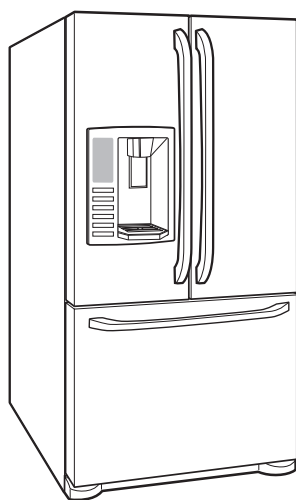




# REFRIGERATOR

# SERVICE MANUAL

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



MODELS:  
LFX23965SW /02  
LFX23965ST /02  
LFX23965SB /02

# ECN (Engineering Change Number)

---

## **Rev.01**

Improve assemble "Cover Lower"

Improve "Cover Assembly,PCB"

## **Rev.02**

Change connector rail in order to reduce claims for bad sealing and door misaligned.

New connector rail has 1° degree of inclination

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## SAFETY PRECAUTIONS

---

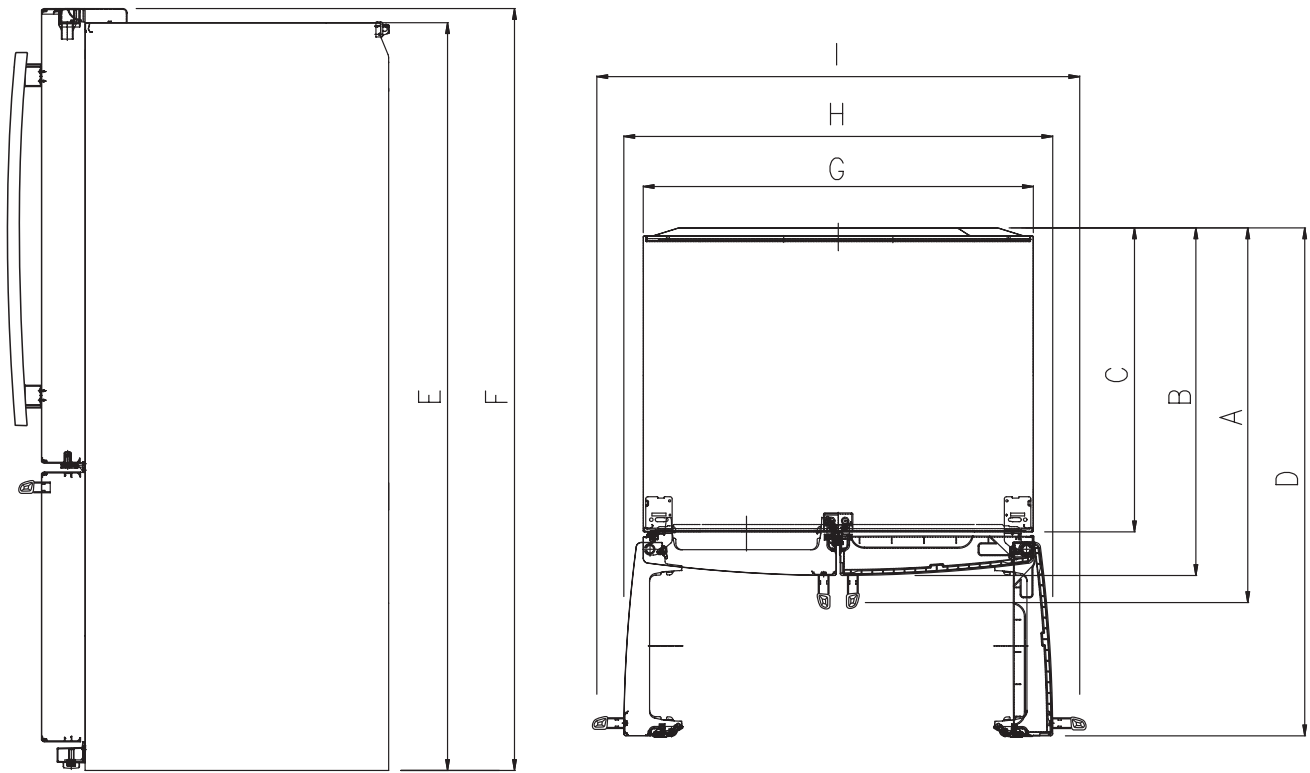
Please read the following instructions before servicing your refrigerator.

1. Check the refrigerator for current leakage.
2. To prevent electric shock, unplug before servicing.
3. Always check line voltage and amperage.
4. Use standard electrical components.
5. Don't touch metal products in the freezer with wet Hands. This may cause frost bite.
6. Prevent water from spilling on to electric elements or the Machine parts.
7. Before tilting the refrigerator, remove all materials from On or in the refrigerator.
8. When servicing the evaporator, wear gloves to prevent Injuries from the sharp evaporator fins.
9. Service on the refrigerator should be performed by a Qualified technician. Sealed system repair must be Performed by a CFC certified technician.

# 1. SPECIFICATIONS

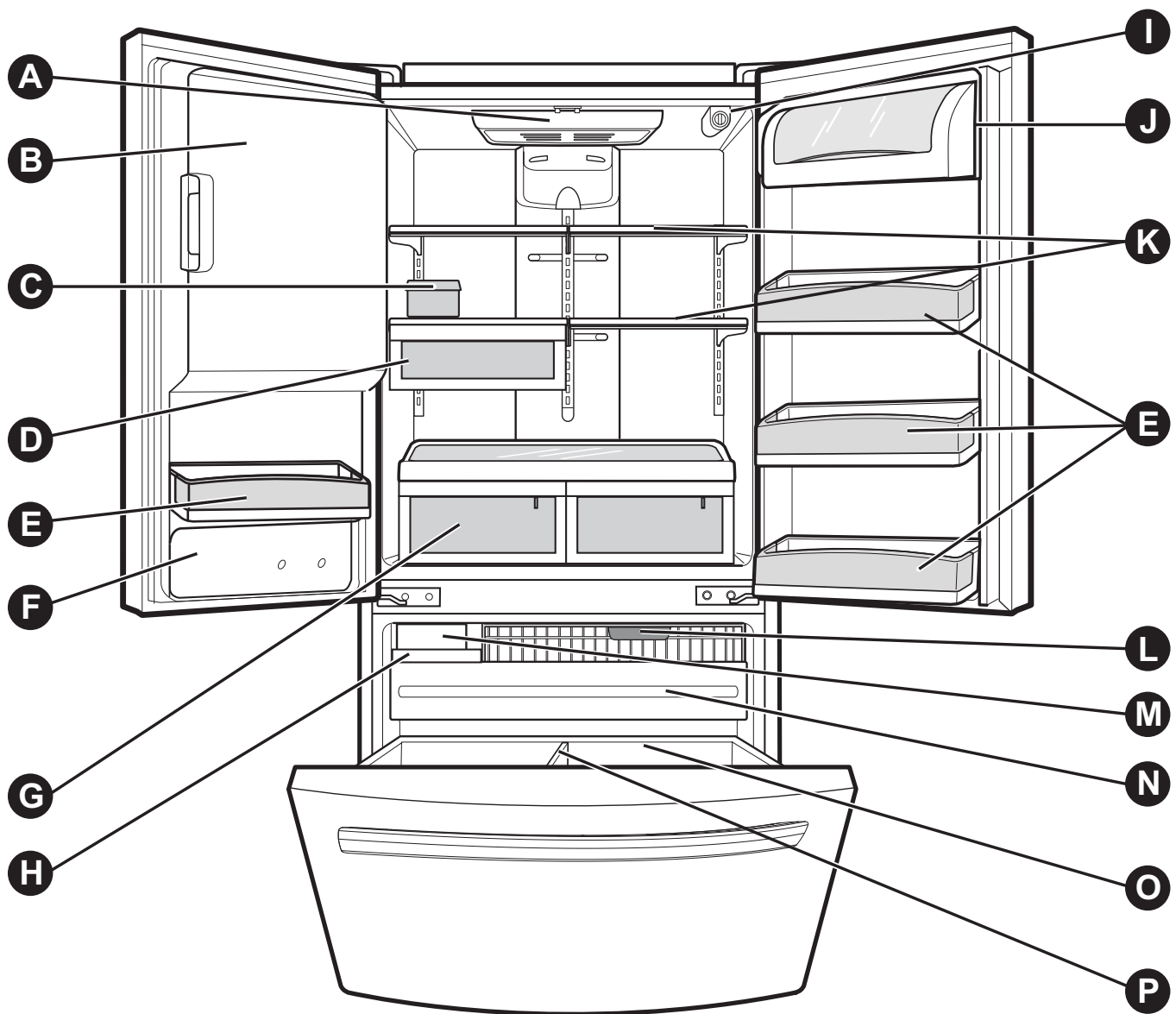
SPECIFICATIONS		MODELS	LFX23965SW	LFX23965ST	LFX23965SB
GENERAL FEATURES	Color		Super White	Stainless	Black
	Dimensions	892 (W) x 925 (D) x 1860 (H) mm			
	Net Weight	140kg			
	Capacity	23 cuft			
	Refrigerant	R134a (120gr)			
	Climate class	Temperate (N)			
	Rated Rating	115V~ / 60Hz			
	Cooling System	Fan Cooling			
	Temperature Control	MICOM control			
	Defrosting System	Full Automatic			
		Heater Defrost			
	Insulation	Cyclo, Pentane			
	Compressor	EGX90HLC 115-127V/60HZ Combo Starting Type			
	Evaporator	Fin Tube Type			
	Condenser	Wire Condenser			
	Lubricanting Oil	Ester ISO10 280 cc			
	Drier	MOLECULAR SIEVE XH-7			
	Capillary Tube	ID Ø0.75			
	First Defrost	4 Hours			
	Defrost Cycle	7 - 40 Hours			
	Desfrosting Device	Heater, Sheath			
	Anti-freezing Heater	Water Tank Heater			
REFRIGERATOR	Case Material	Embo (normal)			
	Door Material		PCM	Stainless	VCM
	Handle Type	Vista			
	Display Graphic	ICE PLUS			
	Basket, Quantity	1 left + 3 right			
	Ice Tray & Bank	AUTO ICE MAKER			
	Lamp	Yes (2) 40W/Blue			
	Shelf	1Fix(S/Proof)+1Fold+2S/Out(S/Proof)			
	Tray meat	Yes			
	Egg Bank	STD			
FREEZER	Basket, Quantity	No			
	Lamp	Yes (1) 40W/Blue			
	Tray Drawer F/U	Yes (Full Width)			
	Tray Drawer F/L	Yes (Plastic)			
	Shelf	No			

# DIMENSIONS



Description		LFX23965**
Depth w/ Handles	A	34 <sup>5</sup> / <sub>8</sub>
Depth w/o Handles	B	32 <sup>1</sup> / <sub>8</sub>
Depth w/o Door	C	28 <sup>1</sup> / <sub>4</sub>
Depth (Total with Door Open)	D	45 <sup>1</sup> / <sub>2</sub>
Height to Top of Case	E	67 <sup>1</sup> / <sub>16</sub>
Height to Top of Door Hinge	F	69 <sup>1</sup> / <sub>16</sub>
Width	G	32 <sup>3</sup> / <sub>4</sub>
Width (door open 90 deg. w/o handle)	H	36 <sup>1</sup> / <sub>4</sub>
Width (door open 90 deg. w/ handle)	I	41 <sup>1</sup> / <sub>4</sub>

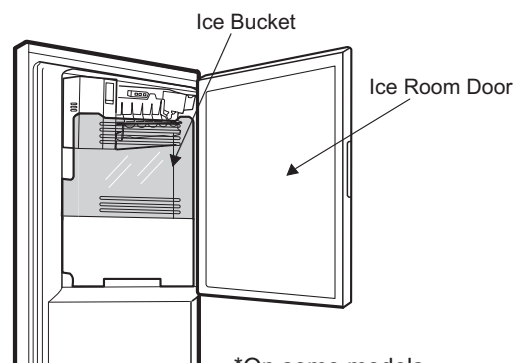
## 2. PARTS IDENTIFICATION



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

**NOTE:** This guide covers several different models. The refrigerator you have purchased may have some or all of the items listed below. The locations of the features shown below may not match your model.

- |                             |                               |
|-----------------------------|-------------------------------|
| <b>A</b> Refrigerator Light | <b>J</b> Dairy Bin            |
| <b>B</b> Ice Room           | <b>K</b> Refrigerator Shelves |
| <b>C</b> Egg Box            | <b>L</b> Freezer Light        |
| <b>D</b> Snack Pan          | <b>M</b> Turbo Motor          |
| <b>E</b> Modular Door Bins  | <b>N</b> Glide out Drawer     |
| <b>F</b> Water Tank Cover   | <b>O</b> Durabase             |
| <b>G</b> Crisper            | <b>P</b> Divider              |
| <b>H</b> Ice Bin            |                               |
| <b>I</b> Filter (Inside)    |                               |



\*On some models

# 3. DISASSEMBLY

## 3-1 DOORS

### 1. Removing Refrigerator Door

**NOTE:** Handle appearance may vary.

**IMPORTANT:** Before you begin, turn the refrigerator OFF and unplug it. Remove food and any bins from doors.

#### ► Left Door

- Loosen the screws and remove the cove on back side (see figure A).
- Disconnect water supply tube by pushing back on the disconnect ring (3).
- Loosen the cover screw (1).
- Disconnect door switch wire (2).
- Pull out the tube (4).

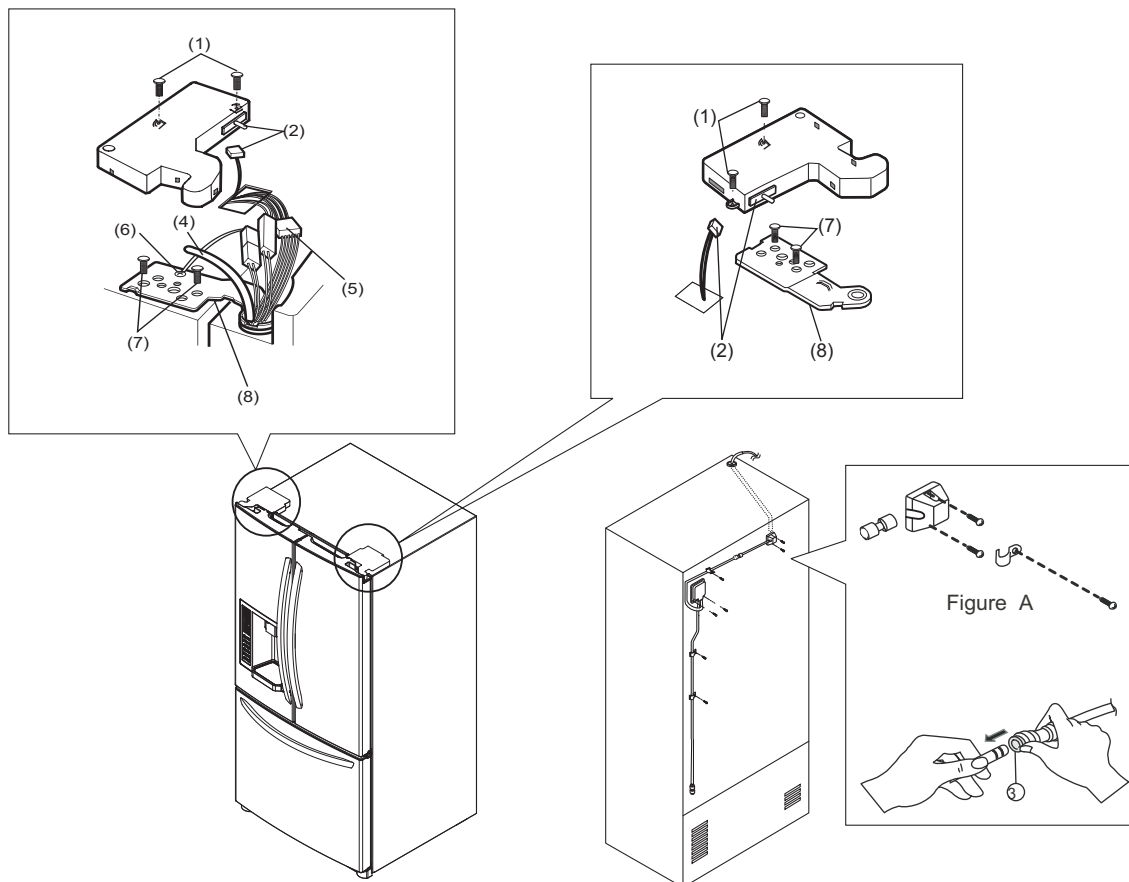
**CAUTION:** If a tube end is deformed or worn out, cut the damaged portion away.

- Disconnect wire harness (5).
- Remove the ground screw (6).
- Loosen screws (7) and lift off the top hinge (8).
- Place the door on a non-scratching surface with the inside up.

**CAUTION:** When removing top hinge, be careful that the door does not fall forward.

#### ► Right Door

- Loosen the cover screw (1).
- Disconnect door switch wire (2).
- Loosen screws (7) and lift off the top hinge (8).
- Place the door on a non-scratching surface with the inside up.



