



# REFRIGERATOR SERVICE MANUAL

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



TYPE	MODEL	FACTORY MODEL	Color
STEP UP	111.75505020	RFP71KETJ4E00-UEDB	STAINLESS
	111.75507020	RFP71KEBJ4E00-UEDB	BLACK STAINLESS



TYPE	MODEL	FACTORY MODEL	Color
OPP	111.75035020	RFP71KDTJ4E00-UECB	STAINLESS
	111.75032020	RFP71KDWC4E00-UECB	WHITE
	111.75039020	RFP71KDBC4E00-UECB	BLACK

## √ Caution

In this manual, some parts can be changed for improving their performance without notice. So, If you need the latest parts information, please visit and refer to PPL (Parts Price List) in Service Information Center. (<http://webportal.winiadaewoo.com/sic>)

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# 1. Warnings and Precautions for Safety

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

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



## **WARNING**

*To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.*

## 2. Specifications

Model Name		111.7550****, 111.7503****	
Factory Model Name		RFP71KE*****-****, RFP71KD*****-****	
Volume AHAM 2008 (Cu ft.)	Total	25.5	
	Freezer	7.8	
	Refrigerator	17.7	
External Dimension (Width * Depth * Height)		35.98 " x 69.81" x 33.79" (w/o Handle)	
Rated Voltage		115~120V (60Hz)	
Weight (Kg)	Net	138	
	Gross (w/ Package)	151	
C O O L I N G	Comp	Model	NC4EVA5ALM (SAMSUNG)
		Motor Type	Inverter Driver
		Motor Protection	-
		Running Capacitor	-
		Starting Device Type	Inverter Driver
		Starting Device	-
		Controller Unit (Inverter)	'-
	Refrigerant	R600a	
	Quantity	77g	
	Evaporator	Fin Type	
	Condenser	Fan Cooling System	
	Dryer	Molecular Sieve XH-9	
	Door Switch	Freezer	On Right Front Side of Freezer Wall
Refrigerator		In Top Cover Hinge	
Lamp	Freezer	5-LED	
	Refrigerator	18-LED	



### WARNING

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## 2. Specifications

(continued)

Model Name		111.7550****, 111.7503****	
Factory Model Name		RFP71KE*****_****	RFP71KD*****_****
Sensor	Defrost	In Evaporator Assembly, In Icemaker Evaporator Assembly	←
	Freezer	In Louver Assembly	←
	Refrigerator	In Multi Flow Duct Assembly	←
	RT	Between Top Cabinet and Top Cover Hinge	←
	Icemaker Room Temp.	In Fixture Geared Motor Assembly	←
	Pantry Drawer Temp.	In Multi Flow Duct Assembly	←
	Water Flow	In Valve Water Assembly	←
Heater	Freezer Eva.	AC120V / 380W / 35 ~ 41Ω / Sheath	←
	Icemaker Eva.	AC120V / 40W / 360Ω / Sheath	←
	Division	AC115V / 6W / 2028 ~ 2380Ω	←
	Water Tank	N/A	←
	Dispenser Ice Flap	N/A	←
	R Motor behind Eva	N/A	←
	Icemaker Water Hose	No Service Part	←
	Icemaker Room Heater	N/A	←
Fuse Temp (Defrost)		AC250V , 10A , 77℃	←
Motor	Freezer Fan	DC12V / DREP9020LJ	←
	Refrigerator Fan	DC12V / DREP9020LL	←
	Condenser Fan	DC13V / D4612AAA28	←
	Dispenser Ice Shut	DC 12V / STAB040D01	←
	Ice Crusher	120V / 60Hz / ISG-3240DED	←
	Ice Type Selector	DC12V / STAB04D01	←
	Ice Maker Fan	DC12V / ODM-016F-57A	←
Damper		DC12V / DU24-113 / 1pcs	N/A



### WARNING

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### 3. Sensor / Voltage

(Table of sensor resistance and measured voltage)

R, Pantry, Ice Maker, F Defrost, R Defrost, I/M Defrost, RT SENSOR							
Temp(°F)	Temp(°C)	Resistance(kΩ)	DC Volts	Temp(°F)	Temp(°C)	Resistance(kΩ)	DC Volts
-22.0	-30.0	129.30	4.02	32.9	0.5	29.34	2.42
-21.1	-29.5	125.90	4.00	33.8	1.0	28.71	2.39
-20.2	-29.0	122.50	3.98	34.7	1.5	28.08	2.36
-19.3	-28.5	119.30	3.96	35.6	2.0	27.47	2.33
-18.4	-28.0	116.20	3.94	36.5	2.5	26.88	2.31
-17.5	-27.5	113.20	3.91	37.4	3.0	26.30	2.28
-16.6	-27.0	110.20	3.89	38.3	3.5	25.74	2.25
-15.7	-26.5	107.40	3.87	39.2	4.0	25.19	2.23
-14.8	-26.0	101.60	3.82	40.1	4.5	24.65	2.20
-13.9	-25.5	101.90	3.82	41.0	5.0	24.13	2.17
-13.0	-25.0	99.30	3.80	41.9	5.5	23.62	2.15
-12.1	-24.5	96.70	3.77	42.8	6.0	23.12	2.12
-11.2	-24.0	94.30	3.75	43.7	6.5	22.63	2.09
-10.3	-23.5	91.90	3.73	44.6	7.0	22.15	2.07
-9.4	-23.0	89.60	3.70	45.5	7.5	21.69	2.04
-8.5	-22.5	87.30	3.68	46.4	8.0	21.24	2.02
-7.6	-22.0	85.10	3.65	47.3	8.5	20.80	1.99
-6.7	-21.5	83.00	3.63	48.2	9.0	20.36	1.97
-5.8	-21.0	80.90	3.60	49.1	9.5	19.94	1.94
-4.9	-20.5	78.90	3.58	50.0	10.0	19.53	1.92
-4.0	-20.0	76.90	3.55	50.9	10.5	19.13	1.89
-3.1	-19.5	75.00	3.52	51.8	11.0	18.74	1.87
-2.2	-19.0	78.20	3.57	52.7	11.5	18.35	1.84
-1.3	-18.5	71.40	3.47	53.6	12.0	17.98	1.82
-0.4	-18.0	69.60	3.45	54.5	12.5	17.61	1.80
0.5	-17.5	67.90	3.42	55.4	13.0	17.26	1.77
1.4	-17.0	66.30	3.39	56.3	13.5	16.91	1.75
2.3	-16.5	64.70	3.37	57.2	14.0	16.37	1.71
3.2	-16.0	63.10	3.34	58.1	14.5	16.26	1.71
4.1	-15.5	61.60	3.31	59.0	15.0	15.91	1.68
5.0	-15.0	60.10	3.28	59.9	15.5	15.59	1.66
5.9	-14.5	58.60	3.26	60.8	16.0	15.28	1.64
6.8	-14.0	57.20	3.23	61.7	16.5	14.98	1.61
7.7	-13.5	55.90	3.20	62.6	17.0	14.66	1.59
8.6	-13.0	54.60	3.17	63.5	17.5	14.39	1.57
9.5	-12.5	53.30	3.15	64.4	18.0	14.10	1.55
10.4	-12.0	52.00	3.12	65.3	18.5	13.83	1.53
11.3	-11.5	50.80	3.09	66.2	19.0	13.56	1.51
12.2	-11.0	49.60	3.06	67.1	19.5	13.29	1.49
13.1	-10.5	48.70	3.04	68.0	20.0	13.03	1.47
14.0	-10.0	47.30	3.01	68.9	20.5	12.78	1.45
14.9	-9.5	46.20	2.98	69.8	21.0	12.53	1.43
15.8	-9.0	45.10	2.95	70.7	21.5	12.29	1.41
16.7	-8.5	44.10	2.92	71.6	22.0	12.05	1.39
17.6	-8.0	43.10	2.89	72.5	22.5	11.82	1.37
18.5	-7.5	42.10	2.86	73.4	23.0	11.60	1.35
19.4	-7.0	41.10	2.83	74.3	23.5	11.37	1.33
20.3	-6.5	40.30	2.81	75.2	24.0	11.16	1.31
21.2	-6.0	39.30	2.78	76.1	24.5	10.95	1.29
22.1	-5.5	37.90	2.73	77.0	25.0	10.74	1.27
23.0	-5.0	37.50	2.72	77.9	25.5	10.54	1.26
23.9	-4.5	36.70	2.69	78.8	26.0	10.34	1.24
24.8	-4.0	35.80	2.66	79.7	26.5	10.14	1.22
25.7	-3.5	35.00	2.64	80.6	27.0	9.945	1.20
26.6	-3.0	34.30	2.61	81.5	27.5	9.768	1.19
27.5	-2.5	33.50	2.58	82.4	28.0	9.586	1.17
28.4	-2.0	32.70	2.55	83.3	28.5	9.408	1.15
29.3	-1.5	32.00	2.52	84.2	29.0	9.234	1.14
30.2	-1.0	31.30	2.50	85.1	29.5	9.063	1.12
31.1	-0.5	30.60	2.47	86.0	30.0	8.896	1.10
32.0	0.0	30.00	2.44				



**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

### 3. Sensor / Voltage

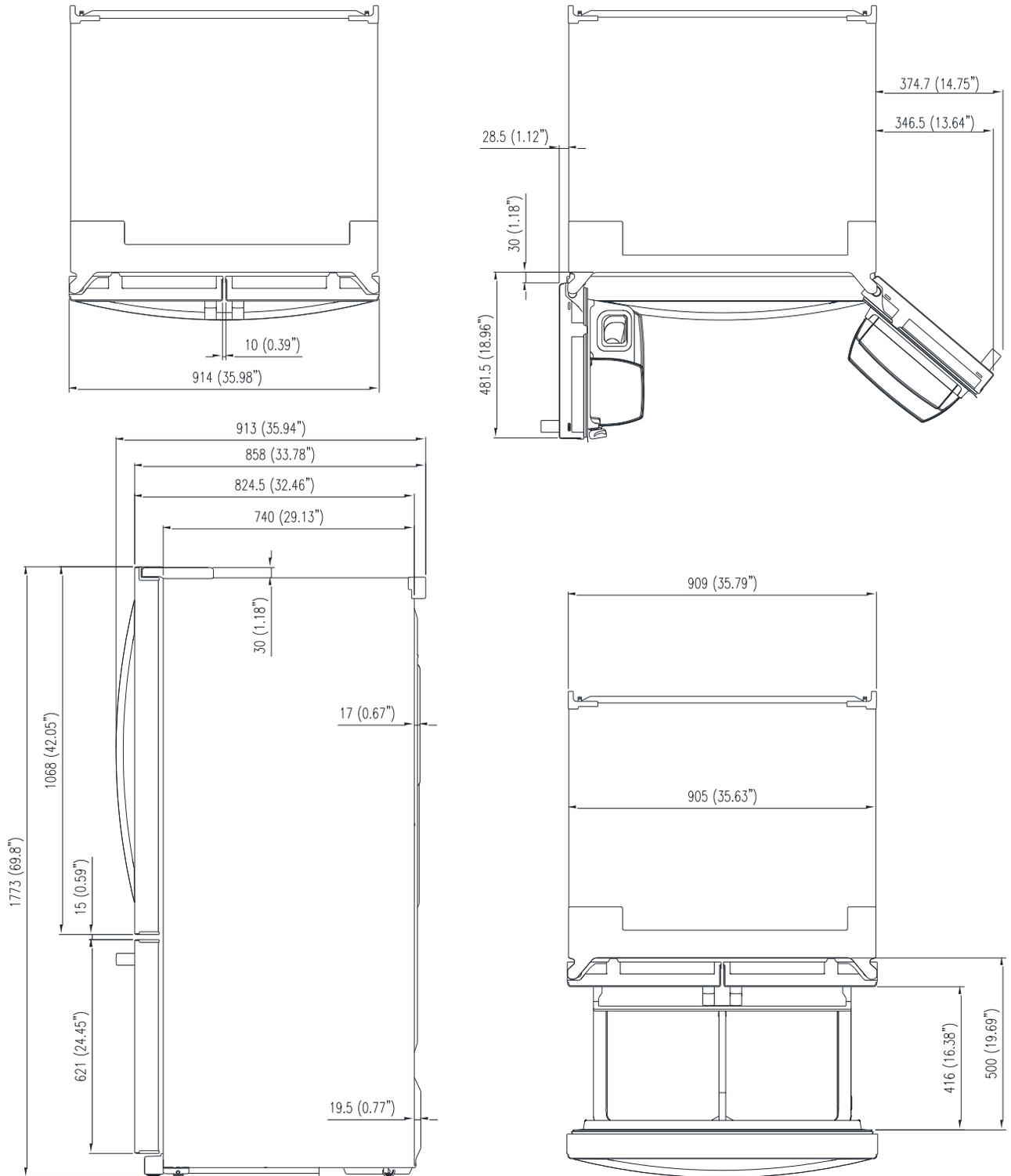
(Table of sensor resistance and measured voltage)

