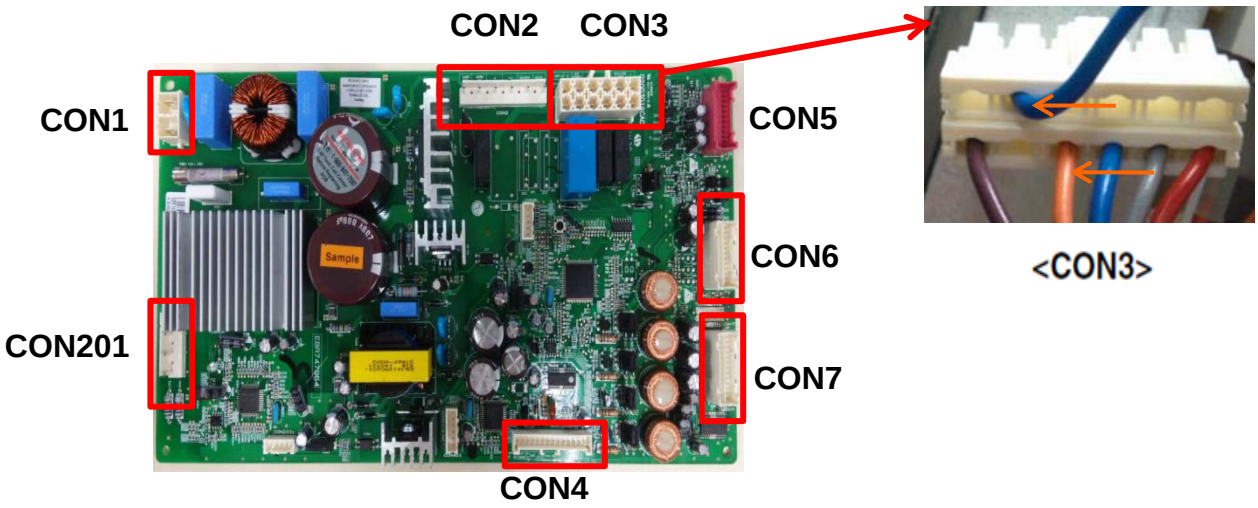


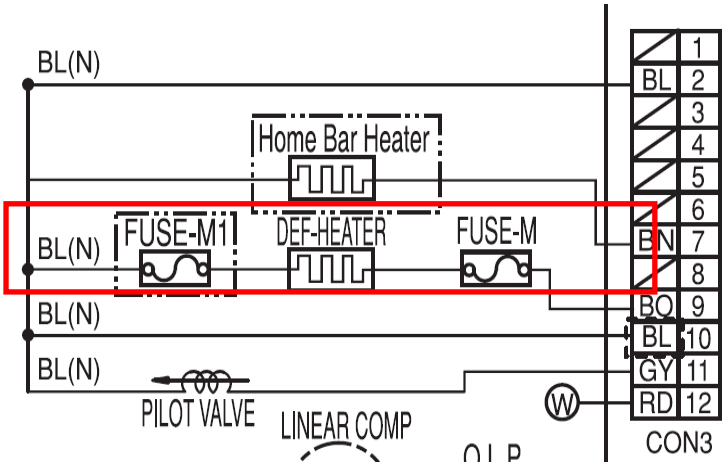
Yes → Change the Main PCB

No

8-6. Defrost Heater Error (F dH)

Symptom	Check Point
1. F dH	1. Check the door gasket 2. Check the Defrost control part 3. Check the PCB output voltage





Part	Resistance [Ω]
FUSE-M	**0**
Defrost Heater	**34~42**
Defrost Sensor	**22k↑**

TEST MODE 3	Voltage [V]
CON3 2nd pin ~ 9th pin	**112V ~ 116V**

TEST MODE 1	Voltage [V]
CON3 2nd pin ~ 9th pin	**0V**

Defrost Heater Error (F dH)

1

Check the Door gasket .
Is door gasket damaged?

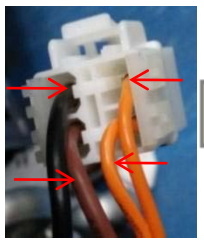
Yes → Replace the Door gasket

No

2

Check the Defrost control part.
(1) Is Fuse-M resistance 34~42Ω?

No → Change Defrost Heater

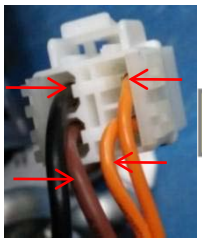


Yes

3

Check the Defrost control part.
Is Defrost Sensor resistance
22kΩ↑ or OFF?

OFF → Replace product

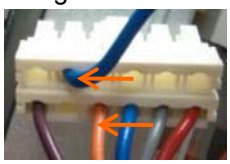


22kΩ↑

4 Input Test 3 Mode (Push the button 3 times)

Check the Heater Voltage.
Is voltage 112~116V?

NO → Replace Main PCB



CON3

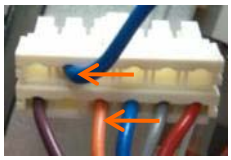
TEST MODE 3	**Voltage [V]**
CON3 2nd pin ~ 9th pin	**112V ~ 116V**

Yes

5 Input Test 1 Mode (Push the button 1 times)

Check the Heater Voltage.
Is voltage 0V?

No → Replace Main PCB



CON3

TEST MODE 1	**Voltage [V]**
CON3 2nd pin ~ 9th pin	**0V**

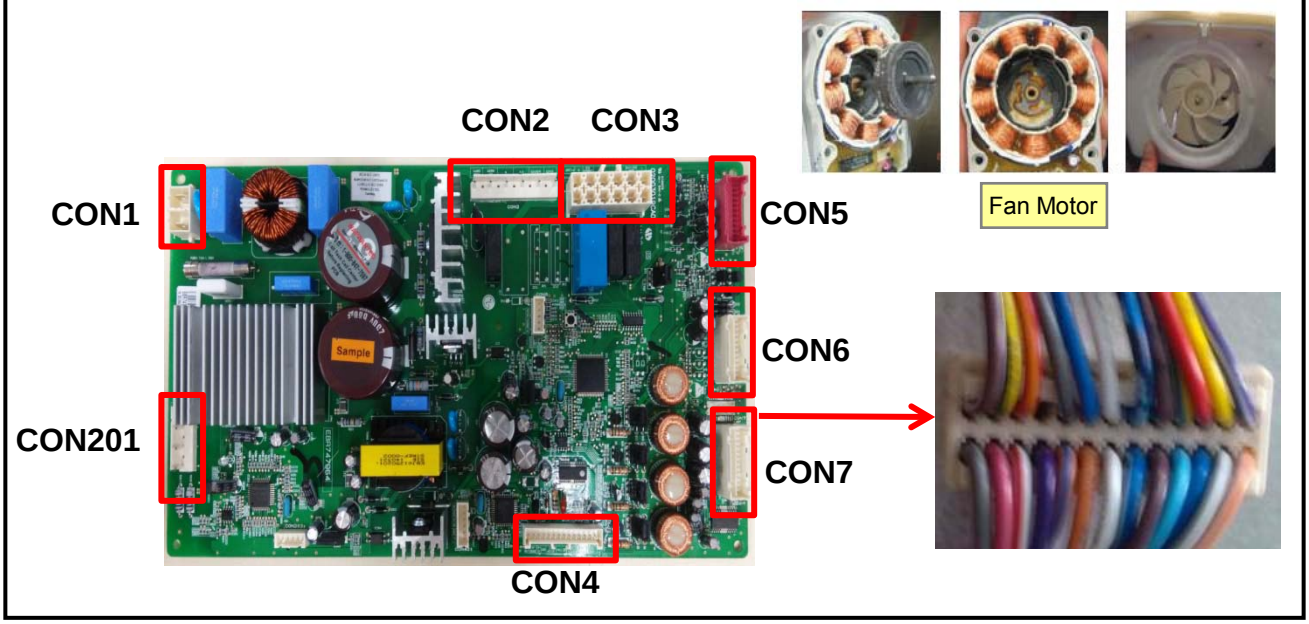
Yes

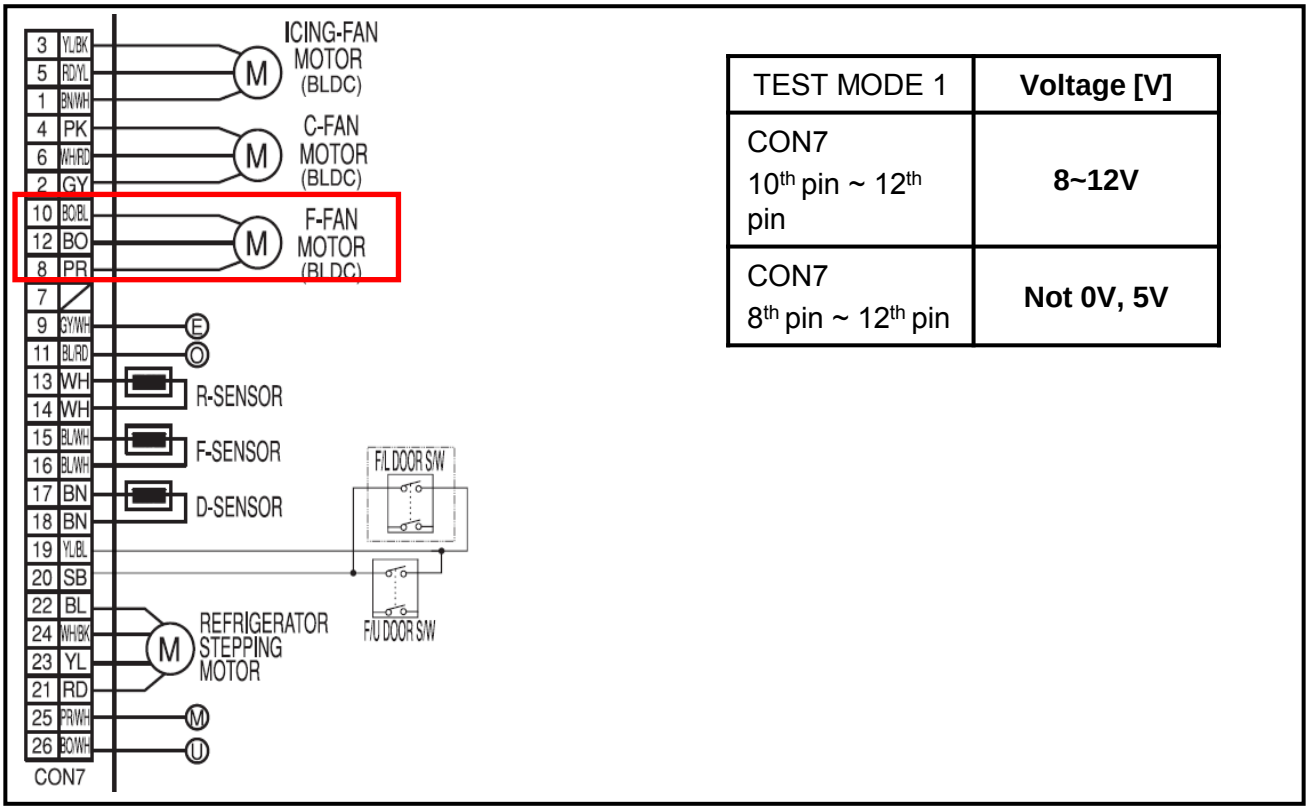
6

Explain to customer

8-7. Freezer Fan Error (E FF)

Symptom	Check Point
1. E FF	1. Check the air flow 2. Check the Fan Motor 3. Check the PCB Fan motor voltage





TEST MODE 1	**Voltage [V]**
CON7 10th pin ~ 12th pin	**8~12V**
CON7 8th pin ~ 12th pin	**Not 0V, 5V**

Freezer Fan Error (E FF)

1 **Reset the unit and Input Test1 Mode. (Push the button 1 time)**

2

Open the freezer door and Check the air flow. Windy?

No → Go to 3

Yes

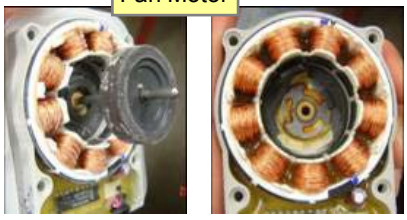
Go to 4

3

Check the Fan motor.
Rotate fan using hand.
It feel sticky?

Yes → Change the Fan motor

Fan Motor



4

Check the Fan Motor voltage
Is Fan Motor voltage 8~12V?

No → Replace Main PCB

CON7

TEST MODE 1	**Voltage [V]**
CON7 10thpin ~ 12th pin	**8~12V**

Yes

5

Check the Fan Motor voltage
Is Fan Feed Back voltage 0V, 5V?

Yes → Change the motor

CON7

TEST MODE 1	**Voltage [V]**
CON7 8th pin ~ 12th pin	**Not 0V, 5V**

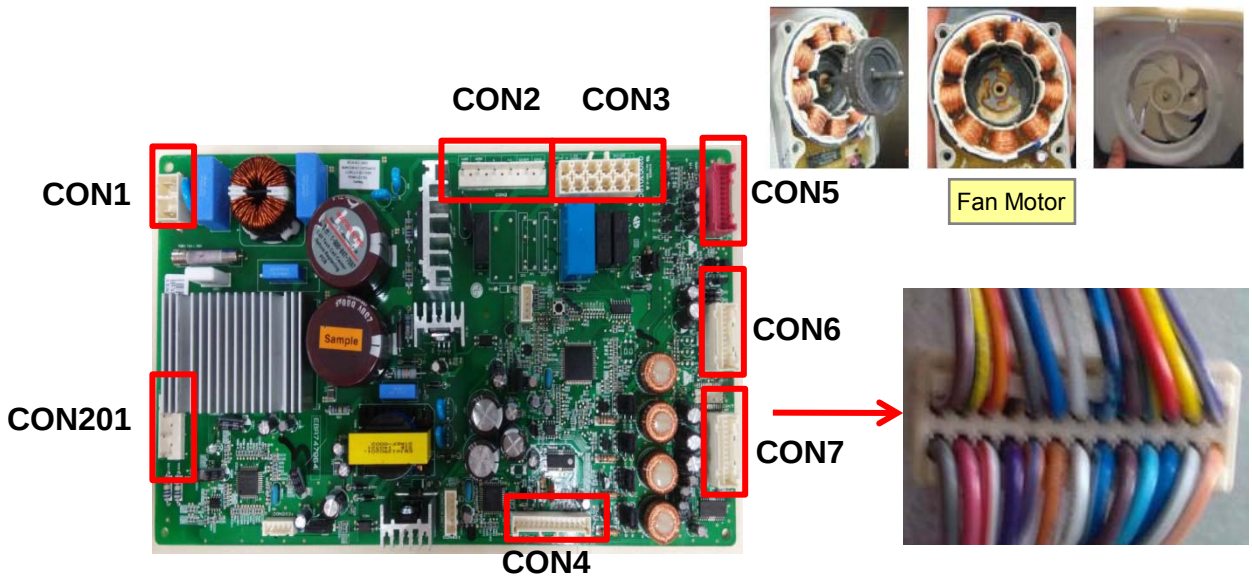
No

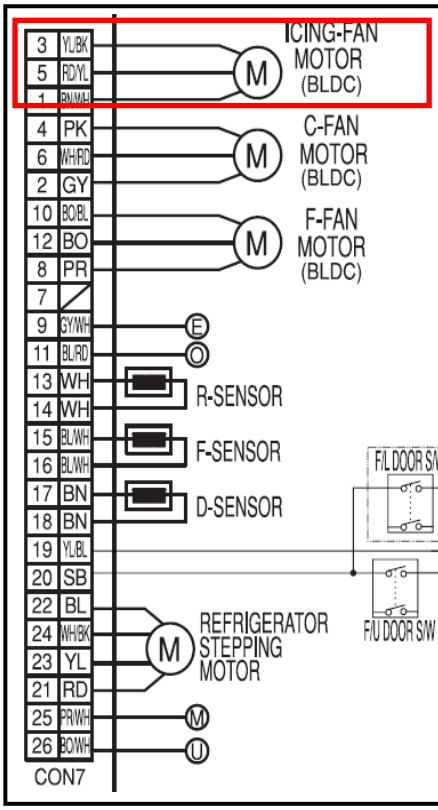
6

Explain to customer

8-8. Icing Fan Error (E IF)

Symptom	Check Point
1. E IF	1. Check the air flow 2. Check the Connector 3. Check the PCB Fan motor voltage





TEST MODE 1	**Voltage [V]**
CON7 3rd pin ~ 5th pin	**8~12V**
CON7 1st pin ~ 5th pin	**Not 0V, 5V**

Freezer Fan Error (E IF)

1 **Reset the unit and Input Test1 Mode. (Push the button 1 time)**

2 Open the freezer door and Check the air flow. Windy?

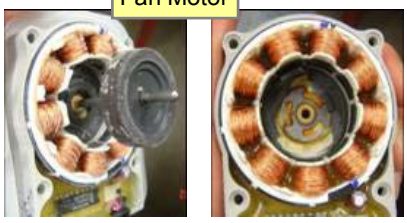
No → Go to 3

Yes → Go to 4

3 Check the Fan motor. Rotate fan using hand. It feel sticky?

Yes → Change the Fan motor

Fan Motor



4 Check the Fan Motor voltage Is Fan Motor voltage 8~12V?

No → Replace Main PCB

CON7

TEST MODE 1	**Voltage [V]**
CON7 3rd pin ~ 5th pin	**8~12V**

Yes →

5 Check the Fan Motor voltage Is Fan Feed Back voltage 0V, 5V?

Yes → Change the motor

CON7

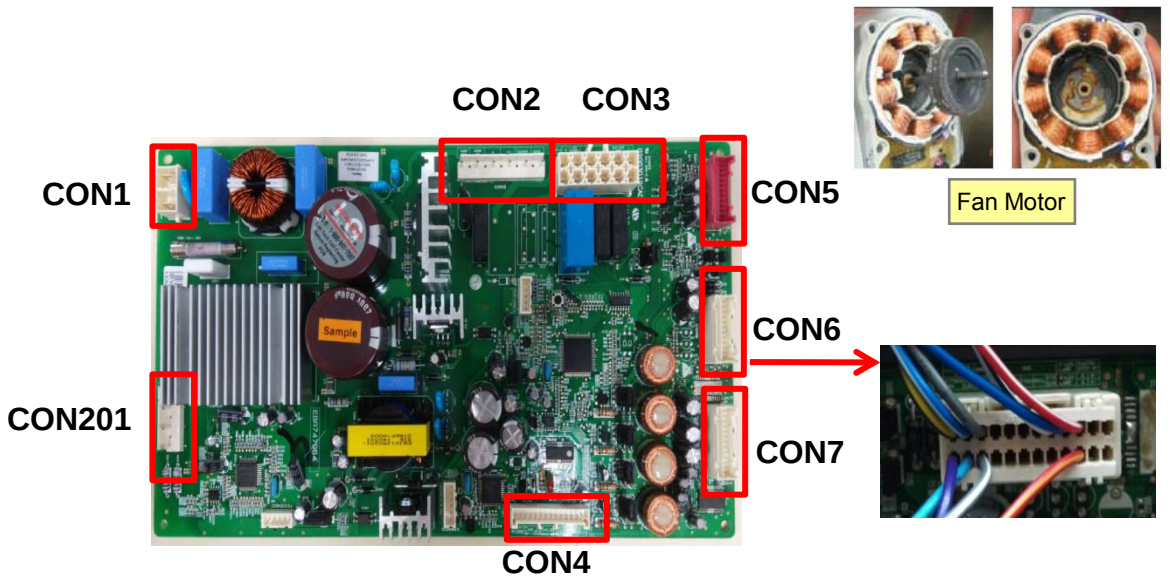
TEST MODE 1	**Voltage [V]**
CON7 1st pin ~ 5th pin	**Not 0V, 5V**

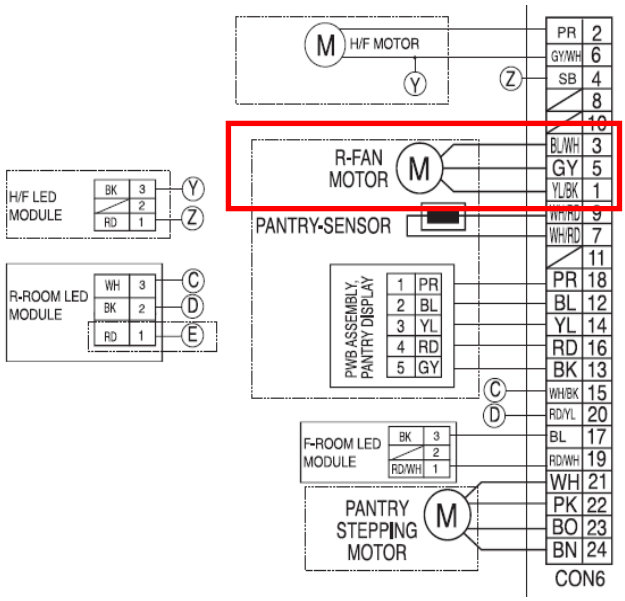
No →

6 Explain to customer

8-9. Icing Fan Error (E rF)

Symptom	Check Point
1. E rF	1. Check the air flow 2. Check the Connector 3. Check the PCB Fan motor voltage





TEST MODE 1	Voltage [V]
CON6 3rd pin ~ 5th pin	8~12V
CON6 1st pin ~ 5th pin	Not 0V, 5V

Freezer Fan Error (E rF)

1 **Reset the unit and Input Test1 Mode. (Push the button 1 time)**

2 Open the freezer door and Check the air flow. Windy?

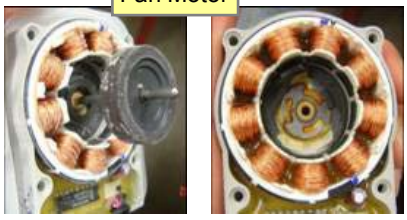
No → Go to 3

Yes → Go to 4

3 Check the Fan motor. Rotate fan using hand. It feel sticky?

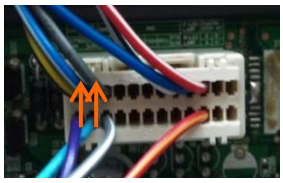
Yes → Change the Fan motor

Fan Motor



4 Check the Fan Motor voltage Is Fan Motor voltage 8~12V?

No → Replace Main PCB



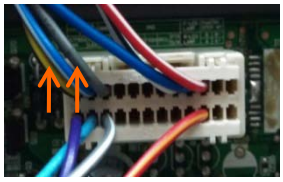
CON6

TEST MODE 1	**Voltage [V]**
CON6 3rd pin ~ 5th pin	**8~12V**

Yes →

5 Check the Fan Motor voltage Is Fan Feed Back voltage 0V, 5V?

Yes → Change the motor



CON6

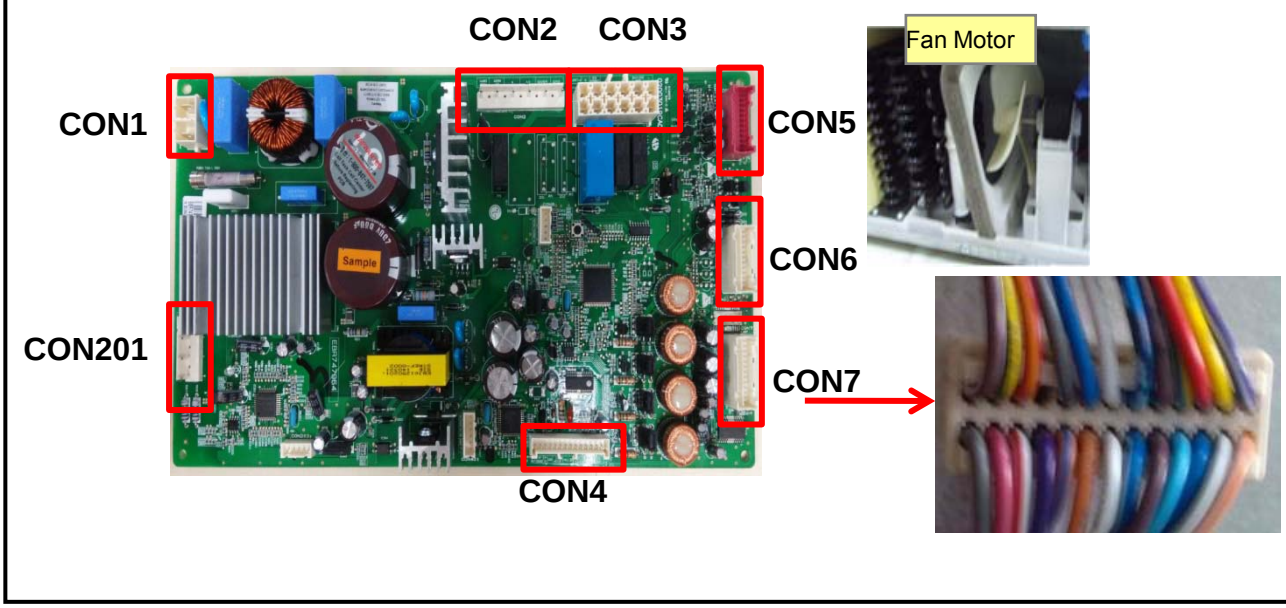
TEST MODE 1	**Voltage [V]**
CON6 1st pin ~ 5th pin	**Not 0V, 5V**

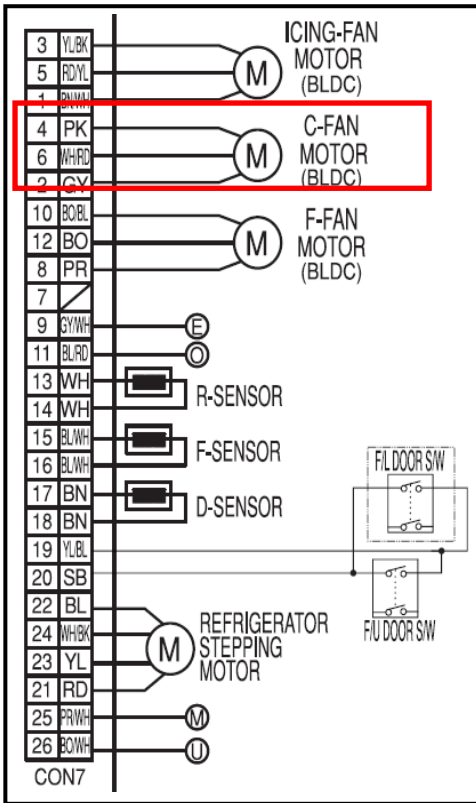
No →

6 Explain to customer

8-10. Condenser Fan Error (E CF)

Symptom	Check Point
1. E CF	1. Check the air flow 2. Check the Connector 3. Check the PCB Fan motor voltage





TEST MODE 1	**Voltage [V]**
CON7 4th pin ~ 6th pin	**8~12V**
CON7 2nd pin ~ 6th pin	**Not 0V, 5V**

Condenser Fan Error (E CF)

1 **Reset the unit and Input Test1 Mode. (Push the button 1 time)**

2

Check the fan rotating.
Does fan rotate?