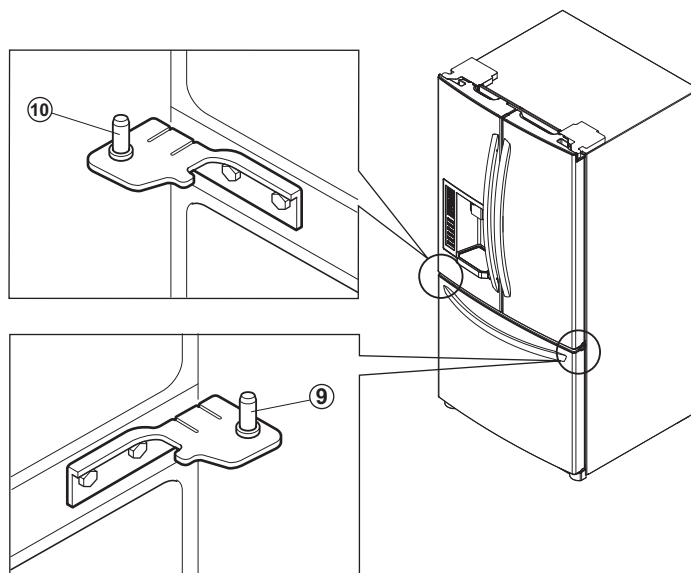
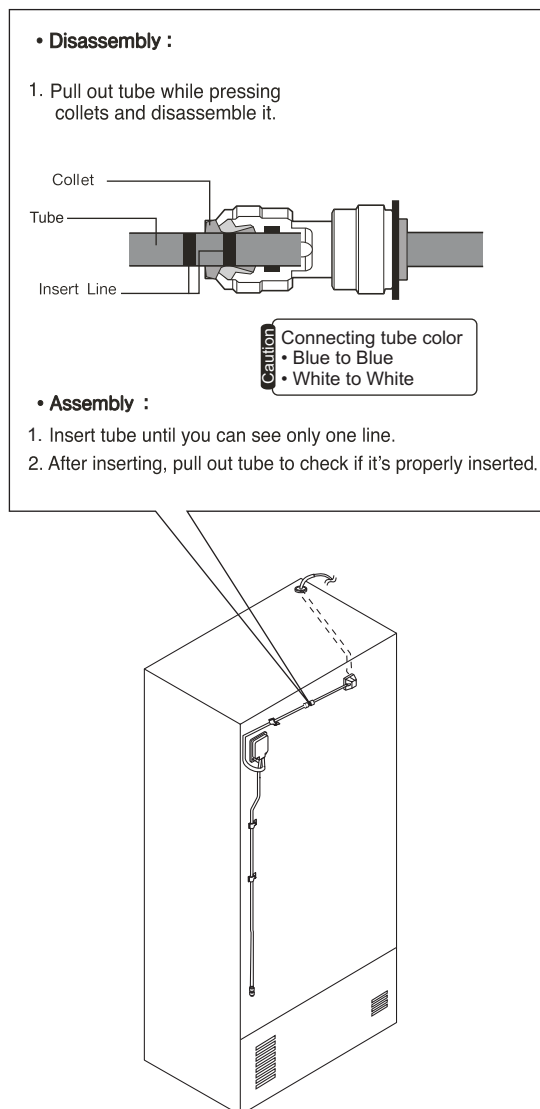
## 2. Replacing Refrigerator Door

### ► Right Door

- Lower the door onto the middle hinge pin (9). Make sure the door is aligned with the cabinet.
- Replace the top hinge (8) installing hinge screws (7) to secure it.
- Make sure the gasket on the door is flush against the cabinet and is not folded. Support the door on the handle side while securing hinge. Make sure the door is straight and the gap between the doors is even.
- Connect the door switch wire (2).
- Tighten the cover screw (1).

### ► Left Door

- Lower the door onto the middle hinge pin (10). Make sure the door is aligned with the cabinet.
- Replace the top hinge (8) installing hinge screws (7) to secure it.
- Make sure the gasket on the door is flush against the cabinet and is not folded. Support the door on the handle side while tightening. And make sure the door is straight and the gap between the doors is even.
- Insert the water supply tube (4) into the connector tube until you see only one scale mark.  
(Fully insert the tube over 5/8" (15 mm)).
- Install the ground screw (6) and connect the wire harness (5).
- Connect the door switch wire (2).
- Tighten the cover screw (1).



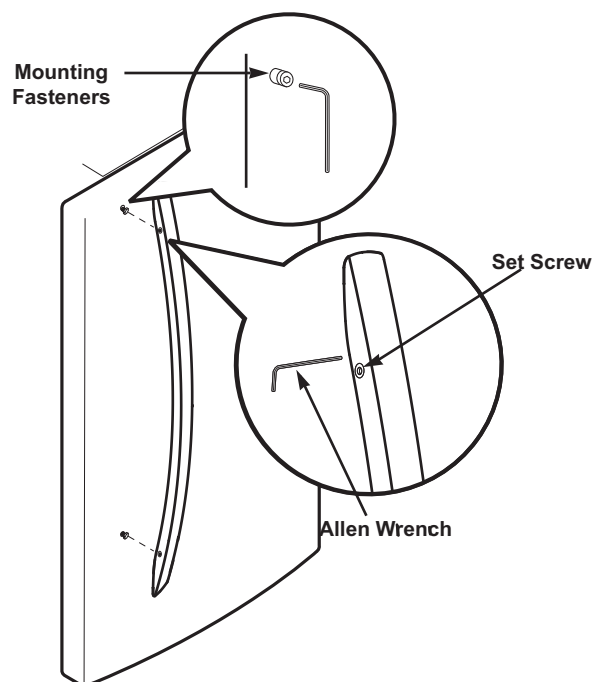


## 3-2 REMOVING REFRIGERATOR HANDLE

### 1. Removing Refrigerator Handle

- Loosen the set screws with the 3/32" Allen wrench and remove the handle.

**NOTE:** If the handle mounting fasteners need to be tightened or removed, use a 1/4" Allen wrench.

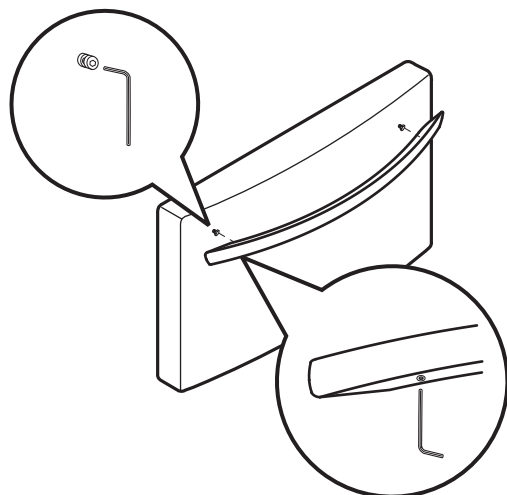


## 3-3 REMOVING FREEZER HANDLE

### 2. Removing Freezer Drawer Handle

- Loosen the set screws located on the lower side of the handle with the 3/32" Allen wrench and remove the handle.

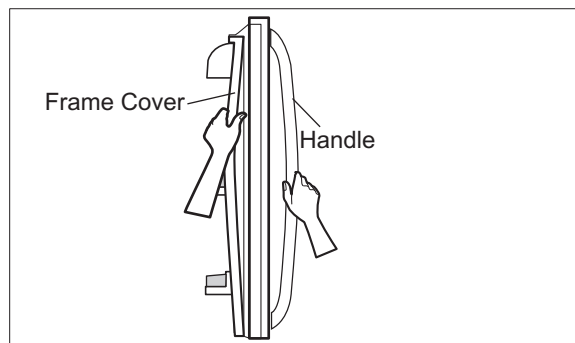
**NOTE:** If the handle mounting fasteners need to be tightened or removed, use a 1/4" Allen wrench.



## 3-4 DOOR GASKET REMOVAL

### 1. Remove door frame cover

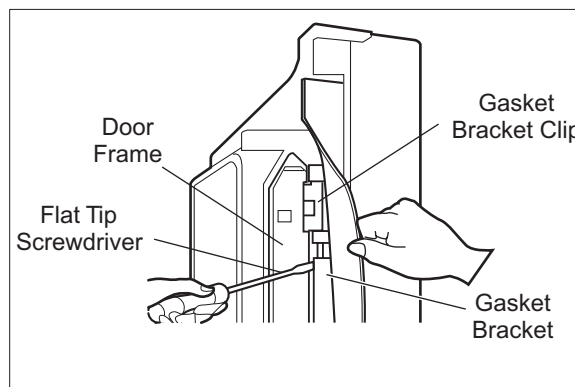
Starting at top of cover and working down, snap cover out and away from door.



### 2. Remove gasket bracket clips

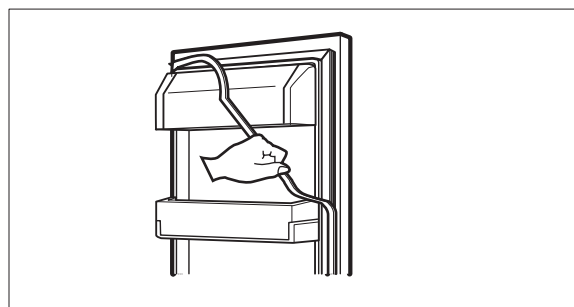
There are two clips on each door. Start bracket removal near one of the middle clips.

- 1) Pull gasket back to expose gasket bracket clip and door frame.
- 2) Insert a flat tip screwdriver into seam between gasket bracket and door frame and pry back until clips snap out.
- 3) Continue prying back along seam until all clips snap out.



### 3. Remove gasket

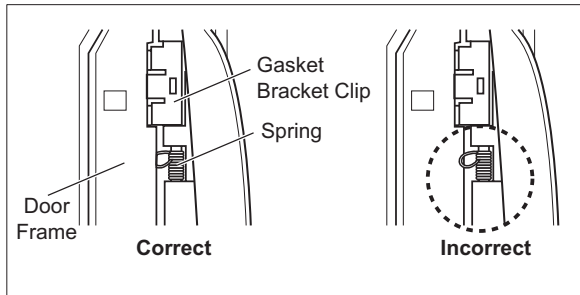
Pull gasket free from gasket channel on the three remaining sides of door.



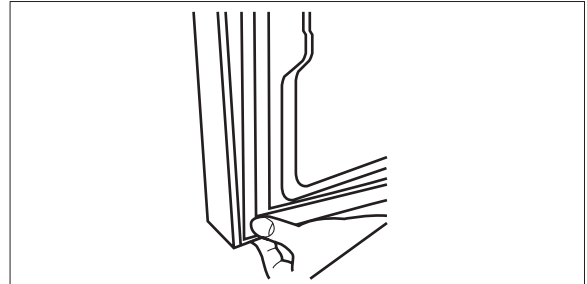
### 3-5 DOOR GASKET REPLACEMENT

#### 1. Insert gasket bracket clips

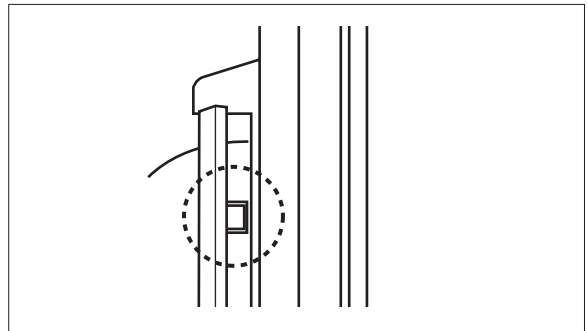
- 1) Insert gasket bracket edge beneath door frame edge.
- 2) Turn upper gasket bracket spring so that the spring ends are in the door channel.
- 3) Push in clip until you hear it snap securely into place.



- 2) Press gasket into channels on the three remaining sides of door.



- 3) Replace door frame cover  
Starting at top of cover and working down, snap cover back into door.



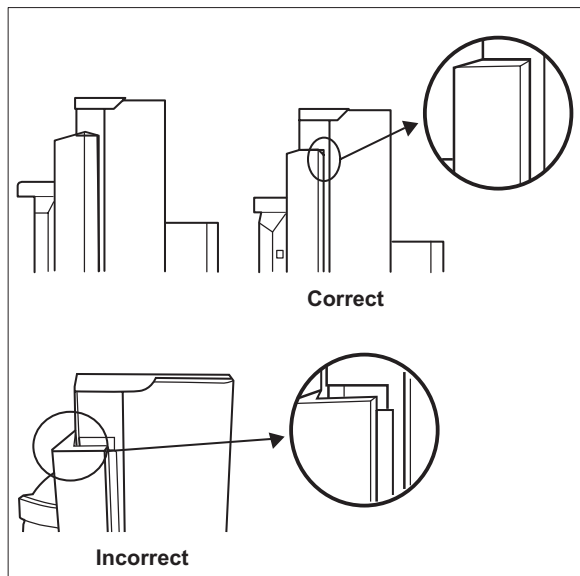
- 4) Push in remaining clip until you hear it snap securely into place.

**Note:** Make sure that no part of gasket bracket edge protrudes from beneath door frame edge.

#### 2. Insert gasket into channel

- 1) Snap gasket assembly into the door bracket.

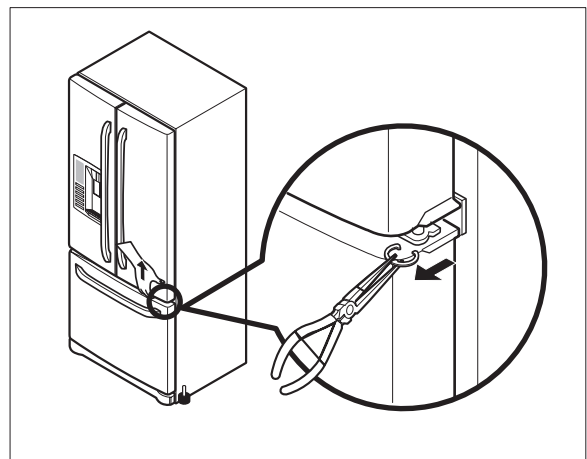
<Inserting the Gasket Assembly into the Bracket Door>



### 3-6 DOOR ALIGNMENT

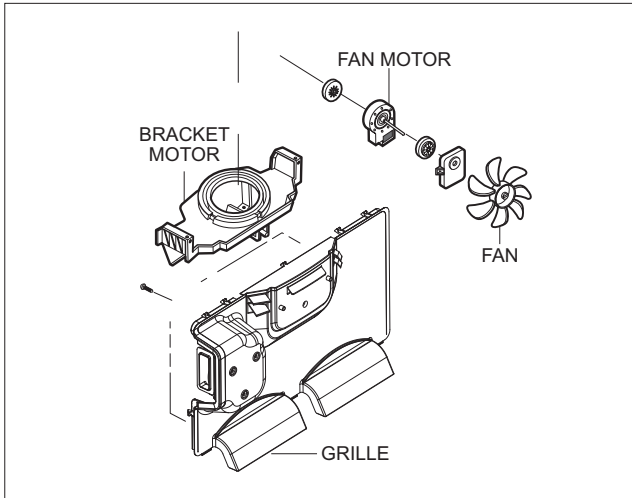
If fridge door are uneven,

- Use the wrench to adjust the bolt in the door hinge to adjust the height. (CCW to raise or CW to lower the height.)



### 3-7 FAN AND FAN MOTOR(EVAPORATOR)

1. Remove the freezer shelf. (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 pulling the grille fan forward.
4. Remove the Fan Motor assembly by loosening 2 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 for slides on left side by unscrewing phillips head screws.
- 2) Pull the grille forward as shown in the second picture.
- 3) Disconnect wire harness of the grille
- 4) Remove the scroll assembly by loosening 3 screws



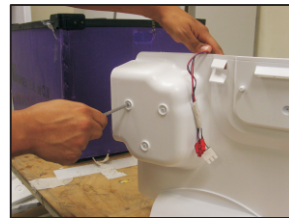
(1)



(2)



(3)



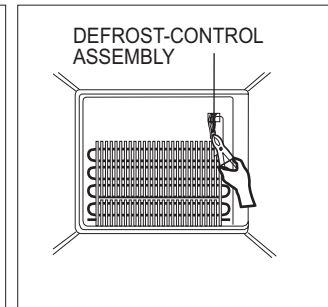
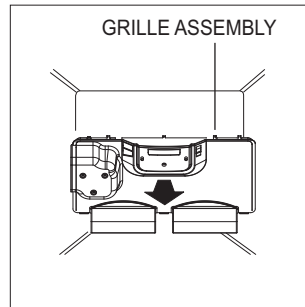
(4)

### 3-8 DEFROST CONTROL ASSEMBLY

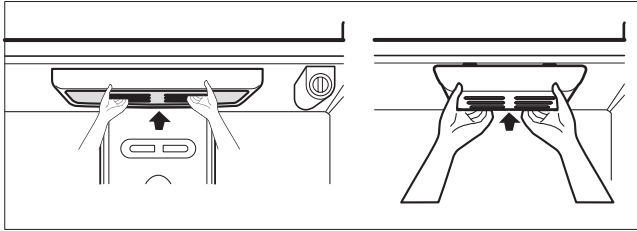
Defrost Control assembly consists of Defrost Sensor and 2 FUSE—M.

The Defrost Sensor works to defrost automatically. It is attached to the metal side of the Evaporator and senses its temperature. At 72°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.
2. Separate the connector with the Defrost Control assembly and replace the Defrost Control assembly

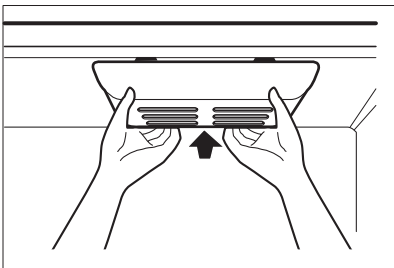


### 3-9 LAMP



#### 3-9-1 Refrigerator Compartment Lamp

1. Unplug Refrigerator, or disconnect power at the circuit breaker.
2. If necessary, remove top shelf or shelves.
3. Using a flat instrument, gently pry the cover loose in the front as shown. Rotate downward to remove rear tabs.
4. Make sure the bulbs are cool to the touch. Turn bulbs counterclockwise to remove.
5. Assemble in reverse order by snapping the Lamp Cover in, engaging the rear tabs followed by the front tabs. (Max. 40 W-2EA)

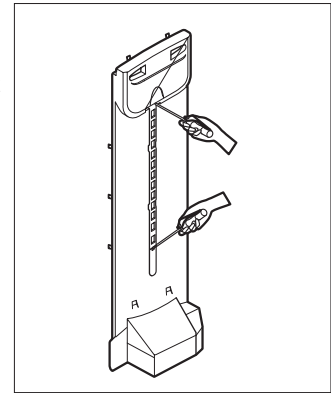


#### 3-9-2 Freezer Compartment Lamp

1. Unplug refrigerator power cord from outlet.
2. Gently pry the lamp cover loose in the back as shown. Rotate forward to remove the front tabs.
3. Make sure the bulb is cool to the touch. Turn the bulb counterclockwise to remove.
4. Replace with a new 40-watt appliance bulb.
5. Insert tabs on front of cover into slots in freezer ceiling. Push cover up to snap back into place.

### 3-10 MULTI DUCT

1. Remove the upper and lower Caps by using a flat screwdriver, and remove 2 screws.
2. Disconnect the lead wire on the bottom position.



### 3-11 MAIN PWB

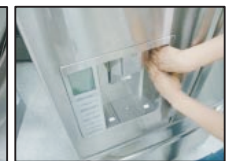
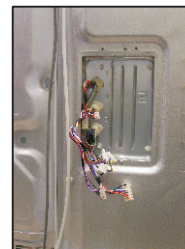
- 1) Loosen the 3 screws on the PWB cover.



- 2) Remove the PWB cover



- 3) Disconnect wire harness and replace the main PWB in



- 1) Pull out the drain
- 2) Grasp the lower part of the dispenser firmly, pull it out.
- 3) Hold the inner side part of the dispenser with both hands at the handle side to pull it out forward.



4) If nozzle is interfered with button, push and pull out the bottom of button

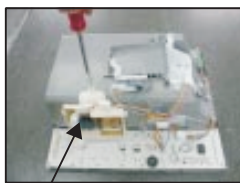
5) Remove the connected part of lead wire.