F Sensor							
Temp(°F)	Temp(°C)	Resistance(kΩ)	DC Volts	Temp(°F)	Temp(°C)	Resistance(kΩ)	DC Volts
-22.0	-30.0	39.652	3.04	32.9	0.5	7.692	1.16
-21.1	-29.5	38.495	3.01	33.8	1.0	7.508	1.14
-20.2	-29.0	37.375	2.97	34.7	1.5	7.328	1.12
-19.3	-28.5	36.291	2.94	35.6	2.0	7.153	1.10
-18.4	-28.0	35.242	2.90	36.5	2.5	6.983	1.07
-17.5	-27.5	34.227	2.87	37.4	3.0	6.818	1.05
-16.6	-27.0	33.240	2.83	38.3	3.5	6.656	1.03
-15.7	-26.5	31.372	2.76	39.2	4.0	6.500	1.02
-14.8	-26.0	30.926	2.74	40.1	4.5	6.347	1.00
-13.9	-25.5	30.480	2.72	41.0	5.0	6.198	0.98
-13.0	-25.0	29.616	2.69	41.9	5.5	6.054	0.96
-12.1	-24.5	28.780	2.65	42.8	6.0	5.913	0.94
-11.2	-24.0	27.970	2.62	43.7	6.5	5.776	0.92
-10.3	-23.5	27.185	2.58	44.6	7.0	5.642	0.91
-9.4	-23.0	26.425	2.54	45.5	7.5	5.512	0.89
-8.5	-22.5	25.686	2.51	46.4	8.0	5.386	0.87
-7.6	-22.0	24.974	2.47	47.3	8.5	5.262	0.86
-6.7	-21.5	24.283	2.44	48.2	9.0	5.142	0.84
-5.8	-21.0	23.612	2.40	49.1	9.5	5.025	0.82
-4.9	-20.5	22.963	2.37	50.0	10.0	4.911	0.81
-4.0	-20.0	22.333	2.33	50.9	10.5	4.800	0.79
-3.1	-19.5	21.722	2.30	51.8	11.0	4.691	0.78
-2.2	-19.0	21.130	2.27	52.7	11.5	4.586	0.76
-1.3	-18.5	20.557	2.23	53.6	12.0	4.483	0.75
-0.4	-18.0	20.000	2.20	54.5	12.5	4.383	0.73
0.5	-17.5	19.460	2.16	55.4	13.0	4.285	0.72
1.4	-17.0	18.937	2.13	56.3	13.5	4.190	0.71
2.3	-16.5	18.429	2.10	57.2	14.0	4.097	0.69
3.2	-16.0	17.937	2.06	58.1	14.5	4.007	0.68
4.1	-15.5	17.459	2.03	59.0	15.0	3.918	0.67
5.0	-15.0	16.995	2.00	59.9	15.5	3.832	0.65
5.9	-14.5	16.545	1.97	60.8	16.0	3.749	0.64
6.8	-14.0	16.109	1.94	61.7	16.5	3.668	0.63
7.7	-13.5	15.635	1.90	62.6	17.0	3.587	0.62
8.6	-13.0	15.274	1.87	63.5	17.5	3.509	0.60
9.5	-12.5	14.875	1.84	64.4	18.0	3.433	0.59
10.4	-12.0	14.487	1.81	65.3	18.5	3.350	0.58
11.3	-11.5	14.111	1.78	66.2	19.0	3.287	0.57
12.2	-11.0	13.746	1.75	67.1	19.5	3.217	0.56
13.1	-10.5	13.391	1.72	68.0	20.0	3.148	0.55
14.0	-10.0	13.047	1.69	68.9	20.5	3.081	0.54
14.9	-9.5	14.712	1.83	69.8	21.0	3.015	0.53
15.8	-9.0	12.387	1.63	70.7	21.5	2.927	0.51
16.7	-8.5	12.072	1.61	71.6	22.0	2.839	0.50
17.6	-8.0	11.765	1.58	72.5	22.5	2.829	0.50
18.5	-7.5	11.467	1.55	73.4	23.0	2.769	0.49
19.4	-7.0	11.176	1.52	74.3	23.5	2.711	0.48
20.3	-6.5	10.897	1.50	75.2	24.0	2.655	0.47
21.2	-6.0	10.624	1.47	76.1	24.5	2.600	0.46
22.1	-5.5	10.358	1.44	77.0	25.0	2.546	0.45
23.0	-5.0	10.109	1.42	77.9	25.5	2.493	0.45
23.9	-4.5	9.849	1.39	78.8	26.0	2.442	0.44
24.8	-4.0	9.605	1.37	79.7	26.5	2.392	0.43
25.7	-3.5	9.368	1.34	80.6	27.0	2.343	0.42
26.6	-3.0	9.138	1.32	81.5	27.5	2.295	0.41
27.5	-2.5	8.913	1.30	82.4	28.0	2.246	0.40
28.4	-2.0	8.696	1.27	83.3	28.5	2.202	0.40
29.3	-1.5	8.484	1.25	84.2	29.0	2.158	0.39
30.2	-1.0	8.277	1.23	85.1	29.5	2.114	0.38
31.1	-0.5	8.077	1.20	86.0	30.0	2.072	0.38
32.0	0.0	7.882	1.18				



**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 4. External Dimensions



**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 5. Features

### 5-1. Exterior

#### Front Control Panel

LED, Touch

#### Water and Ice Dispenser

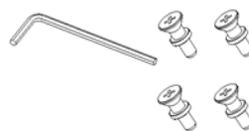
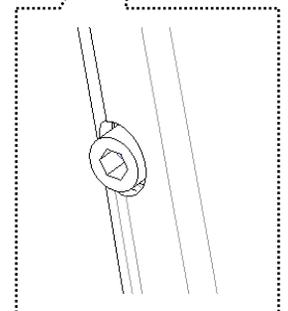
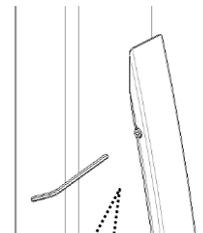
1 Levers

#### Freezer Handle

Sticker written "F"  
inside handle for  
correct assembly

#### Refrigerator Handle

Sticker written "R"  
inside handles for  
correct assembly



#### Included Parts

Hex Wrench(2.5mm) in User Manual Bag, Standoff  
Screws on doors



#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 5. Features

## 5-2. Interior



**Foldable Shelf**  
fixed by magnet after folding

**Filter Cover**

**Water Filter**



**Air Filter Cover**

**Slid Away Split Shelf**

**Icemaker Compartment**  
Icemaker and Ice Bin

**Dispenser Bin**  
Fixed

**Dairy Bin**

**Shelves**  
Adjustable, Spill proof

**Utility Bin**  
Adjustable

**Small Bin**  
Fixed

**Gallon Bin**  
Adjustable

**Bottom Bin**

**Bottom Bin**  
Adjustable

**Mullion Bar**

**Auto Pull Out Drawer**

**- Temperature Controlled Pantry Drawer(RFP71KE\*)**  
3 Steps Select Produce / Deli / Meat



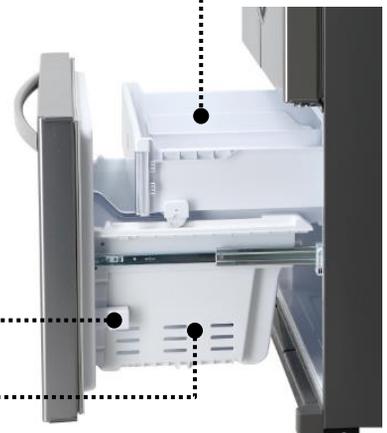
**- Wide Pantry Drawer(RFP71KD\*)**



**Humidity Controlled Crisper**  
Vegetable & Fruit

**Button Door Switch**

**Freezer Base Drawer**

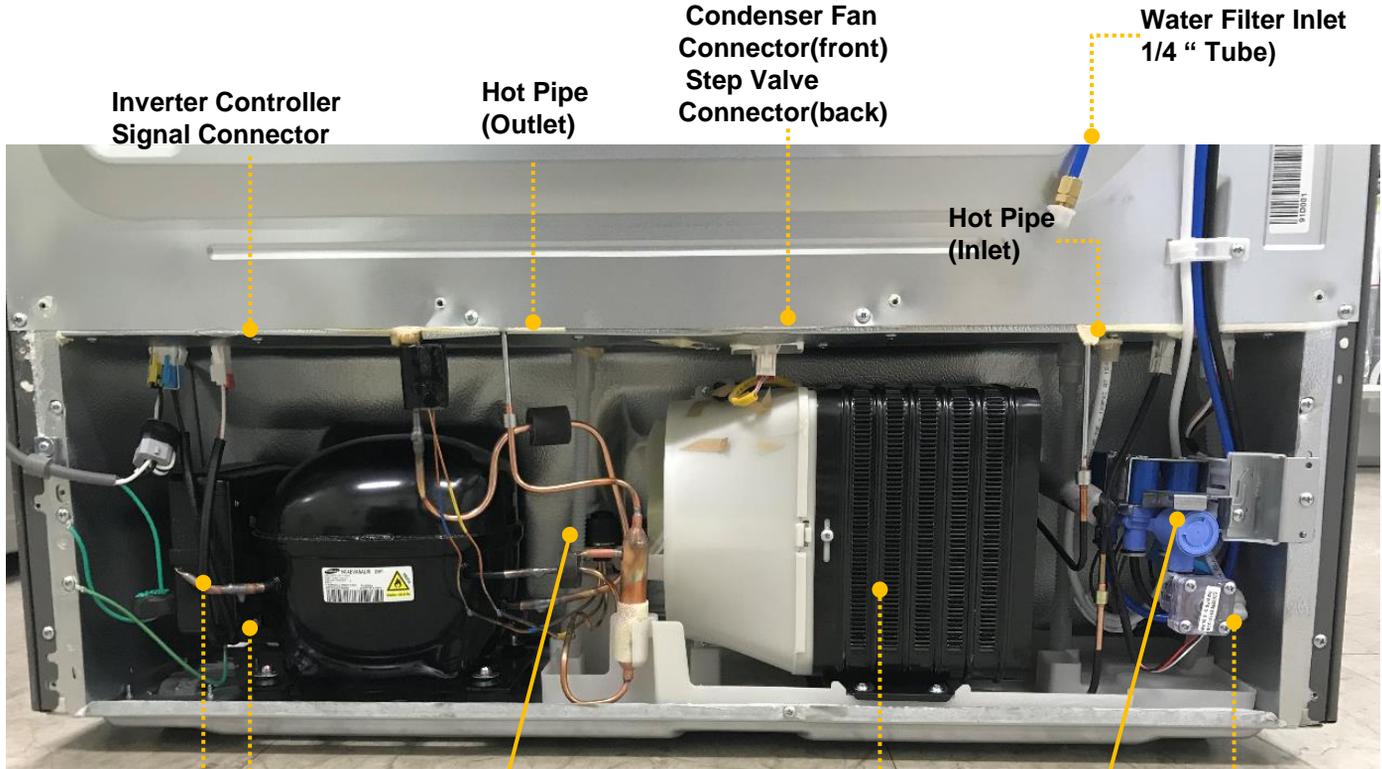


**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 5. Features

## 5-3. Machine Room



Inverter Controller  
Signal Connector

Hot Pipe  
(Outlet)

Condenser Fan  
Connector(front)  
Step Valve  
Connector(back)

Water Filter Inlet  
1/4 " Tube

Hot Pipe  
(Inlet)

Process Part  
in Compressor

Condenser

Inverter  
Controller

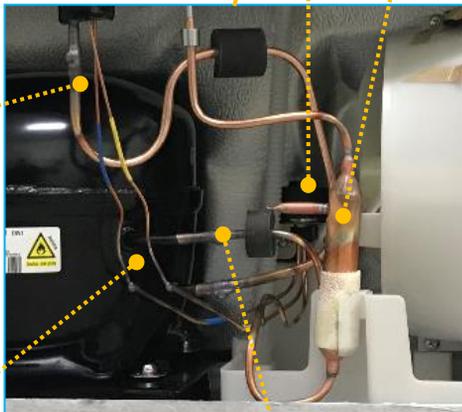
Step Valve

Flow Sensor  
in Valve Water

Dryer

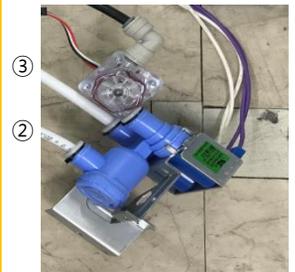
Valve Water

Pipe Suction  
Conn



MODEL : RFP71KE\*\*

MODEL : RFP71KD\*\*



- ① Black(1/4") – Ice Maker Tube(R room)
- ② White(1/4") – Water Filter Outlet
- ③ White(5/16") – Water Tank Inlet
- ④ Blue(1/4") - Ice Maker tube(F room)

Pipe Condenser Conn  
(Discharge Part)

Capillary Tube  
- Blue : F Eva.  
- Yellow : Ice Maker Eva.