No → Go to 3

Fan Motor

Yes → Go to 4

3

Check the Fan motor.
Rotate fan using hand.
It feel sticky?

Yes → Change the Fan motor

Fan Motor

4

Check the Fan Motor voltage
Is Fan Motor voltage 8~12V?

No → Replace Main PCB

CON7

TEST MODE 1	**Voltage [V]**
CON7 4th pin ~ 6th pin	**8~12V**

Yes

5

Check the Fan Motor voltage
Is Fan Feed Back voltage 0V, 5V?

Yes → Change the motor

CON7

TEST MODE 1	**Voltage [V]**
CON7 2nd pin ~ 6th pin	**Not 0V, 5V**

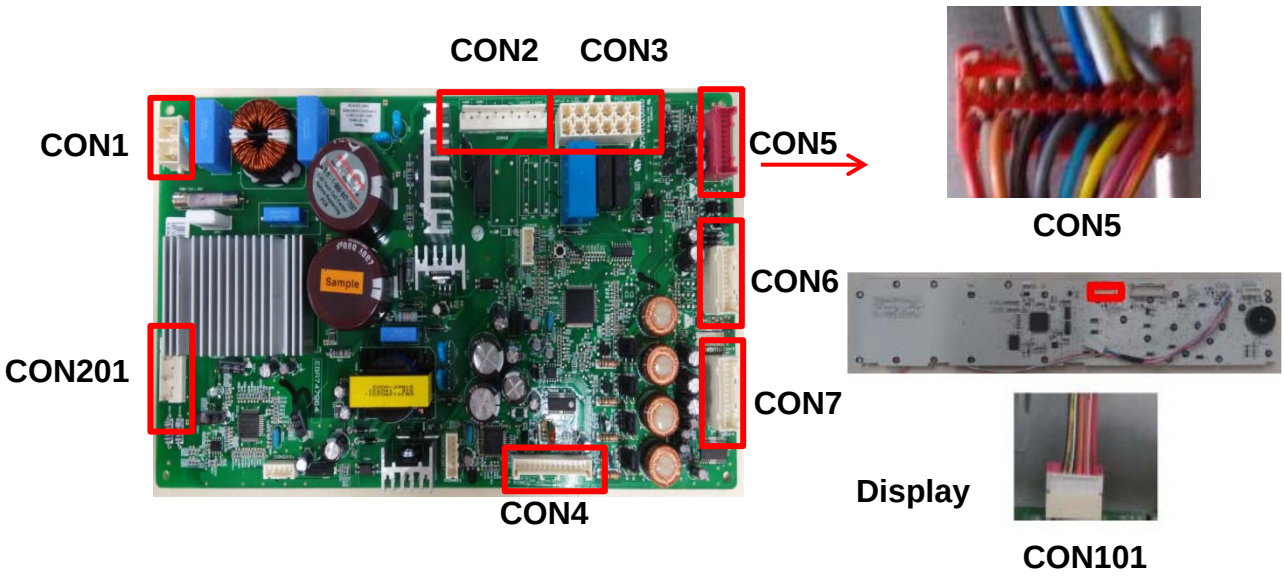
No

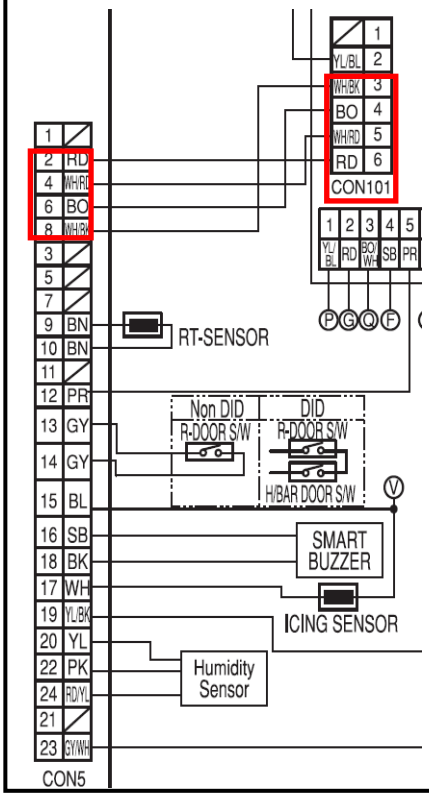
6

Explain to customer

8-11. Communication Error (E CO)

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





	Voltage [V]
CON101 5th pin ~ 6th pin	12V
CON101 4th pin ~ 5th pin	Not 0V, 5V
CON101 5th pin ~ 3rd pin	Not 0V, 5V
CON5 4th pin ~ 6th pin	Not 0V, 5V
CON5 4th pin ~ 8th pin	Not 0V, 5V

Communication Error (E CO)

1

Check the loose connection

2

Check the voltage.

Is CON101 5th pin ~ 6th pin voltage 12V?

Housing	**Voltage [V]**
CON101 5th pin ~ 6th pin	**12V**

No → Check the Hinge (loose connection) Change the Main PCB

Yes

3

Check the voltage.

Is CON101 4th pin ~ 5th pin voltage 0V or 5V?

Housing	**Voltage [V]**
CON101 4th pin ~ 5th pin	**Not 0V, 5V**

Yes → Change the Display PCB

No

4

Check the voltage.

Is CON101 5th pin ~ 3rd pin voltage 0V or 5V?

Housing	**Voltage [V]**
CON101 5th pin ~ 3rd pin	**Not 0V, 5V**

Yes → Change the Main PCB

No

5

Check the voltage.

Is CON5 4th pin ~ 6th pin voltage 0V or 5V?

CON5

Housing	**Voltage [V]**
CON5 4th pin ~ 6th pin	**Not 0V, 5V**

Yes → Change the Display PCB

No

6

Check the voltage.

Is CON5 4th pin ~ 8th pin voltage 0V or 5V?

CON5

Housing	**Voltage [V]**
CON5 4th pin ~ 8th pin	**Not 0V, 5V**

Yes → Change the Main PCB

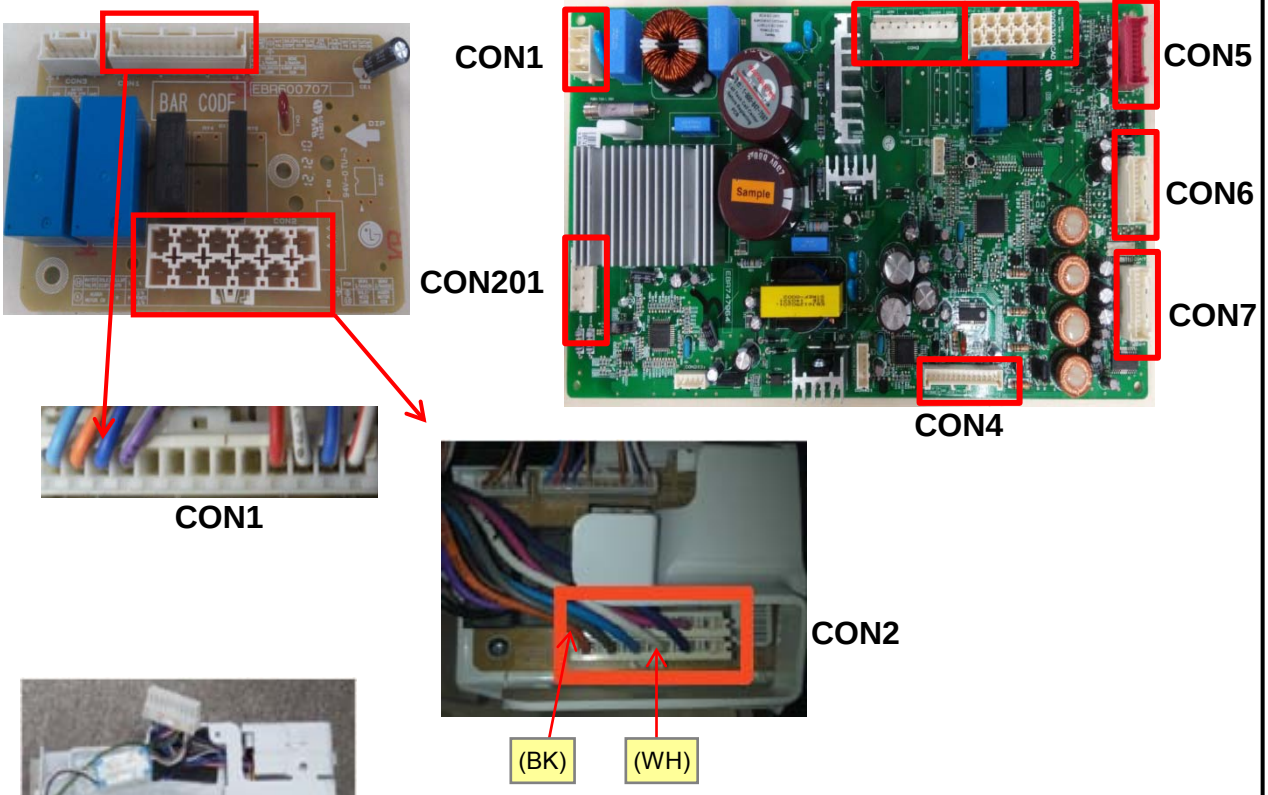
No

7

Explain to customer

8-12. Cube mode doesn't work

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

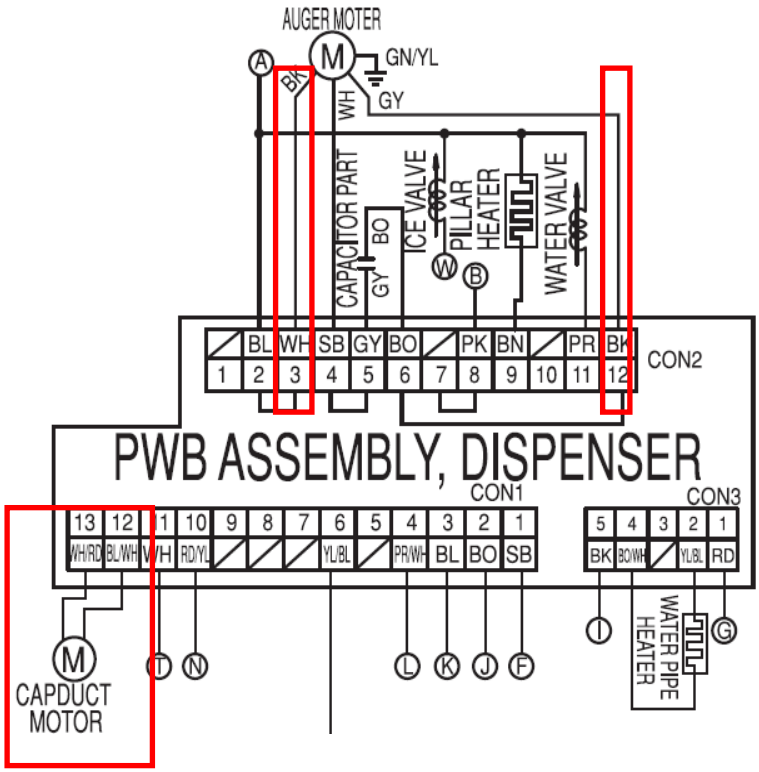


Ice Maker

Geared Motor

Dispenser Motor

8-12. Cube mode doesn't work



LEVER S/W	Voltage [V]	
CON2 3rd pin ~ 12th pin	**Pushing**	**112~115V**
	Not Pushing	**0~2V**
CON3 5th pin ~ CON1 13th pin	**Pushing**	**9~12V**
	Not Pushing	**0~2V**

	Resistance [Ω]
Geared Motor	**31.1 ~ 42.1**
Dispenser Motor	**9.9 ~ 12.1**

Cube mode doesn't work

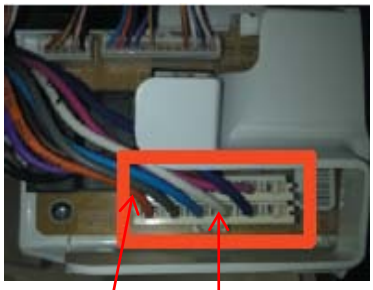
1

Check the loose connection

2

Check the voltage.
(while pushing the lever S/W)
Is voltage correct?

No → Change the PCB



CON2

LEVER S/W	Voltage [V]	
CON2 3rd pin ~ 12th pin	**Pushing**	**112~115V**
	Not Pushing	**0~2V**

Yes

3

Check the voltage.
(while pushing the lever S/W)
Is voltage correct compared with table?

No → Change the PCB

CON3 CON1

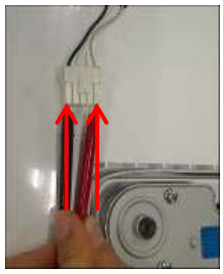
LEVER S/W	Voltage [V]	
CON3 5th pin ~ CON1 13th pin	**Pushing**	**9~12V**
	Not Pushing	**0~2V**

Yes

4

Check the resistance value.
Is Geared Motor resistance 144~ 176Ω?

No → Replace Geared Motor



Geared Motor

	Resistance [Ω]
Geared Motor	**31.1 ~ 42.1**

Yes

5

Check the resistance value.
Is Dispenser Motor resistance 9.9 ~ 12.1Ω?

No → Replace Geared Motor

Dispenser Motor

	Resistance [Ω]
Dispenser Motor	**9.9 ~ 12.1**

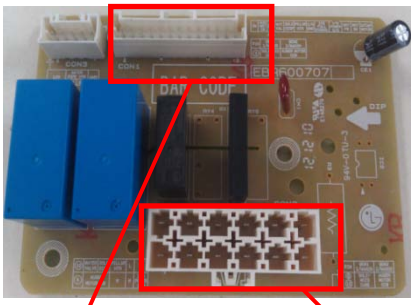
Yes

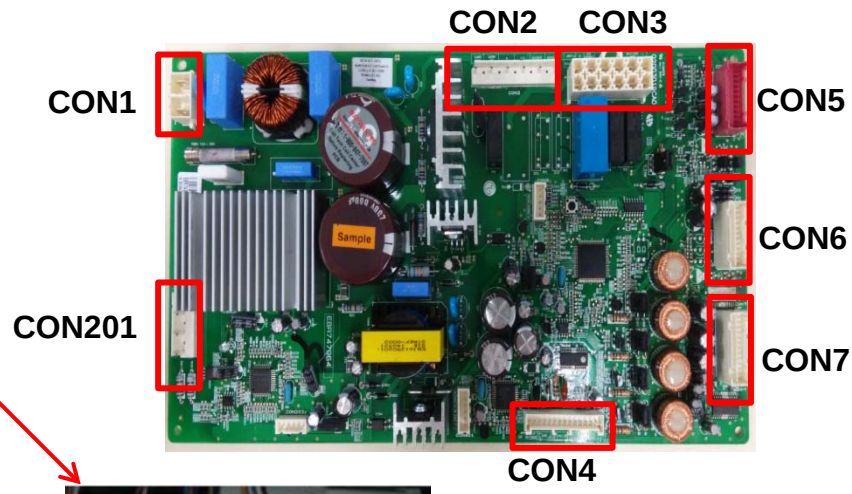
6

Explain to customer

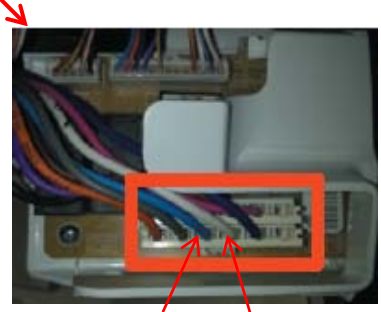
8-13. Crush mode doesn't work

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





CON1

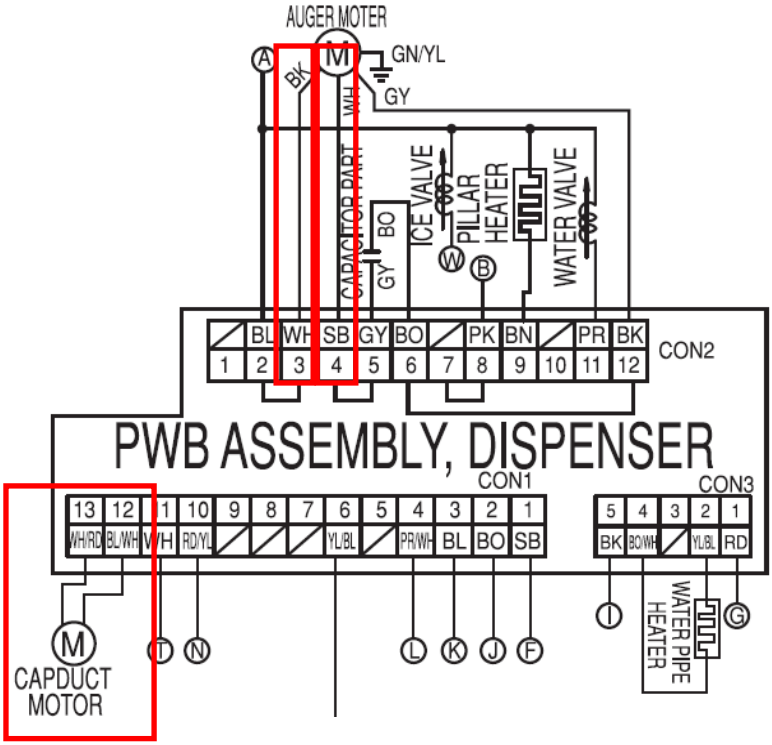


Ice Maker

Geared Motor

Dispenser Motor

8-13. Crush mode doesn't work



LEVER S/W	Voltage [V]	
CON2 3rd pin ~ 4th pin	**Pushing**	**112~115V**
	Not Pushing	**0~2V**
CON3 5th pin ~ CON1 13th pin	**Pushing**	**9~12V**
	Not Pushing	**0~2V**

	Resistance [Ω]
Geared Motor	**31.1 ~ 42.1**
Dispenser Motor	**9.9 ~ 12.1**

Crush mode doesn't work

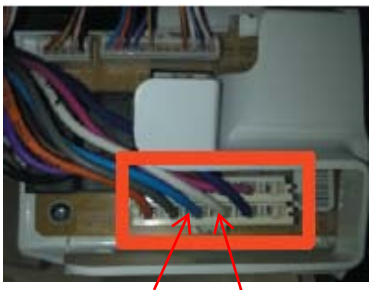
1

Check the loose connection

2

Check the voltage.
(while pushing the lever S/W)
Is voltage correct?

No → Change the PCB



CON2

(SB) (WH)

LEVER S/W	Voltage [V]	
CON2 3rd pin ~ 4th pin	**Pushing**	**112~115V**
	Not Pushing	**0~2V**

Yes

3

Check the voltage.
(while pushing the lever S/W)
Is voltage correct compared with table?

No → Change the PCB

CON3 CON1

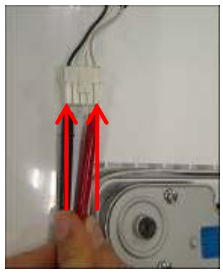
LEVER S/W	Voltage [V]	
CON3 5th pin ~ CON1 13th pin	**Pushing**	**9~12V**
	Not Pushing	**0~2V**

Yes

4

Check the resistance value.
Is Geared Motor resistance
87 ~ 107Ω?

No → Replace Geared Motor



Geared Motor

	Resistance [Ω]
Geared Motor	**31.1 ~ 42.1**

Yes

5

Check the resistance value.
Is Dispenser Motor resistance
9.9 ~ 12.1Ω?