**CAUTION:** When replacing the dispenser cover in the reverse order of removal, be careful that the lead wire does not come out and the water tube is not pinched by the dispenser.

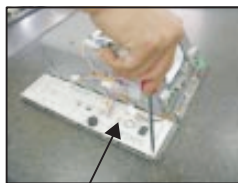


### 3-12 DISPLAY PCB

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



Case, PCB



Display PCB

### 3-13 ICE BUTTON ASSEMBLY

- 1) Remove the screw fixing the button lever.
- 2) Push the spring from the hanging hook to remove it.
- 3) Apply some pressure to the rib in direction and lift the button in direction.



Button Lever

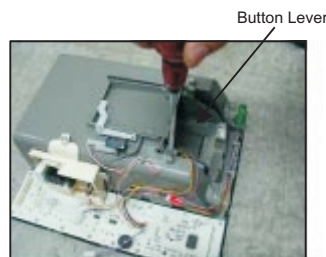
### 3-14 FUNNEL REPLACEMENT

Pull down and forward

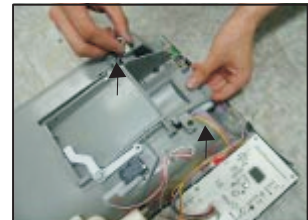


### 3-15 WATER BUTTON ASSMEBLY

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



Button Lever



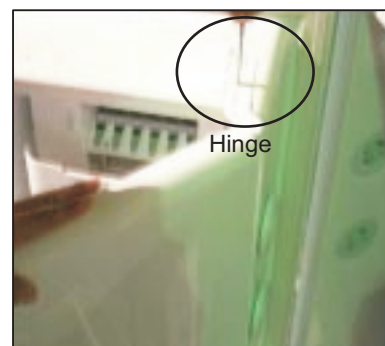
### 3-16 DUCT DOOR REPLACEMENT

- 1) Pull up and out on the dispenser cover to remove.
- 2) Disconnect the wire harness.
- 3) Remove the funnel
- 4) Replace in reverse order.



### 3-17 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.

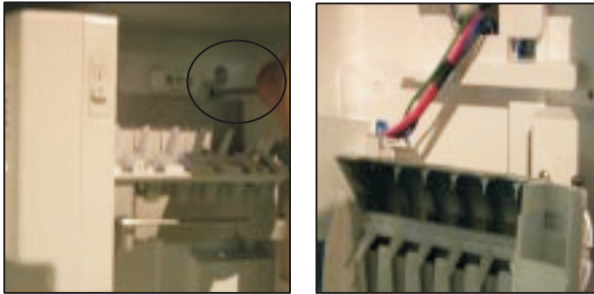


Hinge



### 3-18 ICEMAKER ASSEMBLY

- 1) Loosen two screws as shown in the first picture.



- 2) Disconnect the wire harness & ground screw replace the icemaker assembly in the reverse order of removal.

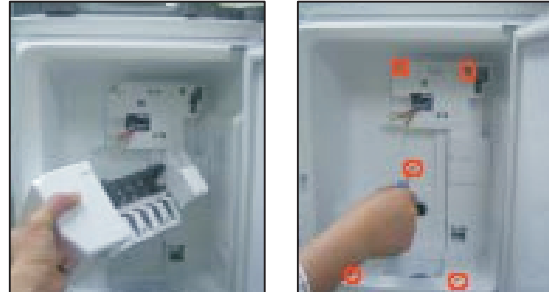


- 3) It separates a ground connection screw.



### 3-19 AUGER MOTOR COVER

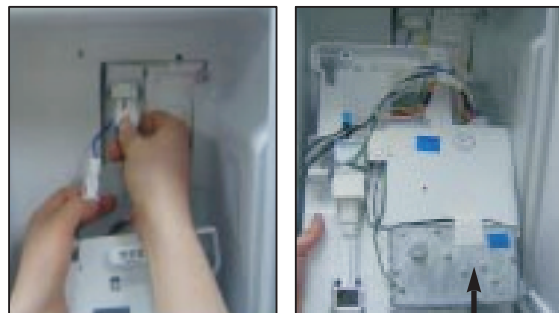
- 1) After removing the icemaker remove the (5) stainless screws holding the auger motor cover, shown in the pictures below.



- 2) Grip the bottom of motor cover assembly and pull out it.



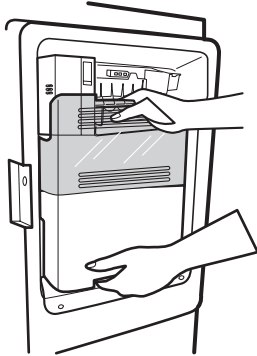
- 3) Disconnect wire harness of motor cover assembly. There is a auger motor on the back, as shown in the picture.



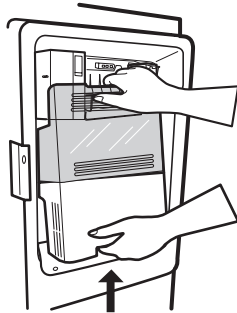
Auger Motor

### 3-20 HOW TO REMOVE A DOOR ICE BIN

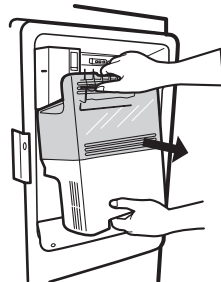
1) Grip the handles, as shown in the picture.



2) Lift the lower part slightly.

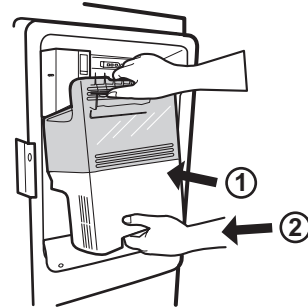


3) Take the Ice Bin out slowly.

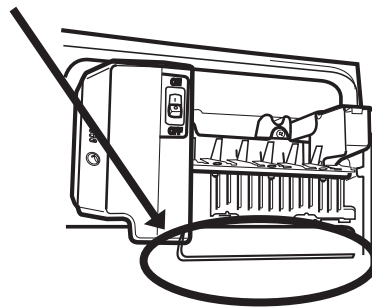


### 3-21 HOW TO INSERT A DOOR ICE BIN

1) Insert the Ice Bin, slightly tilting it to avoid touching the Icemaker. (especially, ice maker lever)



Insert the ice bucket carefully avoid contacting the automatic shut off arm.

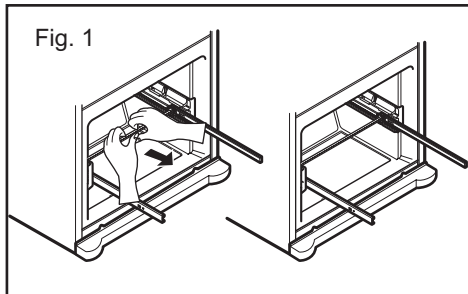


## 3-22 PULL OUT DRAWER

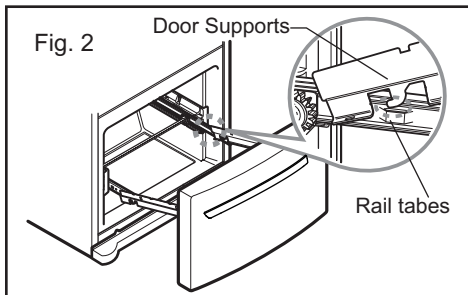
### (a) HOW TO INSTALL PULL OUT DRAWER

**IMPORTANT:** To avoid possible injury, product or property damage, you will need two people to perform the following instructions.

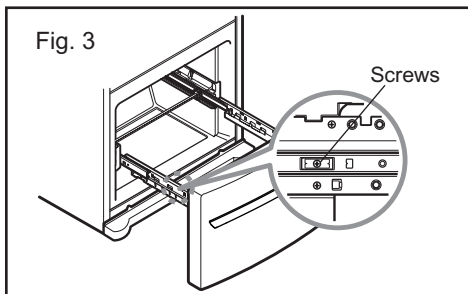
- With both hands, hold the center of the bar and pull it out to let both rails out to full extension simultaneously.



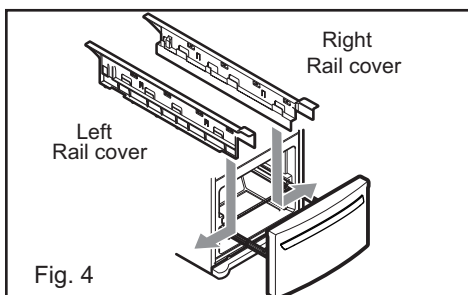
- Hook door supports into rail tabs.



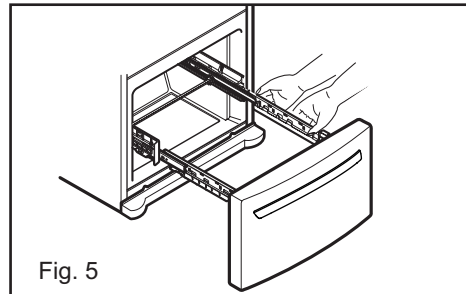
- Lower door into final position and tighten the screws.



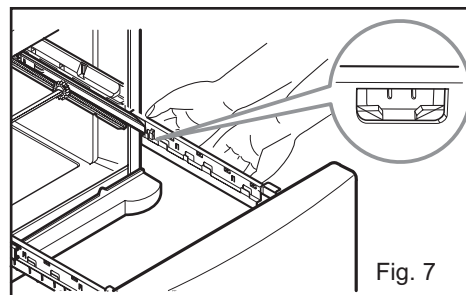
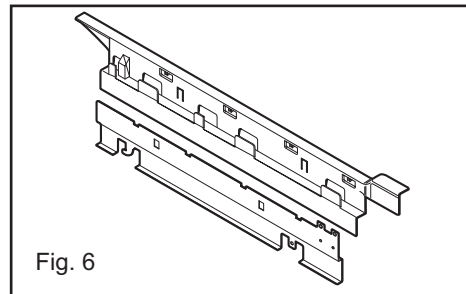
- Make sure you have a right rail cover for each side.



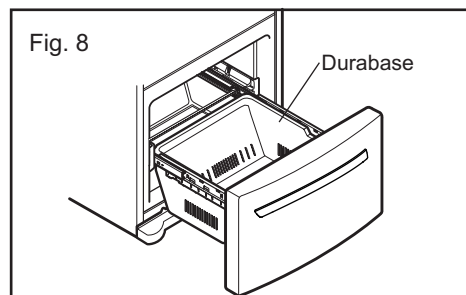
- Align the top holes of the rail cover with the top holes of the door supports to assemble the rail cover.



- Verify the hole's assembly



- With the rails pulled out to full extension, insert the durabase in the rail assembly.



**⚠ WARNING:** To prevent accidental child and pet entrapment or suffocation risk. DO NOT allow them to play inside of drawer.

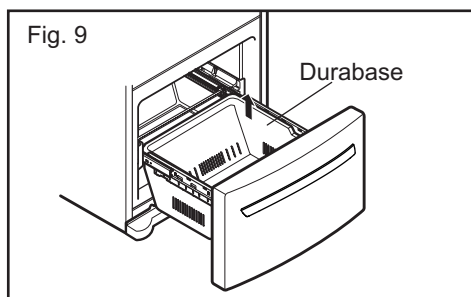
**⚠ WARNING:** DO NOT step or sit down on Freezer Door.



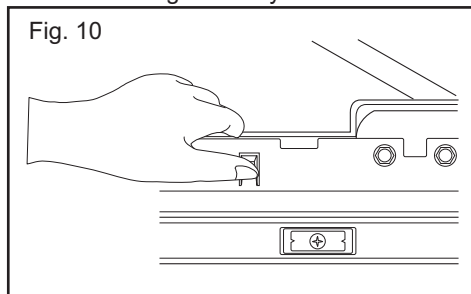
## (b) HOW TO REMOVE PULL OUT DRAWER

**IMPORTANT:** To avoid possible injury, product or property damage, you will need two people to perform the following instructions.

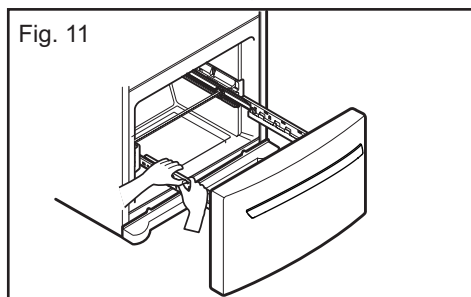
- Pull the drawer open to full lower extension. Remove durabase by lifting it from rail system.



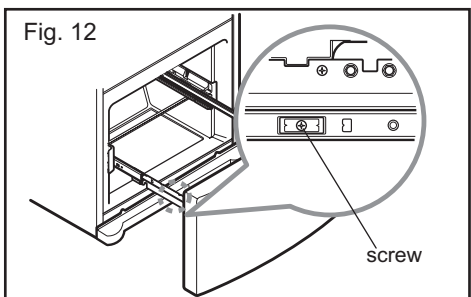
- Press both hangers with your thumbs to lift it up.



- Separate the left and right rail cover



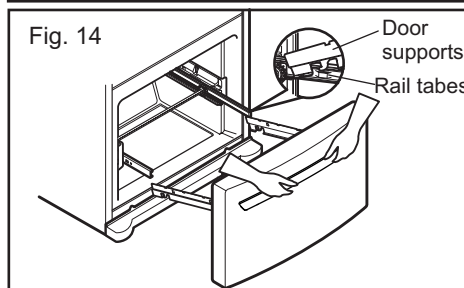
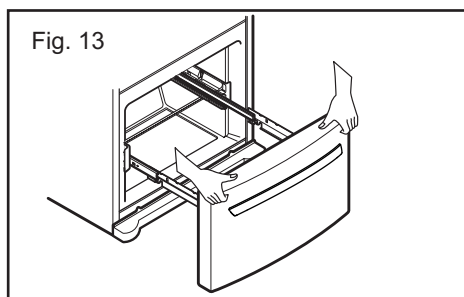
- Remove the screws of the rail on both sides.



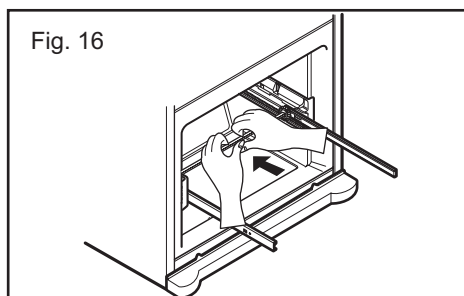
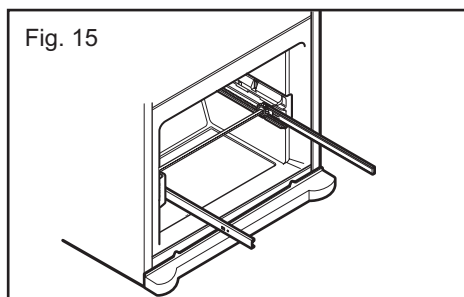
**⚠ CAUTION:** When removing drawer door, do not hold it by the handle. Door could fall down and you may be injured grasp door with both hands as pictured below When removing.

**⚠ CAUTION:** When laying down the drawer, be careful not to damage the floor or hurt your feet with the sharp edges on hinge side.

- With both hands, hold both sides of the door and pull it up to separate it from the rails.



- Push rails back into drawe cavity. With both hands, hold the center of the bar and push it in so that both rails go back simultaneously.



### 3-23 FAN AND FAN MOTOR DISASSEMBLY METHOD

- 1) Using a short screwdriver, loosen one SCREW in DRAIN PIPE ASSEMBLY and one connected to the MOTOR COVER.



(R)

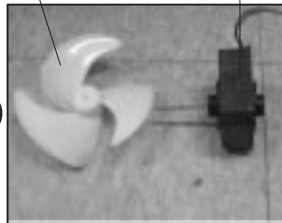


MOTOR COVER

- 2) Pull and separate the FAN ASSEMBLY and MOTOR turning counterclockwise based on the MOTOR SHAFT.



(R)



FAN ASSEMBLY

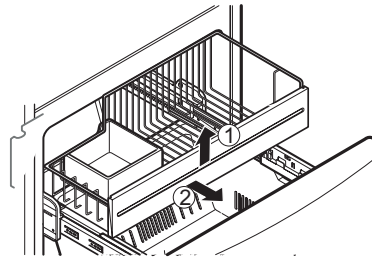
MOTOR

The assembly is in the reverse order of the disassembly and take special care for the following details.

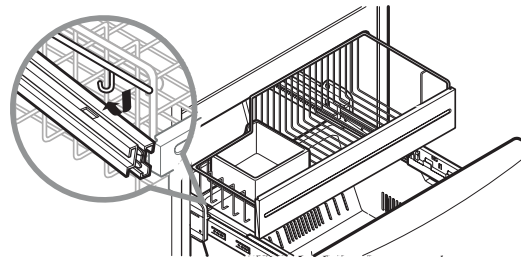
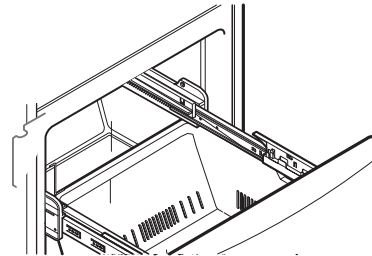
1. Be careful not to bend the tube during assembly.
2. Press the WATER DISPENSER button until water pours out and check for leakage in the CONNECTOR TUBE (It differs by the water pressure but usually takes about 2 minutes until water pours out.)

### 3-24 PULL OUT DRAWER

1. To remove, lift basket up and pull out straight out.



2. To Install, pull both rails out to full extension. Hook the basket supports into the rail tabs and push to the back of compartment.



# 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 Composition

The compressor includes overload protection. The PTC starter and OLP (overload protector) are attached to the outside of the compressor. Since the compressor is manufactured to tolerances of 1 micron and is hermetically sealed in a dust and moisture-free environment, use extreme caution when performing repairs.

### 4-1-3 Note for Usage

- (1) Be careful not to allow over-voltage and over-current.
- (2) If compressor is dropped or handled carelessly, poor operation and noise may result.
- (3) Use proper electric components appropriate to the Particular Compressor in your product.
- (4) Keep Compressor dry.  
If the Compressor gets wet (in the rain or a damp environment) and rust forms in the pin of the Hermetic Terminal, poor operation and contact may result.
- (5) When replacing the Compressor, be careful that dust, humidity, and soldering flux don't contaminate the inside of the compressor. Dust, humidity, and solder flux contaminate the cylinder and may cause noise, improper operation or even cause it to lock up.