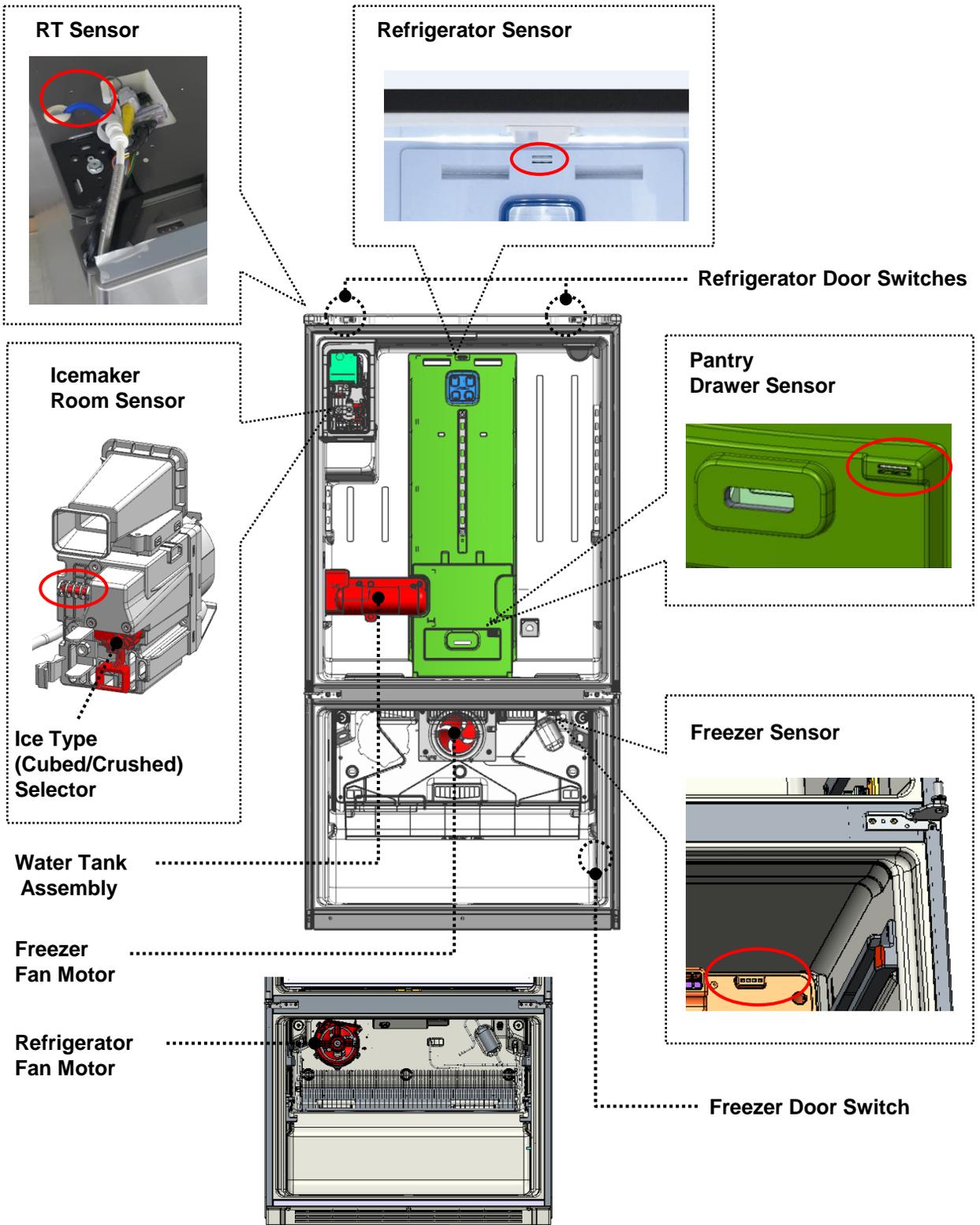


**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 5. Features

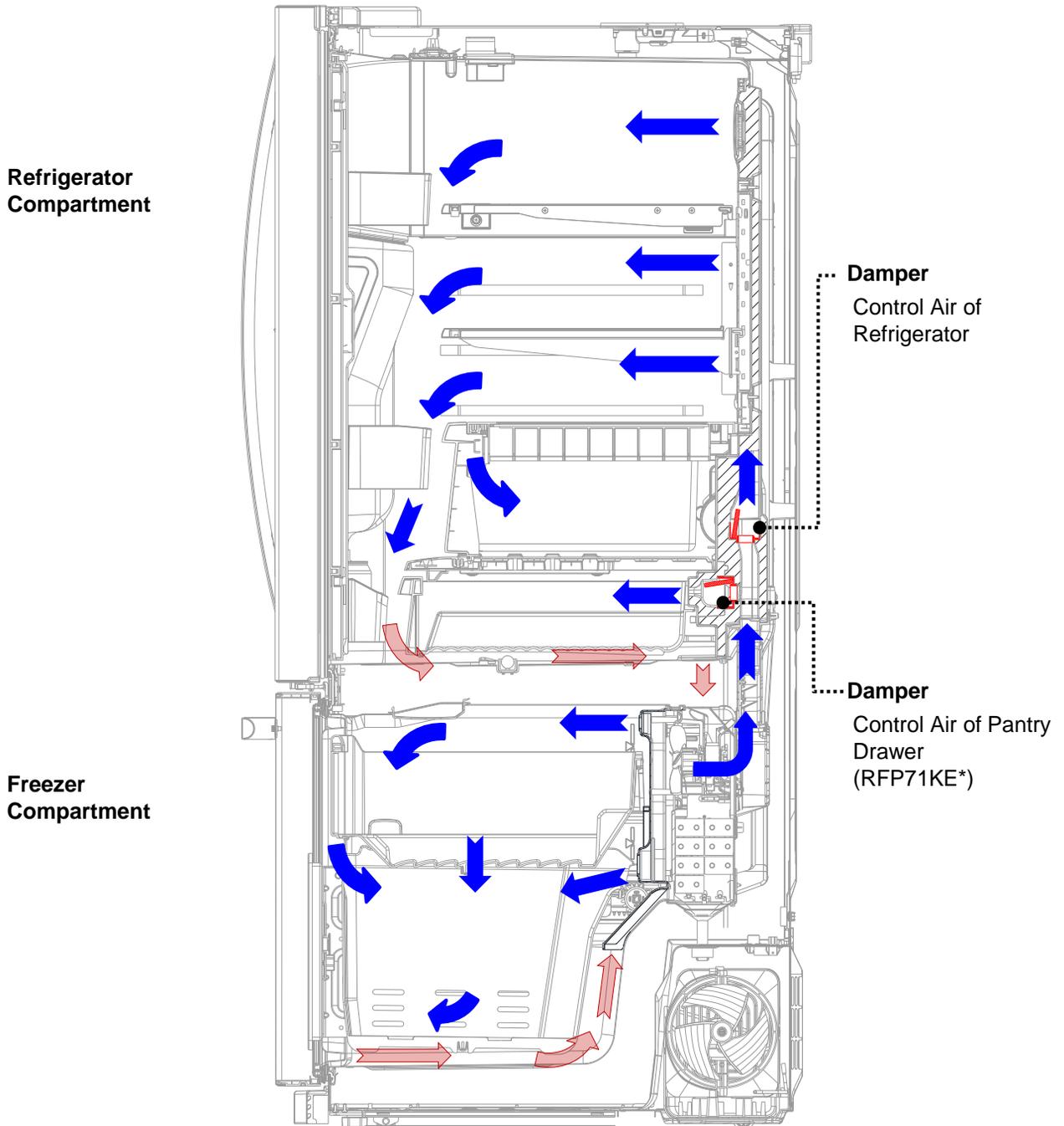
## 5-4. Others



**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 6. Flow Diagram

## 6-1. Cold Air Flow

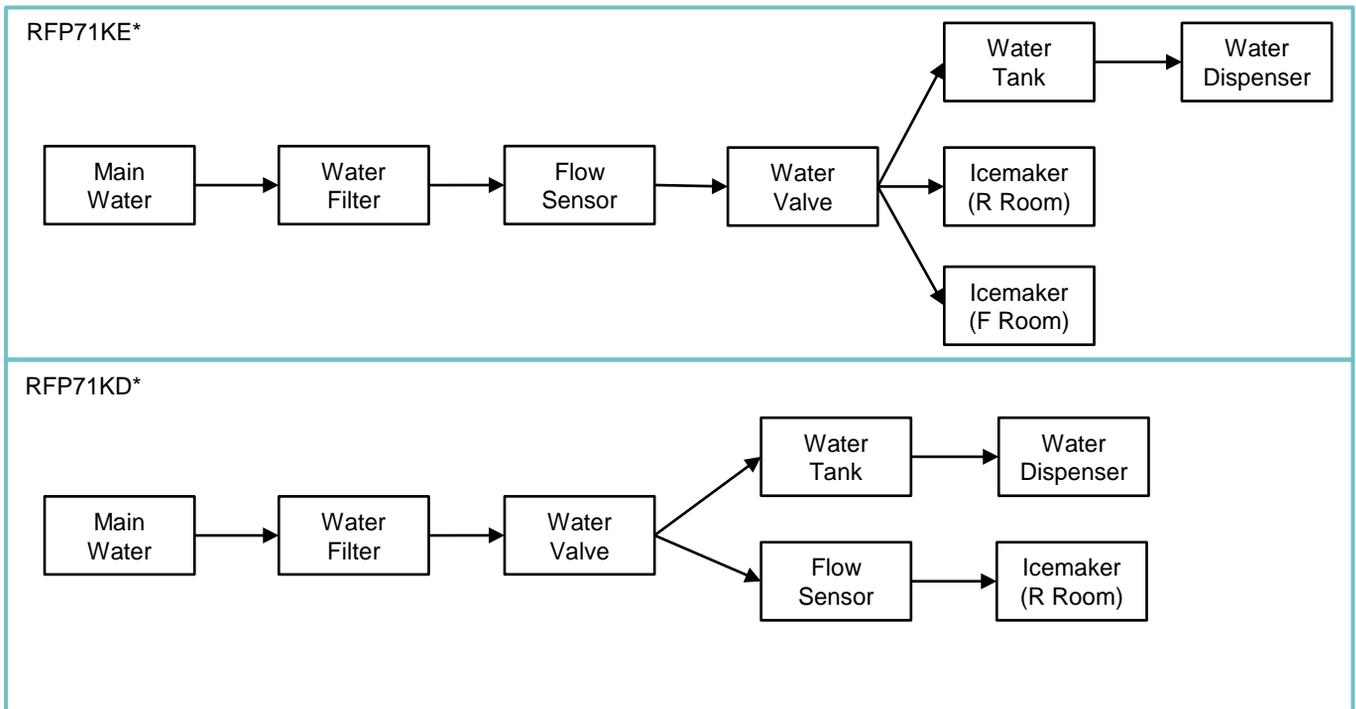


### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 6. Flow Diagram

### 6-2. Water Flow



□ Water Supply Pressure must be :

**Min 30psi (207kPa, 2.1kgf/cm<sup>2</sup>)**

**Max 125psi (862Kpa, 8.8kgf/cm<sup>2</sup>)**

※ If the water pressure exceeds 125psi,  
a pressure reducing valve must be installed.

※ If the water pressure is under 30psi,  
a booster pump must be installed.



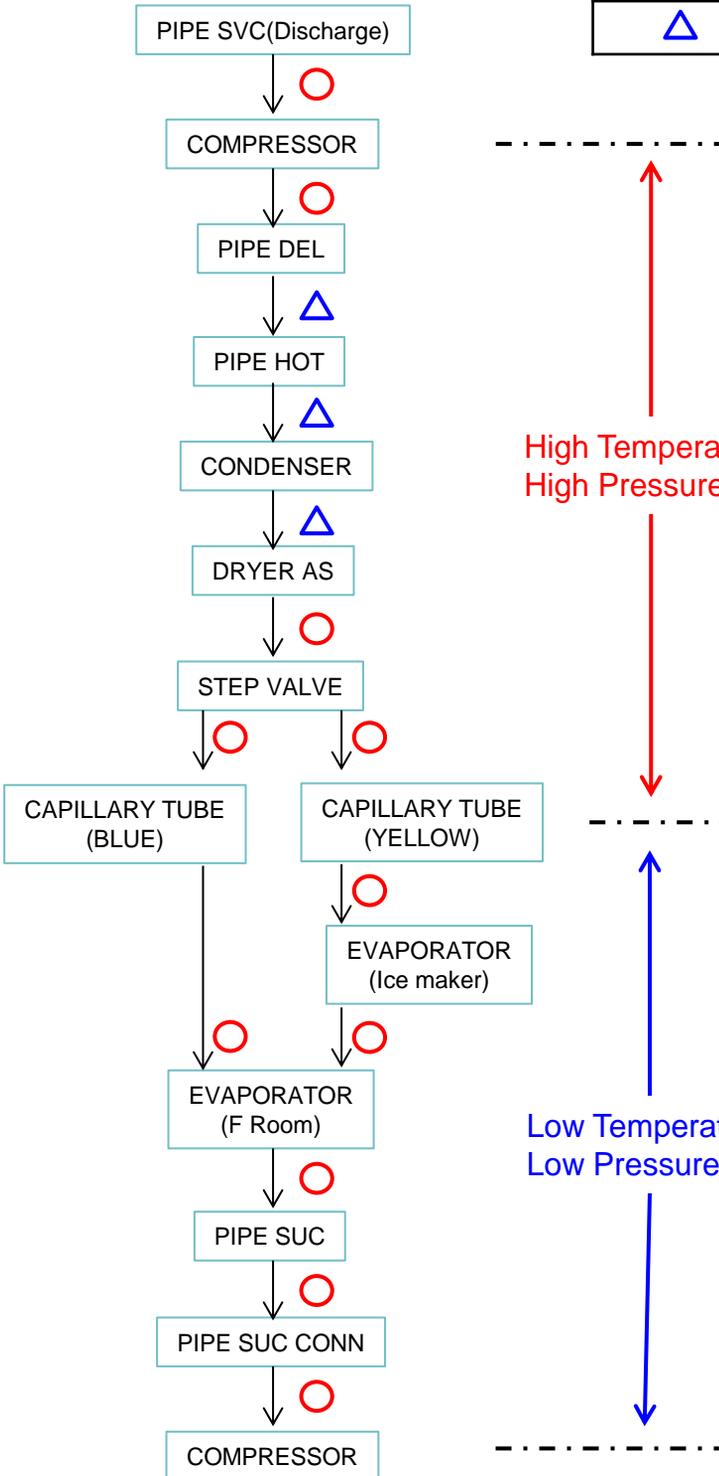
#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 6. Flow Diagram

## 6-3. Refrigerant Flow and Welding Point

SYMBOL	METHOD	POINTS
○	Copper Welding (Ag 3%)	11
△	Lokring	3



You can force open all the step valve for 2 evaporators by following the next steps:

1. Lock inner PCB
2. While pressing the “Refrigerator Temp” and “Freezer Temp” buttons, then press “Light” button 5 times

High Temperature  
High Pressure

**Refrigerant flow system :**

When the refrigerator valve is open, the refrigerant flows through the icemaker and freezer compartment.

When the icemaker valve is open, the refrigerant flows through the freezer and icemaker compartment.

When the freezer valve is open, the refrigerant flows through the freezer compartment only.

There is no way to force open each individual valve.