No → Replace Geared Motor

Dispenser Motor

	Resistance [Ω]
Dispenser Motor	**9.9 ~ 12.1**

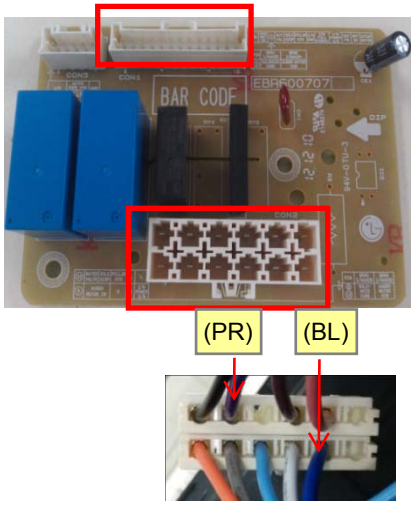
Yes

6

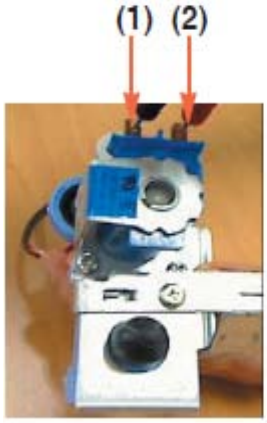
Explain to customer

8-14. Water mode doesn't work

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

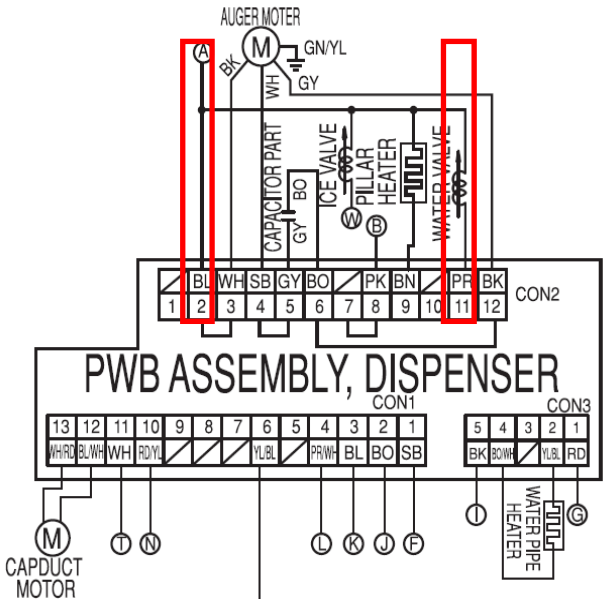


CON2



<Pilot Valve>
Machine Room

<Water Valve>
In door



LEVER S/W	Voltage [V]	
CON2 2nd pin ~11th pin	Pushing	112~115V
	Not Pushing	0~2V

	Resistance [Ω]
Pilot Valve	360~420
Water valve	360~420

Water mode doesn't work

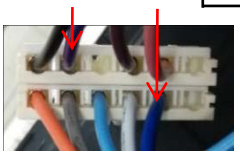
1

Check the loose connection

2

Check the voltage.
(while pushing the lever S/W)
Is voltage correct?

No → Change the PCB



CON2

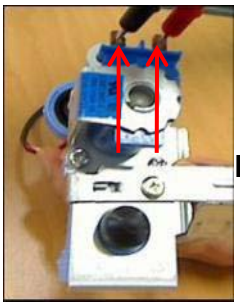
LEVER S/W	Voltage [V]	
CON2 2nd pin ~11th pin	**Pushing**	**112~115V**
	Not Pushing	**0~2V**

Yes

3

Check the resistance value.
Is Pilot Valve resistance
360~420 Ω?

No → Replace Water Valve



Pilot Valve

	Resistance [Ω]
Pilot Valve	**360~420**

Yes

4

Check the resistance value.
Is Water Valve resistance
360~420 Ω?

No → Replace Water Valve

Water Valve

	Resistance [Ω]
Water valve	**360~420**

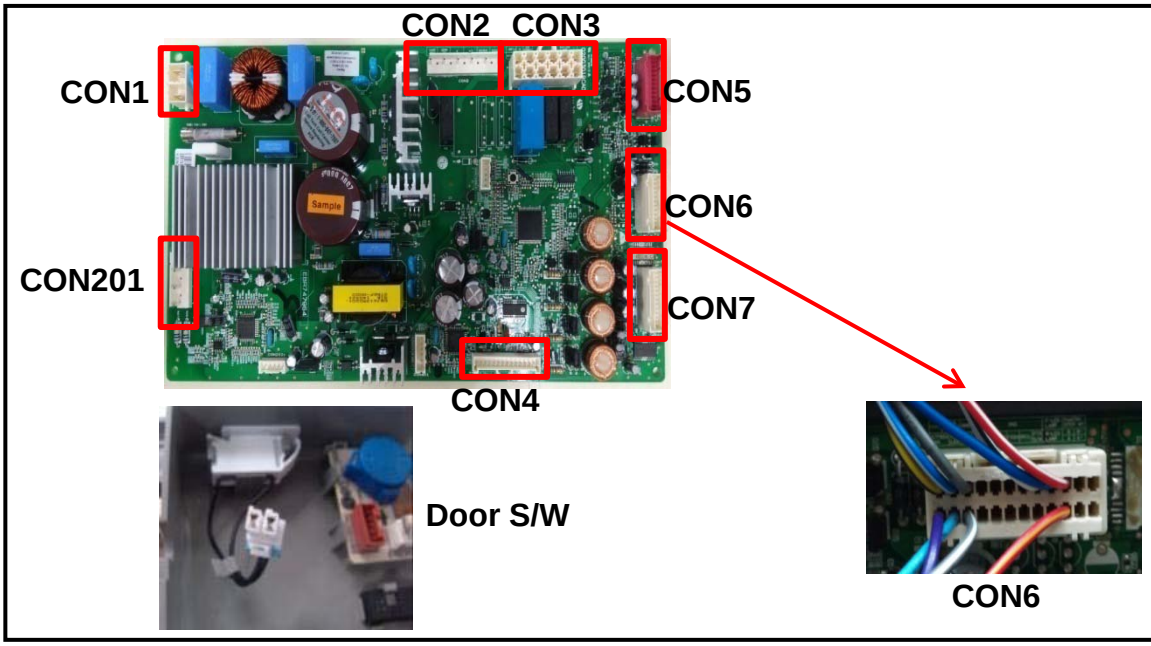
Yes

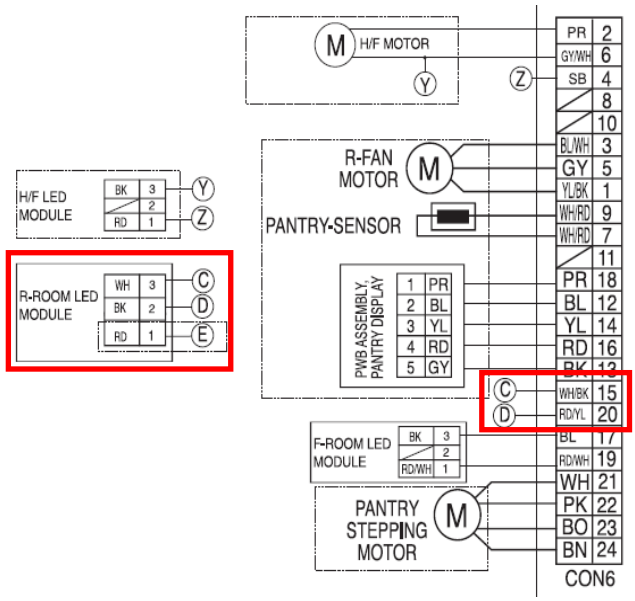
5

Explain to customer

8-15. Refrigerator room lamp doesn't work

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





	S/W Resistance [Ω]	
Door	Open	Infinity
	Close	0

	Voltage [V]
CON6 20th pin ~ 15th pin	12V

LED Lamp	Voltage [V]	
White~ Black	Closed	0~2V
	Open	12V

Refrigerator room lamp doesn't work

1

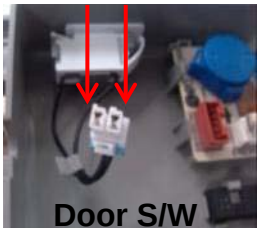
Check the Refrigerator door switch.
Does it feel sticky?

Yes → Change the Door S/W

No

2

Check the door S/W resistance.
Is it correct compared with table?



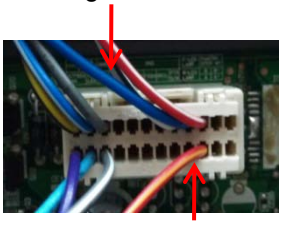
No → Change the Door S/W

	S/W Resistance [Ω]	
Door	**Open**	**Infinity**
	Close	**0**

Yes

3

Check the PCB Voltage.
Is CON6 20th pin ~ 15th pin voltage 12V?



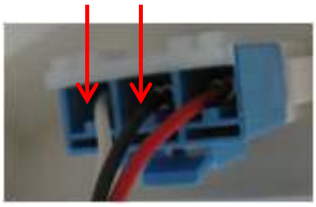
No → Change the PCB

	Voltage [V]
CON6 20th pin ~15th pin	**12V**

Yes

4

Check the LED Lamp voltage.
Is it 0~2V? (While door closed)

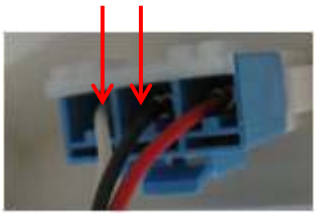


No → Change the Door S/W

Yes

5

Check the LED Lamp voltage.
Is it 12V? (While door open)



No → Change the LED Lamp

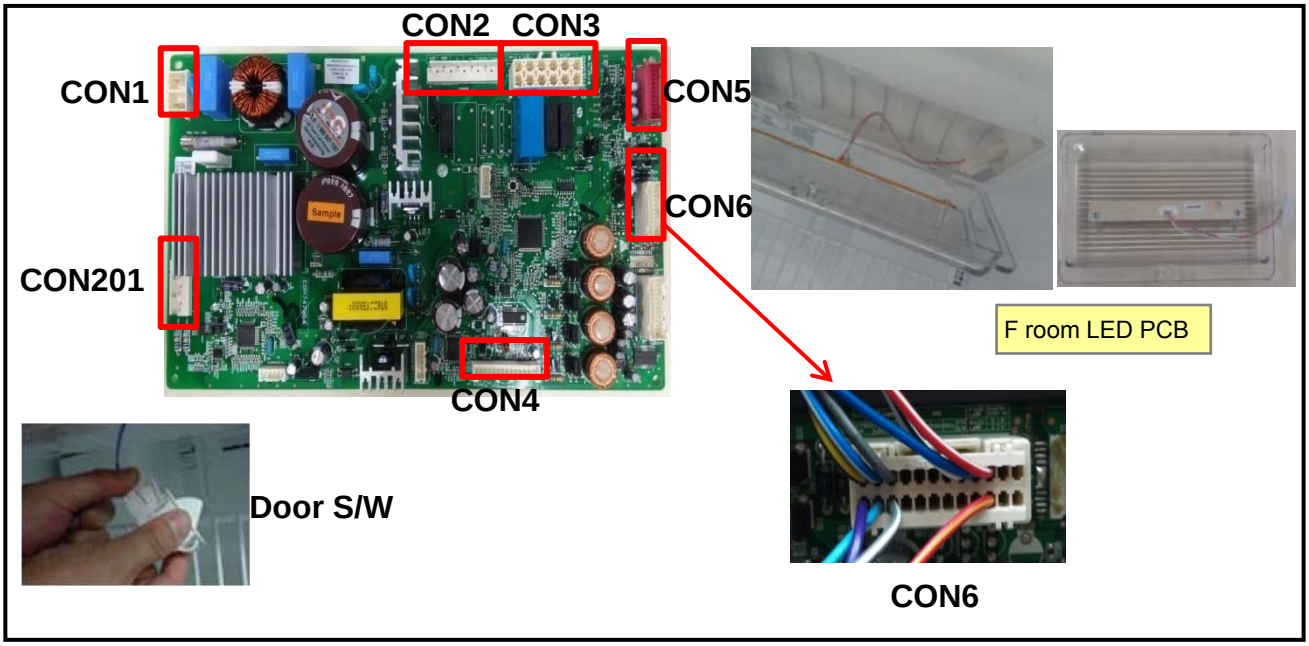
Yes

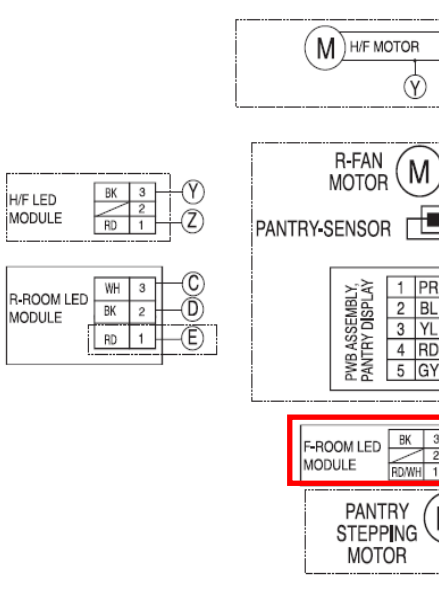
6

Explain to customer

8-16. Freezer room lamp doesn't work

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





	S/W Resistance [Ω]	
Door	**Open**	**0**
	Close	**Infinity**

	Voltage [V]
CON6 19th pin ~ 17th pin	**12V**

F-Door	LED Lamp	Voltage [V]
Open	Red/WH ~ White	**12V**
Close	Red/WH ~ White	**0~2V**

Freezer room lamp doesn't work

1

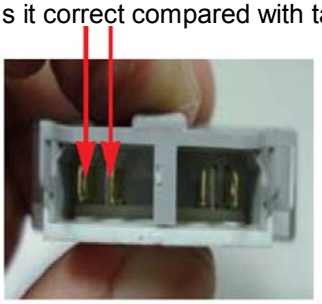
Check the Freezer door switch.
Does it feel sticky?

Yes → Change the Door S/W

No

2

Check the door S/W resistance.
Is it correct compared with table?



Door S/W

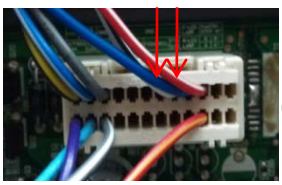
	S/W Resistance [Ω]	
Door	**Open**	**0**
	Close	**Infinity**

No → Change the Door S/W

Yes

3

Check the PCB Voltage.
Is CON6 19th pin ~ 17th pin voltage 12V?



CON6

	Voltage [V]
CON6 19th pin ~ 17th pin	**12V**

No → Change the PCB

Yes

4

Check the LED Lamp voltage
Is voltage 12V? (While door open)

No → Change the LED Lamp

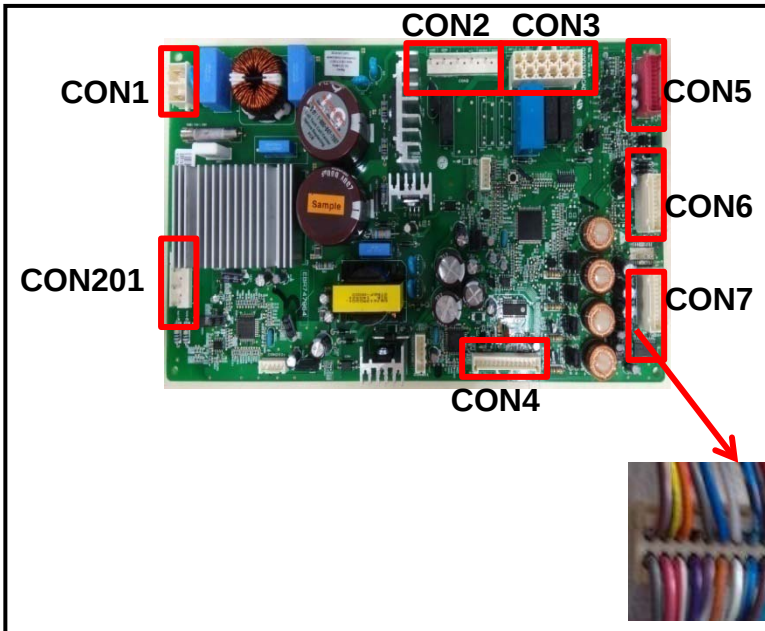
Yes

7

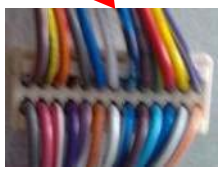
Explain to customer

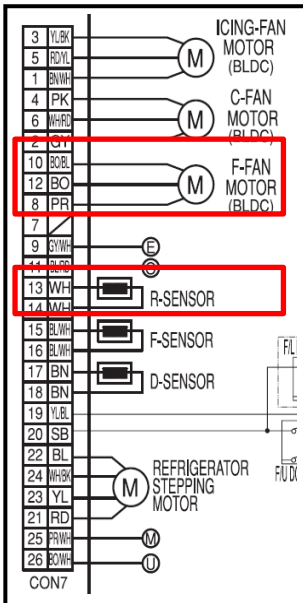
8-17. Poor cooling in Fresh food section

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-Damper motor voltage



Fan Motor





Duct	Status
Air Flow	**Windy**
Air Temperature	**Cold**

CON7 13th pin ~ 14th pin	**Resistance [Ω]**
23ºF / -5ºC	**38k**
32ºF / 0ºC	**30k**
41ºF / 5ºC	**24k**
50ºF / 10ºC	**19.5k**
~~**59ºF / 15ºC**~~	~~**16k**~~
~~TEST MODE 1~~	~~**Voltage [V]**~~
CON7 10th pin ~ 12th pin	**8~12V**
CON7 8th pin ~ 12th pin	**Not 0V, 5V**

Poor cooling in Fresh food section

1

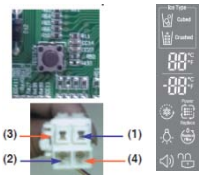
Check the sensor resistance.

CON7 13th pin ~ 14th pin	**Resistance [Ω]**
23ºF / -5ºC	**38k**
32ºF / 0ºC	**30k**
41ºF / 5ºC	**24k**
50ºF / 10ºC	**19.5k**
59ºF / 15ºC	**16k**

2 **Reset the unit and Input Test1 Mode (Push the button 1 time)**

3 Open the fresh food door and Check the air flow Damper?

No → Check the damper Go to 5



Test Mode	Damper state	SVC Action
1 Mode	Closed	Damper is normal. (Go to the 7)
2 Mode	Open	
1, 2 mode	Not working	Change the damper

Test Point	Result	SVC Action
(1) To (2)	270 ~ 330Ω	It's normal
	Other	Change damper
(3) To (4)	270 ~ 330Ω	It's normal
	Other	Change damper

Yes

4 Check the air temperature. Is it cold?

No → Check the Compressor and sealed system

Yes → Go to 7

5 Check the Fan Motor voltage Is Fan Motor voltage 8~12V?

No → Replace Main PCB

TEST MODE 1	**Voltage [V]**
CON7 10thpin ~ 12th pin	**8~12V**

Yes

6 Check the Fan Motor voltage Is Fan Feed Back voltage 0V, 5V?

Yes → Change the motor

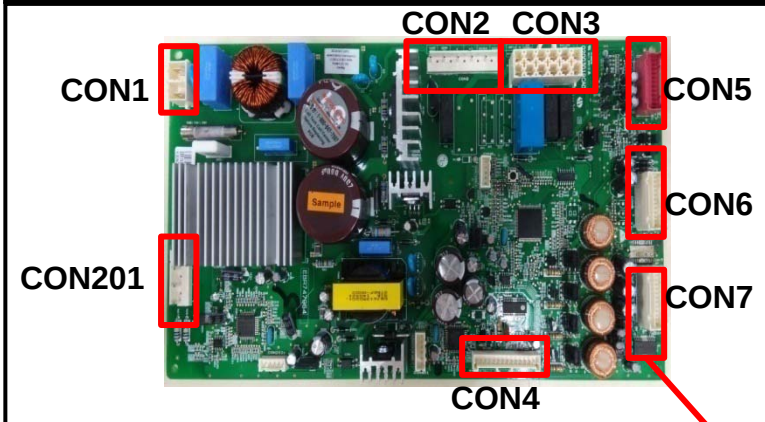
TEST MODE 1	**Voltage [V]**
CON7 8th pin ~ 12th pin	**Not 0V, 5V**

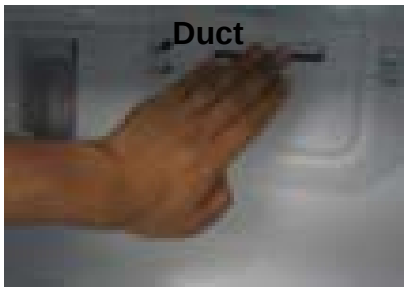
No

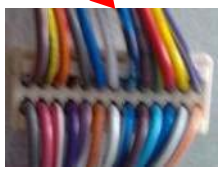
7 Explain to customer

8-18. Poor cooling in Freezer compartment

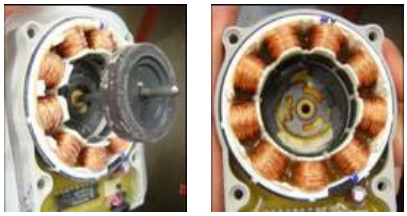
Symptom	Check Point
1. Poor cooling in Freezer compartment	1. Check the sensor resistance 2. Check the air flow 3. Check the air Temperature 4.Check the Fan motor sticky 5. Check the Fan motor voltage

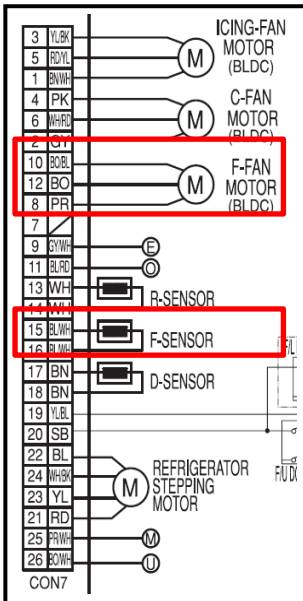






Fan Motor



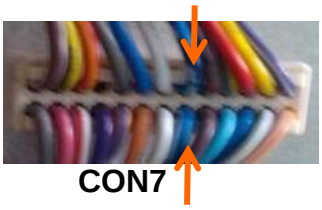


Duct	Status
Air Flow	**Windy**
Air Temperature	**Cold**

CON7 15th pin ~ 16th pin	Resistance [Ω]
-22ºF / -30ºC	**40k**
-13ºF / -25ºC	**30k**
-4ºF / -20ºC	**23k**
-13ºF / -25ºC	**17k**
14ºF / -10ºC	**13k**
23ºF / -5ºC	**10k**
~~**32ºF / 0ºC**~~	~~**8k**~~
~~TEST MODE 1~~	~~**Voltage [V]**~~
CON7 10th pin ~ 12th pin	**8~12V**
CON7 8th pin ~ 12th pin	**Not 0V, 5V**

Poor cooling in Freezer compartment

1 Check the sensor resistance.



CON7

CON7 15th pin ~ 16th pin	**Resistance [Ω]**
-22ºF / -30ºC	**40k**
-13ºF / -25ºC	**30k**
-4ºF / -20ºC	**23k**
-13ºF / -25ºC	**17k**
14ºF / -10ºC	**13k**
23ºF / -5ºC	**10k**
32ºF / 0ºC	**8k**

2 **Reset the unit and Input Test1 Mode. (Push the button 1 time)**

3 Open the fresh food door and Check the air flow. Windy?

No → Check the F Fan Motor Go to 5

Yes

4 Check the air temperature. Is it cold?

No → Check the Compressor and sealed system

Yes

5 Check the Fan motor. Rotate fan using hand. It feel sticky?

Yes → Change the Fan motor

Fan Motor

No

6

Check the Fan Motor voltage
Is Fan Motor voltage 8~12V?

No → Replace Main PCB

TEST MODE 1	**Voltage [V]**
CON7 10th pin ~ 12th pin	**8~12V**

Yes

7

Check the Fan Motor voltage
Is Fan Feed Back voltage 1~5V?