## 4-2 PTC-STARTER

### 4-2-1 Composition of PTC-Starter

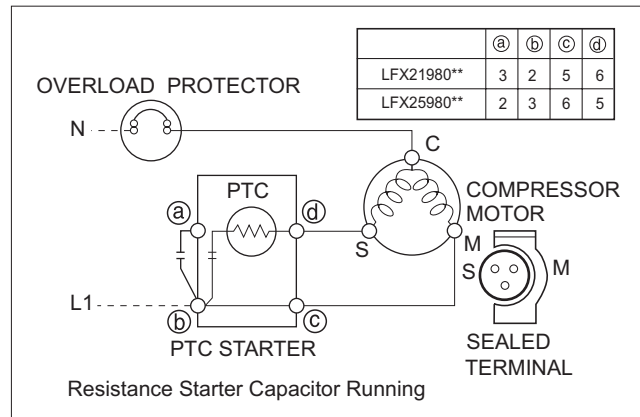
- (1) PTC (Positive Temperature Coefficient) is a no-contact semiconductor starting device which uses ceramic material consisting of BaTiO<sub>3</sub>.
- (2) The higher the temperature is, the higher the resistance value. These features are used as a starting device for the Motor.

### 4-2-2 Role of PTC-Starter

- (1) The PTC is attached to the Sealed Compressor and is used for starting the Compressor Motor.
- (2) The compressor is a single-phase induction motor. The starting operation, the PTC allows current flow to both the start winding and main winding.

## 4-2-3 PTC-Applied Circuit Diagram

### Starting Method for the Motor



## 4-2-4 Motor Restarting and PTC Cooling

- (1) It requires approximately 5 minutes for the pressure to equalize before the compressor can restart.
- (2) The PTC device generates heat during operation. Therefore, it must be allowed to cool before the compressor can restart.

## 4-2-5 Relation of PTC-Starter and OLP

- (1) If the compressor attempts to restart before the PTC device is cooled, the PTC device will allow current to flow only to the main winding.
- (2) The OLP will open because of the over current condition. This same process will continue (3 to 5 times) when the compressor attempts to restart until the PTC device has cooled. The correct OLP must be properly attached to prevent damage 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.

## 4-2-6 Note for Using the PTC-Starter

- (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 PTC, PTC materials may fail due to breakdown of their insulating capabilities.
- (4) If the exterior of the PTC is damaged, the resistance value may be altered. This can cause damage to the compressor and result in a no-start or hard-to-start condition.
- (5) Always use the PTC 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.

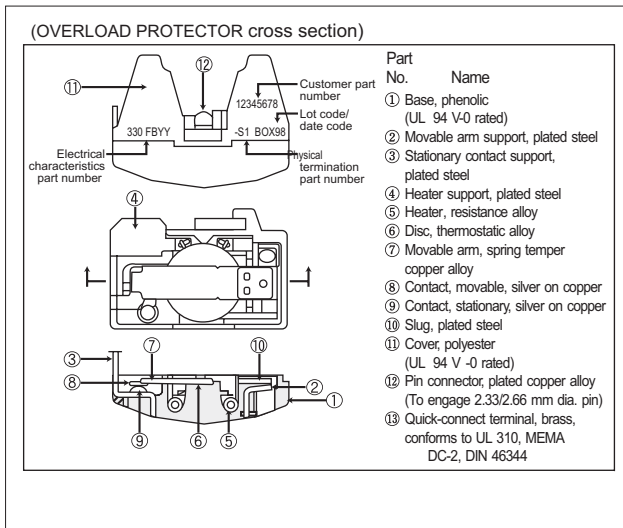
## 4-3 OLP (OVERLOAD PROTECTOR)

### 4-3-1 Definition of OLP

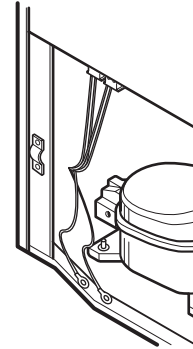
- (1) OLP (OVERLOAD PROTECTOR) is attached to the Compressor and protects the Motor by opening the circuit to the Motor if the temperature rises and activating the bimetal spring in the OLP.
- (2) When high current flows to the Compressor motor, the Bimetal works by heating the heater inside the OLP, and the OLP protects the Motor by cutting off the current flowing to the Compressor Motor.

### 4-3-2 Role of the OLP

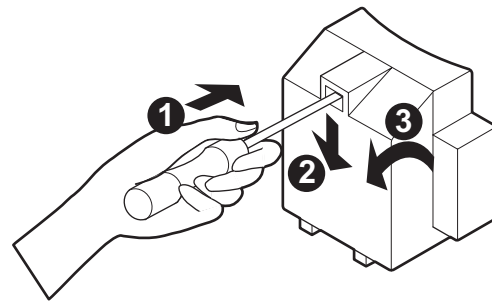
- (1) The OLP is attached to the Sealed Compressor used for the Refrigerator. It prevents the Motor Coil from being started in the Compressor.
- (2) For normal operation of the OLP, do not turn the Adjust Screw of the OLP in any way.



## 4-4 TO REMOVE THE COVER PTC



- (1) Remove the Cover Back M/C.
- (2) Disconnect two housing upper side of comp connected in.
- (3) Loosen two screws on comp base.

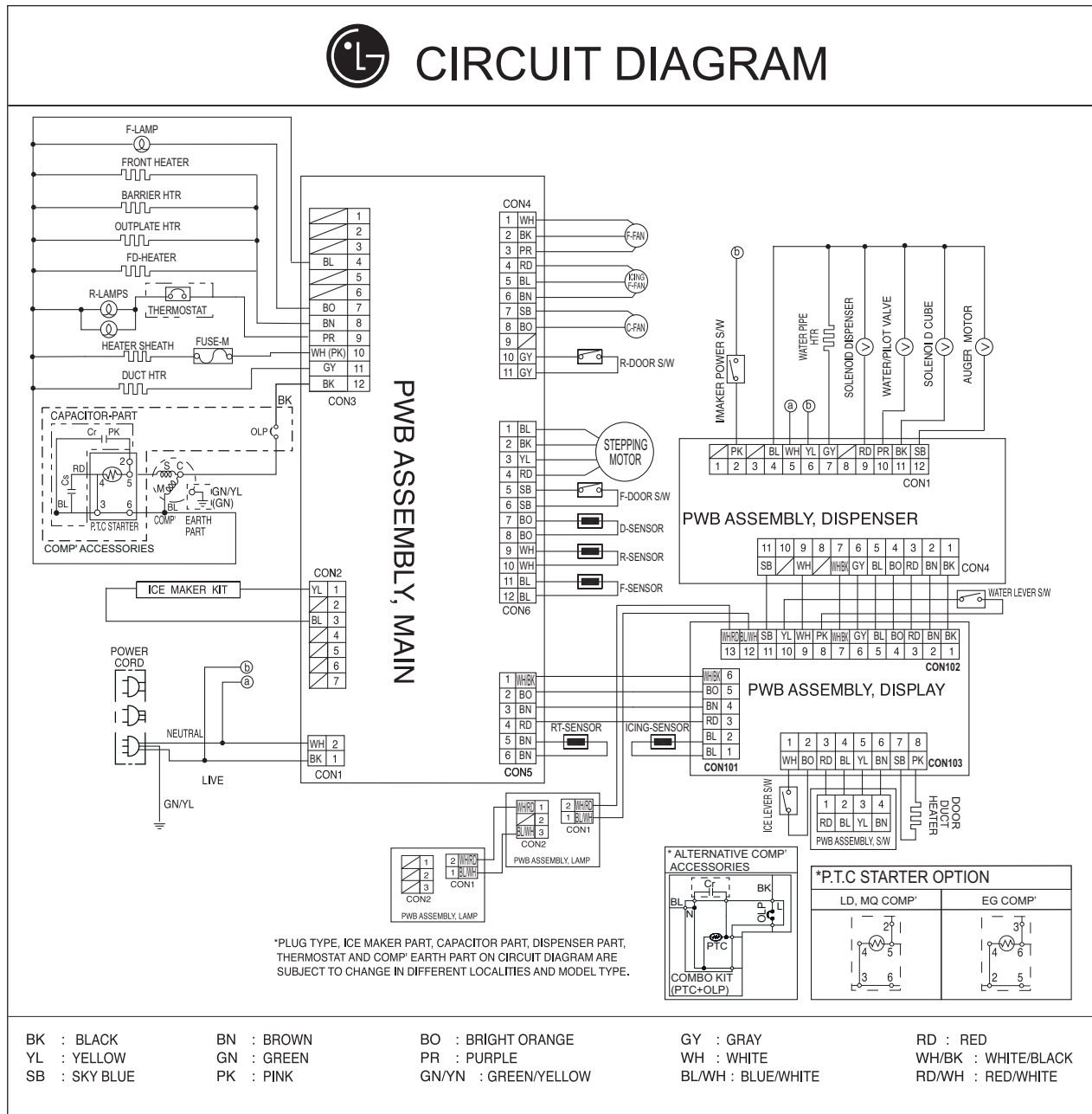


- (4) Use a L-shaped flap tool to pry off the cover.
- (5) Assembly in reverse order of disassembly.

# 5. CIRCUIT DIAGRAM

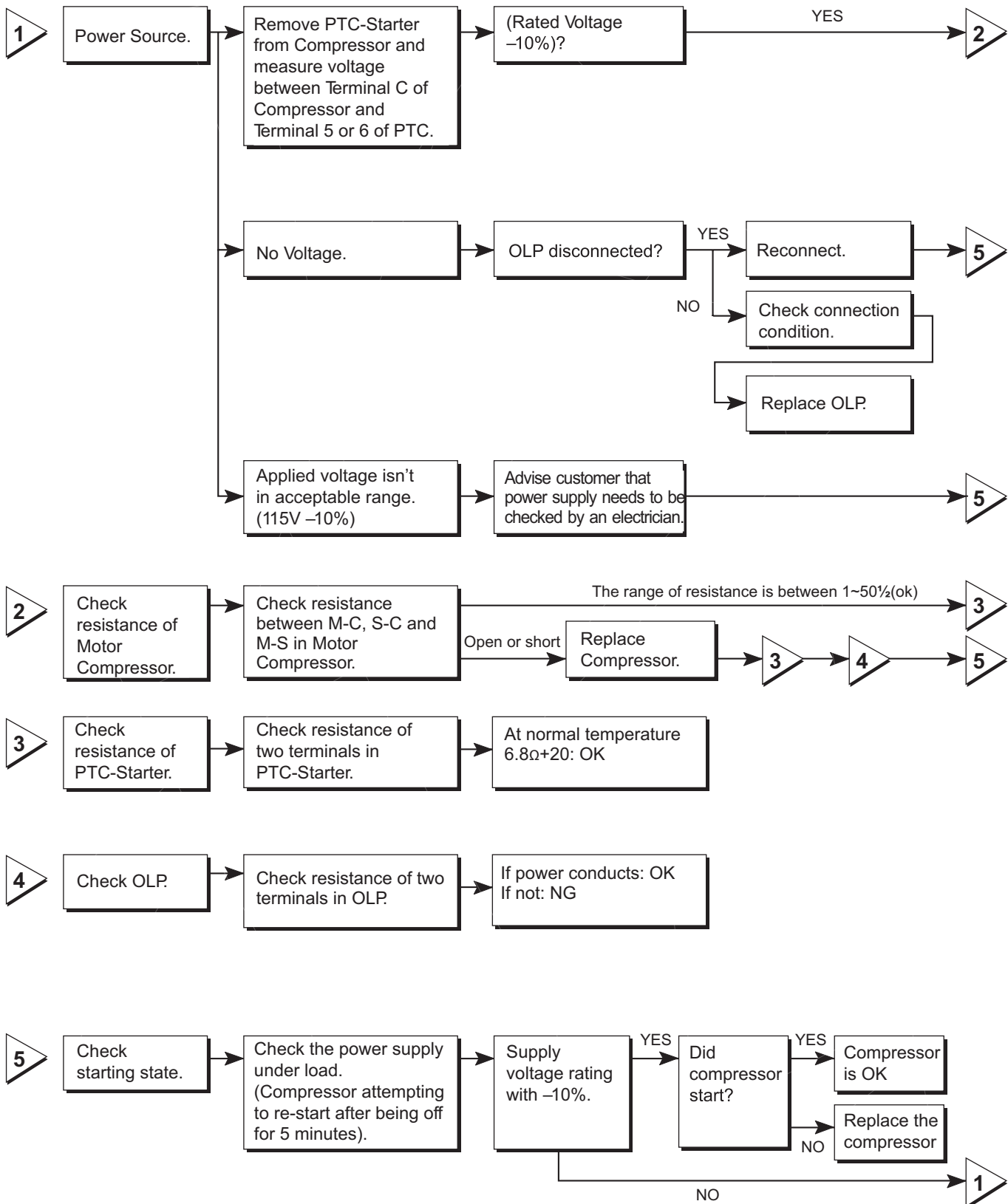


## CIRCUIT DIAGRAM



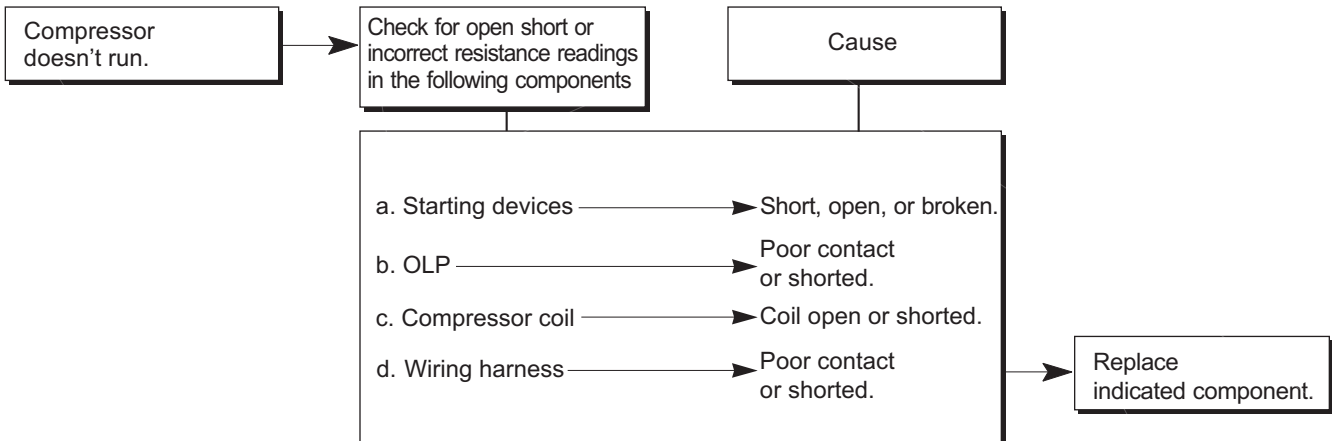
# 6. TROUBLESHOOTING

## 6-1 COMPRESSOR AND ELECTRIC COMPONENTS

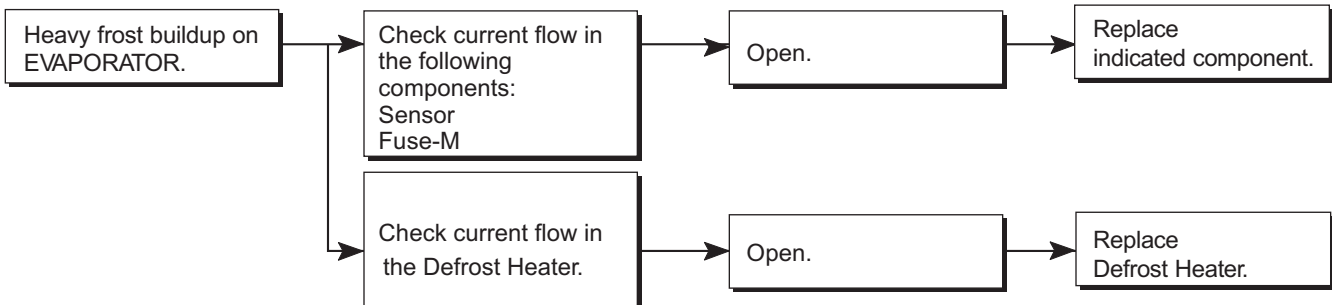
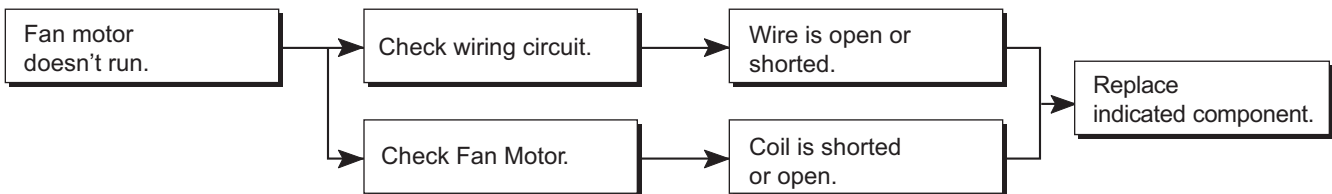
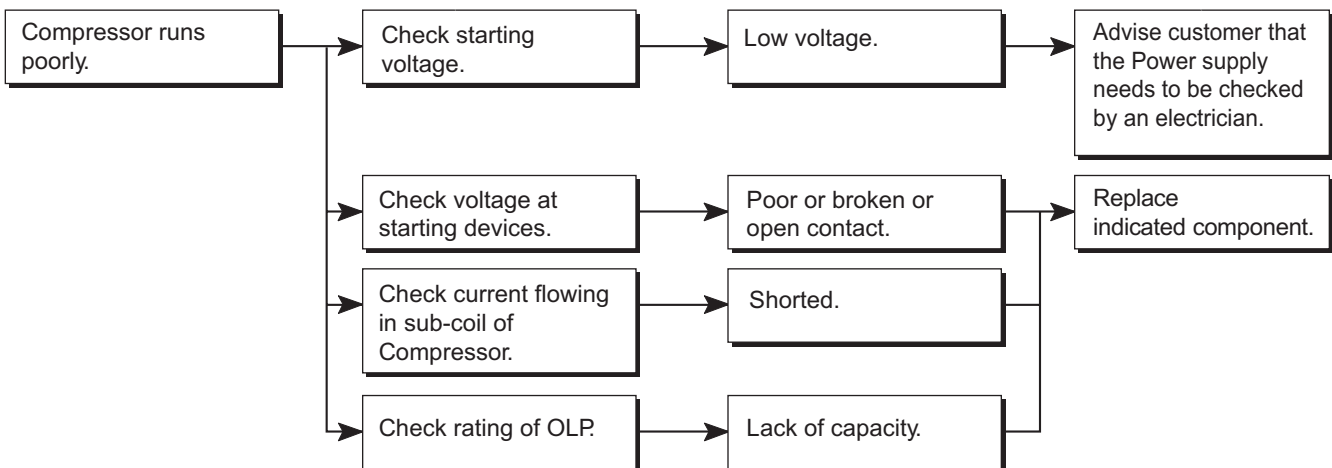