Low Temperature  
Low Pressure

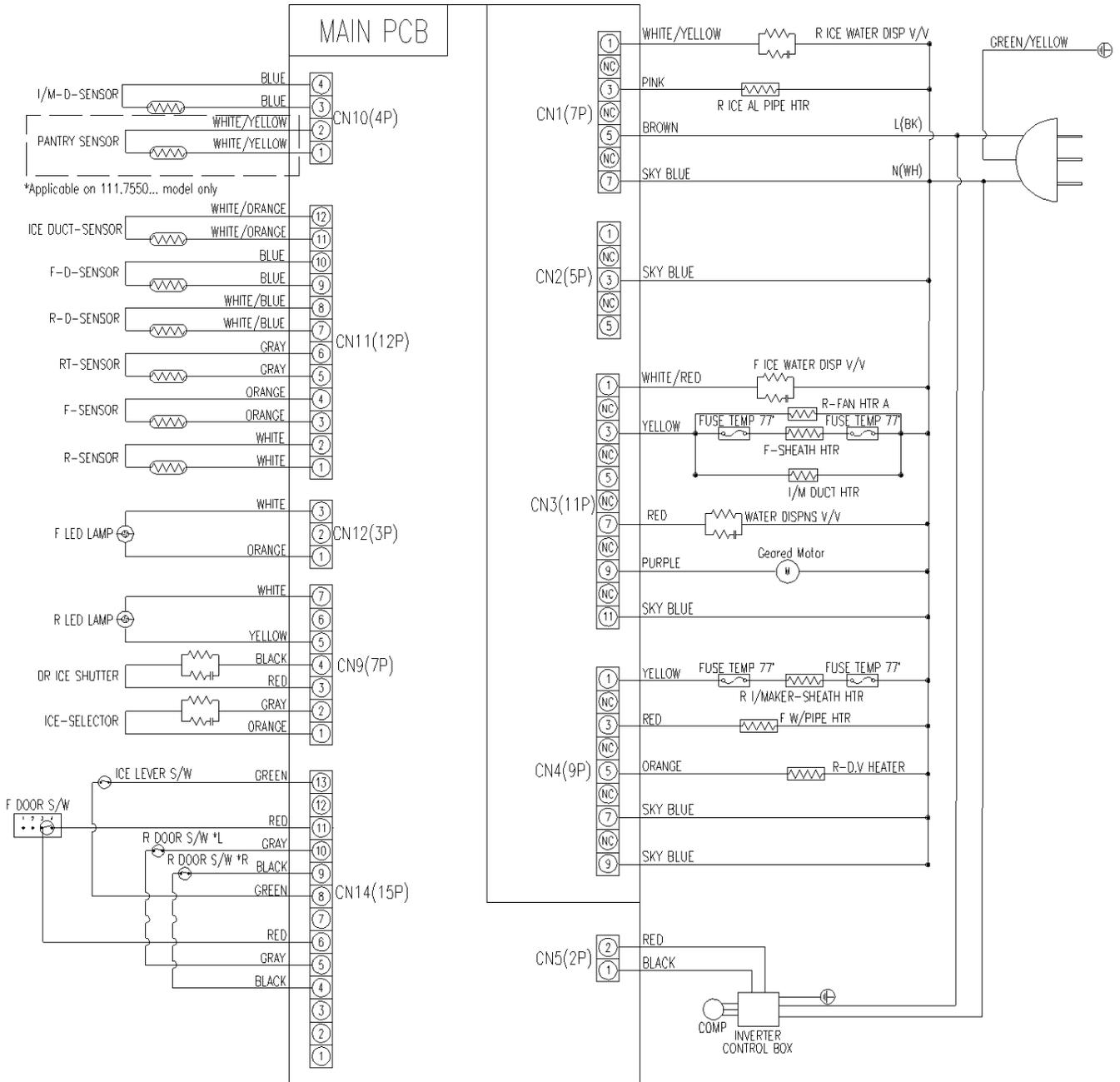


**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 7. Wiring Diagram

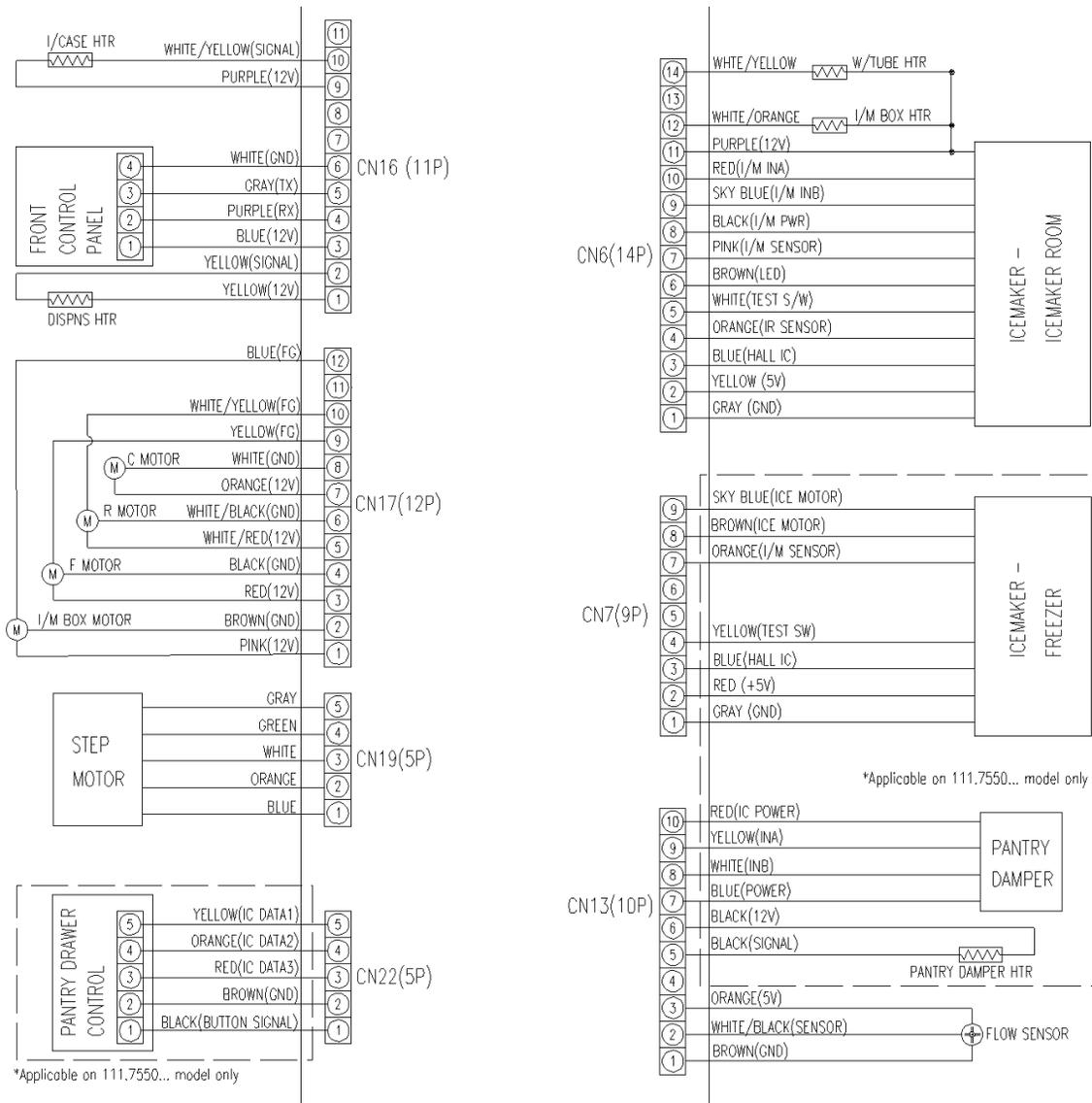
## 7-1. Total View(1/2)



**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

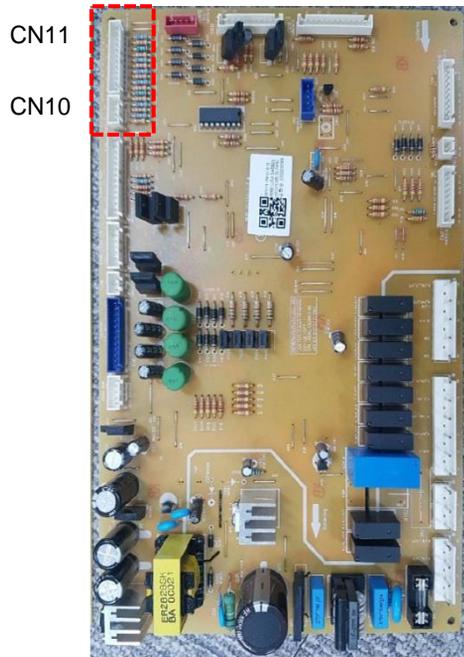
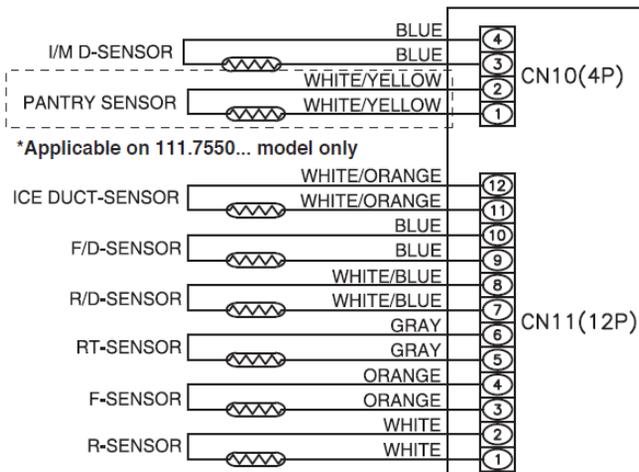
# 7. Wiring Diagram

## 7-1. Total View(2/2)

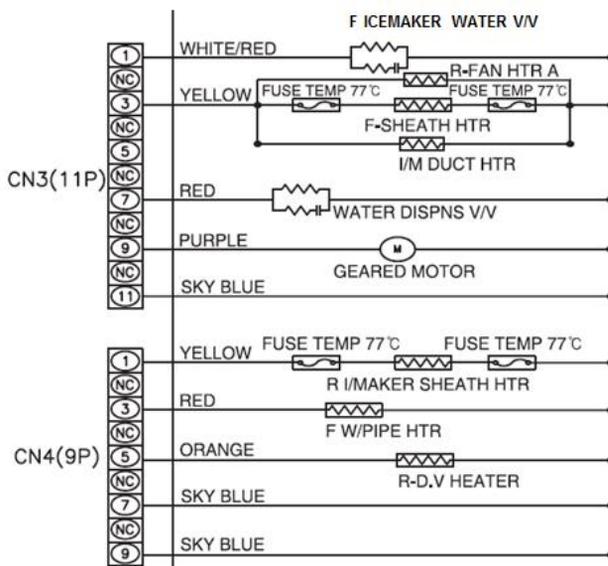


# 7. Wiring Diagram

## 7-2. Part View – Sensors



## 7-3. Part View – Eva Heater (SHEATH HTR)



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 7. Wiring Diagram

### 7-4. Dispenser, DV(Mullion Bar), I/CASE Heater Operation

7-4-1. The dispenser heater is always on.

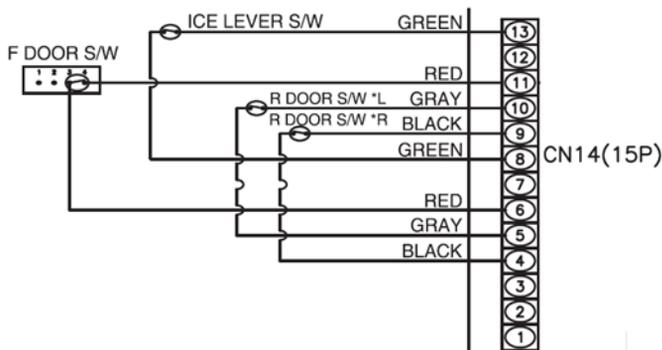
7-4-2. The DV heater is always on and located Between refrigerator doors.

7-4-3. The I/CASE heater cycles which is located inside the icemaker helps to remove residual ice from the ice case.

The heater turns on when the temperature reaches 21.2°F(-6°C) on and turns off when the temperature reaches 28.4°F(-2°C)

### 7-5. Other voltage

#### 7-5-1. CN 14 (Switch)



Item	Pin No.	Open(On)	Close(Off)	비고
R DOOR S/W L	5 & 10	0V	5V	
ICE LEVER S/W	8 & 13	0V	5V	
F DOOR S/W	6 & 11	5V	0V	
R DOOR S/W R	4 & 9	0V	5V	

#### 7-5-2. CN 5 (Compressor Inverter)

Item	Pin No	On		Off		Remarks
		V	Hz	V	Hz	
Comp RPM	1 & 2	3.3	50~125	6.5	-	Frequency (Compressor Power Consumption) Feedback to the main PCB



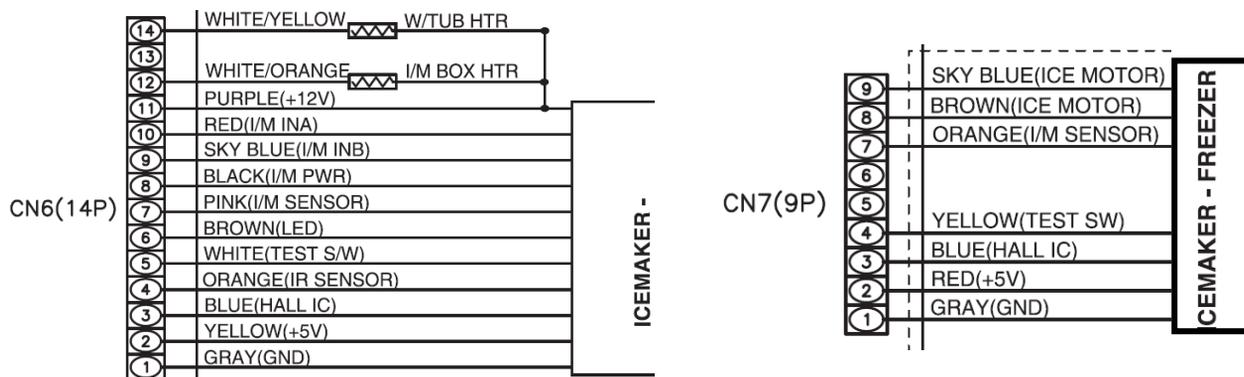
### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 7. Wiring Diagram

### 7-5. Other voltage (continued)

#### 7-5-3. CN 6 (Icemaker in the ice room)



Item	Pin No	On		Off		Remarks
		V	Hz	V	Hz	
Water Tube Heater	1 & 14	0		12		
I/M Box Heater	N/A	N/A	N/A	N/A	N/A	
I/M Stepping Motor	1 & 9, 10	2.5		5		Bi-Directional
Icemaker Power	1 & 8	5		0		
Icemaker LED	1 & 6	0		10		
Icemaker Temp. Sensor	1 & 7					Sensor Table
Icemaker Test Switch	1 & 5	0		5		
Start Position Check Sensor	1 & 4	0(Start)		5		
Ice Bucket Full Check Sensor	1 & 4	5(Full)		0		

#### 7-5-4. CN 7 (Icemaker in the freezer compartment) ※ 111.7550... model only

Item	Pin No	On		Off		Remarks
		V	Hz	V	Hz	
I/M Stepping Motor	1 & 8, 9	2.5		5		
Icemaker Temp. Sensor	1 & 7					Sensor Table
Icemaker Test Switch	1 & 4	0		5		
Start Position Check Sensor	1 & 3	0(Start)		5		
Ice Bucket Full Check Sensor	1 & 5	5(Full)		0		



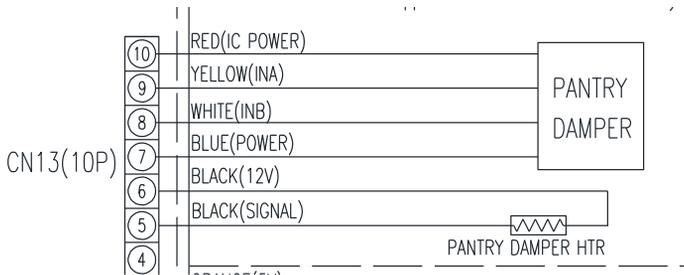
### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 7. Wiring Diagram