Yes → Change the motor

TEST MODE 1	**Voltage [V]**
CON7 8th pin ~ 12th pin	**Not 0V, 5V**

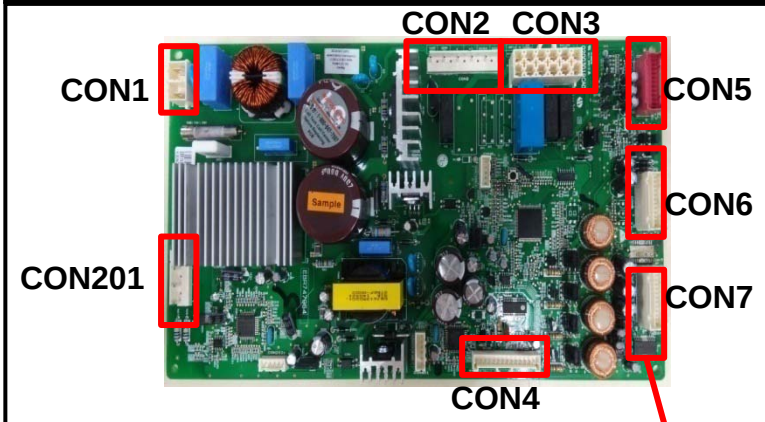
No

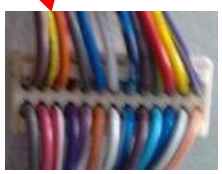
8

Explain to customer

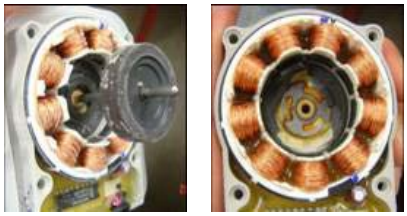
8-19. Over cooling in Freezer compartment

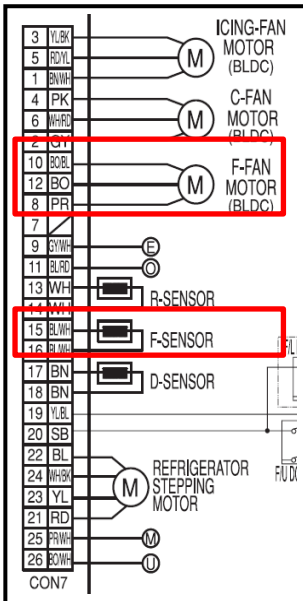
Symptom	Check Point
1. Over cooling in Freezer compartment	1. Check the sensor resistance 2. Check the air flow 3. Check the air Temperature 4.Check the Fan motor sticky 5. Check the Fan motor voltage





Fan Motor





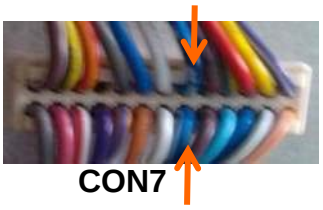
Duct	Status
Air Flow	**Windy**
Air Temperature	**Cold**

CON7 15th pin ~ 16th pin	**Resistance [Ω]**
-22ºF / -30ºC	**40k**
-13ºF / -25ºC	**30k**
-4ºF / -20ºC	**23k**
-13ºF / -25ºC	**17k**
14ºF / -10ºC	**13k**
23ºF / -5ºC	**10k**
32ºF / 0ºC	**8k**

TEST MODE 1	**Voltage [V]**
CON7 10th pin ~ 12th pin	**8~12V**
CON7 8th pin ~ 12th pin	**Not 0V, 5V**

Over cooling in Freezer compartment

1 Check the sensor resistance.



CON7

CON7 15th pin ~ 16th pin	**Resistance [Ω]**
-22ºF / -30ºC	**40k**
-13ºF / -25ºC	**30k**
-4ºF / -20ºC	**23k**
-13ºF / -25ºC	**17k**
14ºF / -10ºC	**13k**
23ºF / -5ºC	**10k**
32ºF / 0ºC	**8k**

2 **Check the air flow in test mode 1 & 3 (Push the button 1 or 3 time)**

OK → Explain to customer

8888 3333

Test1	Air Flow
Test3	No Air Flo w

NG

3 Check the Fan motor.
Rotate fan using hand.
It feel sticky?

Yes → Change the Fan motor

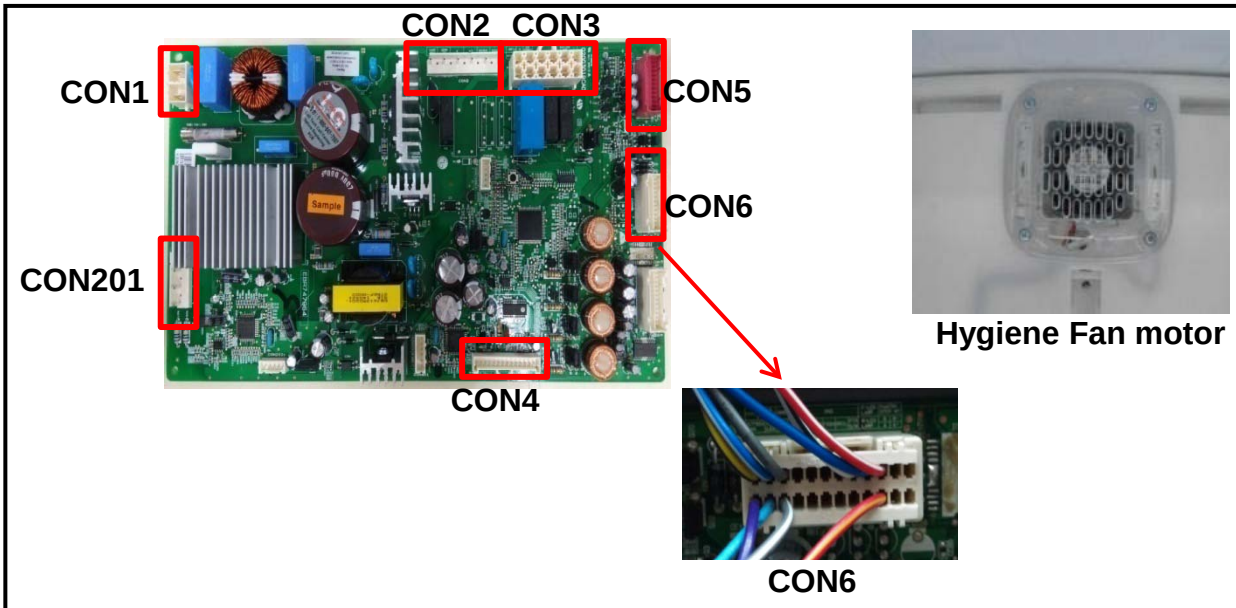
Fan Motor

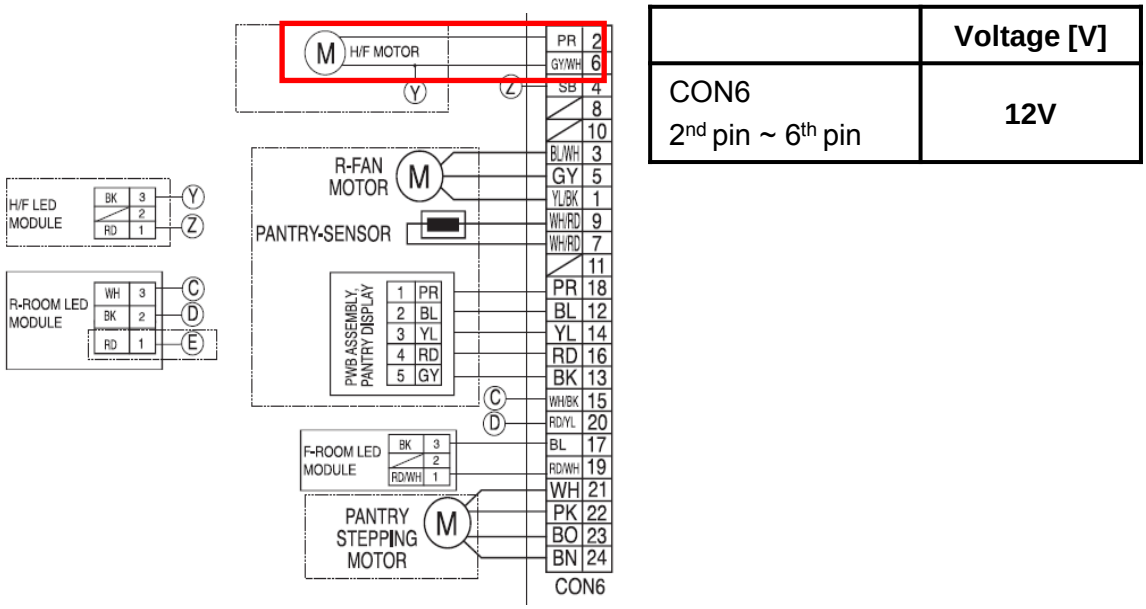
No

4 Change the Main PCB

8-20. Hygiene fan doesn't work

Symptom	Check Point
1. **Hygiene fan doesn't work**	1. Check Hygiene Fan motor voltage 2. Main PCB





	Voltage [V]
CON6 2nd pin ~ 6th pin	**12V**

Hygiene fan doesn't work

1

Choose the Hygiene Max in display
Check the PCB Voltage.
Is CON6 2nd pin ~ 6th pin voltage 12V?

No → Change the PCB

	Voltage [V]
CON6 2nd pin ~ 6th pin	**12V**

Yes

2

Is the connector loose?

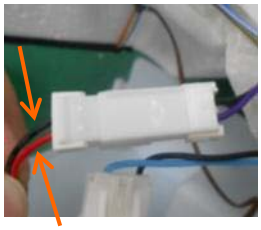
Yes → Connect the housing

No

3

Check the Hygiene voltage
Is voltage 12V? (While door open)

No → Change the Fan motor



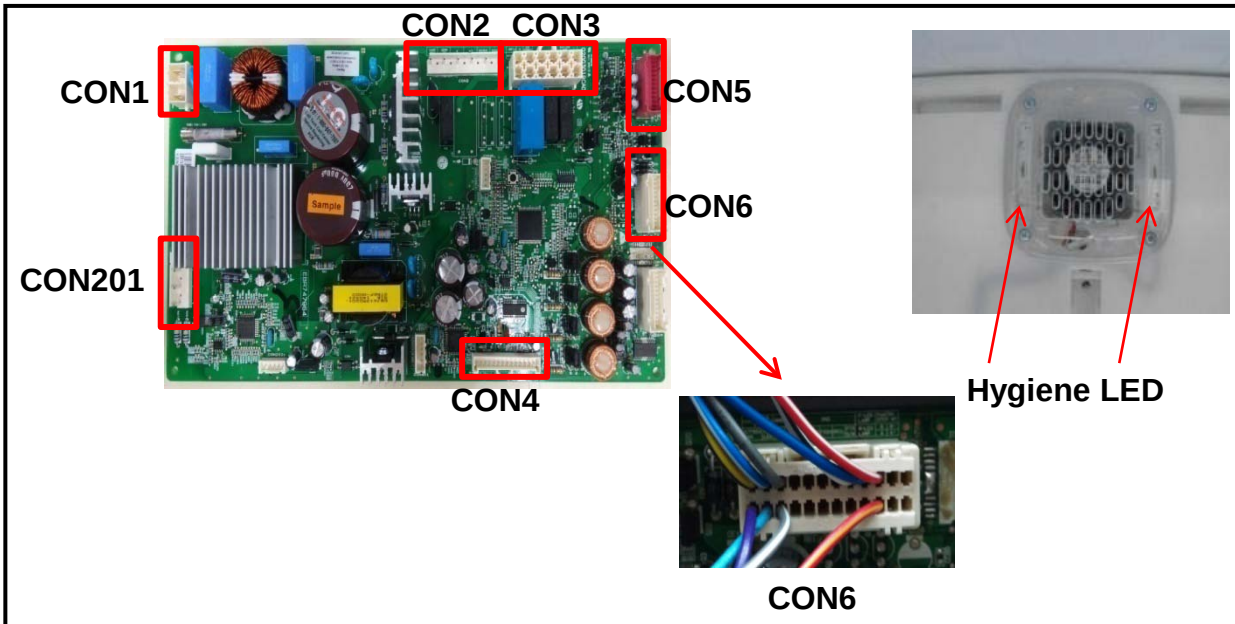
Yes

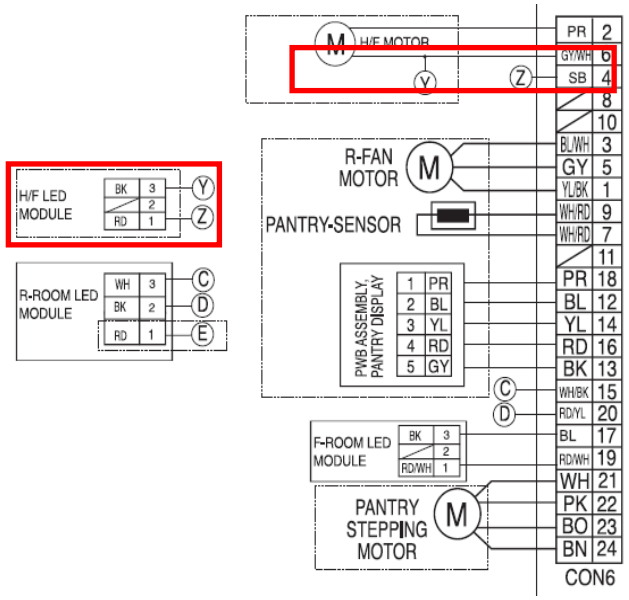
4

Explain to customer

8-21. Hygiene LED doesn't work

Symptom	Check Point
1. **Hygiene LED doesn't work**	1. Check Hygiene LED voltage 2. Main PCB





	Voltage [V]
CON6 4th pin ~ 6th pin	**12V**

Hygiene LED doesn't work

1

Choose the Hygiene Max in display
Check the PCB Voltage.
Is CON6 4th pin ~ 6th pin voltage 12V?

No → Change the PCB

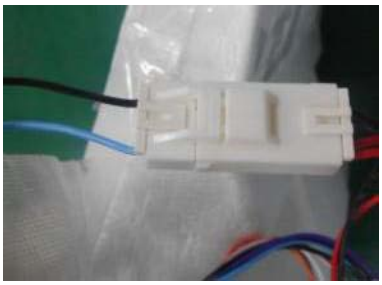
	Voltage [V]
CON6 4th pin ~ 6th pin	**12V**

Yes

2

Is the connector loose?

Yes → Connect the housing

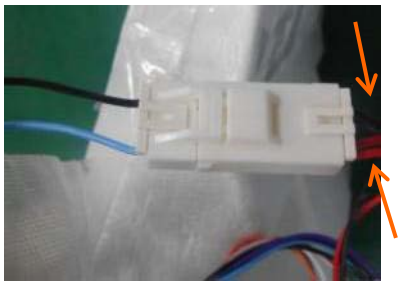


No

3

Check the Hygiene LED voltage
Is voltage 12V? (While door open)

No → Change the Fan motor



Yes

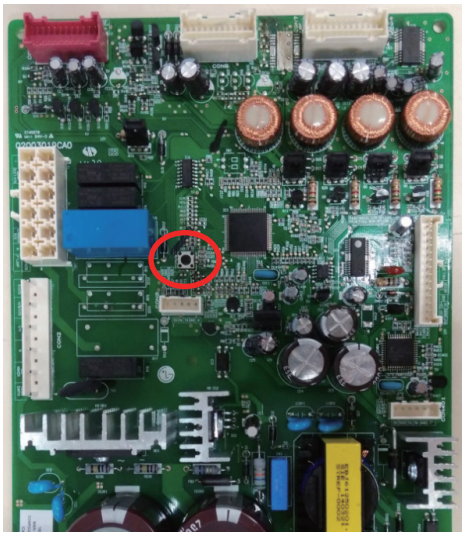
4

Explain to customer

9. Reference

9-1 TEST MODE and Removing TPA

1. How to enter the TEST MODE
Push the test button on the Main PCB to enter the TEST MODE.



Main PWB

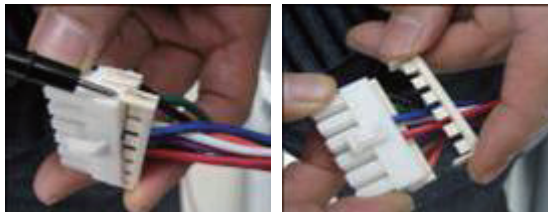
⋆ 1 time : Comp / Damper / All FAN on

⋆ 2 times : Damper closed
(22 22 displayed)

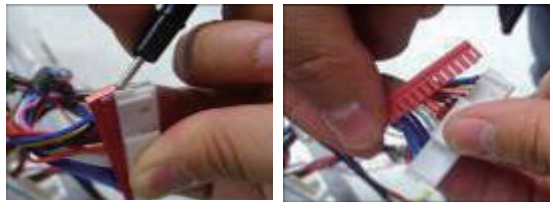
⋆ 3 times : Forced defrost mode

2. How to remove Terminal Position Assurance (TPA)

<AC TPA>



<DC TPA>



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

9-2 TEMPERATRUE CHART - FRZ AND ICING SENSOR

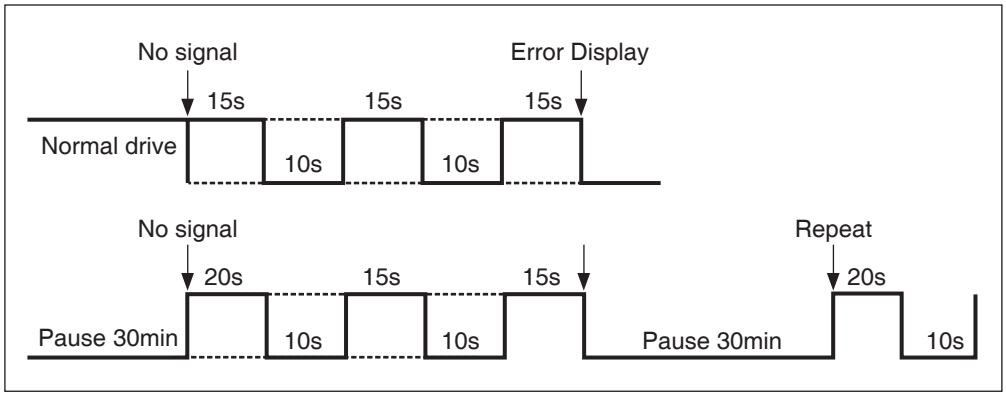
TEMP	RESISTANCE	VOLTAGE
-39°F (-40°C)	73.29 kΩ	4.09 V
-30°F (-35°C)	53.63 kΩ	3.84 V
-21°F (-30°C)	39.66 kΩ	3.55 V
-13°F (-25°C)	29.62 kΩ	3.23 V
-4°F (-20°C)	22.33 kΩ	2.89 V
5°F (-15°C)	16.99 kΩ	2.56 V
14°F (-10°C)	13.05 kΩ	2.23 V
23°F (-5°C)	10.10 kΩ	1.92 V
32°F (0°C)	7.88 kΩ	1.63 V
41°F (5°C)	6.19 kΩ	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

9-3 TEMPERATRUE CHART - REF AND DEF SENSOR

TEMP	RESISTANCE	VOLTAGE
-39°F (-40°C)	225.1 kΩ	4.48 V
-30°F (-35°C)	169.8 kΩ	4.33 V
-21°F (-30°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

9-4 How to check the Fan-Error

(1) After sending a signal to the fan, the MICOM checks the BLDC fan motor s lock status. If there is no feedback signal from the BLDC fan, the fan motor stops for 10 seconds and then is powered again for 15 seconds. To determine that there is a fan motor malfunction, this process is repeated 3 times. If the fan motor is determined to be defective, the error code will be shown in the display for 30 minutes. At this point, the process will be repeated until the fan motor operates normally. If normal operation is achieved, the error display is erased and the MICOM is reset automatically.



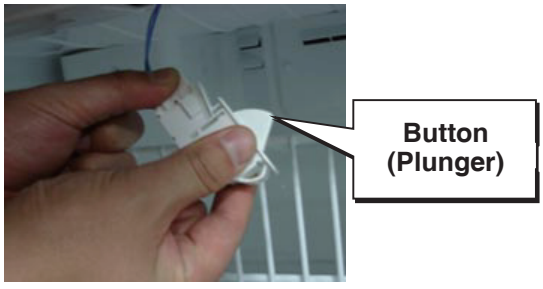
10. COMPONENT TESTING INFORMATION

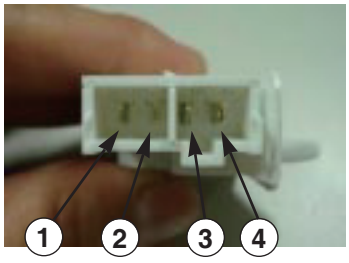
10-1 **Door Heater Assembly**

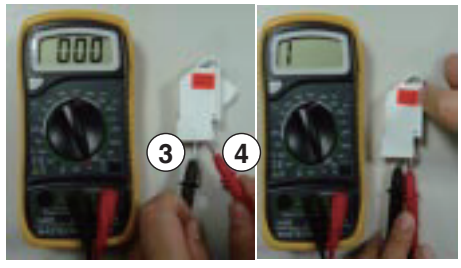
<table>
<tr><td>Function</td><td>The heater is designed to prevent the raising dew from door.</td></tr>
<tr><td>How to Measure</td><td> 

</td></tr>
<tr><td>Standard</td><td><table>
<tr><th>Test Point</th><th>Ressult</th></tr>
<tr><td>(1) to (2)</td><td>1.9 ~ 2.2 Ω</td></tr>
</table></td></tr>
</table>

10-2 Door Switch

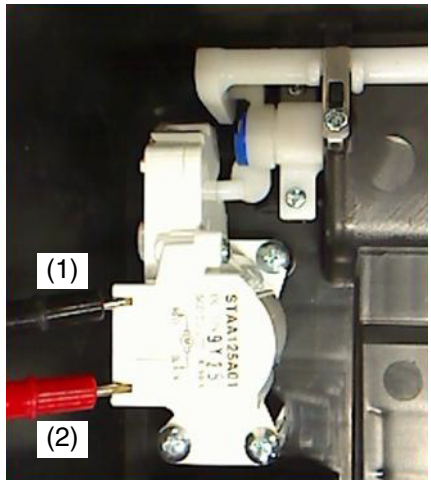
<table>
<tr><td>Function</td><td>The switch senses if the door is open or closed.
- When the door open, lamp on.
- When the door open, the switch give information to Micom.
When the door open, internal contact operate on and off moving plunger of door switch up and down.</td></tr>
<tr><td>How to Measure</td><td><Switch, Freezer>
 

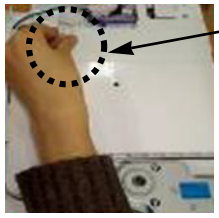
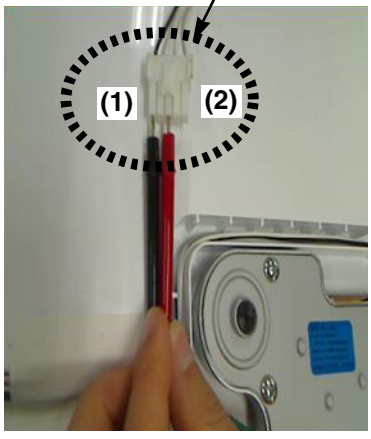
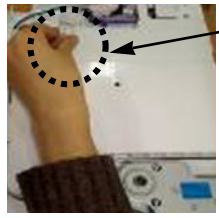
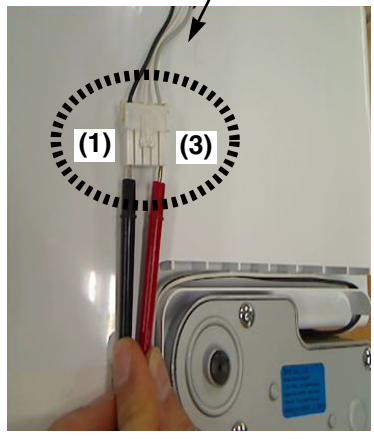
Beep
Check the resistance between connectors 1, 2 and 3, 4 .It means check whether or not applying an electric current. If there is resistance, the switch is good.</td></tr>
<tr><td>Standard</td><td>Multimeter beep – Switch F,R
<table><tr><td>Nomal</td><td>Push the button(Plunger)</td></tr><tr><td>Beep or 0Ω</td><td>None (∞Ω)</td></tr></table></td></tr>
</table>

10 Dispenser DC Motor

<table>
<tr><td>Function</td><td>- Dispenser DC Motor : When customer push the dispenser button, Pull duct door and abstract from ice bank.</td></tr>
<tr><td>How to Measure</td><td> 

Dispensor DC Motor</td></tr>
<tr><td>Standard</td><td>Dispenser DC Motor
<table>
<tr><th>Test Points</th><th>Result</th></tr>
<tr><td>(1) to (2)</td><td>9.9 ~ 12.1Ω</td></tr>
</table></td></tr>
</table>

10-4 AC Motor ASSEMBLY

Function	The motor in the door pushed the ice into the dispenser.
How to Measure	**< In-door Motor >**  ① Separate the housing. ② Measure the resistance between (1) and (2)  **< In-door Motor >**  ① Separate the housing. ② Measure the resistance between (1) and (3)  Check the resistance between connectors (In-door motor 1, 2) and (In-door motor 1, 3). It means check whether or not applying an Electric current. If there is resistance, it means the geared motor or solenoid is not inferiority
Standard	**Geared Motor** Test Points: (1) to (2) — Result: 31.1 ~ 42.09Ω **Cube Solenoid** Test Points: (1) to (3) — Result: 31.1 ~ 42.09Ω

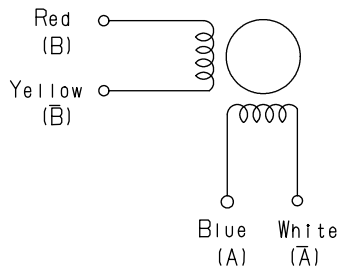
10-5 Damper

Function

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.