## 6-2 OTHER ELECTRICAL COMPONENTS

### • Not cooling at all



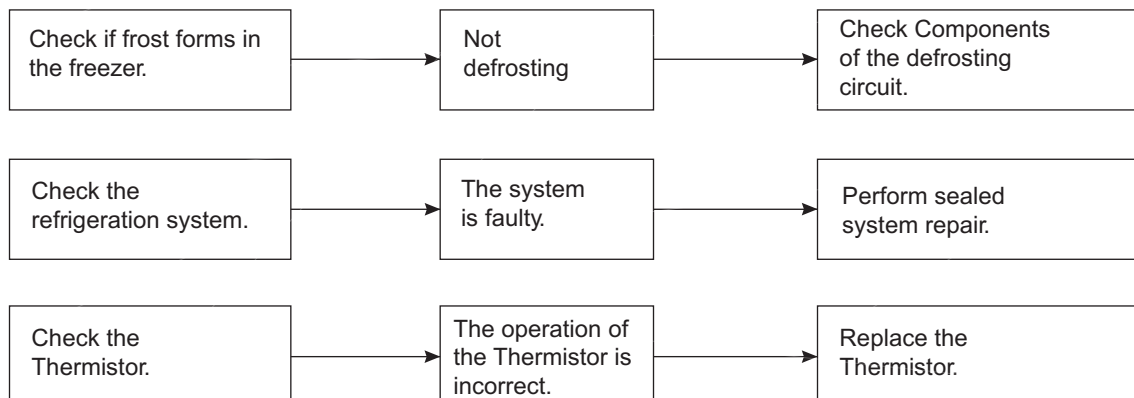
### • Poor cooling performance



## 6-3 SERVICE DIAGNOSIS CHART

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

- Other possible problems:



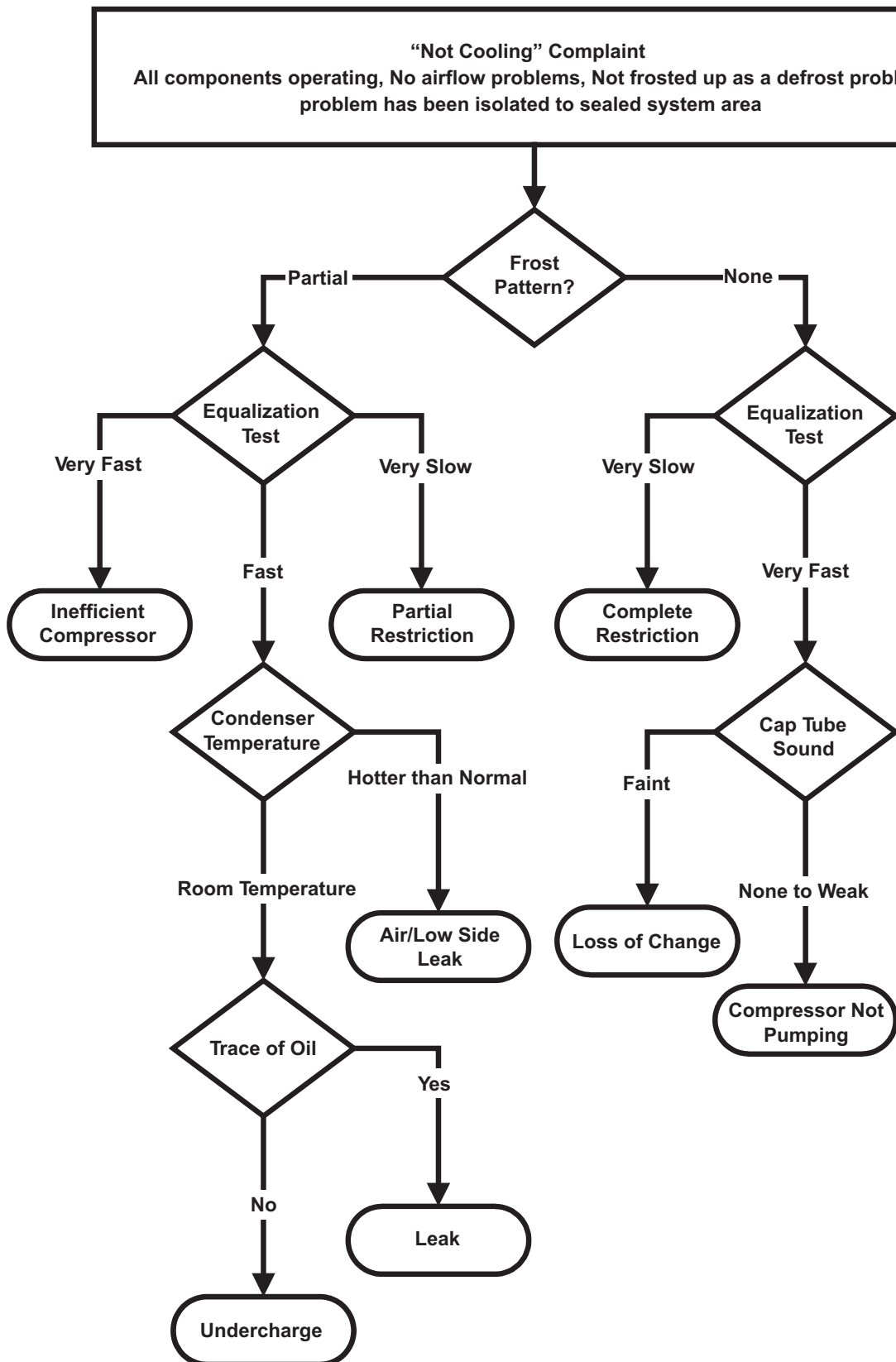


## 6-4 REFRIGERATION CYCLE

### • Troubleshooting Chart

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

## 6-4-1 SEALED SYSTEM DIAGNOSIS

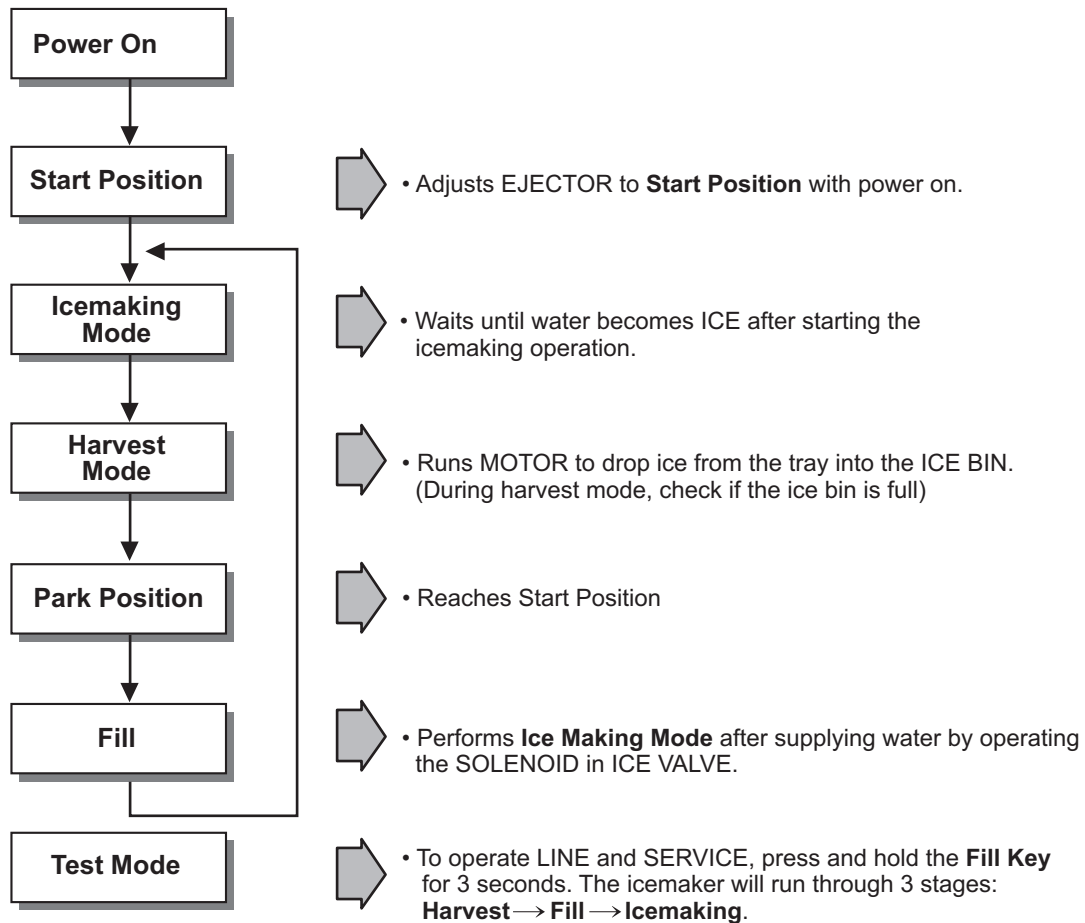


(The equalization test is trying to restart a compressor using a start kit after it has been operating.)

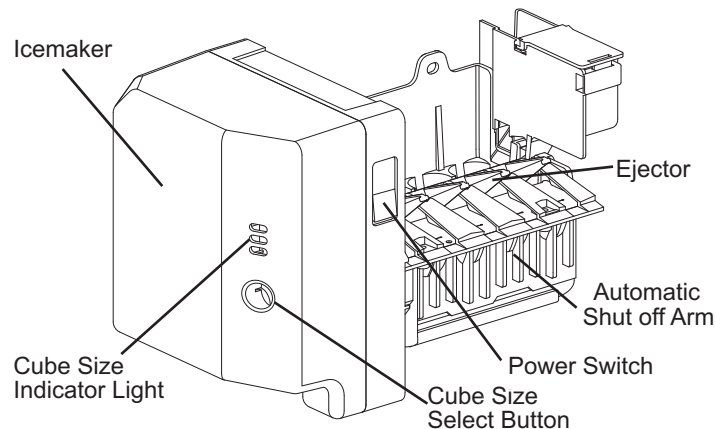
# 7. OPERATION PRINCIPLE AND REPAIR METHOD OF ICEMAKER

## 7-1 OPERATION PRINCIPLE

### 7-1-1 Operation Principle of IceMaker



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



## 7-2 ICE MAKER FUNCTIONS

### 7-2-1. Icemaking Mode

1. Icemaking refers to the freezing of supplied water in the ice tray. Complete freezing is assured by measuring the temperature of the Tray with Icemaking SENSOR.
2. Icemaking starts after completion of the water fill operation.
3. The Ice Making function is completed when the sensor reaches 19°F (-7°C), 55 minutes after starting.

**NOTE** :After Icemaker Power is ON, the Icemaker heater will be on for test for 6 sec.

### 7-2-2. Harvest Mode




1. Harvest (Ice removing) refers to the operation of dropping ices into the ice bin from the tray when icemaking has completed.
2. Harvest mode:
  - (1) The Heater is ON for 30 seconds, then the motor starts.
  - (2) The feeler arm senses the quantity of ice in the ice storage bin while rotating with the EJECTOR.
    - A. Ice storage bin is full : The EJECTOR stops (heater off).
    - B. Ice storage bin is not full : The EJECTOR rotates twice to open for ice.

If the EJECTOR does not rotate once within 5 minutes in B mode, separate heater control mode starts operating to prevent the EJECTOR from being constrained. (It is recommended that the user open for ice to return to normal mode.)

### 7-2-3. Fill/Park Position

1. Once a normal harvest mode has been completed, the water solenoid will be activated.
2. The amount of water is adjusted by pressing the Fill Key repeatedly. This changes the time allowed for fill as illustrated in the table below.






**Water supply amount TABLE**

STAGE	TIME TO SUPPLY	INDICATIONS	REMARKS
1	3.7 sec.		The water amount will vary depending on the water control Switch setting, as well as the water pressure of the connected water line.
2	3.9 sec. (FIRST STAGE)		
3	4.2 sec.		

### 7-2-4 Function TEST


1. This is a forced operation for TEST, Service, cleaning, etc. It is operated by pressing and holding the Fill Key for 3 seconds.
2. The test works only in the Icemaking Mode. It cannot be entered from the Harvest or Fill mode.
3. **Caution!** If the test is performed before water in the icemaker is frozen, the ejector will pass through the water. When the Fill mode begins (Stage 4), unless the water supply has been shut off, added water will overflow into the ice bin. If the control doesn't operate normally in the TEST mode, check and repair as needed.
4. After water is supplied, the normal CYCLE is followed: **icemaking Harvest Park Position Fill.**
5. Five seconds after Stage 5 is completed, the Ice Maker returns to MICOM control. The time needed to supply water resets to the pre- test setting.

#### Diagnosis TABLE

STAGE	ITEMS	INDICATOR	REMARKS
1	HEATER		Five seconds after heater starts, a heater will go off if the temperature by sensor is higher than 10°C
2	MOTOR		Five seconds after heater starts, you can confirm that a motor is moving.
3	HALL IC I		Check if Ice Bin is full or not. If Ice bin is full, the motor and heater are off and on stand by until Ice bin is empty.
4	HALL IC II		You can confirm HALL IC detection of start position.
5	VALVE		Two seconds after detection of start position, you can confirm that valve is on.
6	Reset	Return to Status prior to TEST MODE	Five seconds after fifth stage is completed, The icemaker resets to initial status.

### 7-3 DEFECT DIAGNOSIS FUNCTION

#### 7-3-1 ERROR CODES shown on Ice Maker water supply control panel

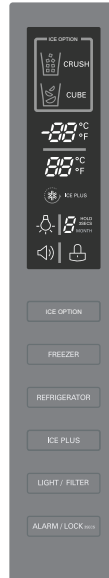
NO	DIVISION	INDICATOR	CONTENTS	REMARKS
1	Normal	Mark time to supply	None	Display switch operates properly
2	Icemaking Sensor malfunction		Open or short-circuited wire	Make sure that the wire on each sensor is connected.

# 8. DESCRIPTION OF FUNCTION & CIRCUIT OF MICOM

## 8-1 FUNCTION

### 8-1-1 Display 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 initially applied or restored after a power failure, it is set to Control temperature previously.

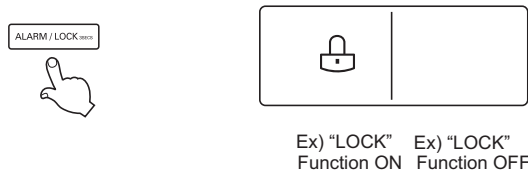


### 8-1-2. How to Toggle the Display between °F & °C

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 FREEZER and the REFRIGERATOR keys at the same time for over 5 seconds.

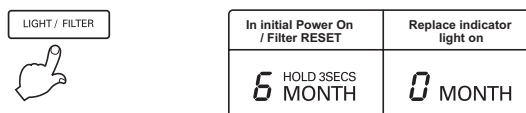
### 8-1-3 Lock function (dispenser and display button lock)

- 1) When the refrigerator is first turned on, the buttons are not locked. The display panel shows the padlock unlocked icon.
- 2) To lock the display, the dispenser, and the control panel, press, and hold the ALARM/LOCK button for 3 seconds. The locked pad lock icon is displayed.
- 3) The ALARM/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 ALARM/LOCK button again for 3 seconds.



### 8-1-4 Filter condition display function

- 1) There is a replacement indicator for the filter cartridge on the dispenser.
- 2) Water filter needs replacement once six months.
- 3) Initial month indication is 6 month.  
Water filter icon turn on to tell you need to replace the filter soon.
- 4) When filter indicator becomes 0 MONTH "HOLD 3SECS" text will be lighting.
- 5) After 6 MONTH has passed, " 0 " month is shown on display to indicate the filter has to be exchanged.
- 6) When 6 MONTH has passed or when filter month indication wants to be Reset press 3 seconds the filter button and the graphic light will come off and month display will be 6 (six).



### 8-1-5 Ice Plus selection

Please select this function for quick freezing.

- \* Function is repeat Ice Plus Icon whenever pressing Ice Plus button.
- \* Ice Plus function automatically turns off after a fixed time passes.

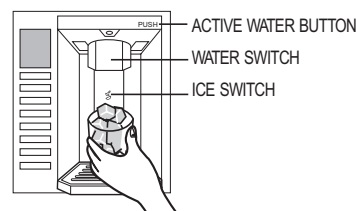
### 8-1-6 Dispenser Use Selection

#### 1. Water

- 1) Water Switch: Hold your cup in the dispenser for a few seconds with pressing water switch to allow the last drops of water to fall into the cup.
- 2) Active water button: Place big bowl on the dispenser bottom with pressing active water button to allow the last drop of water to fall into the bowl.
- 3) When after initially establishing the water comes out, the water tank inside fills and until at the time of quality the hour es caught.

#### 2. Ice

- 1) You can select cube or crushed ice.
- 2) Select cube ice or crushed ice by cycling through the selections when pressing the ICE OPTION button.
- 3) Hold your cup in the dispenser for a few seconds with pressing ice switch to allow the last pieces of ice to fall into the cup.



### 8-1-7 Dispenser Light

Please select this function for DISPENSER LIGHT MODE.

1. Normal status (LIGHT icon is OFF): When dispenser is operated, DISPENSER LIGHT is ON.
2. ON status (LIGHT icon is ON): DISPENSER LIGHT is on continuously



### 8-1-8 Control of Freezer Fan Motor

1. Freezer fan motor has high and standard speeds.
2. High speed is used at power-up, for Ice Plus, 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, Ice Plus  
Normal speed (2400RPM) : General working conditions.
5. Fan motor stops when refrigerator open.