## 7-5. Other voltage (continued)

### 7-5-5. CN 13 (Damper)



Item	Pin No	On		Off		Remarks
		V	Hz	V	Hz	
Damper Heater	5 & 6	0	-	12	-	
Damper Signal	1 & 7, 8, 9, 10	6	-	0	-	

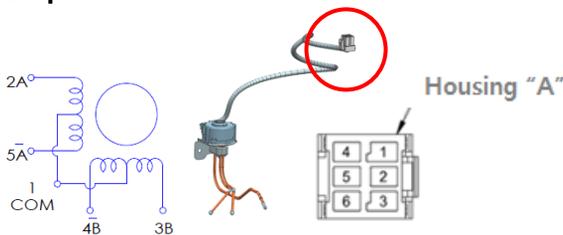
### 7-5-6. CN 19 (Step Valve)



Item	Pin No	On		Off		Remarks
		V	Hz	V	Hz	
Step Motor	5 & 1, 2, 3, 4	0~12 swing	-	12	-	

※ Floating – pins 1, 2, 3, 4 are completed to circuit ground in sequence to operate the step valve

### Step Motor



HOUSING "A"					
Pin No.	1	2	3	4	5
Color of lead wire	GRAY	BLACK	ORANGE	BLUE	YELLOW

Following is the correct pin for PCB and step motor pin:

- PCB Pin 1 = Step Motor Pin 5
- PCB Pin 2 = Step Motor Pin 4
- PCB Pin 3 = Step Motor Pin 1
- PCB Pin 4 = Step Motor Pin 2
- PCB Pin 5 = Step Motor Pin 3

Coil POINT	[Ω]
1 & 2, 3, 4, 5	40±4Ω
Housing "A" 2 &, 3, 4, 5	80±8Ω
Pin No. 3 & 4, 5	80±8Ω
4 & 5	80±8Ω



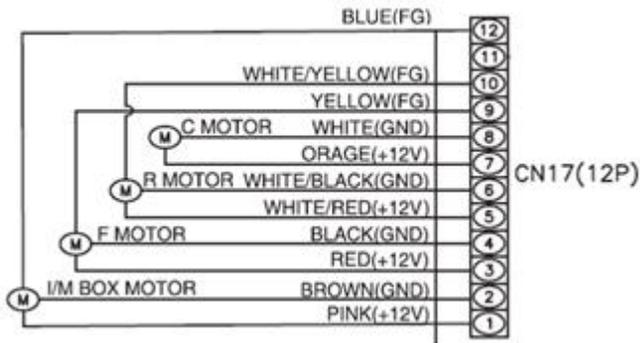
### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 7. Wiring Diagram

### 7-5. Other voltage (continued)

#### 7-5-7. CN 17 (Fan Motor)



Item	Pin No	On		Off		비고
		V	Hz	V	Hz	
I/M BOX MOTOR	1 & 2	12 ~ 14	-	0	-	
I/M BOX MOTOR (Feedback signal)	2 & 12	5V Pulse, Duty 50%	65~80	0	0	Frequency fluctuation
C MOTOR	7 & 8	12 ~ 14	-	0	-	
F MOTOR	3 & 4	12 ~ 14	-	0	-	
F MOTOR (Feedback signal)	4 & 9	5V Pulse, Duty 50%	45~65	0	0	Frequency fluctuation
R MOTOR	5 & 6	12 ~ 14	-	0	-	
R MOTOR (Feedback signal)	6 & 10	5V Pulse, Duty 50%	45~65	0	0	Frequency fluctuation

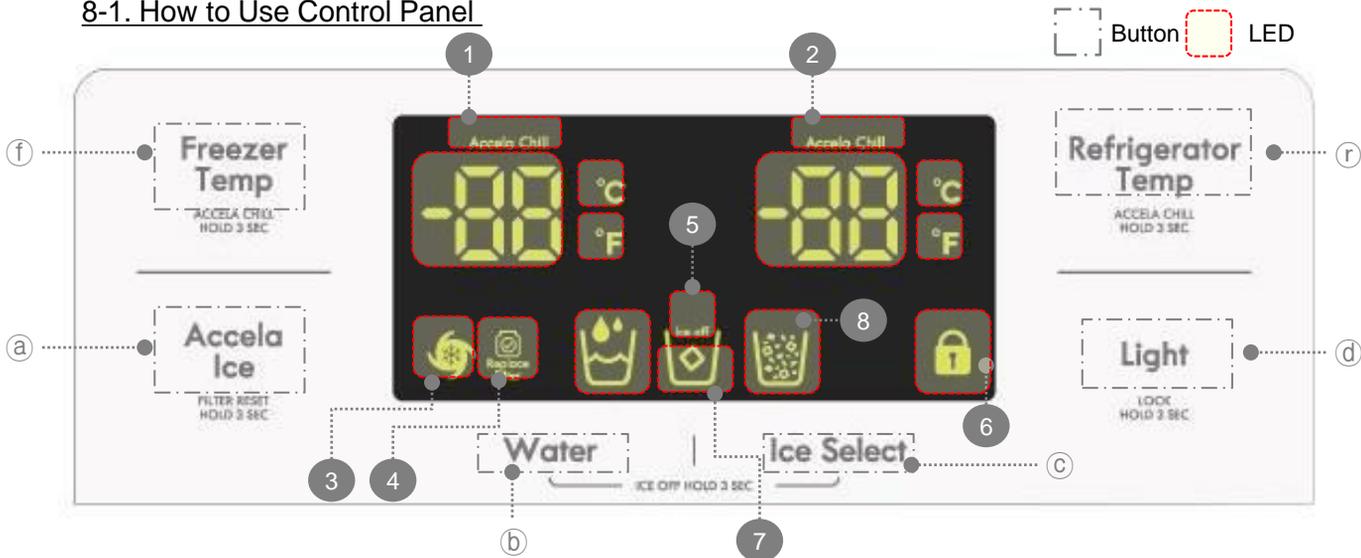


### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 8. Operation and Functions

## 8-1. How to Use Control Panel



Button	Item	Display	Description
-	Initial Temperature by power input	88 LED	Freezer : 0°F / Refrigerator : 37°F / Pantry room(optional) : "Produce"
f	Freezer Temperature	88 LED	°F : 0 → -2 → -4 → -6 → <b>-8(Coldest)</b> → 6 → 4 → 2 → (repeat) °C : -18 → -19 → -20 → -21 → <b>-22(Coldest)</b> → -15 → -16 → -17 → (repeat)
	Freezer Accela Chill Function	LED ①	<input type="checkbox"/> How to Start : Press and hold this button for 3sec. <input type="checkbox"/> How to Proceed : the icon LED ON, Coldest Temp for 3000min <input type="checkbox"/> How to End : Time Limit or Any press for changing Temp or Power Rest
r	Refrigerator Temperature	88 LED	°F : 37 → 35 → <b>33(Coldest)</b> → 45 → 43 → 41 → 39 → (repeat) °C : 3 → 2 → <b>1(Coldest)</b> → 7 → 6 → 5 → 4 → (repeat)
	Refrigerator Accela Chill Function	LED ②	<input type="checkbox"/> How to Start : Press and hold this button 3sec. <input type="checkbox"/> How to Proceed : the icon LED ON, Coldest Temp for 360min <input type="checkbox"/> How to End : Time Limit or Any press for changing Temp or Power Rest
d → f r	Switch Temperature Unit °F ↔ °C	LED	<b>In lock mode</b> , press and hold f and r buttons at the same time for 5sec
a	"Accela Ice" Function	LED ③	The icon LED On, Quick ice cube production mode for 24hr If no water comes into the icemaker for 6hr, the operation is canceled.
	Filter Reset	LED ④	Press and hold "Accela Ice" button for 3sec, "Replace Filter" icon LED OFF ※ After about 6 months from power on or Filter Reset, the icon LED ON.
b	Select Cubed Ice	LED ⑦	The icon LED ON;
c	Select Crushed Ice	LED ⑧	The cubed/crushed ice comes out by pressing the dispenser lever.
b c	Icemaker off	⑤	Press and hold b and c buttons for 3sec at the same time.
d	Turn Dispenser Lamp On	-	Press the "Light" button or push any dispenser lever.
	Lock Control Function	⑥	Press and hold d button 3sec to stop operation of different buttons. The ice or water dispenser does not work during lock mode.

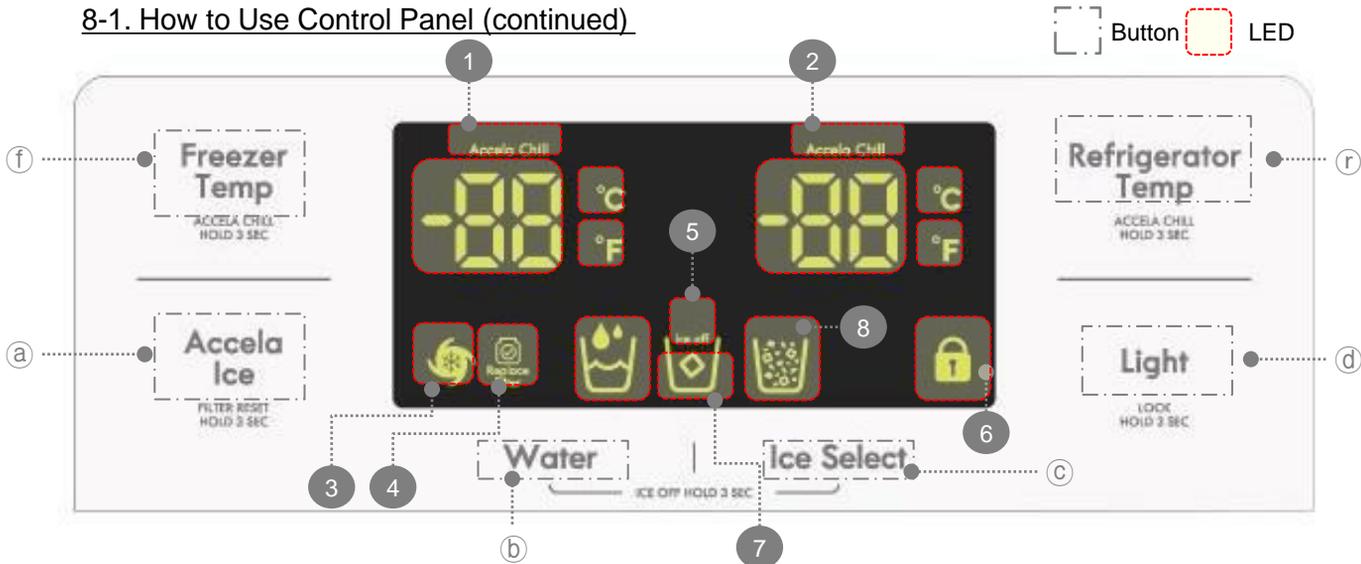


### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 8. Operation and Functions

## 8-1. How to Use Control Panel (continued)



Button	Item	Display	Description																					
(d) → (a) (f) (r)	Service Mode (Error Display)	88 LED	<input type="checkbox"/> How to Start : <b>In lock mode</b> , press (a) 5 times, while pushing (f) & (r) at once <input type="checkbox"/> How to Proceed : operating state values (ex : <b>error codes</b> ) are displayed ※ Error display is skipped if no error. <input type="checkbox"/> How to End : Press "Light" button 1 time or No input for 4min.																					
(d) → (f) (r)	Forced Defrosting	-	<input type="checkbox"/> How to Start : <b>In lock mode</b> , press (r) 5 times, while pushing (f) <input type="checkbox"/> How to Proceed : Heater is on regardless of F/R Defrost Sensor for first 30sec. <input type="checkbox"/> How to End : Same as normal defrosting or Power Rest																					
(d) → (a) (d)	Changing Sensor ON/OFF Temp (for Service)	88 LED	<input type="checkbox"/> How to Start : <b>In lock mode</b> , press (d) 5 times, while pushing (a) <input type="checkbox"/> How to Proceed : <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>Freezer</th> <th>Refrigerator</th> </tr> </thead> <tbody> <tr> <td>Default Value Display</td> <td>F 88 LED "00"</td> <td>R 88 LED "00"</td> </tr> <tr> <td>Value "01" =</td> <td>0.13°F (0.072°C)</td> <td>0.18°F (0.1°C)</td> </tr> <tr> <td>Range of Value Change</td> <td colspan="2">"00 ±30"</td> </tr> <tr> <td>= Range of Temp Change</td> <td>0±3.9°F (0±2.16°C)</td> <td>0±5.4°F (0±3°C)</td> </tr> <tr> <td>Control Button to be Warmer</td> <td>(f)</td> <td>(r)</td> </tr> <tr> <td>Control Button to be Colder</td> <td>(a)</td> <td>(d)</td> </tr> </tbody> </table> <input type="checkbox"/> How to End : No input for 10sec <input type="checkbox"/> If the refrigerator is disconnected from initial power on before 5 days after setting change, the value is initialized.		Freezer	Refrigerator	Default Value Display	F 88 LED "00"	R 88 LED "00"	Value "01" =	0.13°F (0.072°C)	0.18°F (0.1°C)	Range of Value Change	"00 ±30"		= Range of Temp Change	0±3.9°F (0±2.16°C)	0±5.4°F (0±3°C)	Control Button to be Warmer	(f)	(r)	Control Button to be Colder	(a)	(d)
	Freezer	Refrigerator																						
Default Value Display	F 88 LED "00"	R 88 LED "00"																						
Value "01" =	0.13°F (0.072°C)	0.18°F (0.1°C)																						
Range of Value Change	"00 ±30"																							
= Range of Temp Change	0±3.9°F (0±2.16°C)	0±5.4°F (0±3°C)																						
Control Button to be Warmer	(f)	(r)																						
Control Button to be Colder	(a)	(d)																						
(d) → (a) (r) (d)	Showroom Mode (Cooling Off) (Demo Mode)	LED	<input type="checkbox"/> How to Start : <b>In lock mode</b> , press (d) 5 times, while pushing (a) & (r) at once <input type="checkbox"/> How to Proceed : All electrical components are OFF [except] Control Panel sequentially display; Dispenser LED ON; All dampers open; Fans & interior lamps ON/OFF by door opening. <input type="checkbox"/> How to End : <b>In lock mode</b> , (d) 5 times + (a) & (r) at once or Power Rest																					
(d) → (f) (r) (d)	<b>Forced Comp On Mode</b> (use this mode, when you recharge refrigerant.)		<input type="checkbox"/> How to Start : <b>In lock mode</b> , press (d) 5 times, while pushing (f) & (r) at once <input type="checkbox"/> How to Proceed : Compressor operates continuously for 30 hours. <input type="checkbox"/> How to End : <b>Power reset, or after 30 hours.</b>																					



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

### 8-2. Service Mode and Error Display

□ How to Start :

Preparation Work	INPUT					
"Lock" Mode ON	Freezer Temp	+	Refrigerator Temp	+	Accela Ice	5 Times

□ How to Proceed :

- Unit °F : Press "Freezer Temp" button and the following value is displayed successively.
- Unit °C : Press "Accela Ice" button and the following value is displayed successively.