How to Measure

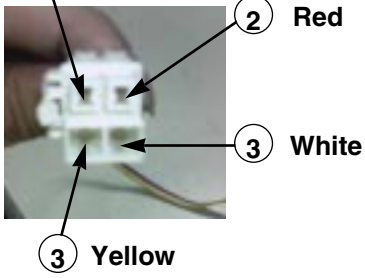
Table(1): 결선도(Wirering)

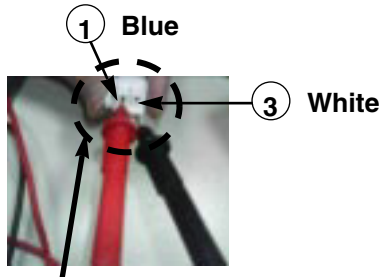


Table(2): 2-2상 여자순서(CW Rotation)

Housing No. & L/Wire Color	Step 1	2	3	4
1- Blue (A)	+	-	-	+
2- Red (B)	+	+	-	-
3- White(A)	-	+	+	-
4- Yellow(B)	-	-	+	+

< Damper Circuit >

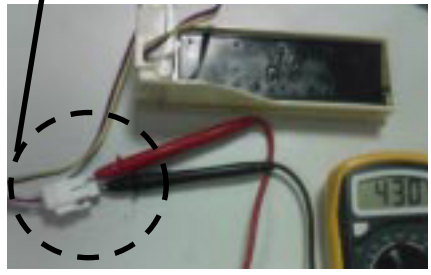




Check the 1, 3

< extension >

Check the 2, 4



Check the 1, 3

Check to see if there is electrical current, if there is resistance the damper is good.

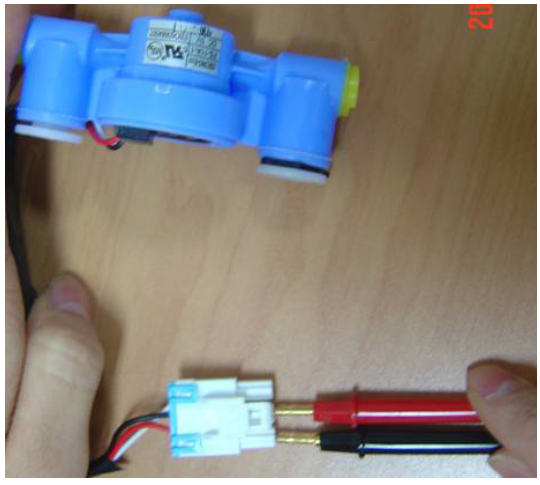
Standard

Damper

Test Points	Result
Red and Yellow	373 ~ 456Ω

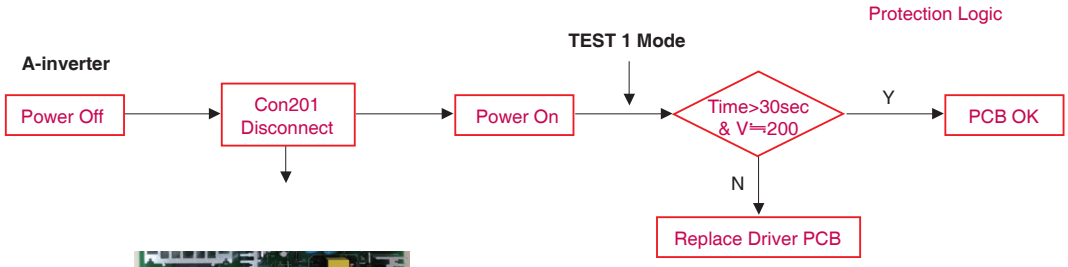
Test Points	Result
Blue and White	373 ~ 456Ω

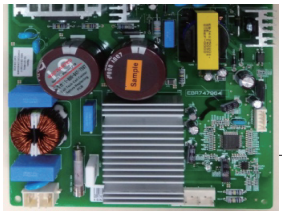
10-6 Flow Sensor

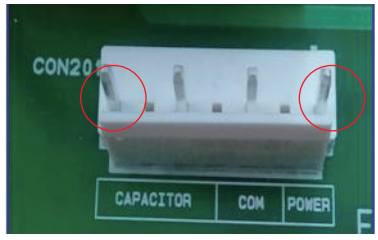
<table>
<tr><td>Function</td><td>Flow Sensor (in machine room)
Count the water quantity from city water to water filter in refrigerator</td></tr>
<tr><td>How to Measure</td><td> 
Flow Sensor
(in machine room)
 
</td></tr>
<tr><td>Standard</td><td><table><tr><th>Test Points</th><th>Result</th></tr><tr><td>Red wire to Black wire</td><td>4 ~ 30 kΩ</td></tr></table></td></tr>
</table>

11. Compressor Troubleshooting

PCB Check (Simplify)





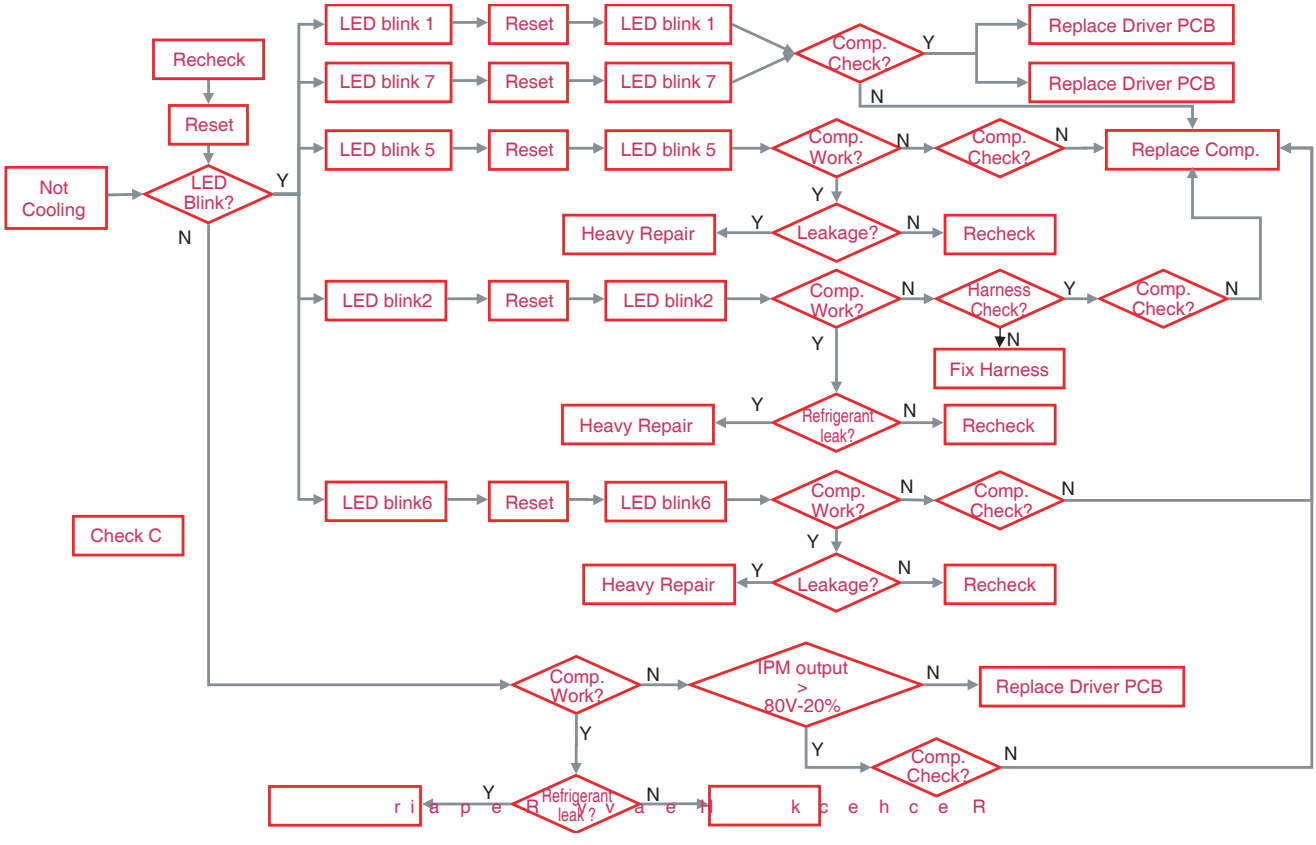


Check Voltage about 200V past 30second after turn on

Test Mode

	Ref.	Comp	Display & sound	Refer
		FLA075(A-Inverter)		
TEST1	Forced Starting	TDC (Full Stroke)	Display ON, Buzz 1 time	

Troubleshooting



11-1 Check A

- There is PC Board located in the PCB case.
  The control driver is PC board for the compressor.
- This step shows the source voltage of the driver PC board.

Step1. Open PCB Cover

Step2. Check Driver PCB

11-2 Check B

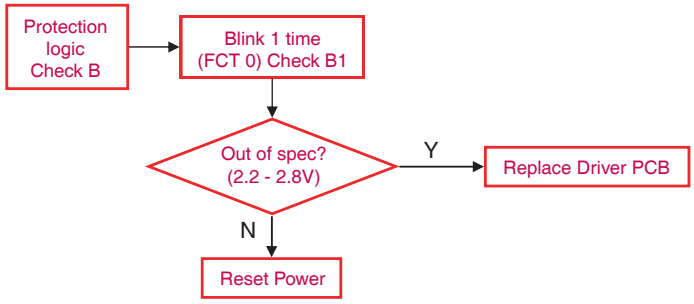
B1. LED blinks once, then repeats (FCT0 Fault: A-Inverter)

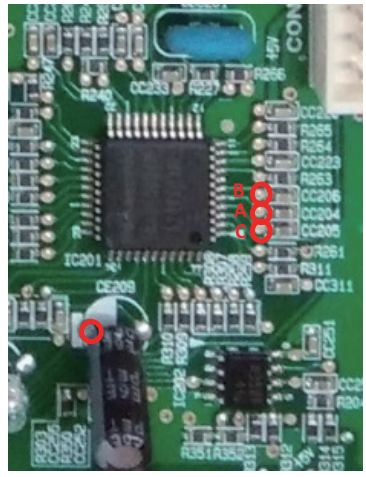
Protection Logic

Blink OFF Blink OFF

- Purpose: Detecting motor current and voltage error
- Check voltage at **point A** (Motor Voltage), **point B** (Motor Current) and **Point C** (Capacitor Voltage) when **compressor is off**.
- Spec: **Points A, B,** & **C 2.5V ± 0.3V**

GND
Voltage



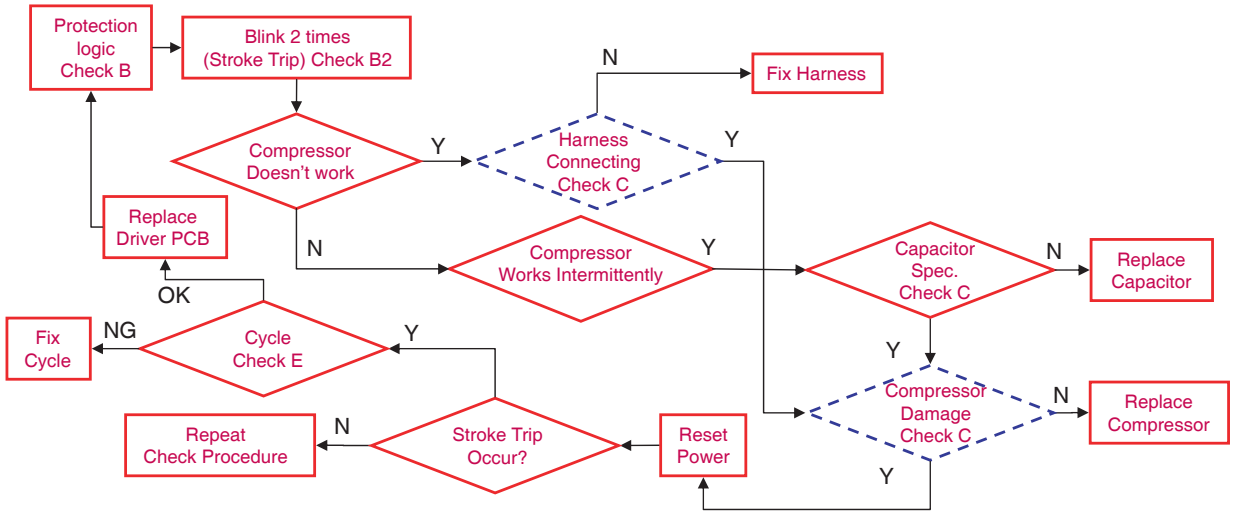


B2. LED blinks two times, then repeats (Stroke Trip: A & E Inverters)

Protection Logic

Blink Blink OFF Blink Blink OFF

- Purpose: Prevent abnormally long piston strokes.
- Case 1. If compressor doesn't work and LED blinks - Cause: Possibly harness from compressor to PCB might be defective.
- Case 2. If compressor works intermittently and LED blinks - Cause: Condenser Fan or Freezer Fan is not running. Sealed system problem such as moisture restriction, restriction at capillary tube or refrigerant leak.
- Logic: Compressor is forced to off and then tries to restart after 1 minute.

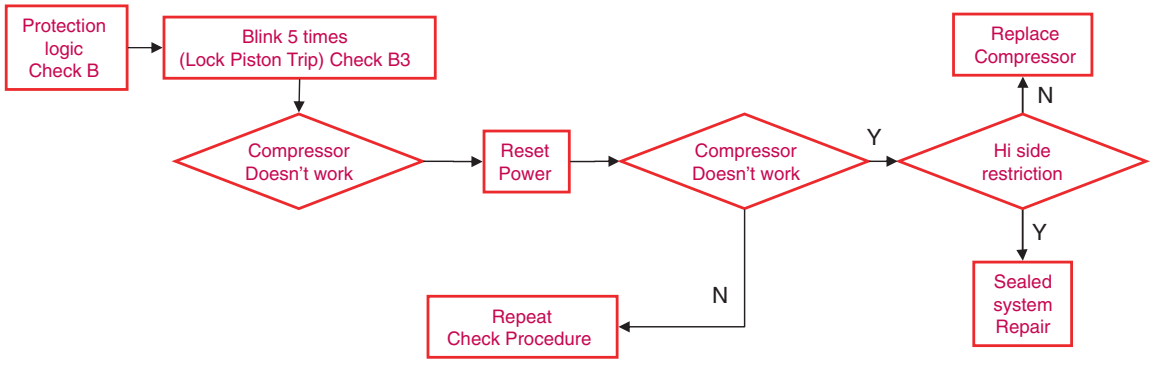


B3. LED blinks five times, then repeats (Locked Piston: A & E Inverters)

Protection Logic

Blink Blink Blink Blink Blink OFF

- Purpose: To detect locked piston
- Cause: Lack of oil to the cylinder, cylinder or piston damaged and or restricted discharge. A Locked Piston can also be caused by foreign materials inside the compressor.
- Logic: Compressor is forced off and tries to restart within 2.5 minutes.

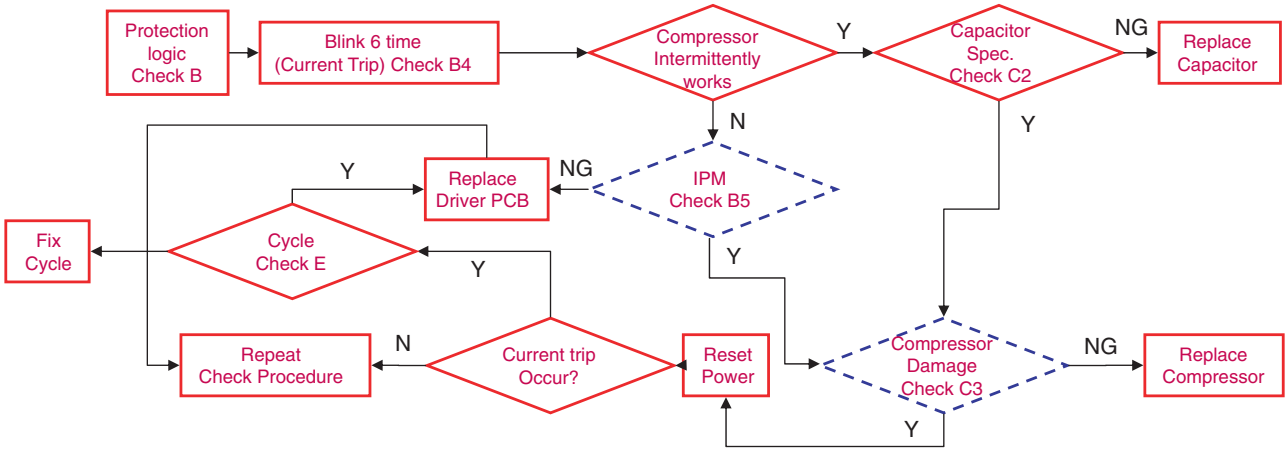


B4. LED blinks six times, then repeats (Current Trip: A & E-Inverters)

Protection Logic

Blink Blink Blink Blink Blink Blink OFF

- Purpose: Prevent over-current (overload protect)
- Cause: Ambient temperature is high (over 43°C) and/or refrigerator's condenser air movement is restricted.
- Condenser Fan is stopped, restricted discharge line, compressor is damaged, or IPM device is defective.
- Logic: Compressor is forced off and tries to restart after 6 minutes.

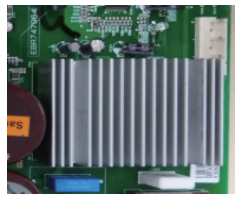


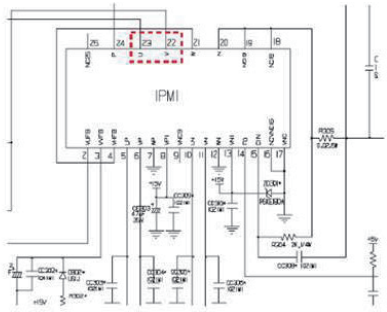
B5. LED blinks seven times, then repeats (IPM Fault: A & E Inverters)

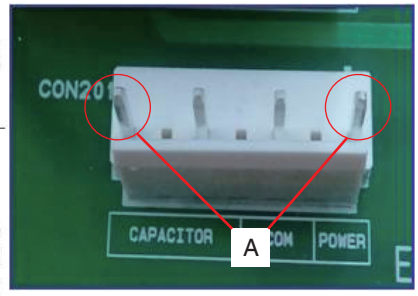
Blink Blink Blink Blink Blink Blink Blink OFF

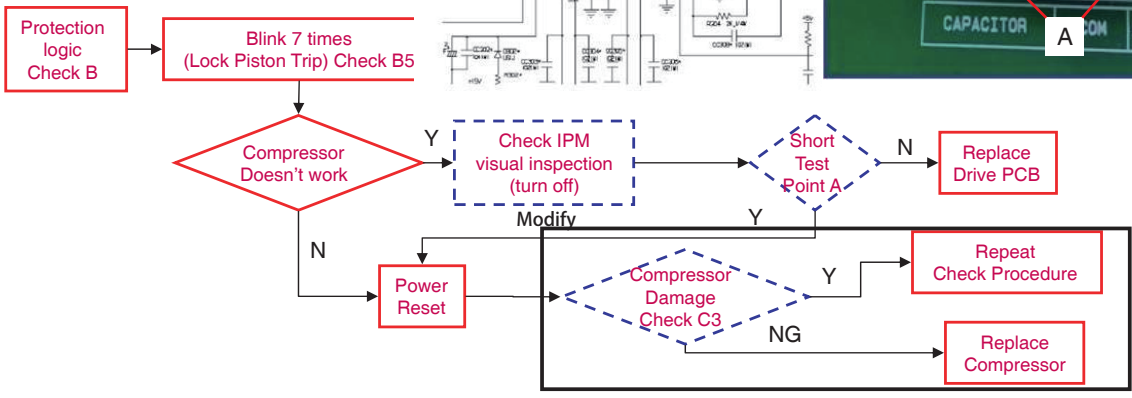
- Purpose: Prevent high current due to IPM Short
- Cause: Damaged IPM (Dead Short)
- Test for a dead short at **Point A** with a VOM.
- Logic: Compressor is forced off and tries to restart in 20 minutes.

Protection Logic





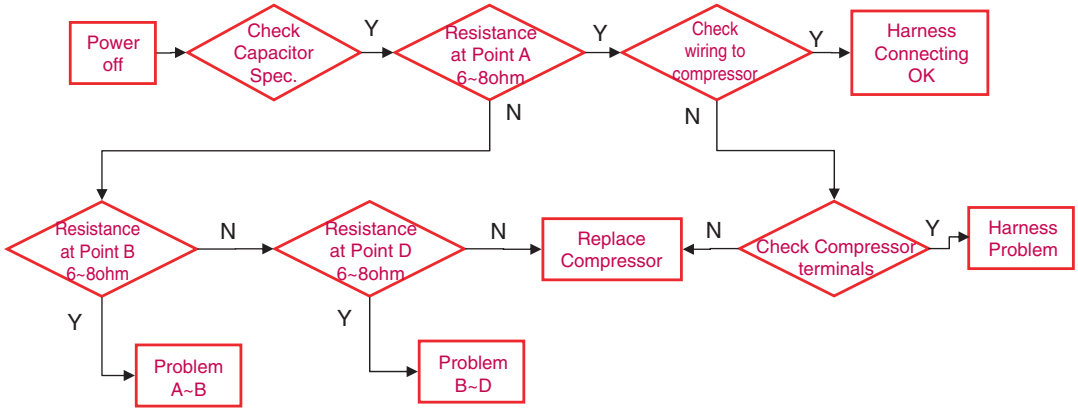




11-3 Check C

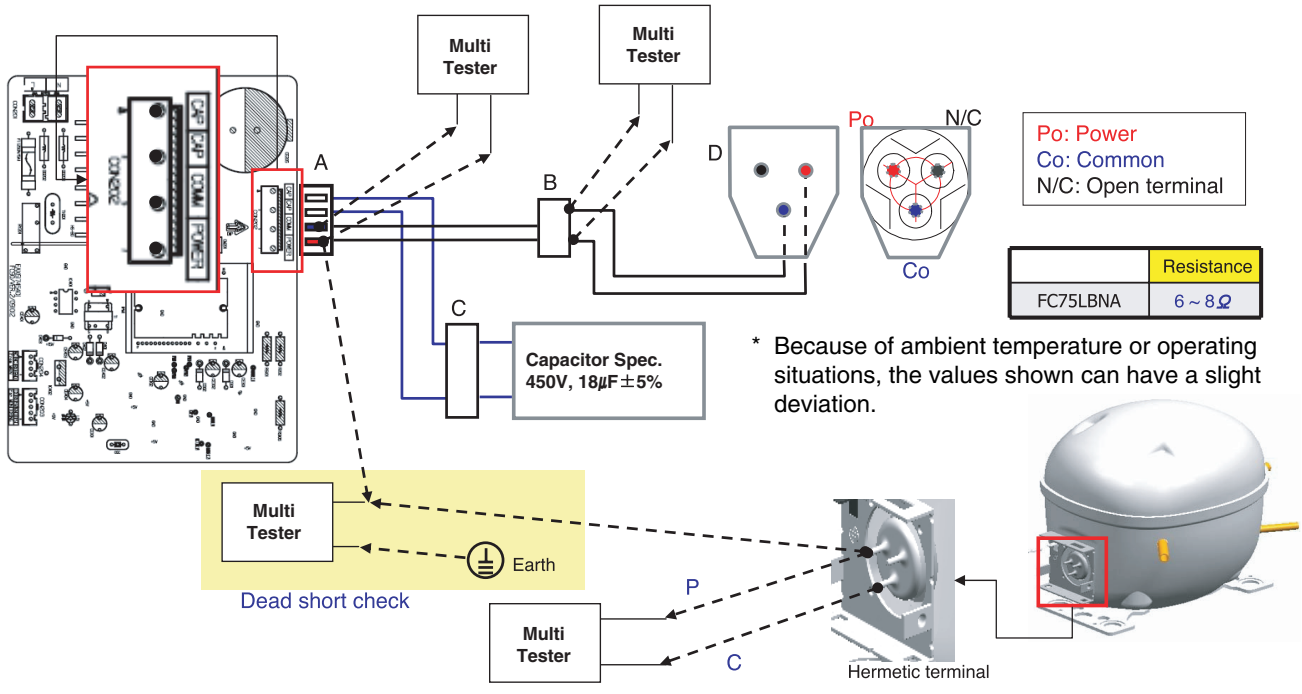
C1. Harness Connection Check **Check Process**
C2. Capacitor Specifications
C3. Compressor Check

- Step 1. Power off. Step 2. Check capacitor spec. (table1). Step3. Check resistance of point A
  Step 4. Check wire harness (INF ohm). Step 5. Check resistance at point B. Step 6. Point D.