### 8-1-9 Cooling Fan Motor

1. The cooling fan is switched ON and OFF in conjunction with the compressor.
2. The cooling fan runs at a single speed.

### 8-1-10 Icing Fan

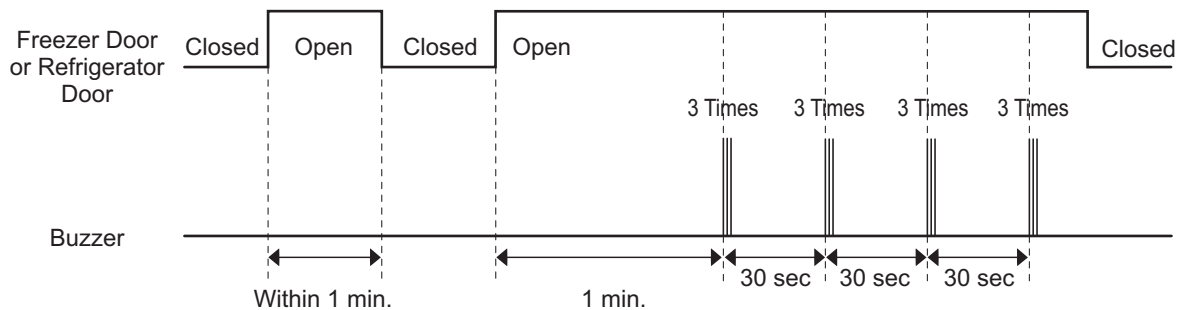
1. The Icing Fan is controlled by the the sensor on the top of the ice room.
2. The Failure sensing method is the same as in the fan motor of the freezer  
(refer to failure diagnosis function table for failure display)

### 8-1-11 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 three hours the compressor and Freezer Fan will be ON. The next 21 hours the freezer will be controlled at the lowest temperature. After 24 hours or if the Ice Plus key is pressed again, the freezer will return to its previous temperature.
5. During the first 3 hours:
  - (1) Compressor and freezer fan (HIGH RPM) run continuously.
  - (2) If a defrost cycle begins during the first 90 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 90 minutes, Ice Plus will run for two hours 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.
  - (5) The fan motor in the freezer compartment runs at high speed during Ice Plus.
6. For the rest of the 21 hours, the freezer will be controlled at the lowest temperature.

### 8-1-12 Alarm for Open Door

1. This feature sounds a buzzer when the freezer or refrigerator door is not closed within 1 minute after it is opened.
2. One minute after the door is opened, the buzzer sounds three times each for 1/2 seconds. These tones repeat every 30 seconds.
3. The alarm is cancelled when the freezer or the refrigerator is closed while the buzzer sounds.





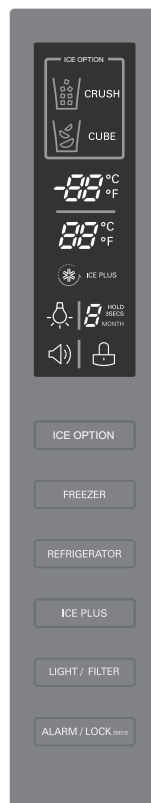
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### 8-1-13 Defrosting (removing frost)

1. Defrosting starts each time the accumulated COMPRESSOR running time is between 7:30 and 50 hours. This time is determined by how often and how long the doors are opened.
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, 8-1-14.)
4. Defrosting won't function if its sensor is defective (wires are cut or short circuited).

### 8-1-14 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.



LED check function: If simultaneously pressing Ice Plus button and Frz Temp. for a second, display LED graphics on. If releasing the button, the LED graphic displays the previous status.

#### Demonstration Mode (Off Mode)

1. Any Door must be opened to enter in this mode
2. To activate this mode press and hold Ice Plus and Refrigerator buttons over 5 seconds.
3. The display will show the word "OFF"
4. In this mode all loads are turn Off (Compressor, Heater, Fans, etc)
5. Lamps and Dispenser Functions works normally.  
(Even in demonstration mode the refrigerator Lamp automatic off function works normally)
6. To exit Demonstration mode open any Door then press and hold Ice Plus and Refrigerator buttons over 5 seconds  
(Display return to normal mode).

**ERROR CODE on display panel**

No.	ITEM	ERROR CODE		CONTENTS	REMARKS
		FRZ TEMP	REF TEMP		
1	Failure of Freezer sensor	Er	FS	Cut or short circuit wire.	Inspect Connecting wires on each sensor
2	Failure of Refrigerator sensor	Er	rS	Cut or short circuit wire.	
3	Failure of defrost sensor	Er	dS	Cut or short circuit wire.	
4	Failure of Room Temperature sensor	When display check mode: Er rt		Cut or short circuit wire.	
5	Failure of Icing sensor	Er	IS	Cut or short circuit wire.	
6	Failure of defrost mode	Er	dH	When defrost sensor doesn't reach 46°F(8°C) within 1 hour after starting defrost	Snapping of defrost heater or Temperature fuse, pull-out of connector (indicated minimum 1 hour after failure occurs)
7	Failure of BLDC Fan Motor at Freezing Compartment	Er	FF	If there is no fan motor sinal for more than 115sec in operation fan motor	Poor motor, hooking to wires of fan, contact of structures to fan, snapping or short circuit of Lead wires
8	Failure of BLDC Fan Motor for Ice Maker at Freezing compartment	Er	IF	If there is no fan motor sinal for more than 114sec in operation fan motor	Poor motor, hooking to wires of fan, contact of structures to fan, snapping or short circuit of Lead wires
9	Failure of Communication between display and Main PCB	Er	CO	If there is no communication between display and main PCB	check the wires of display connection

LED check function: If simultaneously pressing Ultra Ice button and Frz Temp for a second, display LED graphics on. If releasing the button, the LED graphic displays the previous status.

## 8-1-15 TEST Mode

1. The Test mode allows checking the PCB and the function of the product as well as finding out the defective part in case of an error.
2. The test mode is operated by pressing test button at main PCB controller.
3. While in the test mode, the function control button is not recognized, but the recognition tone sounds.
4. After exiting the test mode, be sure to reset by unplugging and then plugging in the appliance.
5. If an error, such as a sensor failure, is detected while in the test mode, the test mode is cleared and the error code is displayed.
6. While an error code is displayed, the test mode will not be activated.

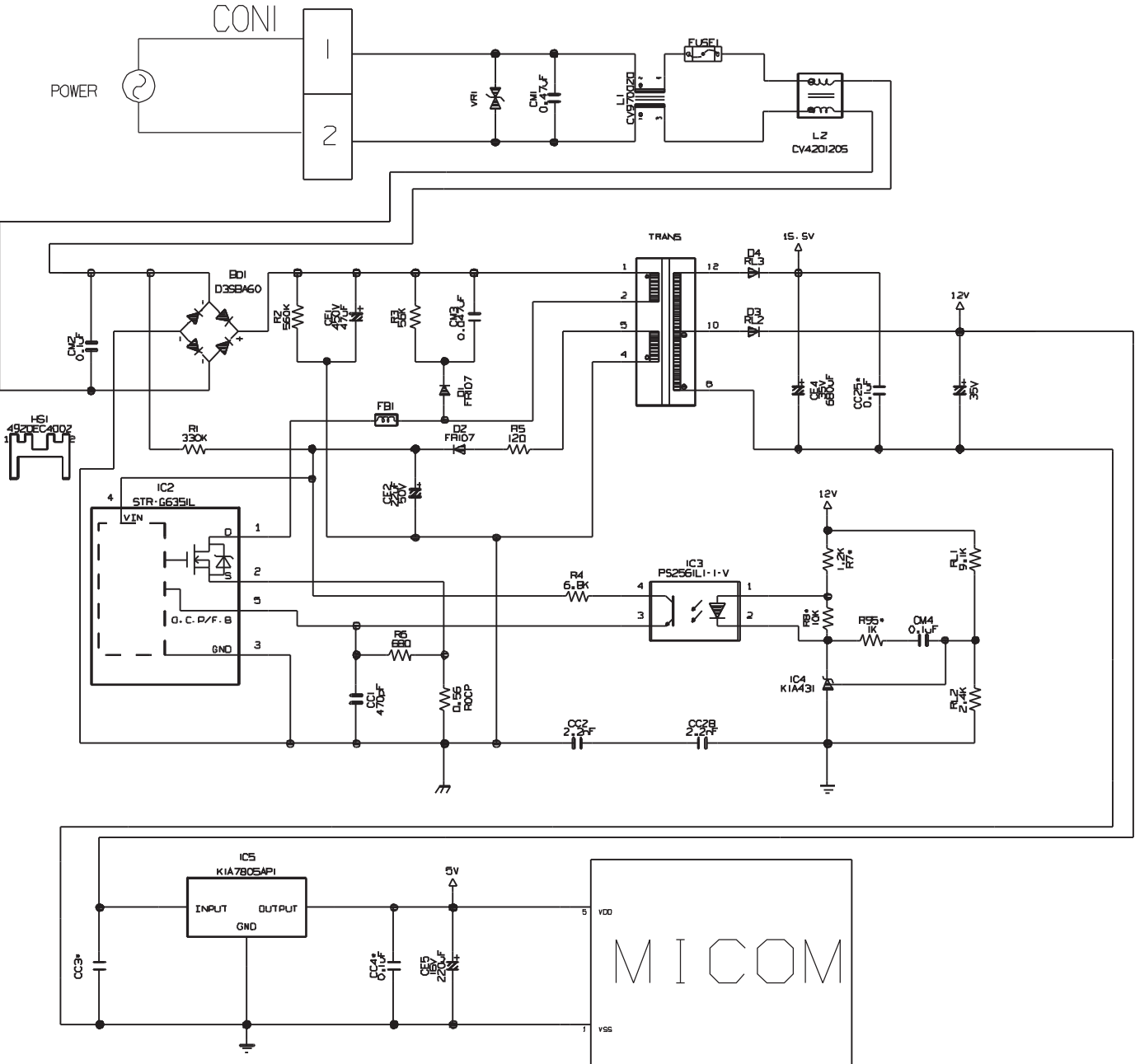
**Table 1. Function Test**

MODE	OPERATION	FUNCTION	REMARKS
TEST1	Push Test Switch (in the main Board) once.	1) Continuous operation of the COMPRESSOR and the Freezer fan 2) Stepping DAMPER OPEN 3) Defrosting HEATER OFF 4) DISPLAY LED all ON	Maximum test time: 5 minutes
TEST2	Push TEST Switch once in TEST MODE1.	1) Continuous operation of the COMPRESSOR and the Freezer fan 2) Stepping DAMPER CLOSE 3) Defrosting HEATER OFF 4) DISPLAY LED shows no. 2	Maximum test time: 5 minutes
TEST3	Push TEST Switch once in TEST MODE 2.	1) COMPRESSOR and the Freezer fan OFF 2) Stepping DAMPER CLOSE 3) Defrosting HEATER ON 4) DISPLAY LED shows no. 3	Reset if the Temperature of the Defrosting Sensor is 46°F(8°C)or more.
RESET	Push TEST Switch once in TEST MODE3.	Reset to the previously setting Before TEST MODE.	The compressor will Start after a 7-minute Delay.

## 8-2 PCB FUNCTION

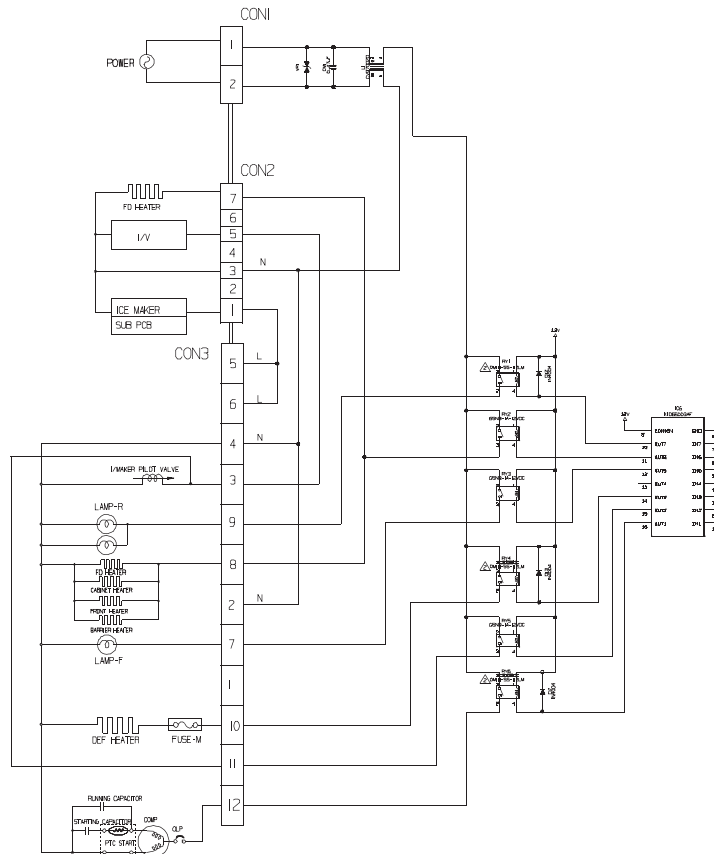
### 8-2-1 Power Circuit

1. Power is supplied to the control board at pin1 and 3 of connector #1.



## 8-2-2 Load / Fan & Open Door Detection Circuit

### 1. Load Drive Condition Check



To measure outputs of the control board, check voltages between the pins for the following components:



CONNECTOR 2							
PIN	7	6	5	4	3	2	1
	N/C	N/C	N/C	N/C	N	N/C	I/MAKER

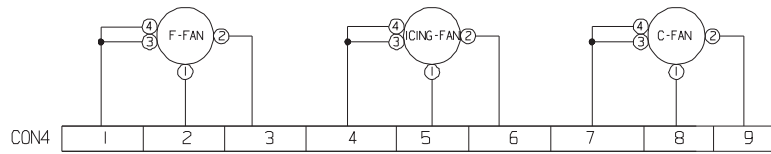
CONNECTOR 3						
PIN	12	11	10	9	8	7
	6	5	4	3	2	1
	REC COMP	Water P/V	DEF HTR	LAMP-R	FD-HTR	LAMP-F
	L	L	N	I/MAKER P/V	N	N/C

\*LOAD DRIVE AREA ON MAIN PCB

Check AC Voltage for loads, regarding following table.

Circuit	A	B	Voltage between A & B
LAMP-R	CON 3 PIN 9	CON 3 PIN 4	115 Vac
LAMP-F	CON 3 PIN 7	CON 3 PIN 4	115 Vac
FD-HTR	CON 3 PIN 8	CON 3 PIN 4	115 Vac
DEF-HTR	CON 3 PIN 10	CON 3 PIN 4	115 Vac
WATER P/V	CON 3 PIN 11	CON 3 PIN 4	115 Vac
REC COMP	CON 3 PIN 12	CON 3 PIN 4	115 Vac

To measure output of the fans on the control board check voltages between the pins for the following components:

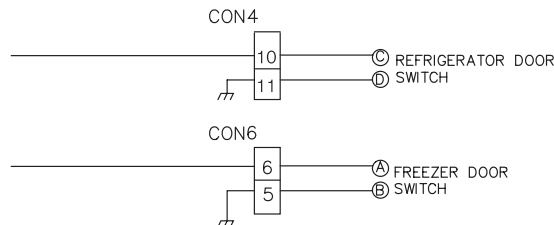


FAN	PIN NUMBER	PIN NUMBER	OUTPUT VOLTAGE	
			MOTOR ON	MOTOR OFF
Freezing compartment fan	Con4 Pin1	Con4 Pin2	13 VDC - 15 VDC	2 VDC or less
Machine compartment fan	Con4 Pin7	Con4 Pin8	13 VDC - 15 VDC	2 VDC or less
Icing compartment fan	Con4 Pin4	Con4 Pin5	13 VDC - 15 VDC	2 VDC or less



### 3. Open Door Detection Circuit Check

CONNECTOR 4											
PIN	1	2	3	4	5	6	7	8	9	10	11
	F-FAN			ICING-FAN			C-FAN			R- Door S/W	
	V	G	F	V	G	F	V	G	F		



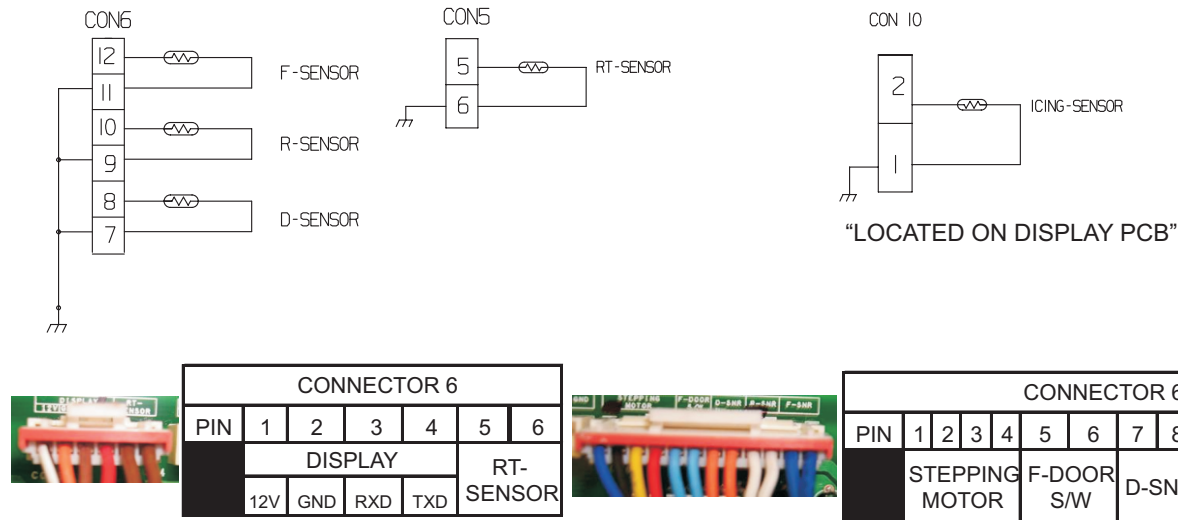
Measurement Location	Pin 10 & 11 of con4 Ref.Door Pin 5 & 6 of con6 Fre.Door
Closed	5 V
Open	0 V



CONNECTOR 4											
PIN	1	2	3	4	5	6	7	8	9	10	11
	F-FAN			ICING-FAN			C-FAN			R- Door S/W	
	V	G	F	V	G	F	V	G	F		

CONNECTOR 6												
PIN	1	2	3	4	5	6	7	8	9	10	11	12
	STEPPING MOTOR				F-DOOR S/W		D- SNR		R- SNR		F-SNR	

### 8-2-3 Temperature Sensor Circuit

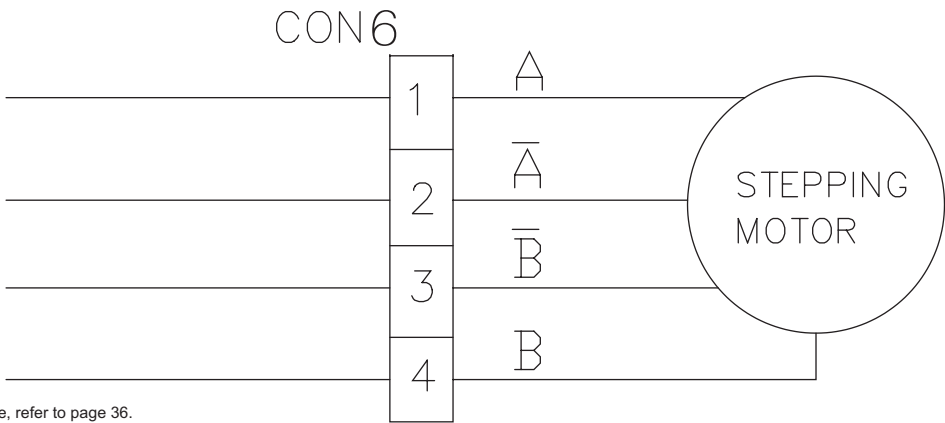


TEMPERATURE	RESISTANCE OF FREEZER/Icing SENSOR	RESISTANCE OF REFRIGERATOR & DEFROST SENSOR & ROOM SENSOR
- 20 °C (-4 °F)	22.3 KΩ	77 KΩ
- 15 °C (5°F)	16.9 K Ω	60 KΩ
- 10 °C (14 °F)	13.0 KΩ	47.3 KΩ
- 5 °C (23 °F)	10.1 KΩ	38.4 KΩ
0 °C (32 °F)	7.8 KΩ	30 KΩ
+ 5 °C (41 °F)	6.2 KΩ	24.1 KΩ
+ 10 °C (50 °F)	4.9 KΩ	19.5 KΩ
+ 15 °C (59 °F)	3.9 KΩ	15.9 KΩ
+ 20 °C (68 °F)	3.1 KΩ	13 KΩ
+ 25 °C (77 °F)	2.5 KΩ	11 KΩ
+ 30 °C (86 °F)	2.0 KΩ	8.9 KΩ
+ 40 °C (104 °F)	1.4 KΩ	6.2 KΩ
+ 50 °C (122 °F)	0.8 KΩ	4.3 KΩ

- The resistance of the SENSOR has a  $\pm 5\%$  common difference.
- Measure the resistance of the SENSOR after leaving it for over 3 minutes in the measuring temperature. This delay is necessary due to sensor response speed.