STEP	Content	Example Display				Description
		etc.	F 88	R 88	etc.	
1	Operating Time		12	34		12hr 34min ※ reset every 24hr
2	Freezer Sensor Temp	-	F0	58	°F	-5.8°F ※ Sensor Open / Short : R 88 = Hi / Lo
3	Refrigerator Sensor Temp		r3	92	°F	39.2°F ※ Sensor Open / Short : R 88 = Hi / Lo
4	Freezer Defrost(FD) Sensor Temp	-	d1	39	°F	-13.9°F ※ Sensor Open / Short : R 88 = Hi / Lo
5	Icemaker Room Defrost Sensor Temp	-	b0	58	°F	-5.8°F ※ Sensor Open / Short : R 88 = Hi / Lo
6	Icemaker Sensor Temp in the Icemaker Room		c0	95	°F	9.5°F ※ Sensor Open / Short : R 88 = Hi / Lo
7	Icemaker Sensor Temp in the Freezer (Dual Icemaker Model)		n0	32	°F	3.2°F ※ Sensor Open / Short : R 88 = Hi / Lo
8	Icemaker Room(IR) Sensor Temp		i1	50	°F	15°F ※ Sensor Open / Short : R 88 = Hi / Lo
9	Pantry Drawer Sensor Temp		u3	02	°F	30.2°F ※ Sensor Open / Short : R 88 = Hi / Lo
10	R Defrost(RD) Sensor Temp	-	E1	39	°F	-13.9°F ※ Sensor Open / Short : R 88 = Hi / Lo
11	RT Sensor Temp		t7	64	°F	Ambient Temperature : 76.4°F
12	Filter remaining Life Time		43	17		4,317hr
13	Flow Sensor Pulse Value of the icemaker in the freezer		o1	00		o100 / P100 (Default value) = 282 pulse <b>Do not change the default value.</b>
14	Flow Sensor Pulse Value of the icemaker in the icemaker Room		P1	00		⚠ (Icemaker is filled a certain amount of water provided by flow sensor in water valve.) ※ if "Ice Select" button pushed : ex) P100(default value)→P101→P102→... →P150(max)→P50(min)→P51→...→P100→(repeat)
15	<b>Error Code</b> : F Sensor		Er	F1		The sensor is read as open or shorted. Check the wiring connections in each part and at Main PCB.
16	<b>Error Code</b> : R Sensor		Er	r1		

※ The temperature by display in service mode is shown by sensor. The real temp of the cooling area could be different.



#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

### 8-2. Service Mode and Error Display (continued)

STEP	Content	Example Display				Description
		etc.	F 88	R 88	etc.	
17	<b>Error Code</b> : Icemaker Sensor in the Icemaker Room		Er	i1		The sensor is read as open or shorted. Or Icemaker Heating Error
18	<b>Error Code</b> : Icemaker Room Sensor		Er	i3		The sensor is read as open or shorted. Check the wiring connections in each part and at Main PCB.
19	<b>Error Code</b> : Icemaker Sensor in the freezer		Er	i2		
20	<b>Error Code</b> : Pantry Drawer Sensor		Er	u1		
21	<b>Error Code</b> : F Defrost Sensor		Er	Fd		
22	<b>Error Code</b> : R Defrost Sensor		Er	rd		
23	<b>Error Code</b> : Icemaker Room Defrost sensor		Er	id		
24	<b>Error Code</b> : RT Sensor		Er	rt		
25	<b>Error Code</b> : Cycle		Er	C1		In case compressor works for over 3hr when FD or RD sensor temp is over 23°F(-5°C) Check refrigerant leakage.
26	<b>Error Code</b> : F Door Switch		Er	dF		In case it senses that door is open for more than 1hr. Check F/R door or Door Switch.
27	<b>Error Code</b> : R Door Switch		Er	dr		
28	<b>Error Code</b> : F Defrost Heater		Er	F3		In case defrosting return is done by time limit of 50 min Check the Defrost HTR or Defrost sensor .
29	<b>Error Code</b> : Icemaker Room Defrost Heater		Er	r3		
30	<b>Error Code</b> : EEPROM		Er	EP		EEPROM read / write error
31	<b>Error Code</b> : Dispenser Lever Time		Er	ES		In case dispenser lever is pressed for over 1min
32	<b>Error Code</b> : Water Supply Error		Er	E9		Icemaker water supply error
33	<b>Error Code</b> : Icemaker Error		Er	EA		Flat sensor error in the freezer icemaker
34	<b>Error Code</b> : Flow Sensor Error		Er	EF		The sensor is read as open or shorted.
35	<b>Error Code</b> : F Fan Motor RPM Error		Er	FF		Freezer fan motor RPM error
36	<b>Error Code</b> : R Fan Motor RPM Error		Er	rF		Refrigerator fan motor RPM error
37	<b>Error Code</b> : I/Maker Fan Motor RPM Error		Er	iF		Ice maker fan motor RPM error
38	Mode Display : Forced Defrost		≡ ≡	D2		Forced Defrost
39	Mode Display : Forced Comp ON		≡ ≡	Co		Forced Comp ON

How to End :

Preparation Work	INPUT
"Lock" Mode ON	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Light</div>

※ Error code will be released automatically when the condition is normal.



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

### 8-3. Compressor, Fan & Damper

		Output					
		Comp	C FAN	F FAN	R FAN	Icemaker Room FAN	Pantry Damper
INPUT	Sensor Target Temp						
	Freezer	On/Off	On/Off	On/Off	-	-	-
	Refrigerator	-	-	-	On/Off	-	-
	Pantry Drawer	-	-	-	-		Open/Close
	Ice Harvest Condition & Step Valve Location	-	-	-	-	On/Off	-
	F Door Open	-	-	-	-	-	-
	R Door Open	-	-	-	-	-	-
	Defrosting Mode	Off	Off	Off	Off	Off	Close
	Showroom Mode (Demo Mode)	Off	Off	On only F Door Open	On only R Door Open	On only R Door Open	Open
	F Accela Chill	On/Off (Coldest Temp for setting time)	On/Off (Coldest Temp for setting time)	On/Off (Coldest Temp for setting time)	-	-	-
R Accela Chill	-	-	-	On/Off (Coldest Temp for setting time)	-	Open/Close	
Accela Ice	On for setting time (only ice making condition)	-	-	-	On for setting time (only ice making condition)	-	

■ Compressor will not restart within 6 min after the refrigerator is disconnected from power supply.

□ Fan voltage of control mode : Freezer 13V, Refrigerator 13V, Icemaker Room 13V, Condenser 13V

### 8-4. Defrost Mode

- The defrost mode starts with compressor work time, defrost sensor temp, any error mode, etc.
- The defrosting return is done by F or R Defrost sensor.

### 8-5. Forced Defrost Mode

□ How to Start :

Preparation Work	INPUT
"Lock" Mode ON	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">Freezer Temp</div> <div style="margin: 0 10px;">+</div> <div style="border: 1px dashed black; padding: 5px; margin-right: 10px;">Refrigerator Temp</div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-15deg); background-color: #e0e0ff; margin-left: 10px;">5 Times</div> </div>

□ How to Proceed and End: Same as normal defrost mode



#### WARNING

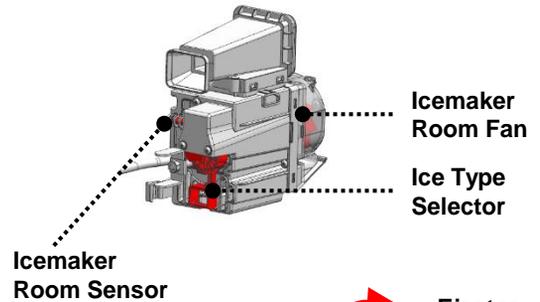
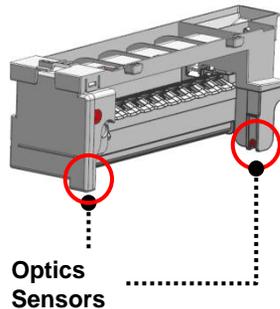
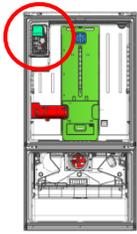
To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

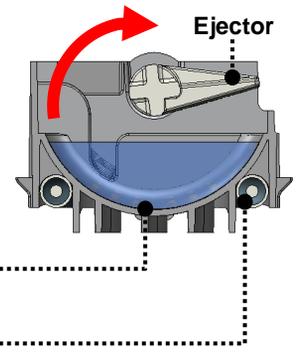
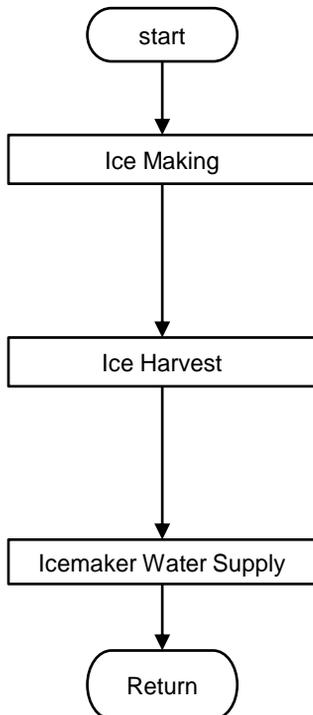
### 8-6. Icemaker in the Icemaker Room

#### 1) Icemaker Room Temperature Control : by IM Sensor On/Off

- Icemaker Room Temp is controlled by IM Sensor on/off setting value.
- In "Accela Ice" mode, the compress and icemaker room fan will turn on 24hr for Quick Icing.
- ※ In case of no icemaker water supply for 6hr, the "Accela Ice" function is canceled.



#### 2) Icemaker System :



- Icemaker starts harvest process by sensing tray temp unless ice storage bin is full.
  - ※ When the bin fills to the level of the optics sensors, the icemaker will stop making ice.
- Icemaker has a ejector and a heater for harvest.
- Ice cube surface is melted by the heater installed the ice tray and ice cubes are swept for the ejector from the ice tray.
- Icemaker is filled a certain amount of water provided by flow sensor in water valve.
- If the water pressure is too low (under flow sensor pulse value 6), the icemaker will not work.
- To operate the icemaker properly, water pressure of 20~125psi is required.
  - ※ Water Filter Operation Pressure : 30 ~125psi (207~862kPa, 2.1~8.8kgf/cm<sup>2</sup>)
  - ※ If the water pressure exceeds 125psi, a pressure reducing valve must be installed.
  - ※ If the water pressure is under 30psi, a booster pump must be installed.



#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

### 8-6. Icemaker in the Icemaker Room (continued)

#### 3) Icemaker Power OFF :

##### How to Start :

Preparation Work	INPUT		
"Lock" Mode OFF	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Water</div>	+	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Ice Select</div>
			<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #e0e0ff;">3sec</div>
			Press and hold buttons for 3sec at once.

##### How to Proceed :

- Display : LED light of Icemaker will turn off. And "Ice off" icon of the control panel will light up.
- Icemaker stops making ice.
- Dispensing cubed / Crushed Ice doesn't work, even if the dispenser lever is pressed.

##### How to End : same as input to start.

#### 4) Icemaker Test Mode :

##### How to Start :

Preparation Work	INPUT		
-		+	<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #e0e0ff;">6 Times</div>
			<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #e0e0ff;">3sec</div>
			Press power button of the icemaker 6 times within 3sec.

##### How to Proceed :

- Display : Icemaker LED will flash red.
- Ice type(cubed/crushed) selector works 5 times
- Icemaker motor runs 1 cycle.  
(Motor On → Heater On → Water Supply → Motor Off)

##### How to End : by finishing test

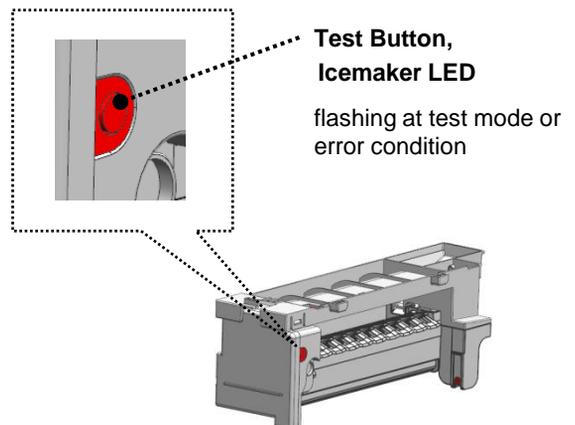
#### 5) Icemaker Errors

##### Error Display :

- IM Sensor Error : Error code display and icemaker LED flashing
- IM Heater Error : icemaker LED flashing

##### How to Service :

- 1) Check the wiring connections in each part and at Main PCB.
- 2) If normal, change the icemaker to new one.