Caution : Turn off power during check C

- Measure the resistance at each point except point C
- Dead short check: measure the resistance between power line in compressor and earth ground in refrigerator (Inf. Ohm)

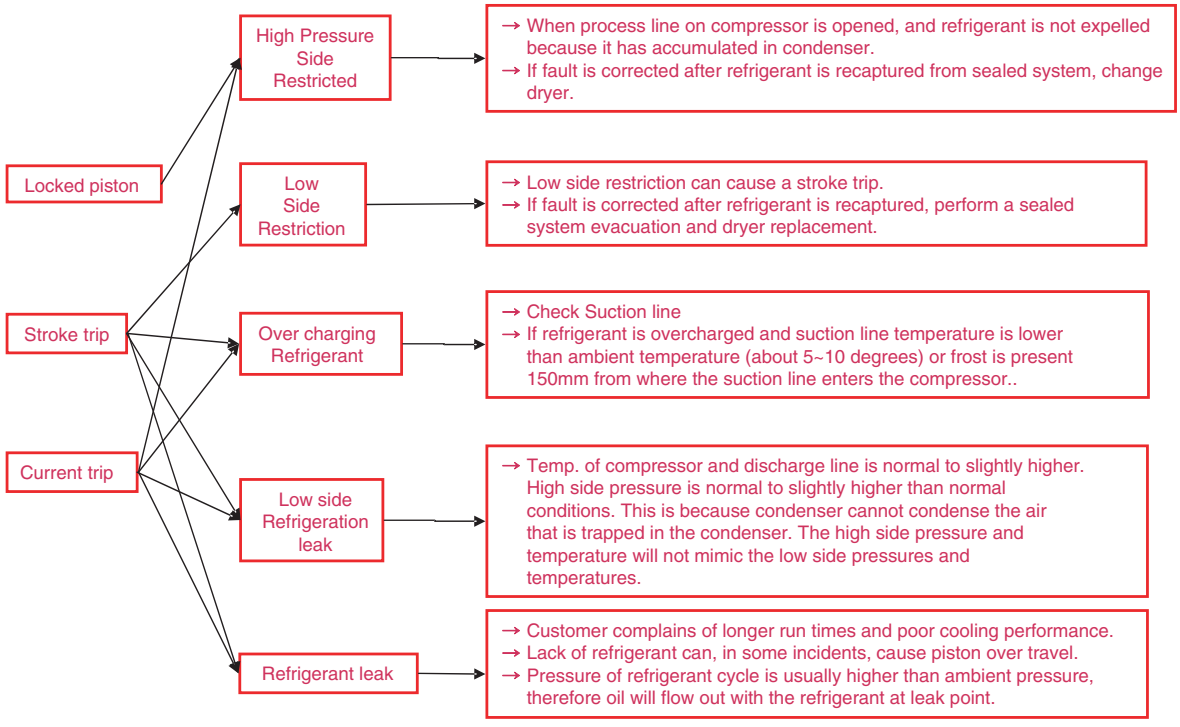


11-4 Check D

D1. Activate Protection logic

Cycle check with protection logic

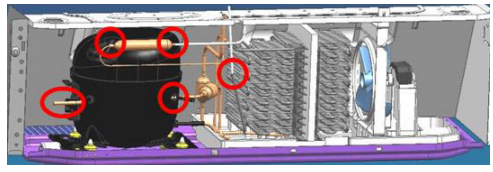
- We have to check Condenser fan and Freezer fan before performing Check D
- Locked Piston, Current trip and stroke trip can be activated by other problems then the driver or compressor.



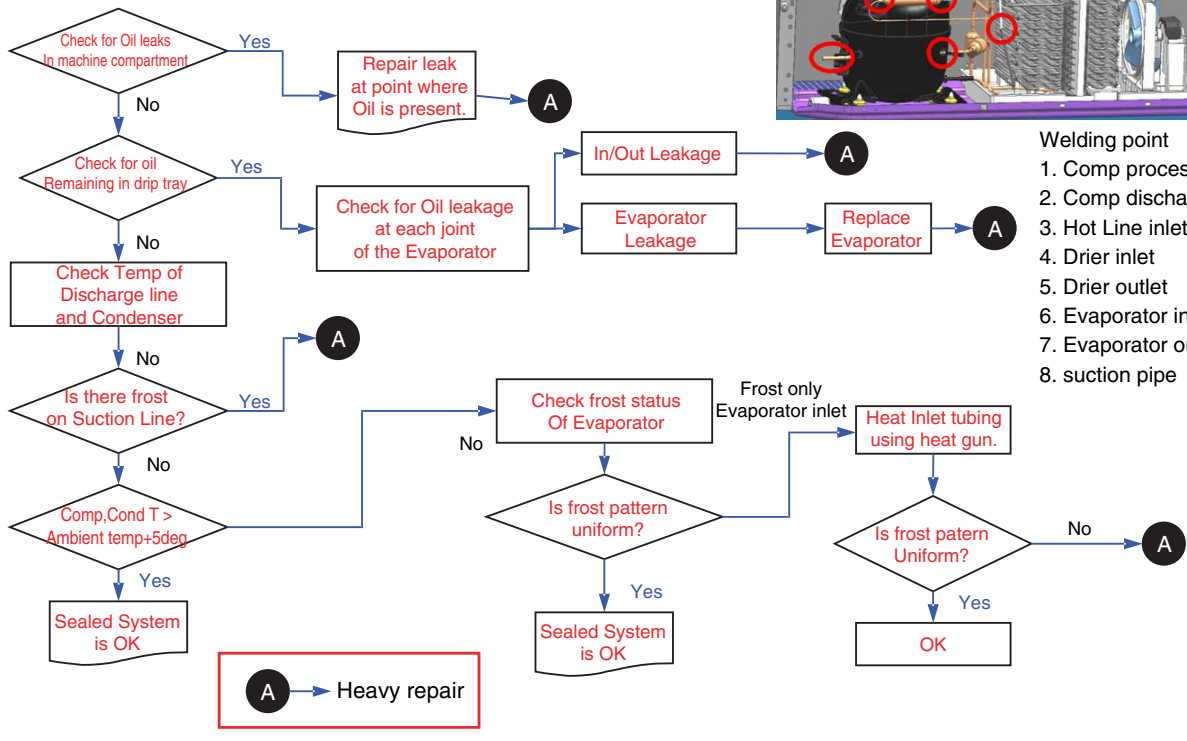
D2. sealed system diagnosis

- Check as follows;

Sealed system



Welding point
1. Comp process stub,
2. Comp discharge
3. Hot Line inlet
4. Drier inlet
5. Drier outlet
6. Evaporator inlet
7. Evaporator outlet
8. suction pipe



Compressor Troubleshooting

Step 1) Open PWB cover

Step 2) Check for blinking frequency of LED, PWB

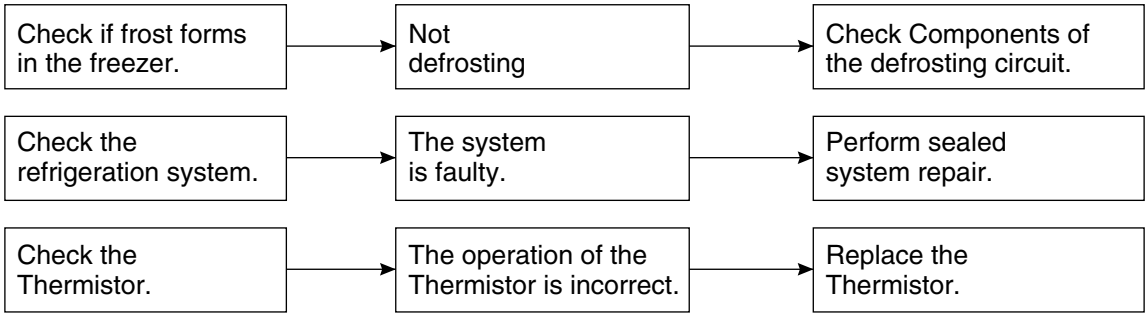
If compressor is normal, it does not blink
: Refer to the next page to find out what actions to take according to how many times LED blink

No	LED operating condition	Cause	Service guideline
1	**LED two - time repetiton (Stroke Trip)**  •• on - on - off - on - on - off - on - on - off •• repeating	PCB Parts defect or Compressor Connector miss connecting (Piston over run)	1. Please check, Whether connector of compressor is attached rightly or not. after power off 2. After the first action, You check on normal operation of compressor. 3. If the same symptom arises after the second action, replace PCB
2	**LED five - time repetiton (Piston Lock Trip)**  •• on - on - on - on - on - off - on - on - on - on - on - off •• repeating	Piston constraint	1. After resetting power, check if it is running normal 2. If the same symptom arises after the first action 3. If the same symptom arises after the second action, replace compressor
3	**LED six - time repetiton (Current Trip)**  •• on - on - on - on - on - on - off - on - on - on - on - on - on - off •• repeating	Circuit over current error Or cycle error	1. After resetting power, check if it is running normal 2. If the same symptom arises after the first action 3. If the same symptom arises after the second action, replace compressor
4	**LED seven- time repetiton (IPM Fault Trip)**  •• on - on - on - on - on - on - on - off - on - on -on - on - on - on- on - off •• repeating	PCB parts defect (IPM)	1. After resetting power, check if it is running normal 2. If the same symptom arises after the first action, replace PCB

11-5 SERVICE DIAGNOSIS CHART

COMPLAINT	POINTS TO BE CHECKED	REMEDY
No Cooling.	• Is the power cord unplugged from the outlet? • Check if the power switch is set to OFF. • Check if the fuse of the power switch is shorted. • Measure the voltage of the power outlet.	• Plug into the outlet. • Set the switch to ON. • Replace the fuse. • If the voltage is low, correct the wiring.
Cools poorly.	• Check if the unit is placed too close to the wall. • Check if the unit is placed too close to the stove, gas cooker, or in direct sunlight. • Is the ambient temperature too high or the room door closed? • Check if food put in the refrigerator is hot. • Did you open the door of the unit too often or check if the door is sealed properly? • Check if the Control is set to **Warm position**.	• Place the unit about 4 inches (10 cm) from the wall. • Place the unit away from these heat sources. • Lower the ambient temperature. • Put in foods after they have cooled down. • Don't open the door too often and close it firmly. • Set the control to **Recommended position**.
Food in the Refrigerator is frozen.	• Is food placed in the cooling air outlet? • Check if the control is set to **colder position**. • Is the ambient temperature below 41°F(5°C)?	• Place foods in the high-temperature section. (front part) • Set the control to **Recommended position**. • Set the control to **Warm position**.
Condensation or ice forms inside the unit.	• Is liquid food sealed? • Check if food put in the refrigerator is hot. • Did you open the door of the unit too often or check if the door is sealed properly?	• Seal liquid foods with wrap. • Put in foods after they have cooled down. • Don't open the door too often and close it firmly.
Condensation forms in the Exterior Case.	• Check if the ambient temperature and humidity of the surrounding air are high. • Is there a gap in the door gasket?	• Wipe moisture with a dry cloth. It will disappear in low temperature and humidity. • Fill up the gap.
There is abnormal noise.	• Is the unit positioned in a firm and even place? • Are any unnecessary objects placed in the back side of the unit? • Check if the Drip Tray is not firmly fixed. • Check if the cover of the compressor enclosure in the lower front side is taken out.	• Adjust the Leveling Screw, and position the refrigerator in a firm place. • Remove the objects. • Fix the Drip Tray firmly in the original position. • Place the cover in its original position.
Door does not close well.	• Check if the door gasket is dirty with an item like juice. • Is the refrigerator level? • Is there too much food in the refrigerator?	• Clean the door gasket. • Position in a firm place and level the Leveling Screw. • Make sure food stored in shelves does not prevent the door from closing.
Ice and foods smell unpleasant.	• Check if the inside of the unit is dirty. • Are foods with a strong odor unwrapped? • The unit smells of plastic.	• Clean the inside of the unit. • Wrap foods that have a strong odor. • New products smell of plastic, but this will go away after 1-2 weeks.

● Other possible problems:



11-6 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.	• Refrigerant level is low due to a leak. • Normal cooling is possible by restoring the normal amount of refrigerant and repairing the leak.
	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.	• No discharging of Refrigerant. • Normal cooling is possible by restoring the normal amount of refrigerant and repairing the leak.
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.	• Normal discharging of the refrigerant. • The capillary tube is faulty.
	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	COMP-RESSION	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 COMP-RESSION	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.

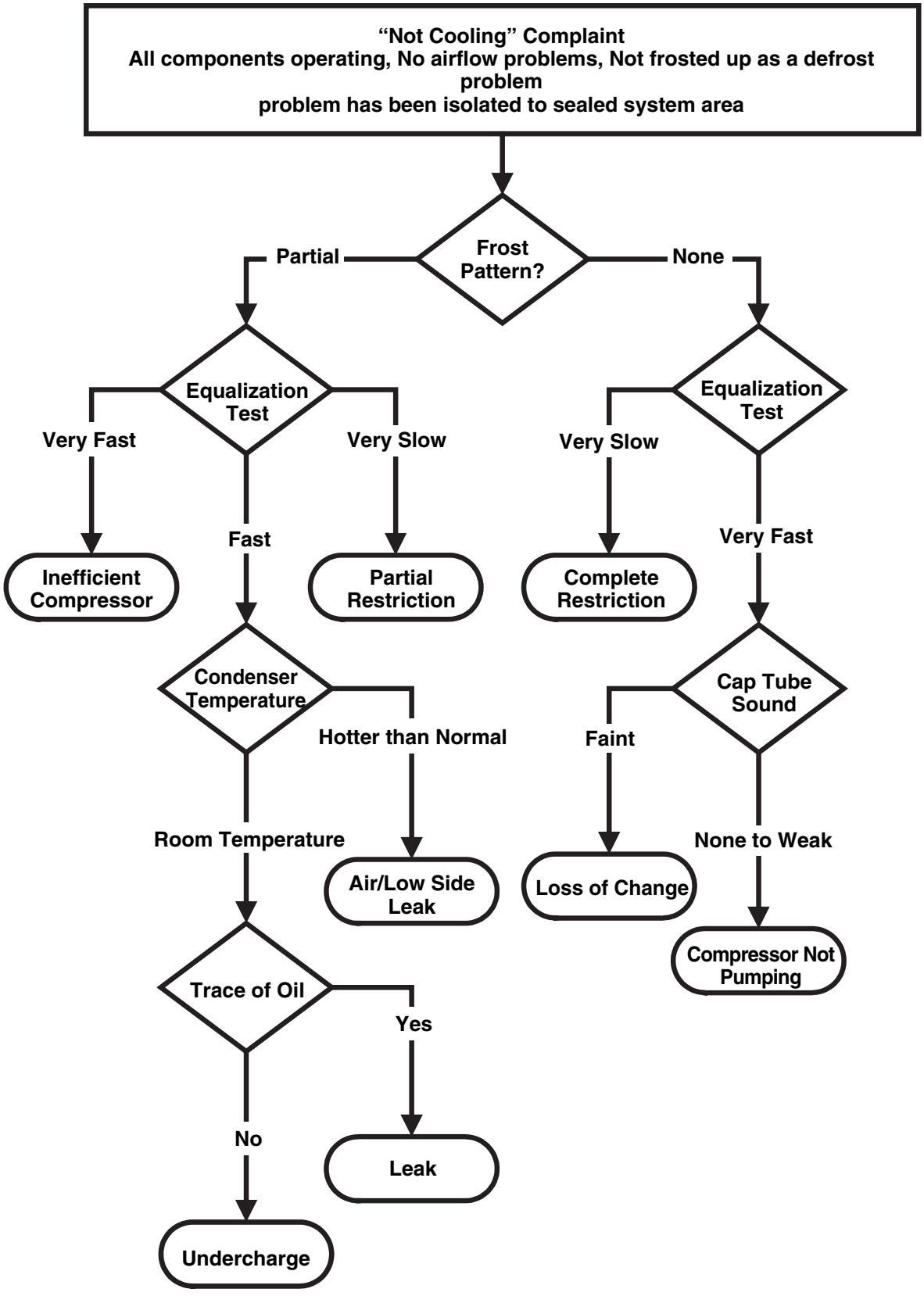
11-6-1 Cleaning

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.

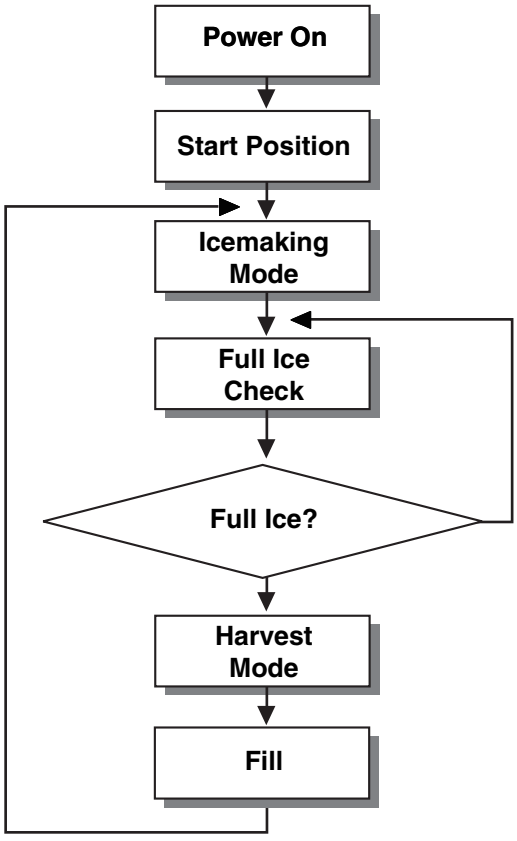
11-6-2 SEALED SYSTEM DIAGNOSIS



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

12. ICEMAKER OPERATING METHOD AND TROUBLE SHOOTING

12-1 Icemaker's Basic Operating Method



- Adjusts Ice Tray to Start Position with power on.

- Waits until water becomes ice.

※For cold air circulation, Ice tray will be on a slightly tilt one hour after ice-making mode begins. Atilt ice tray means icemaker's normal operation.

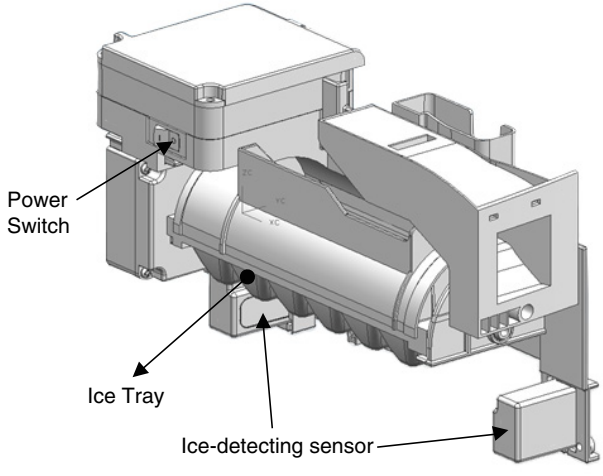
- If water becomes ices in the ice tray, Ice-detecting sensor check if the ice bin is full.

- Twist the ice tray to drop ice into the ICE BIN.

- Supply water to the ice tray by operating the solenoid valve.

- To force water to supply to the ice tray, or check icemaker's condition press and hold the **FILL Key** for about 3seconds.
  In the test mode, The icemaker will run through 3 stages step by step
  : **Harvest → Fill water → Ice making**

To reset the icemaker's operation, set the power switch OFF position and back it to ON position.



Icemaker Unit

12-2 ICE MAKER FUNCTIONS

12-2-1 Icemaking Mode

1. Icemaking Mode begins right after the ice tray fills with water.
2. Icemaker waits until water becomes ice in the ice tray.

※ Ice-detecting sensor checks if the ice bin is full every 2min.

12-2-2 Harvest Mode

At least in 110min, since icemaker begun icemaking mode, Icemaker starts to twist the ice tray to drop ices into the Ice bin. (After installation, at least 1day is needed to make ices)

※ If the icemaker never drop ices to the ice bin though water becomes ices in the ice tray, check the real temperature of compartment. (not temperature on display)
Icemaker needs below 0°F to drop ices to ice bin.

12-2-3 Fill/Park Position

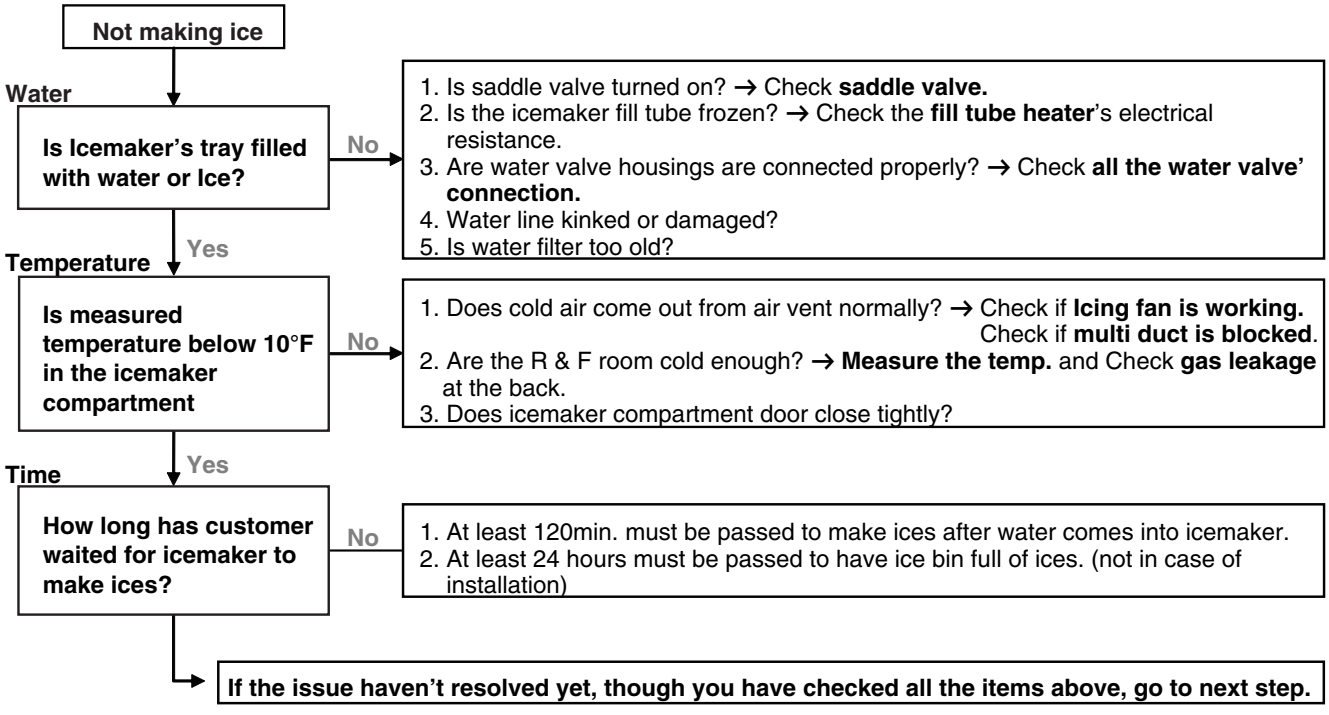
Once the normal harvest mode has been completed, the water solenoid will be activated.