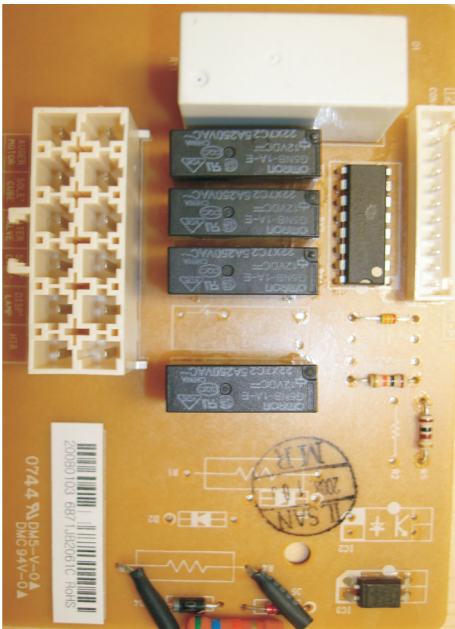
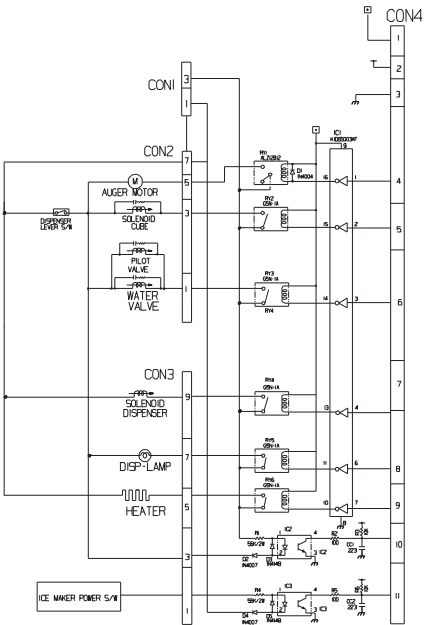
### 8-2-4 Refrigeration Compartment Stepping Motor Damper Circuit

A reversible DC motor is used to open and close the damper.  
 To open the damper, push test button once.  
 To close the damper, push test button twice.



To see connector 6 picture, refer to page 36.

### 8-2-5 Dispenser Drive Circuit



Circuit	Pin Number	Pin Number	Output Voltage
Auger Motor	Con1 Pin12	Con1 Pin4	115 VAC
Solenoid Cube	Con1 Pin11	Con1 Pin4	115 VAC
Pilot/ Water Valve	Con1 Pin10	Con1 Pin4	115 VAC
Solenoid Dispenser	Con1 Pin9	Con1 Pin4	115 VAC
Heater	Con1 Pin7	Con1 Pin4	115 VAC



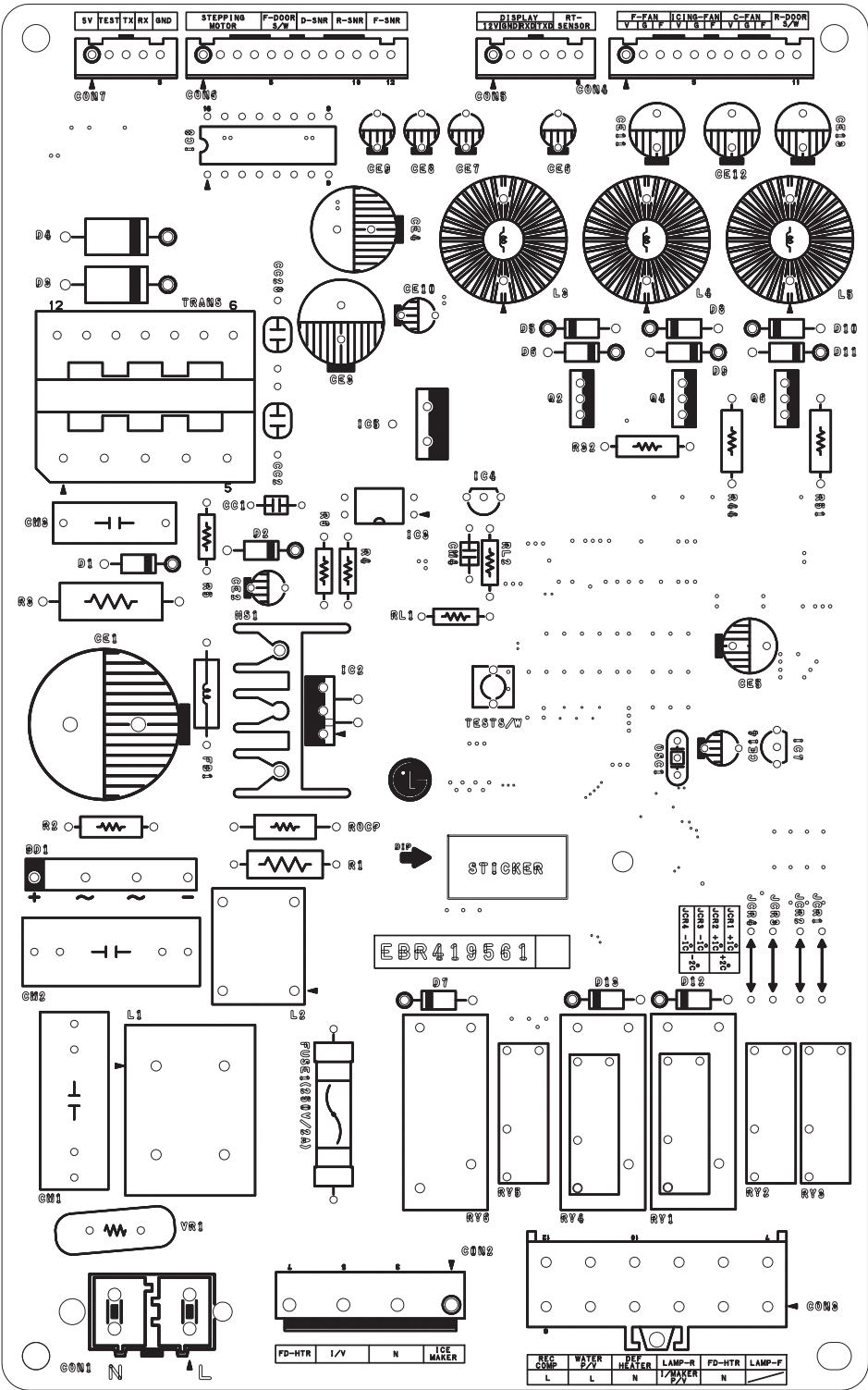
## 8-3 TROUBLESHOOTING

PROBLEM	INDICATED BY	CHECK	CHECKING METHOD	CAUSE	SOLUTION
POWER SOURCE is poor.	1. The whole	1. FREEZER/ REFRIGERATOR.	Check if FREEZER/REFRIGERATOR DOOR IS OPEN and check display.	POWER SOURCE is poor.	Replace Main PWB
	2. DISPLAY LED	2. If LAMP is dim.	Check visually.	Applied voltage error.	Replace Main PWB
		3. The connection of the MAIN PWB CONNECTOR.	Check connection of CONNECTOR.	CONNECTOR connection is poor.	Reconnect CONNECTOR
				TRANS FUSE is open.	Replace Main PWB
COOLING is poor.	NO COOLING.	1. If the COMPRESSOR operate.	USE TEST MODE1 (forced COOLING). If less than 7 minutes pass after compressor shuts off, don't press the KEY and wait.	COMPRESSOR locked or blocked.	Replace OLP, PTC.
				OLP, PTC is poor. COMPRESSOR RELAY is poor.	Replace MAIN PWB.
				THE CONNECTING WIRE is poor.	Check the connection of the black wire of the MAIN PWB CONNECTOR (CON3).
		2. If refrigerant is leaking.	Measure the amount of frost sticking on EVAPORATOR and the surface temperature of the condenser pipe.	Refrigerant leakage.	Replace the leaking part and replace any lost refrigerant.
	FREEZER TEMPERATURE is incorrect	1. If FAN MOTOR operates.	USE TEST MODE1 (forced COOLING).	FAN MOTOR is poor.	Replace the FAN MOTOR.
				CONNECTING WIRE is poor.	Certify the MOTOR and the connection of the black wire of the MAIN PWB CONNECTOR (CON4).
		2. If DEFROSTING is normal.	Check the amount of frost sticking on the EVAPORATOR .	DEFROSTING is poor.	See DEFROSTING is poor.
		3. If SENSOR is normal.	of the Refrigerator SENSOR.	SENSOR RESISTANCE is poor.	Replace SENSOR.
		4. Door Line contact.	Check the seal when the door is closed.	Door liner damaged.	Replace door liner.

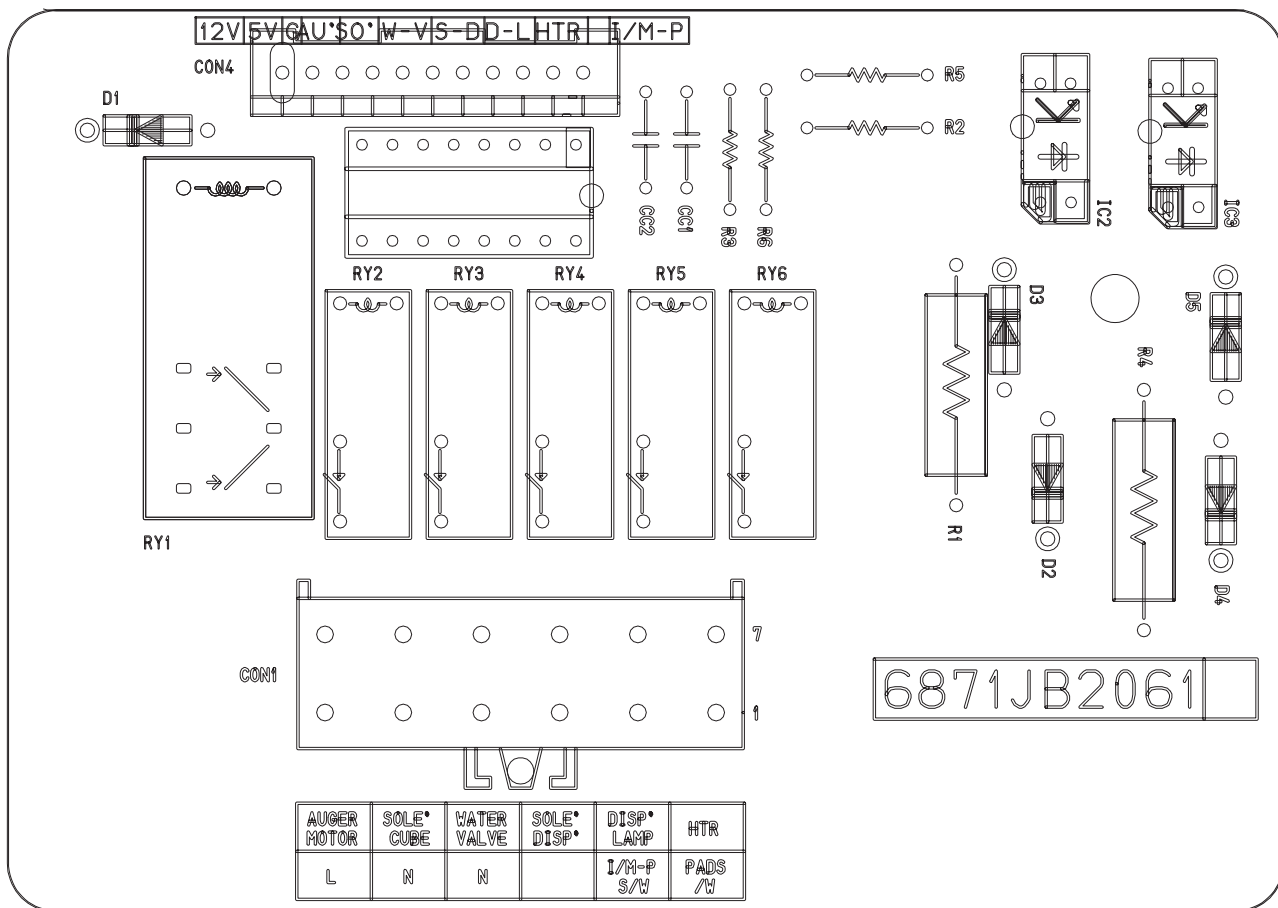
PROBLEM	INDICATED BY	CHECK	CHECKING METHOD	CAUSE	SOLUTION
COOLING is poor.	If REFRIGERATOR TEMPERATURE is too low.	1. If FREEZER TEMPERATURE is normal.	Check is FREEZER TEMPERATURE is too low.		Make sure the DOOR is attached.
		2. If amount of cool air from FAN MOTOR is sufficient.	Make sure that the amount and speed of cool air are sufficient by touching the check supplied on the REFRIGERATOR.	FAN MOTOR is poor.	Replace FAN MOTOR.
				Passage of cool air is blocked.	Remove impurities.
				EVA frozen.	See DEFROSTING is poor.
		3. Door Line contact.	Check door seal when door is closed.	Door liner damaged.	Replace Door liner.
DEFROSTING is poor.	NO DEFROSTING.	1. If HEATER emits heat.	USE TEST MODE3 (forced DEFROSTING).	HEATER disconnection.	Replace HEATER.
				TEMPERATURE FUSE disconnection.	Replace TEMPERATURE FUSE.
				Connection is poor.	Check EVAPORATOR connection and wire of MAIN PWB CONNECTOR.
				DEFROST-SENSOR is poor.	Replace DEFROST-SENSOR.
				HEATER RELAY is poor.	Replace RY1 of MAIN PWB.
		2. If DRAIN PIPE is blocked.	Check DRAIN PIPE.	DRAIN PIPE is blocked.	Remove ice and impurities.
					Check HEATER PLATE resistance.
		3. If ice remains after DEFROSTING.	Make sure that DEFROST SENSOR is connected.	Connection is poor.	Reassemble the DEFROST-SENSOR.
			Make sure that FREEZER /REFRIGERATOR DOOR is closed.	DOOR does not close properly.	Reassemble DOOR. Replace GASKET.