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

### 8-6. Icemaker in the Icemaker Room (continued)

6) Icemaker Conditions Display by control panel :

How to Start :

Preparation Work	INPUT	
1) Service Mode 2) Step : IM Sensor Temp	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Refrigerator Temp</div>	<div style="border: 1px solid blue; border-radius: 10px; padding: 5px; display: inline-block; background-color: #e6e6fa;">holding</div>
		Press and hold the button for display

※ IM(Icemaker Room Sensor) Temp : "Accela Ice" or " Freezer Temp" button 6 times in the service mode. (88 LED : Cx xx)

How to Display :

88 Display		Icemaker Condition Display		Remark
F	R	Ice Bucket Full Check	Ejector at Start Position	
c	00	Not yet	No	
c	01	Not yet	Yes	
c	10	Full	No	
c	11	Full	Yes	
c	15	-	<b>Holding</b>	<b>despite motor starting signal by PCB</b>



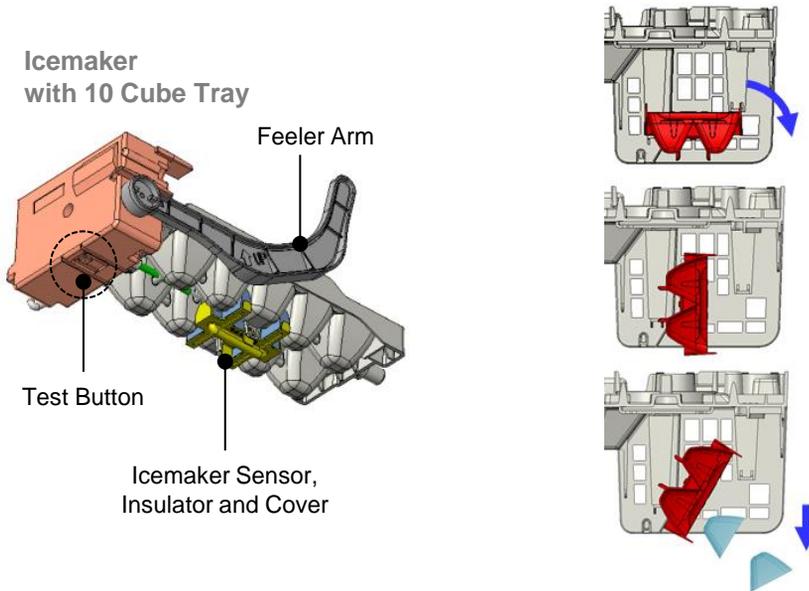
#### **WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

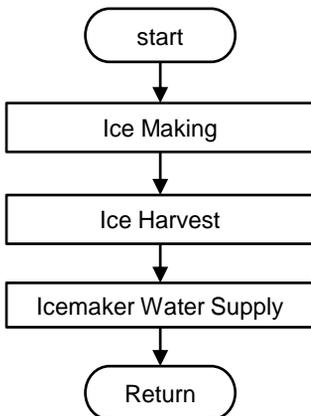
# 8. Operation and Functions

## 8-7. Icemaker in the Freezer Compartment

1) Icemaker Room Temperature Control : by Freezer Temp Sensor On/Off



2) Icemaker System :



- Icemaker starts harvest process by sensing tray temp if the ice bin is not sensed as full.
- When the bin fills to the level of the feeler arm, the icemaker will stop producing ice.

- Icemaker is filled a certain amount of water provided by flow sensor in water valve.

Model	Amount of Water Fill
Icemaker with 10 Cube Tray	3.1~3.5oz (89~99g)

- If the water pressure is too low (under flow sensor pulse value 6), the icemaker will not work.
- To operate the icemaker properly, water pressure of 30~125psi is required.
  - ※ If the water pressure exceeds 125psi, a pressure reducing valve must be installed.
  - ※ If the water pressure is under 30psi, a booster pump must be installed.



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

### 8-7. Icemaker in the Freezer Compartment (continued)

#### 3) Icemaker Power OFF :

##### How to Start :

Preparation Work	INPUT		
"Lock" Mode Off	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Water</div>	+	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Ice Select</div>

 Press and hold buttons for 3sec at once.

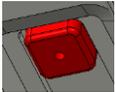
##### How to Proceed :

- Display : "Ice off" icon of the control panel will light up.
- Icemaker stops making ice.

##### How to End : same as input to start.

#### 4) Icemaker Test Mode :

##### How to Start :

Preparation Work	INPUT	
-		Press test button of the icemaker for 5sec.

##### How to Proceed :

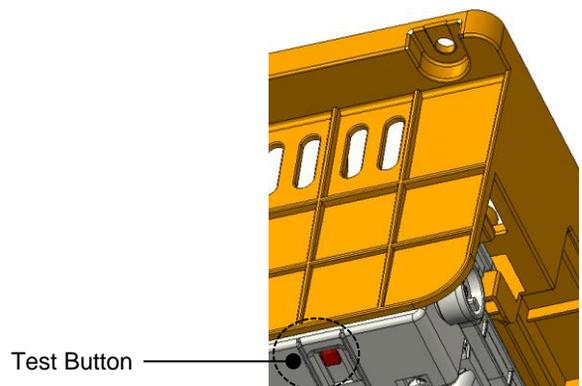
- Icemaker runs 1 cycle.

(Icemaker Motor On → the feeler arm down and up → twisting tray → Water Supply → Icemaker Motor Off)

※ **After finishing the test, the ice bucket should be emptied**

because the ice cubes in icemaker tray could be not fully frozen.

##### How to End : by finishing test



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 8. Operation and Functions

### 8-7. Icemaker in the Freezer Compartment (continued)

5) Icemaker control in case of errors

Error Type :

- IM Sensor Error : Error code display in service mode and icemaker will complete the harvest as time(4.8hr).
- Flow Sensor Error : The water valve is controlled by time.
- Water Supply Error : The ice maker operation stop.

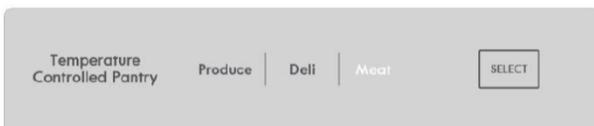
After opening the freezer door, the Hose Icemaker Tube Heater will be on for 60min and then icemaker will try to work again.

How to Service :

- Measure and record the freezer room temp and defrost sensor temp in service mode before opening freezer door.
- Check the error display in Service Mode before opening freezer door.
- Check the water pressure or shut-off valve of water main line.
- Check the wiring connections in each part and at Main PCB.
- Check the Hose Icemaker Tube is blocked with ice.
- Measure the resistance of Hose Icemaker Tube Heater.

### 8-8. Pantry Drawer

- The Temp is controlled by Pantry Drawer Sensor, RT Sensor and Pantry Drawer Damper.
- In case of Pantry Drawer Sensor error, the Pantry Drawer damper will repeat open and close every 5min.



### 8-9. Dispenser Water/Ice Lever

- The operating time using the water/ice dispenser will be max 1min at a time to protect electric parts.  
To use ice/water dispenser for more than 1min, the dispenser lever should be pushed again every 1min.

### 8-10. Buzzer or Alarm

- Buzzer sounds if any button of Front Control Panel is pressed.
- Buzzer sounds after 3sec from initial power input.
- If door is left open for more than 1min, the alarm beeps 10 times every 1min until open total time 6min.  
The beeping stops when door is close.
- Buzzer sounds 3 times when the "Forced Defrost" mode starts.
- Buzzer sounds 3 times when the "Error Display" mode starts.
- Buzzer sounds 3 times when the icemaker power ON/OFF.



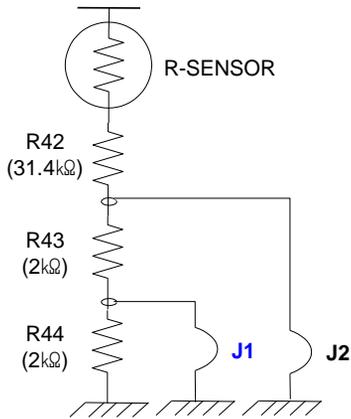
#### **WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

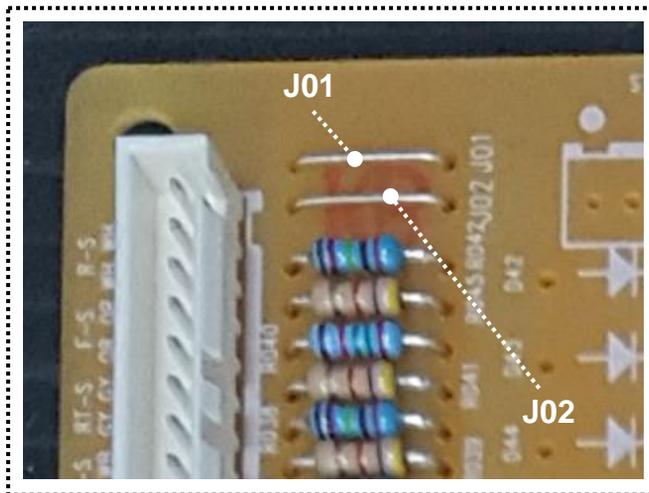
## 8. Operation and Functions

### 8-11 Compensation of Refrigerator Sensor On/Off Temp

- R42 : R-SENSOR standard resistance in normal mode (31.4kΩ)
- In case temperature of refrigerator compartment is weak or insufficient, take the following action.
  - Cut J2 to increase the standard resistance by 2kΩ ⇒ 1.5°C down (2.7 °F down)
  - Cut J1 & J2 to increase the standard resistance by 4kΩ ⇒ 3°C down (5.4°F down)



J2	-	cut	-	cut
J1	-	-	cut	cut
Temperature compensation	0°C	-1.5°C (-2.7 °F)	0°C	-3°C (-5.4 °F)
Resistance	R42	R42+R43	R42	R42+R43+R44
	31.4kΩ	(31.4+2)kΩ	31.4kΩ	(31.4+2+2)kΩ

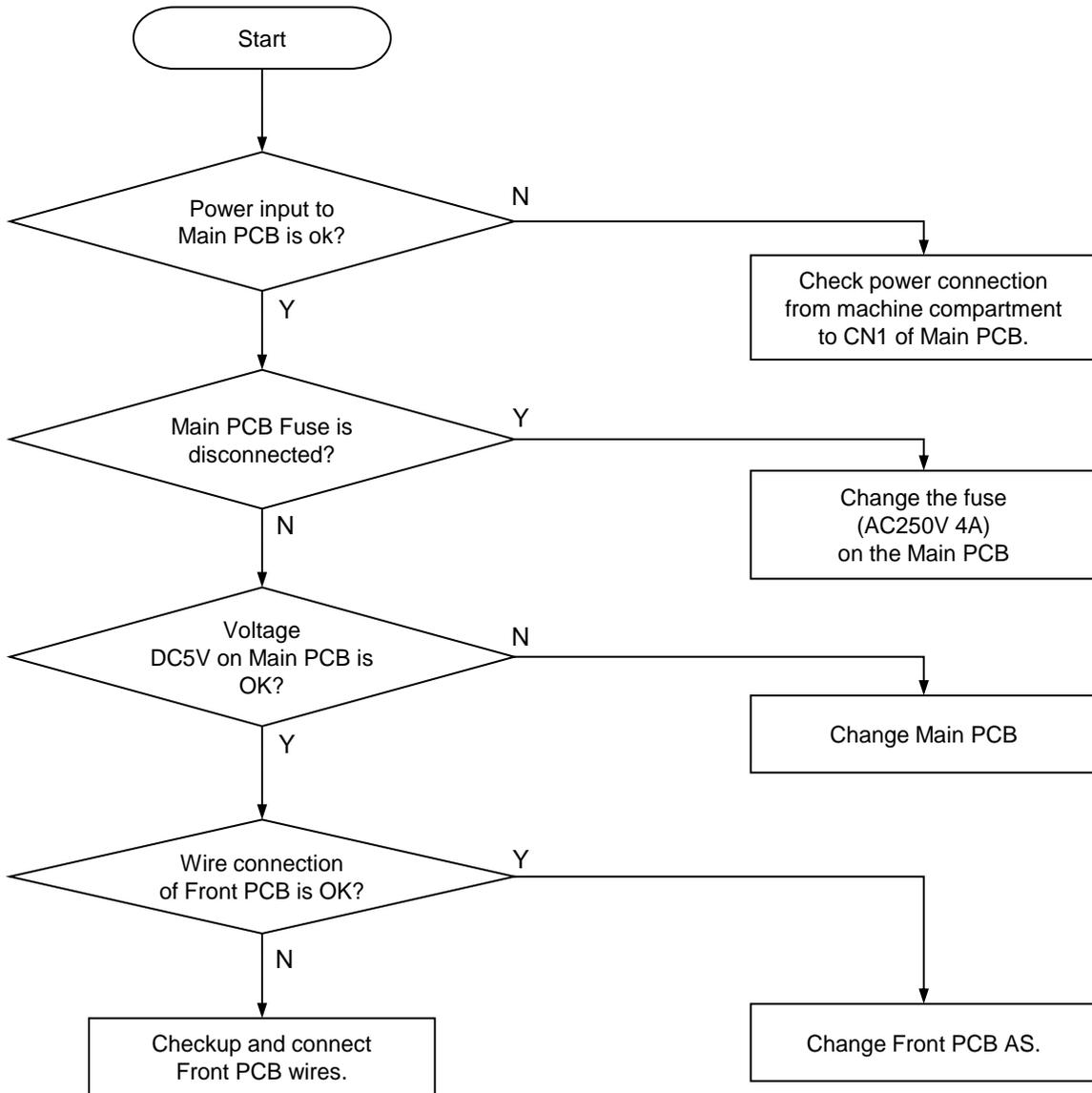


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-1. Faulty Start (F/R lights Off , F-PCB Power Off)