12-3 Trouble Shooting Ice & Water system Issues

12-3-1 Icemaker not making ice or not making enough ice (Environmental Diagnosis)

▶ Icemaker can't make ices itself. Basically, water, temperature and time are needed.
- Water : If no Water, then no Ice.
- Temperature : The compartment, where the icemaker is located, has to be at least 1°F so that icemaker dumps ices to the bin.
- Time : At least 80 minutes must be passed to make one series of ices after water comes into icemaker.

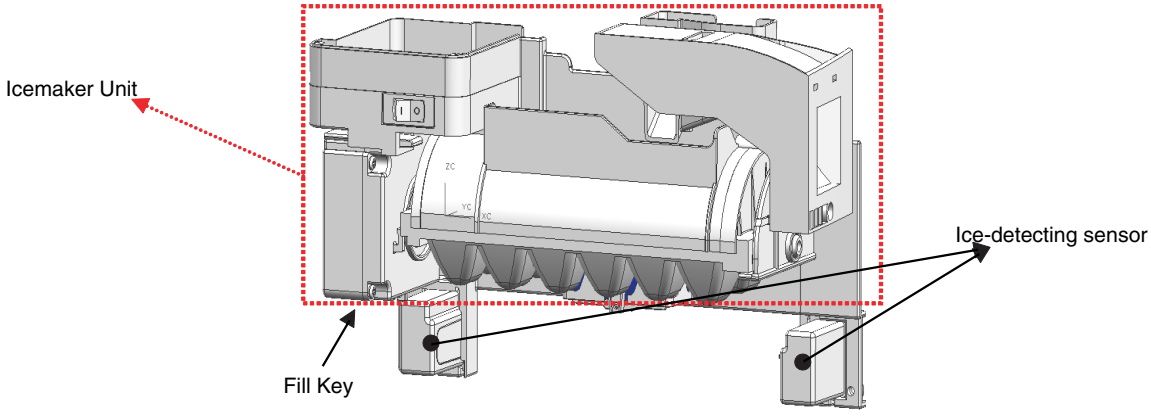
※ ***Test Mode should not be carried out before checking below.***



12-3-2 Icemaker not making ice or not making enough ice (Icemaker Unit & Ice-detecting sensor Diagnosis)

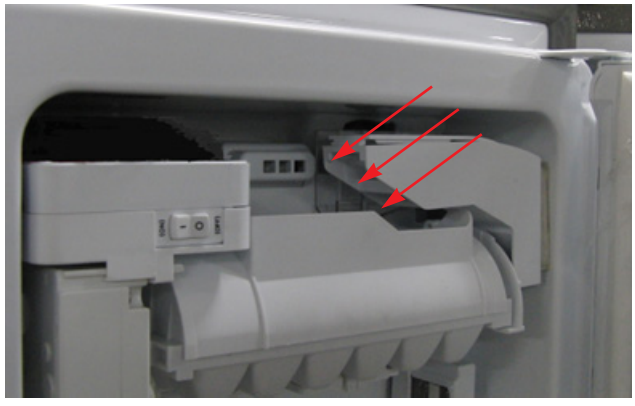
▶ **Icemaker Unit and Ice-detecting sensor Diagnosis**

The icemaker unit and Ice-detecting sensor is programmed to be diagnosed.
Follow the procedure step by step to check to see if icemaker and Ice-detecting sensor is working normally.



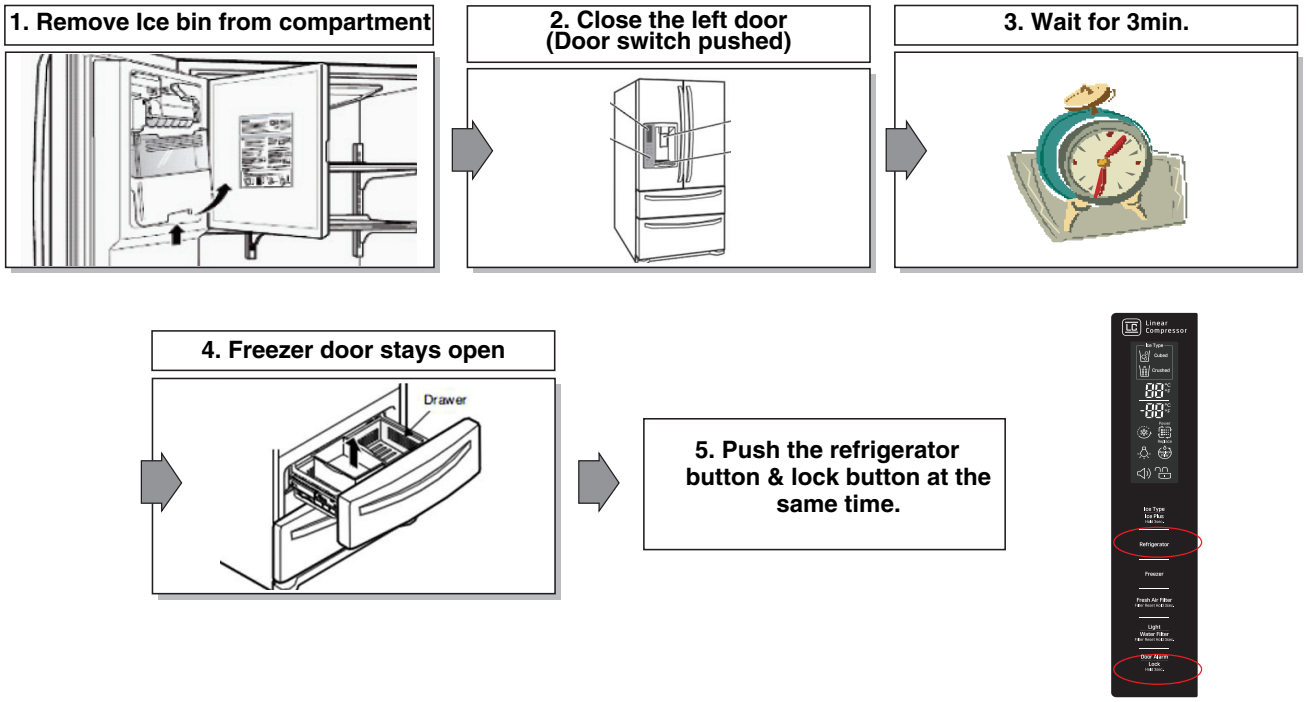
1st STEP (Icemaker Unit Diagnosis)

Press the fill key for about 3sec. If the icemaker runs 2 stages of harvest and filling water step by step, It means icemaker's mechanism is normal.



※ Caution : Be sure that the ice tray is not filled with water before pressing fill key.

2st STEP (Ice-detecting sensor Diagnosis)



If "ETY" is shown on the display after the procedure above, Ice-detecting sensor is normal.
If "FULL" is shown on the display after the procedure above, Ice-detecting sensor is abnormal.
※ *ETY = empty*

12-3-3 Icemaker not making ice or not making enough ice (Other Suspected Items)

Strongly suspect items below If the issue remains yet, though all the diagnosis for icemaker has been carried out.

- Cap duct bad sealing
- Defective thermal sensor in the icemaker compartment
- Not cold icemaker compartment area (sealed system)

12-3-4 Not Dispensing Ice

▶ Clogged Ice In the Ice Bin (suspected items)

- Customer haven't used ice dispenser over a week.
  → **Resolution** : the ices gets stuck if customer doesn't use ice dispenser.
  In this case, empty the ice bin and wait until the new ices are stacked in the ice bin.
- Temperature of icemaker compartment is not cold enough.
  → **Resolution** : Check ice fan, sealed system, cap duct, vent and other items related to temperature.
- Cap duct doesn't seal the air properly.
  → **Resolution** : Possibly, warm air could get into the compartment and make ices get stuck. Replace the cap duct with new one.
- In-door geared motor doesn't work
  → **Resolution** : Change the in-door geared motor and test it.
- The water comes out of fill cup and the water get into the ice bin.
  → **Resolution** : The water pressure from shutoff valve is too high.
  Recommend to use regulator to the customer and close the shutoff valve slightly.

▶ Clogged Ices In the Chute (suspected items)

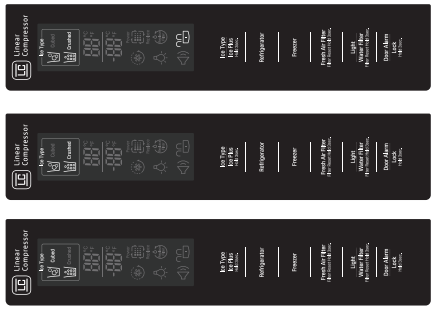
- Cap duct doesn't seal the air properly.
  → **Resolution :** Possibly, warm air could get into the compartment and make ices get stuck. Replace the cap duct with new one.

13. DESCRIPTION OF FUNCTION & CIRCUIT OF MICOM

13-1 FUNCTION

13-1-1 Function

1. When the appliance is plugged in, it is set to 37°F for Refrigerator and 0°F for freezer.
   You can adjust the Refrigerator and the Freezer control temperature by pressing the ADJUST button.
2. When the power is initially applied or restored after a power failure, it is set to Control temperature Previously.
3. If you do not press any button after turning on the power, only CRUSH or CUBE Label that has been selected will be turned on and all other LEDs on the display Panel will be turned off within 60 seconds. (Power Save Mode)
4. If you press a button, only CRUSH, CUBE label and Lock icon that has been selected will be turned on and all other LEDs on the display Panel will be turned off within 20 seconds. (Power Save Mode)

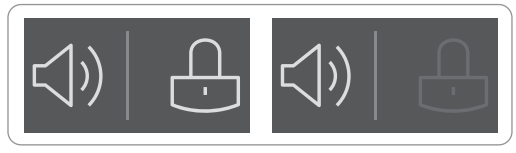


13-1-2 How to Toggle the Display between °F & °C

1. The initial setting is °F and the display temperature mode can be changed from °F to °C or °C to °F by pressing and holding the FRZ TEMP and the REF TEMP keys at the same time for over 5 seconds.

13-1-3 Lock function (dispenser and display button lock)

1. When the refrigerator is first turned on, the buttons are not locked. “LOCK” is deactivated with no light on.
2. To lock the display, the dispenser, and the control panel, press and hold the LOCK button for 3 seconds. “LOCK” is activated with “Lock Icon” on.
3. The LOCK button is the only control feature that remains active in the locked state. The buzzer sound, other control buttons, and the dispenser are deactivated.
4. To release from the locked state, press and hold the LOCK button again for 3 seconds.
5. If you don’t hold the Alarm/Lock button more than 3 seconds, Alarm function will be changed and alarm for opened door will be on/off same as alarm icon indicating.



Ex) In selecting "LOCK"

Ex) In selecting "LOCK" again

13-1-4 Filter condition display function

1. There is a replacement indicator light for the filter cartridge on the dispenser.
2. Water filter needs replacement once six months or of using water filter.
3. When the Water Filter Icon blinks, you must exchange the filter.
4. After replacing the filter, press and hold the Light/Filter button for more than 3 seconds.
   After then water Filter icon turn off with reset status.

13-1-4 Filter condition display function

1. There is a replacement indicator light for the filter cartridge on the dispenser.
2. Water filter needs replacement once six months or of using water filter.
3. When the Water Filter Icon blinks, you must exchange the filter.
4. After replacing the filter, press and hold the Light/Filter button for more than 3 seconds.
   After then water Filter icon turn off with reset status.

Classification	In initial Power On / Filter RESET	Blinking
Filter Status Display		

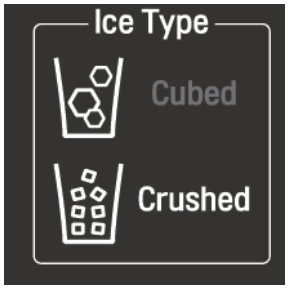
13-1-5 Ice Plus selection

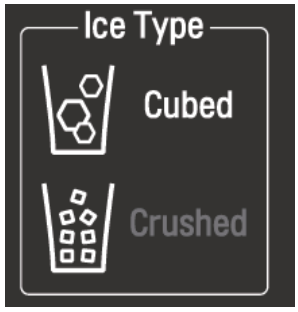
1. Please select ice plus function for quick freezing.
2. When you press the ice plus button, the ice plus icon will be turned on again.
3. Ice plus function automatically turns off after a fixed time passes.
4. If you want additional power save, you can turn on energy saving (some heater off for anti-dew).
5. To turn on or off the energy saving function, press Ice plus/Energy saving Button for more than 3 seconds.
6. We recommend using energy saving function when you go out for quite a long time and are out of the rainy season.

13-1-6 Dispenser use selection

You can select water or ice by separated pad switch.

- When you press ice type button, ice type will be changed. (Crush or Cube)
- Hold your cup in the dispenser for a few seconds after dispensing ice or water to allow the last pieces of ice drops of water to fall into the cup.
- When after initially establ ishing the water comes out, the water tank inside fills and until at the time of quality the hour is caught.





13-1-7 CONTROL OF FREEZER FAN MOTOR

1. Freezer fan motor has high and standard speeds.
2. High speed is used at power-up, for Ultra Ice, and when refrigerator is overloaded.
   Standard speeds is used for general purposes.
3. To improve cooling speed, the RPM of the freezer fan motor change from normal speed to high.
4. High speed (2700RPM) : Initial power on or load corresponding operation, Ultra Ice.
   Normal speed (2400RPM) : General working conditions.

13-1-8 Cooling Fan Motor

1. The cooling fan is switched ON and OFF in conjunction with the compressor.
2. The cooling fan Motor has high and standard speeds. (When room temper rapture more high then 38°C speed is high)
3. 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).

13-1-9 Ice Compartment Fan

1. The Icing Fan is controlled by the 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)

13-1-10 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. The first one hour the compressor, Freezer Fan and Icing Fan will be ON. The next 23 hours the Ice room will be controlled at the lowest temperature. After 24 hours or if the Ice PLUS key is pressed again, the Ice room will return to its previous temperature.
5. During the first hour :
   (1) Compressor, Freezer Fan and Icing Fan run continuously.
   (2) If a defrost cycle begins during the first 30 minutes of Ice Plus, the Ice PLUS cycle will complete its cycle after defrosting has ended.
   If the defrost cycle begins when Ice Plus has run for more than 30 minutes, Ice PLUS will run for 40 minutes after the defrost is completed.
   (3) If Ice PLUS is pressed during defrost, Ice Plus Icon is on but this function will start seven minutes after defrost is completed and it shall operate for three hours.
   (4) If Ice Plus is selected within seven minutes after compressor has stopped, the compressor (compressor delays seven minutes) shall start after the balance of the delay time.
6. For the rest of the 23 hours, the Ice room will be controlled at the lowest temperature.

13-1-11 How to set the display mode and cancel it

1. With the refrigerator door open, keep pressing the Refrigerator Temp Button and ICE PLUS Button more than 5 seconds, 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)

13-1-12 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. The first one hour the compressor, Freezer Fan and Icing Fan will be ON. The next 23 hours the Ice room will be controlled at the lowest temperature. After 24 hours or if the Ice PLUS key is pressed again, the Ice room will return to its previous temperature.
5. During the first hour :
   (1) Compressor, Freezer Fan and Icing Fan run continuously.
   (2) If a defrost cycle begins during the first 30 minutes of Ice Plus, the Ice PLUS cycle will complete its cycle after defrosting has ended.
   If the defrost cycle begins when Ice Plus has run for more than 30 minutes, Ice PLUS will run for 40 minutes after the defrost is completed.
   (3) If Ice PLUS is pressed during defrost, Ice Plus Icon is on but this function will start seven minutes after defrost is completed and it shall operate for three hours.
   (4) If Ice Plus is selected within seven minutes after compressor has stopped, the compressor (compressor delays seven minutes) shall start after the balance of the delay time.
6. For the rest of the 23 hours, the Ice room will be controlled at the lowest temperature.

13-1-13 How to set the display mode and cancel it

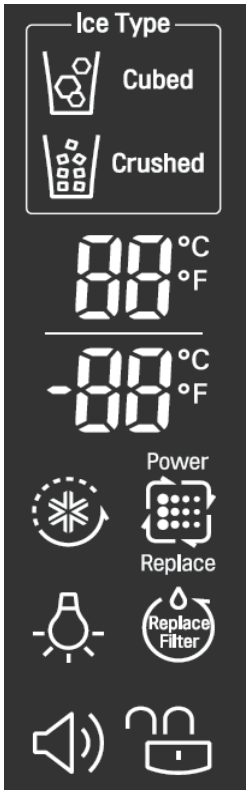
1. With the refrigerator door open, keep pressing the Refrigerator Temp Button and ICE PLUS Button more than 5 seconds, then it goes to the display mode with Special Beep Sound With Special Beep Sound.
2. Perform the same way again to cancel the display mode.
3. All Freezing unit will be turned off at display mode (Exceptions : Lamp, Display)

13-1-14 Defrosting (removing frost)

1. Defrosting starts each time the COMPRESSOR running time Betwee 7~50 hours.
2. For initial power on or for restoring power, defrosting starts when the compressor running time reaches 4 hours.
3. Defrosting stops if the sensor temperature reaches 46.4°F(8°C) or more. If the sensor doesn't reach 46.4°F(8°C) in 1 hours, the defrost mode is malfunctioning. (Refer to the defect diagnosis function, 8-1-15.)
4. Defrosting won't function if its sensor is defective (wires are cut or short circuited)

13-1-15 Defect Diagnosis Function

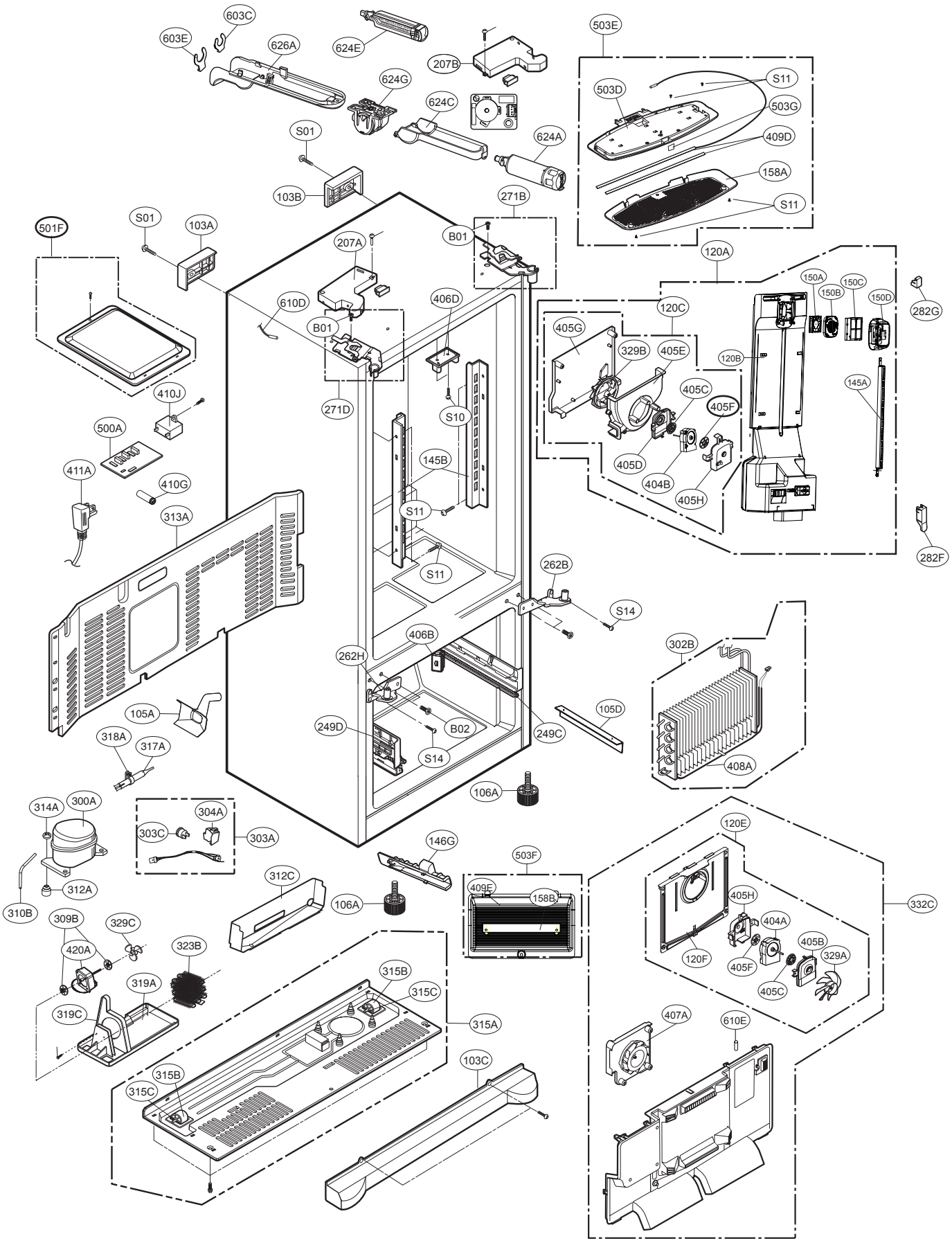
1. Automatic diagnosis makes servicing the refrigerator easy.
2. When a defect occurs, the buttons will not operate; but the tones. such as ding. will sound.
3. When the defect CODE removes the sign, it returns to normal operation (RESET).
4. The defect CODE shows on the Refrigerator and Freezer Display.