# 8-4 MAIN PWB ASSEMBLY AND PARTS LIST

## 8-4-1 Main PWB Assembly



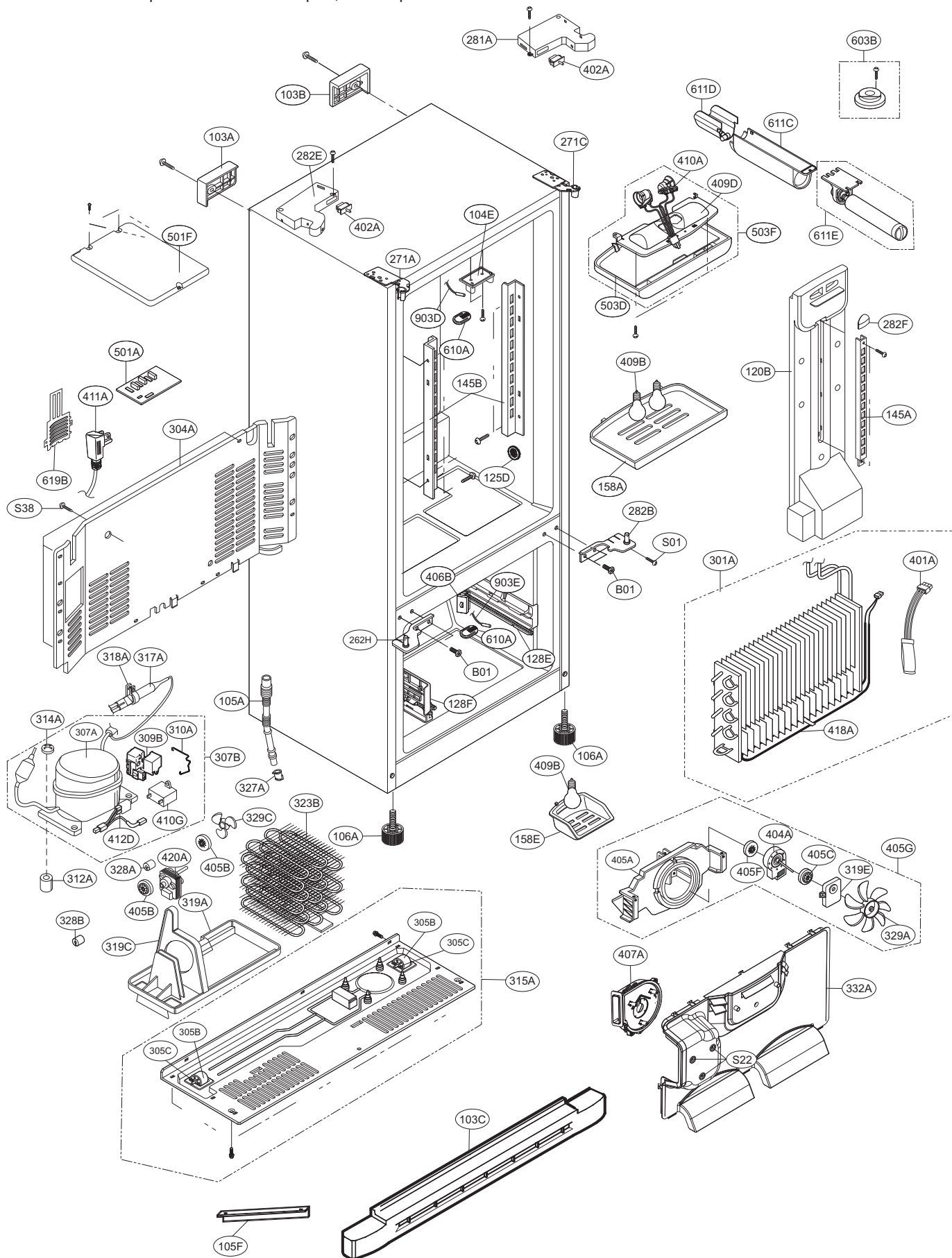
# 8-4-2 Dispenser Drive PWB Assembly



## 9. EXPLODED VIEW

## CASE PARTS

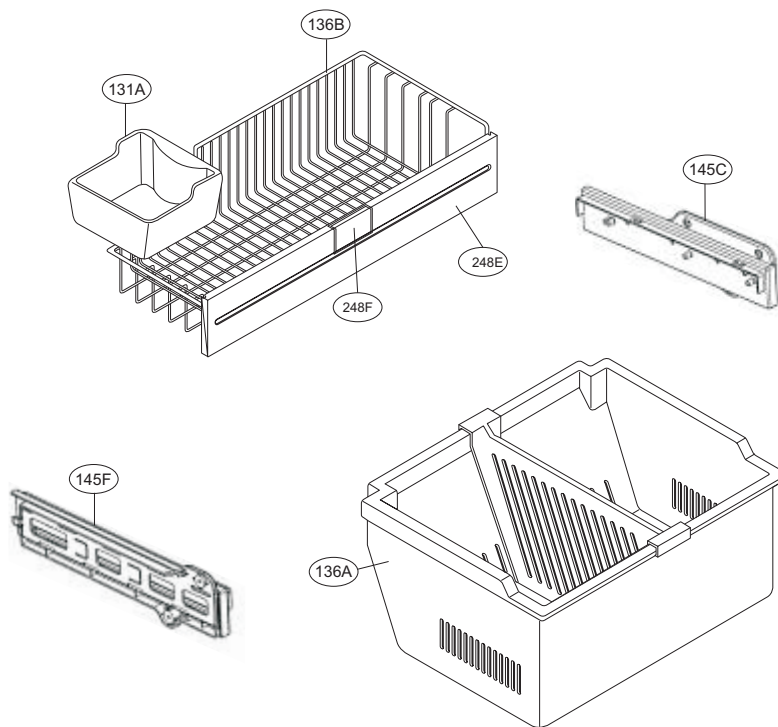
Caution: Use the part number to order part, not the position number.



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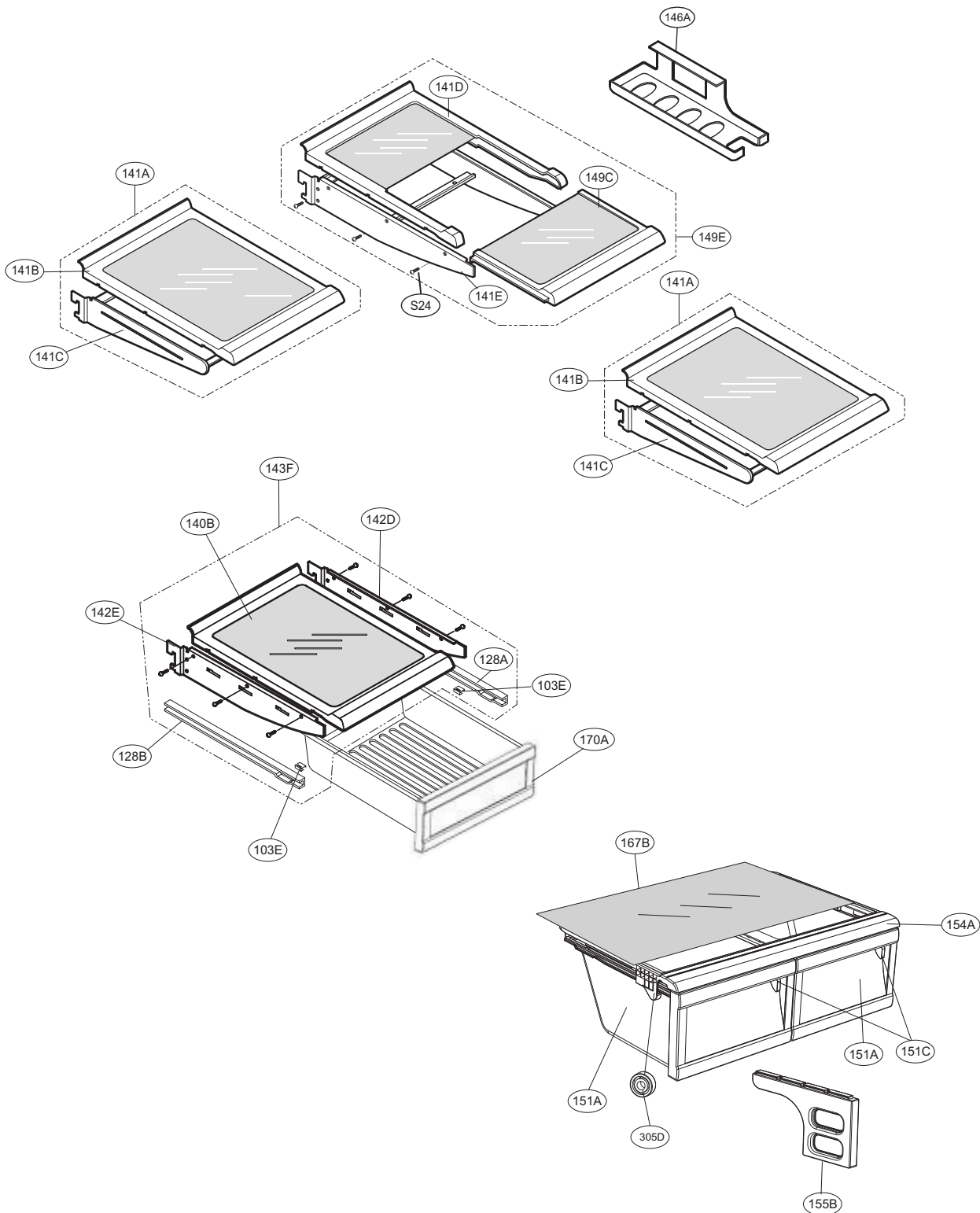
## FREEZER PARTS

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



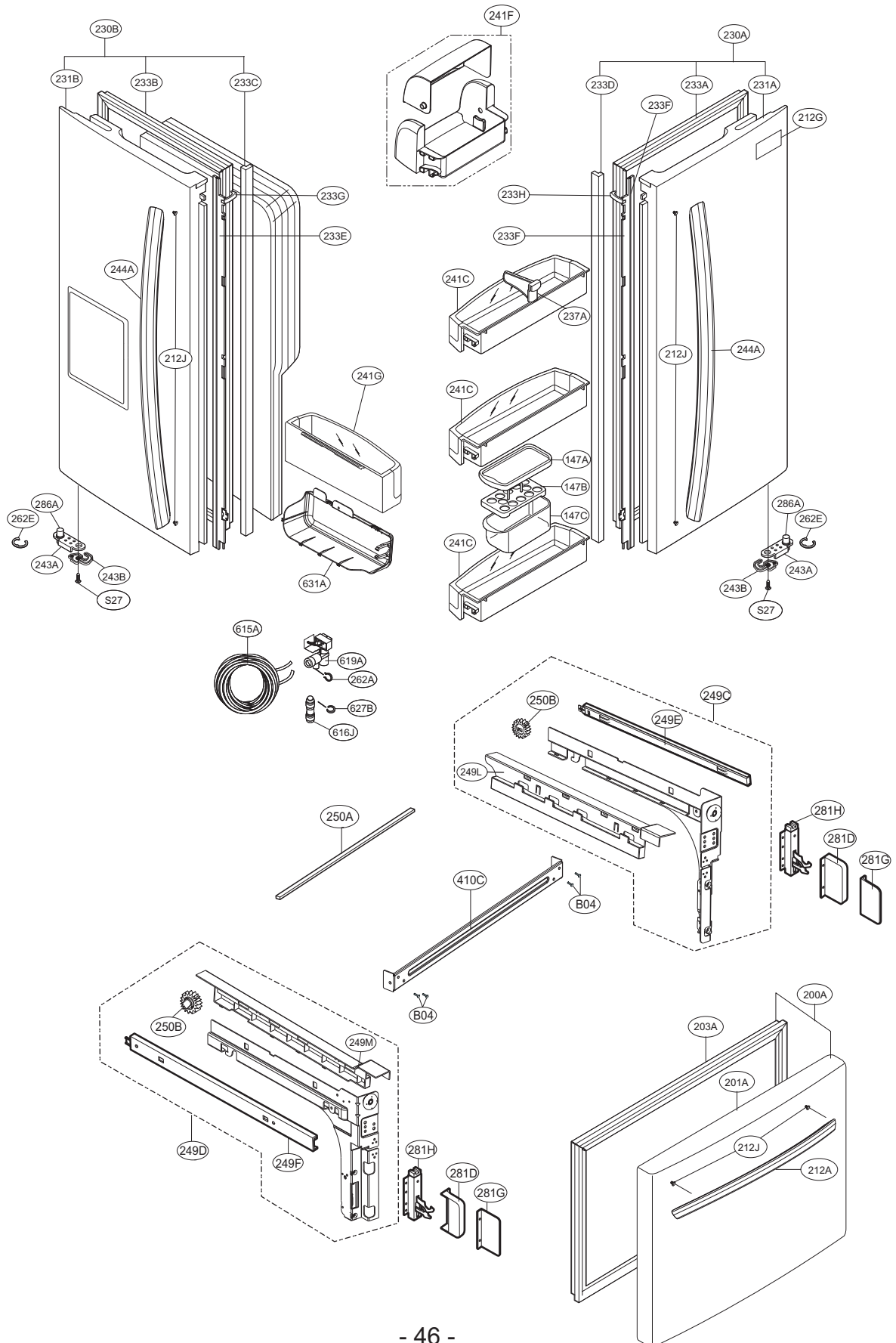
REFRIGERATOR PARTS

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



## DOOR PARTS

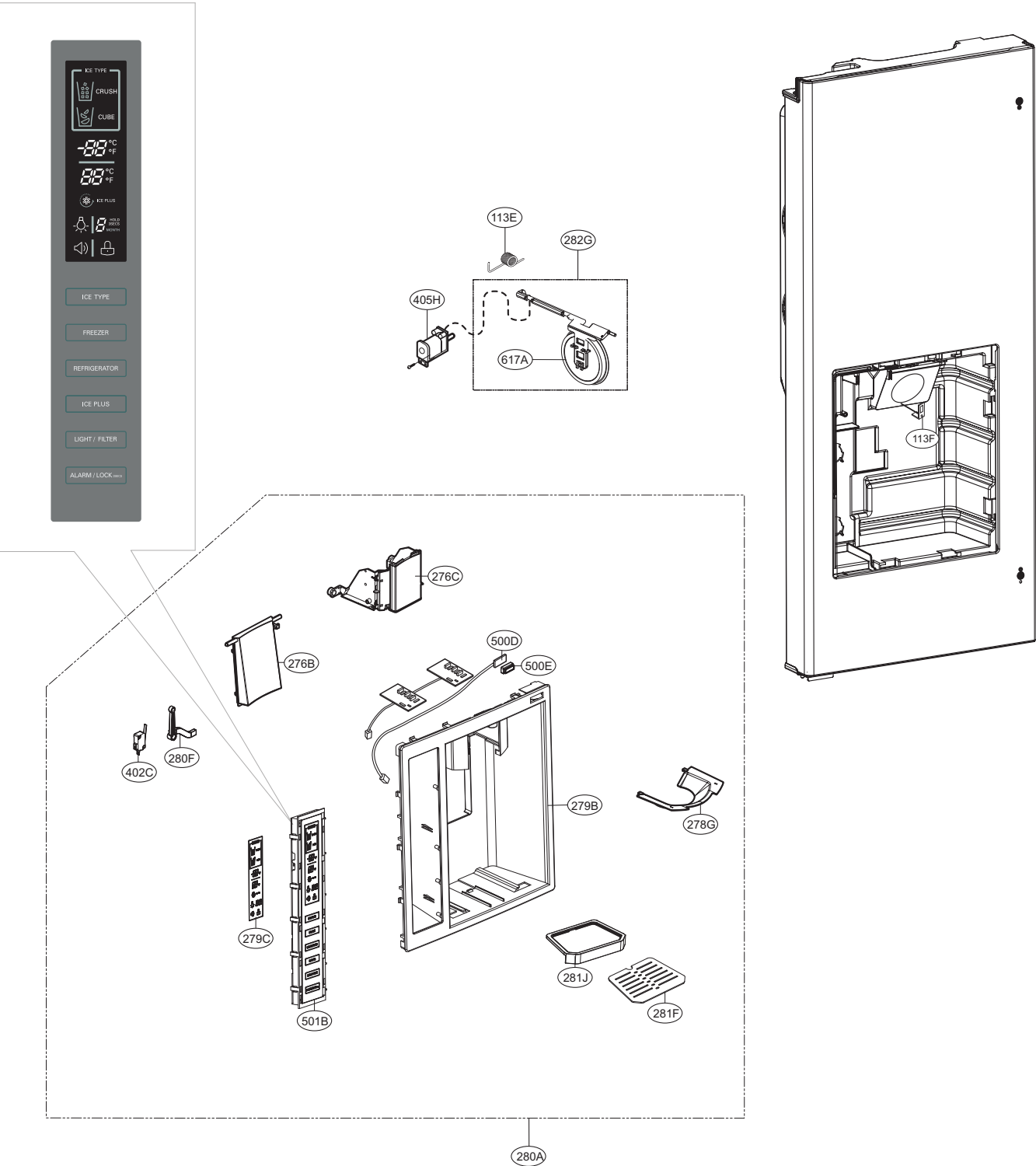
Caution: Use the part number to order part, not the position number.





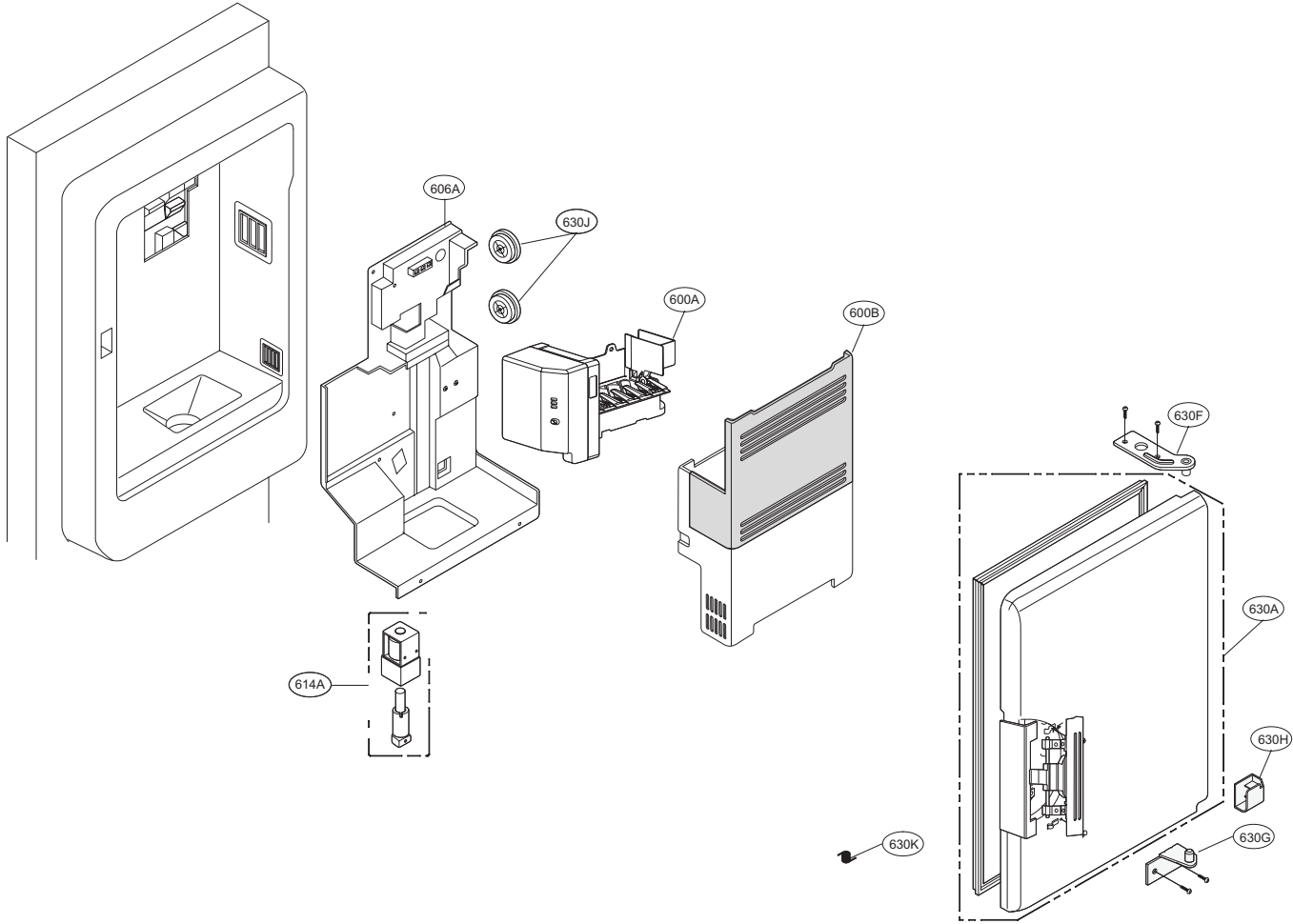
DISPENSER PARTS

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



ICE MAKER & ICE BANK PARTS

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



**VALVE & WATER PARTS**

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