* Display check function: If simultaneously pressing Ultra Ice 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

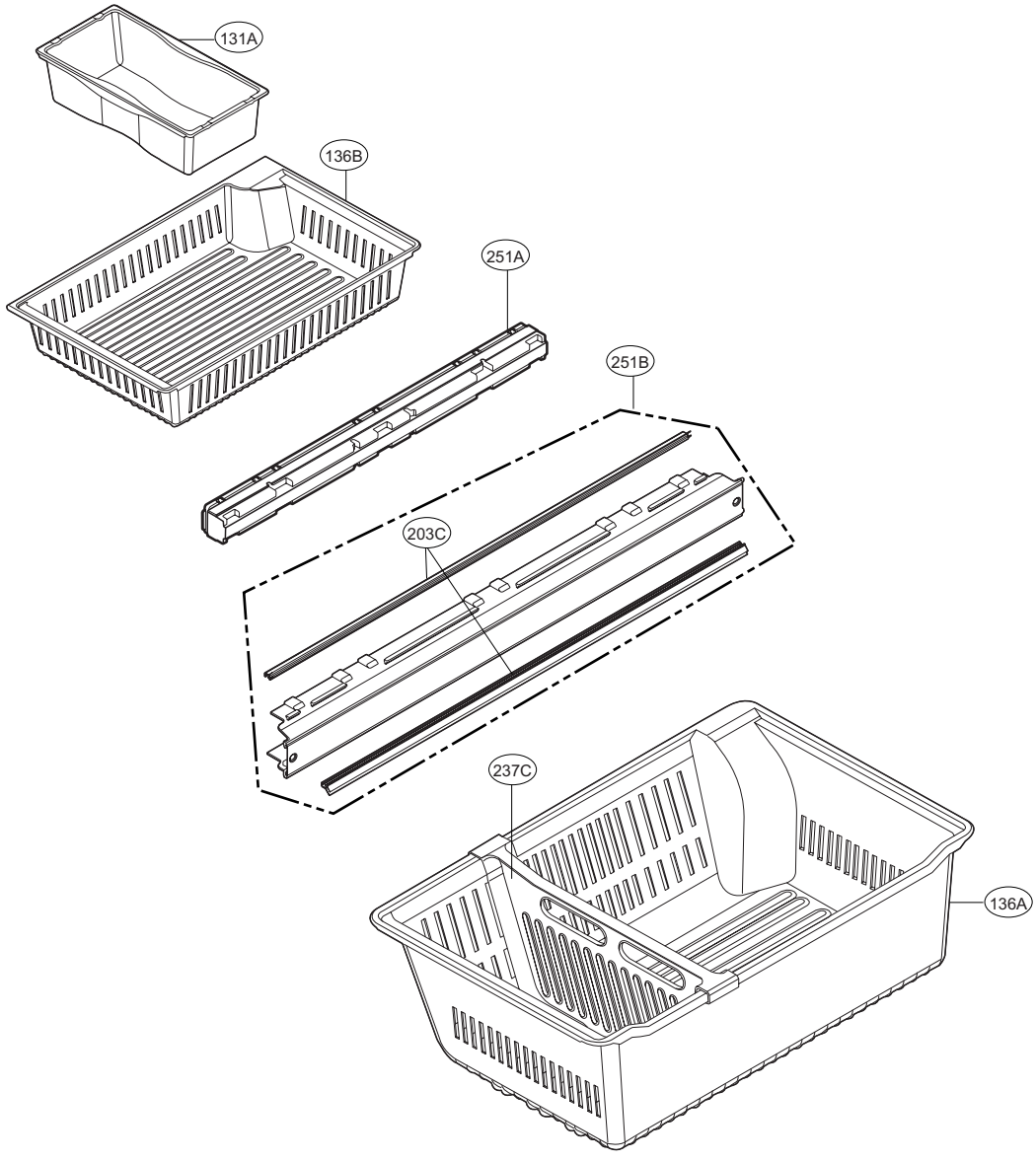
CASE PARTS

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



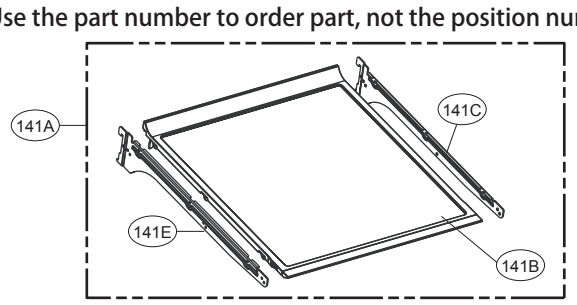
FREEZER PARTS

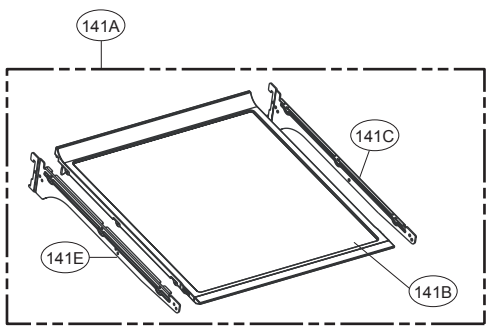
CAUTION: Use the part number to order part, not the position number.

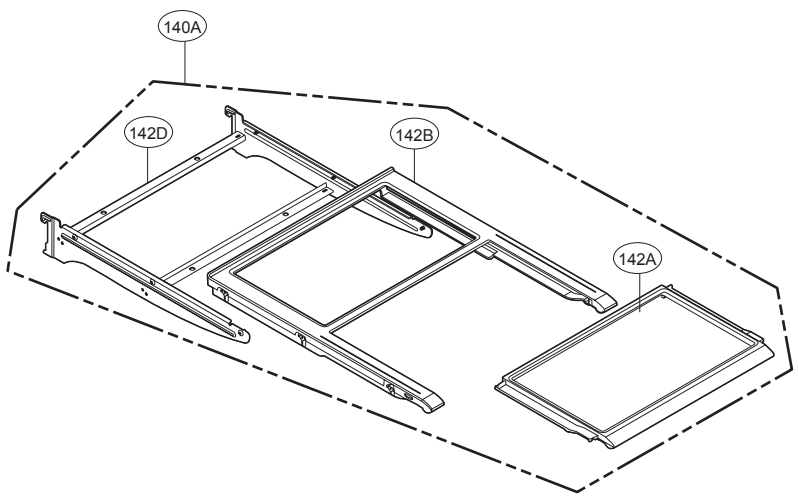


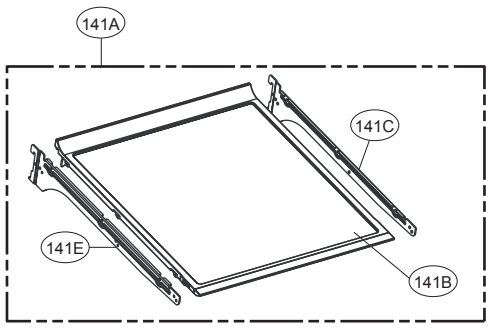
REFRIGERATOR PARTS

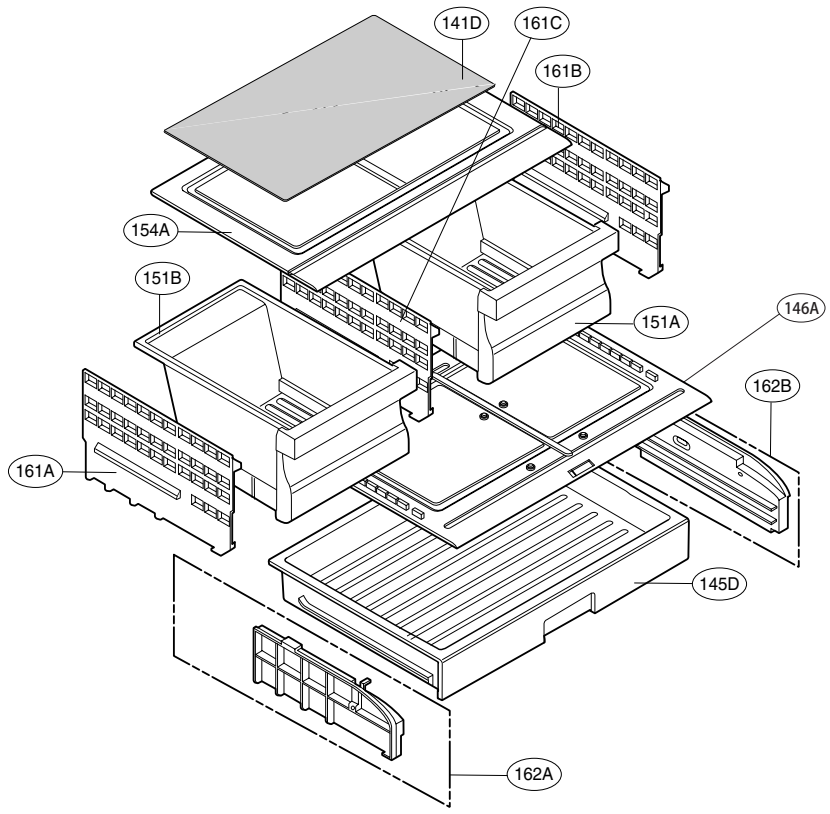
CAUTION: Use the part number to order part, not the position number.

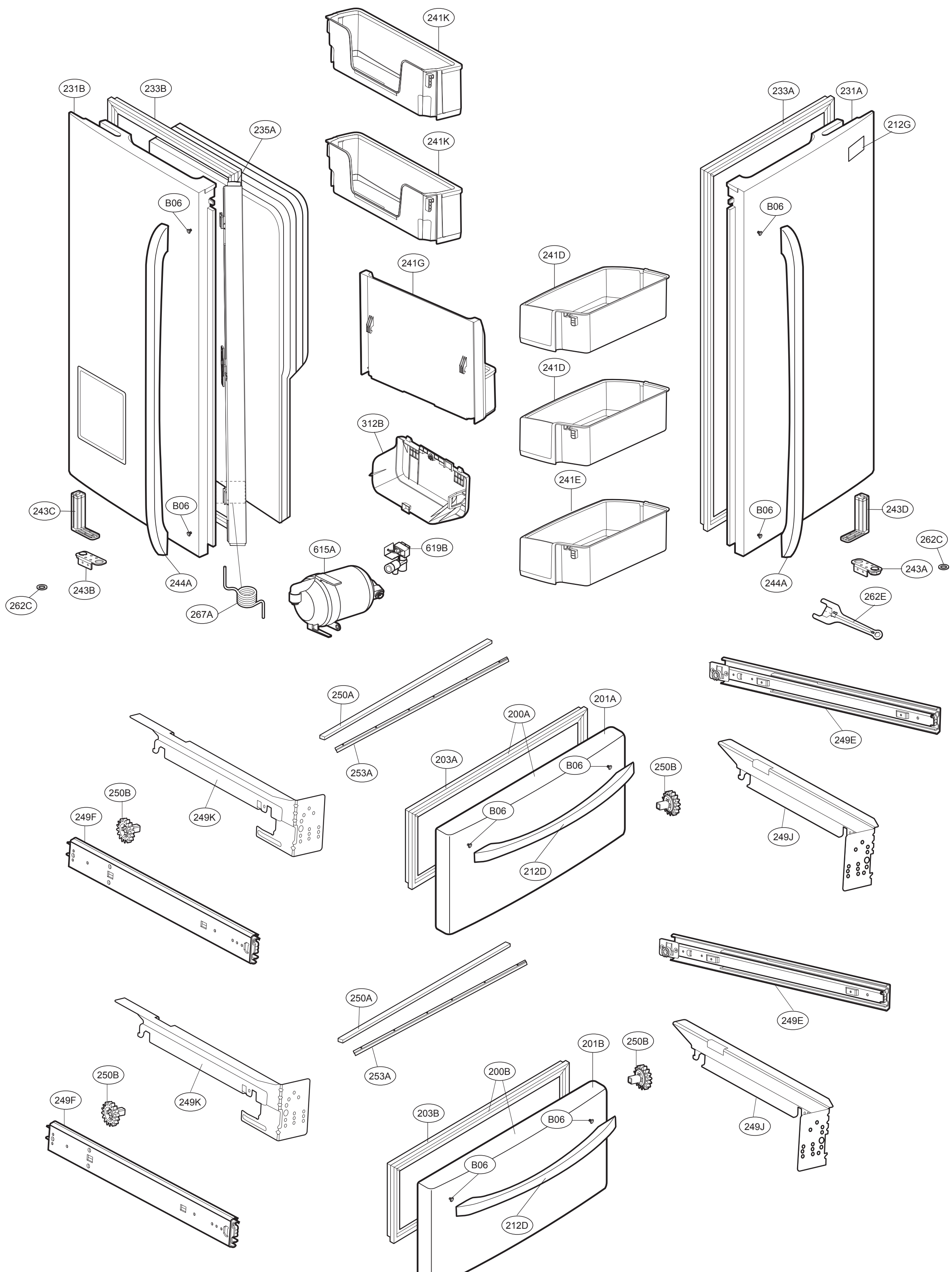








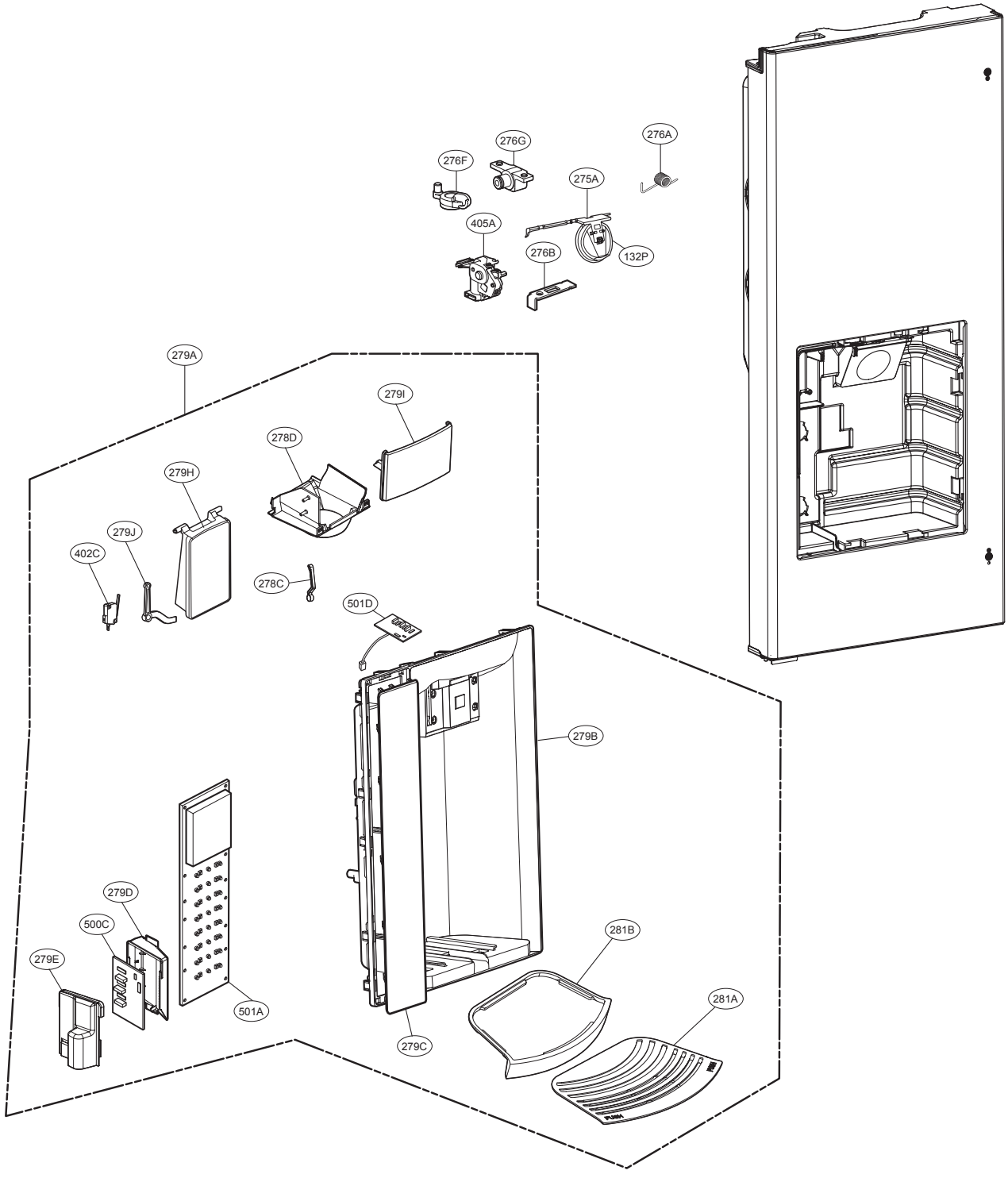




241K
231B
233B
235A
241K
233A
231A
212G
B06
B06
241G
241D
241D
312B
241E
243C
B06
B06
243D
615A
619B
262C
243A
262C
243B
244A
244A
262E
267A
250A
249E
201A
200A
253A
203A
B06
250B
250B
249K
249F
B06
249J
212D
250A
249E
201B
250B
253A
200B
250B
249K
249F
203B
B06
249J
B06
212D

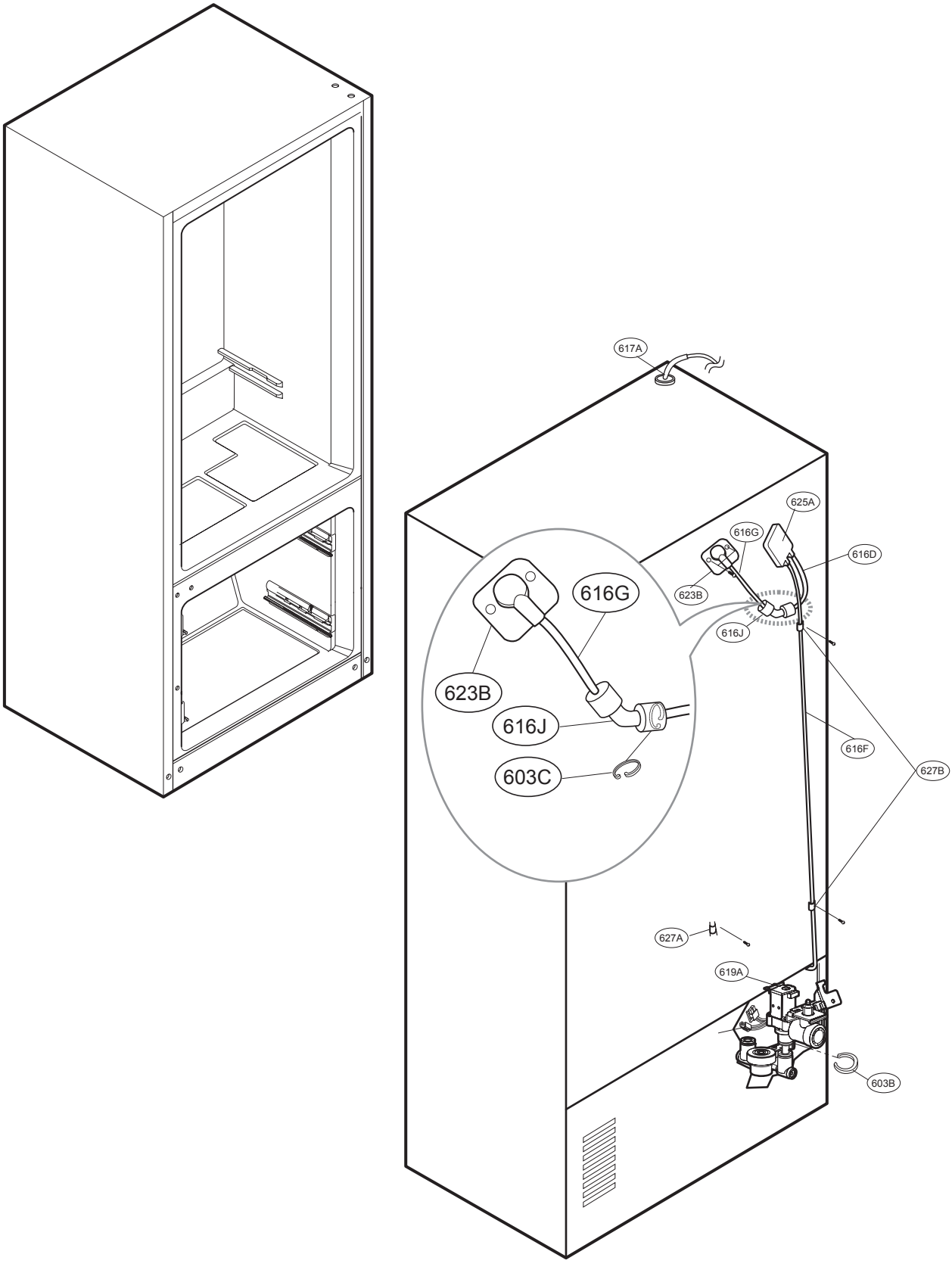
DISPENSER PARTS

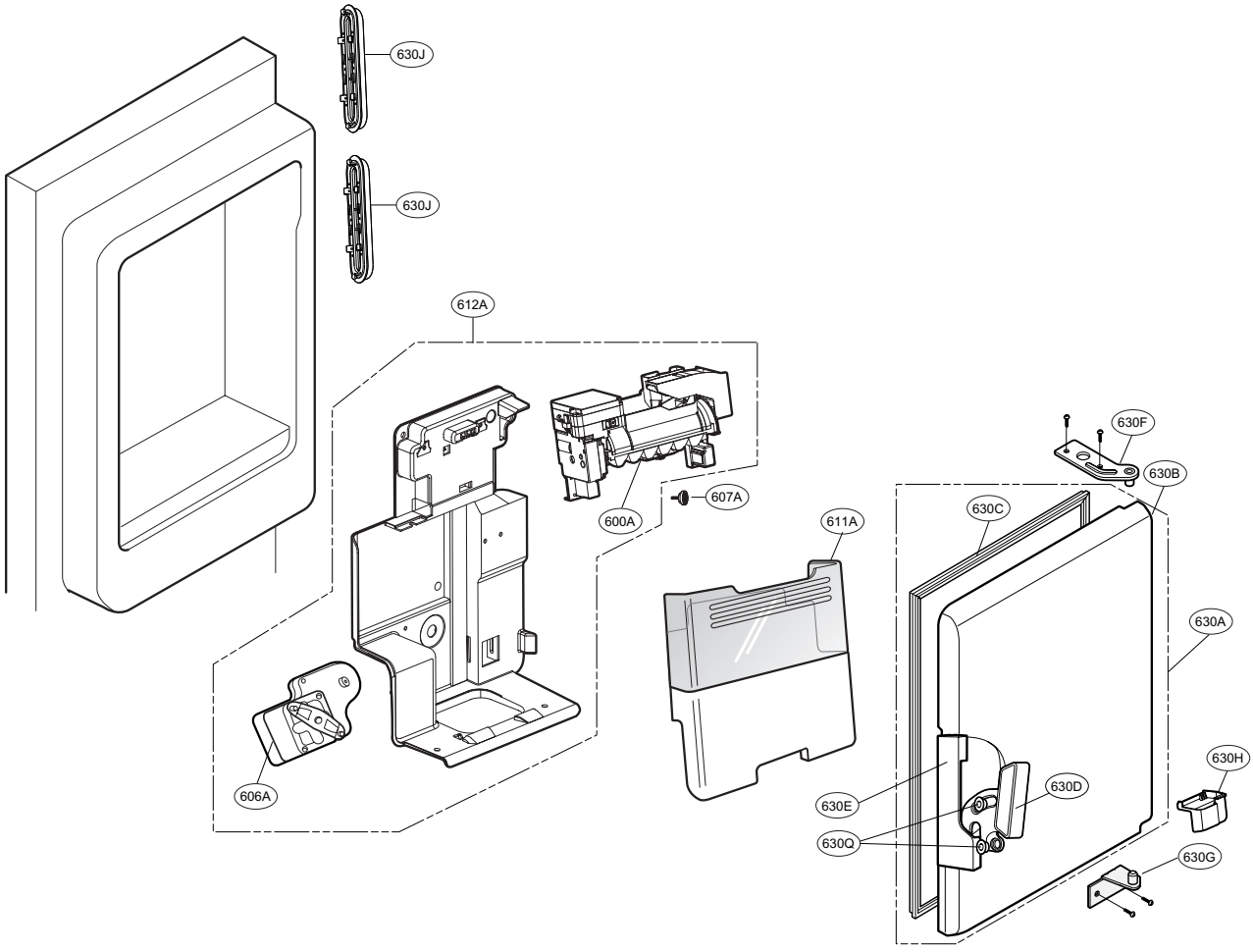
CAUTION: Use the part number to order part, not the position number.



VALVE & WATER TUBE PARTS

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




630J
630J
612A
600A
607A
606A
611A
630F
630B
630C
630A
630H
630D
630E
630Q
630G

LG Electronics Inc.