#### ■ How to check DC voltage on main PCB :

### WARNING

**Never touch the bottom face of PCB board directly by hand to prevent electric shock or injury.**

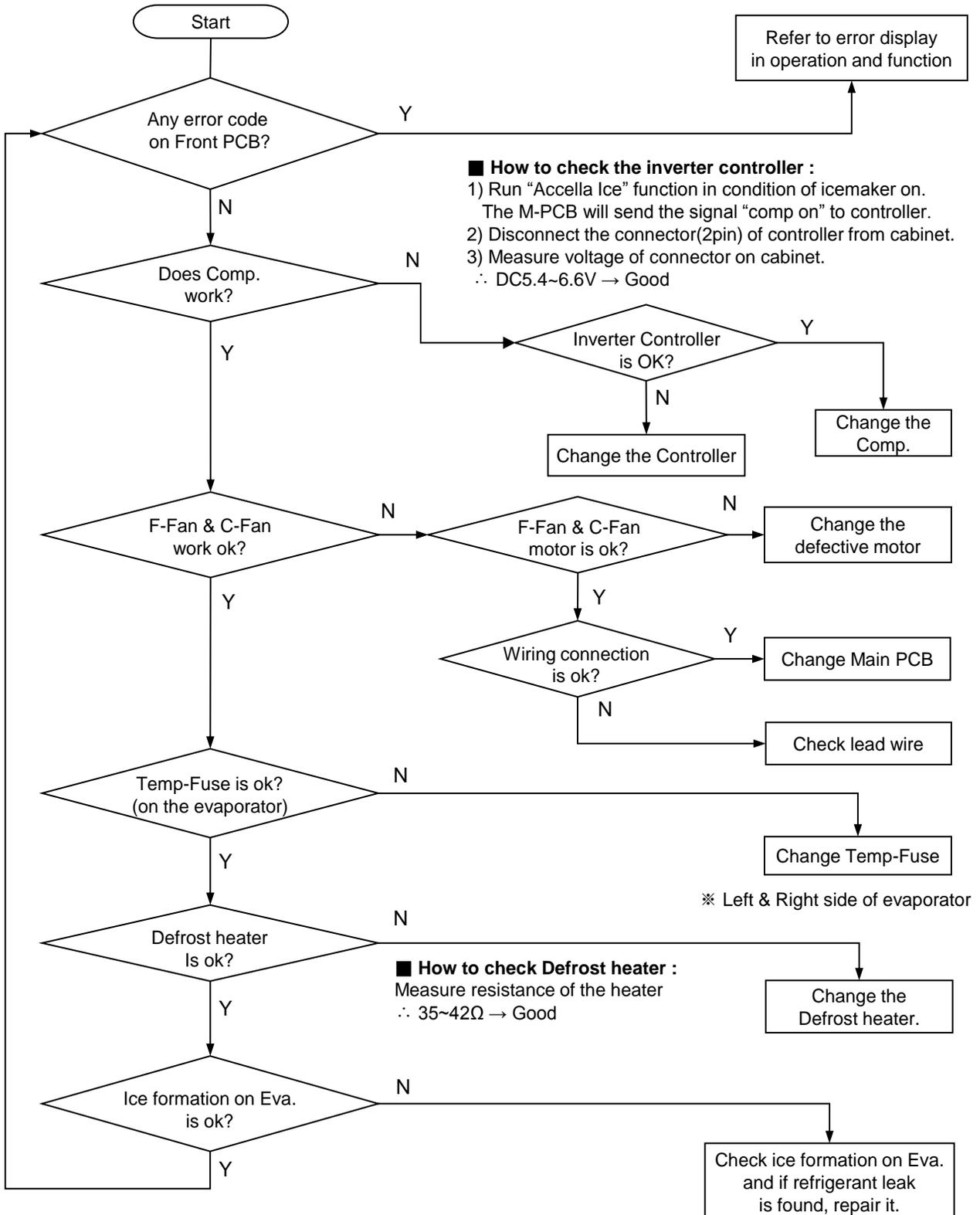


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 9. How to Service

## 9-2. Freezing Failure . (Foods are not frozen/cold.)

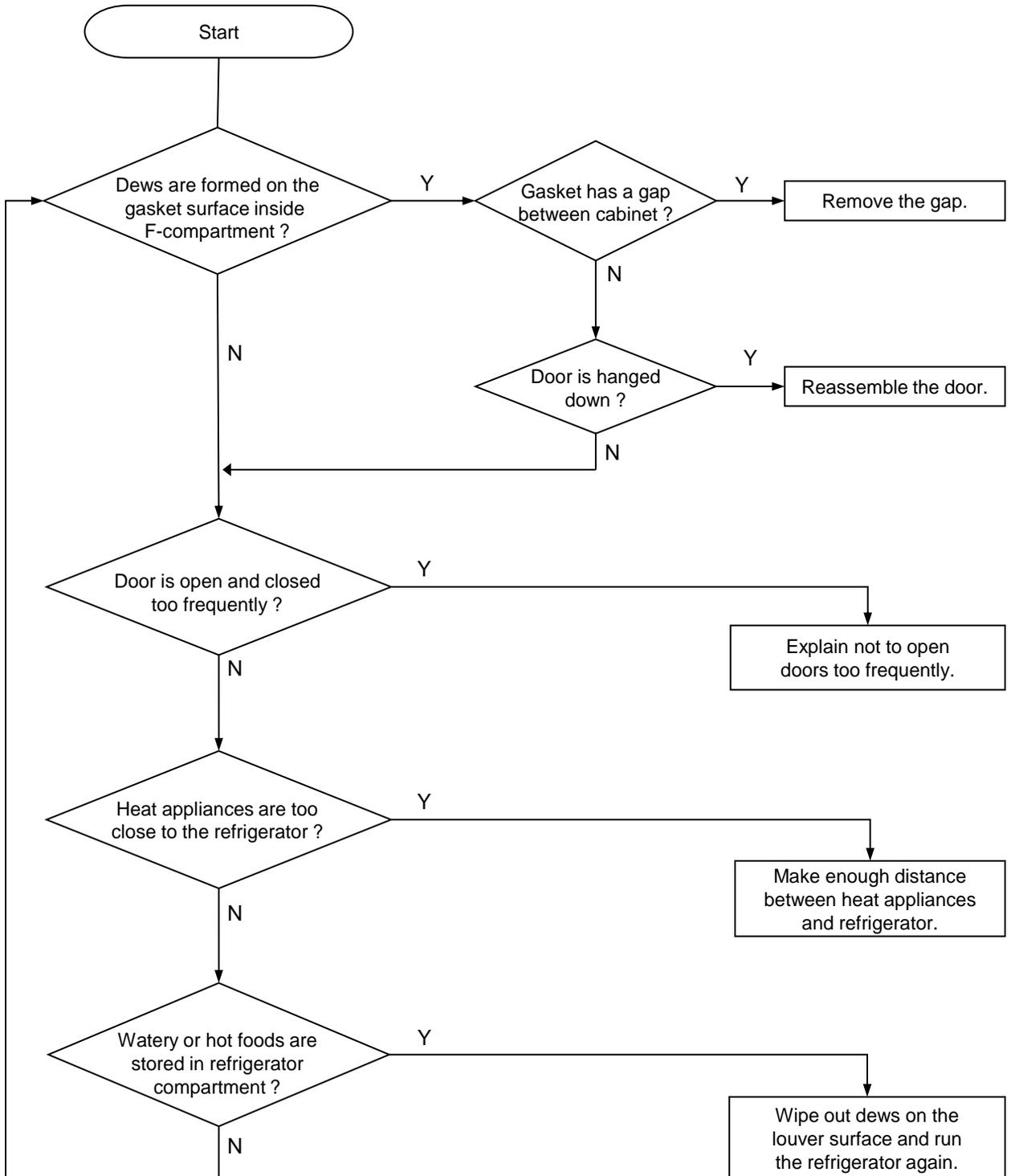


### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-3. Ice Formation on F-Louver

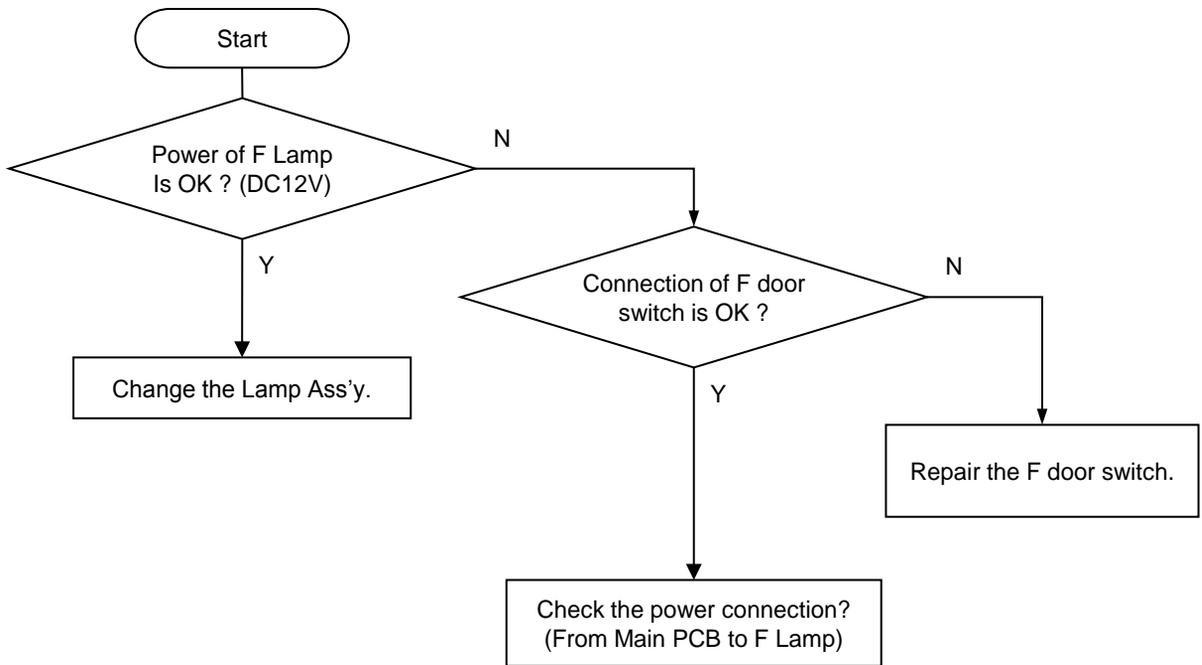


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 9. How to Service

## 9-4. Disconnection / Breaking of Freezer Lights Ass'y



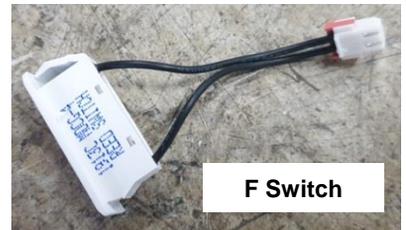
### ■ How to check power of F-Lamp :

Disassemble the F lamp window on the top wall in freezer.  
 ∴ 10.8~ 13.2 V → GOOD

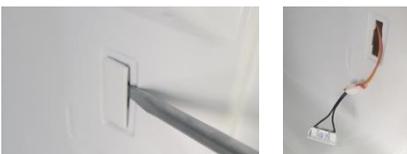
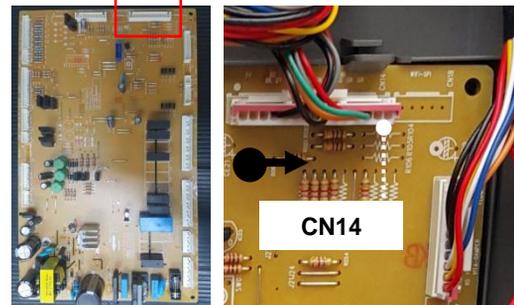


### ■ How to check connection of F Door switch :

- 1) Disassemble the F door switch on the right wall in freezer.
- 2) Connect the connector properly and check if lamp on.
- 3) Disconnect the connector and check the location of terminal pins.
- 4) Check the switch is open circuit without pushing button.  
Or test the lamp with a new switch.
- 5) Check the pins of connector on M-PCB connected to the switch.

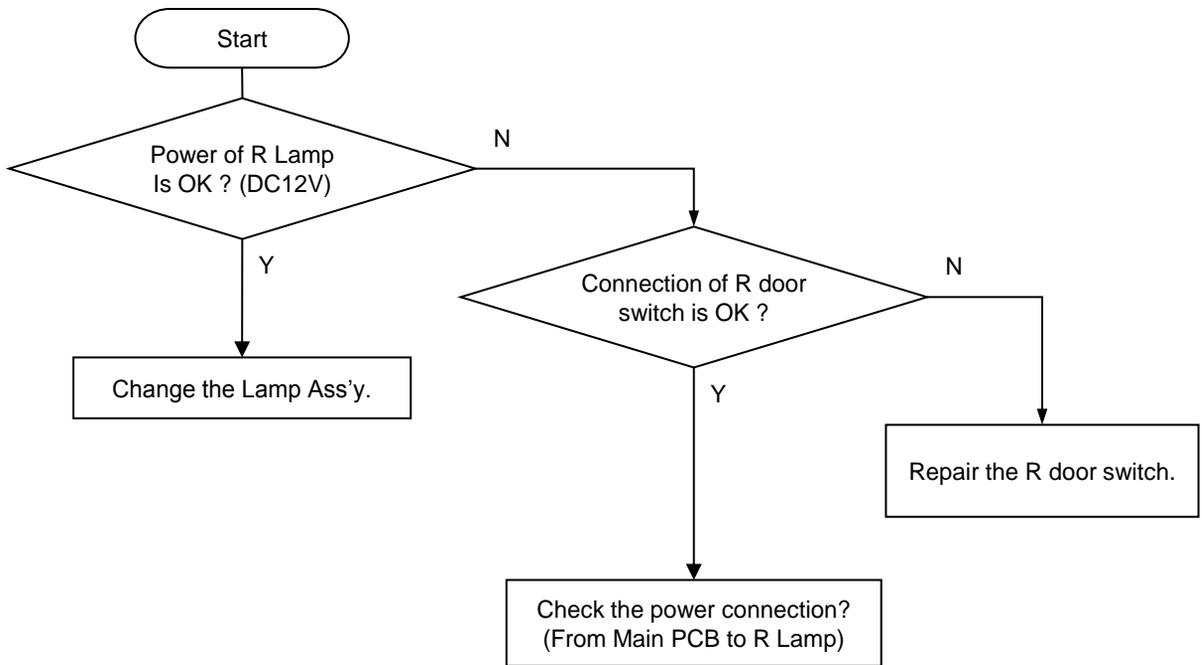


	Door Open(Lamp On)	Door Close(Lamp Off)
F Switch Circuit	Open	Close
Terminal of F Switch	Pin 1, 2	
Connector on M-PCB Connected to F Switch	Pin 11, 16 of CN14	



# 9. How to Service

## 9-5. Disconnection / Breaking of Refrigerator Lights Ass'y



### ■ How to check power of F-Lamp :

Disassemble the R lamp window on the top wall in refrigerator.  
 ∴ 10.8~ 13.2 V → GOOD

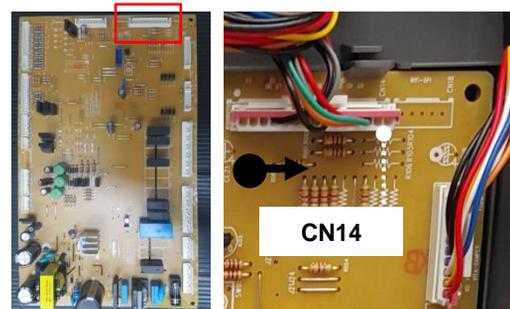


### ■ How to check connection of F Door switch :

- 1) Disassemble the top hinge cover.
- 2) Connect the connectors properly and check if lamp on.
- 3) Check if the wires and connectors are no damage.
- 4) Check the each switch is close circuit without pushing button.  
 Or test the lamp with new switches.
- 5) Check the pins of connector on M-PCB connected to the switches.



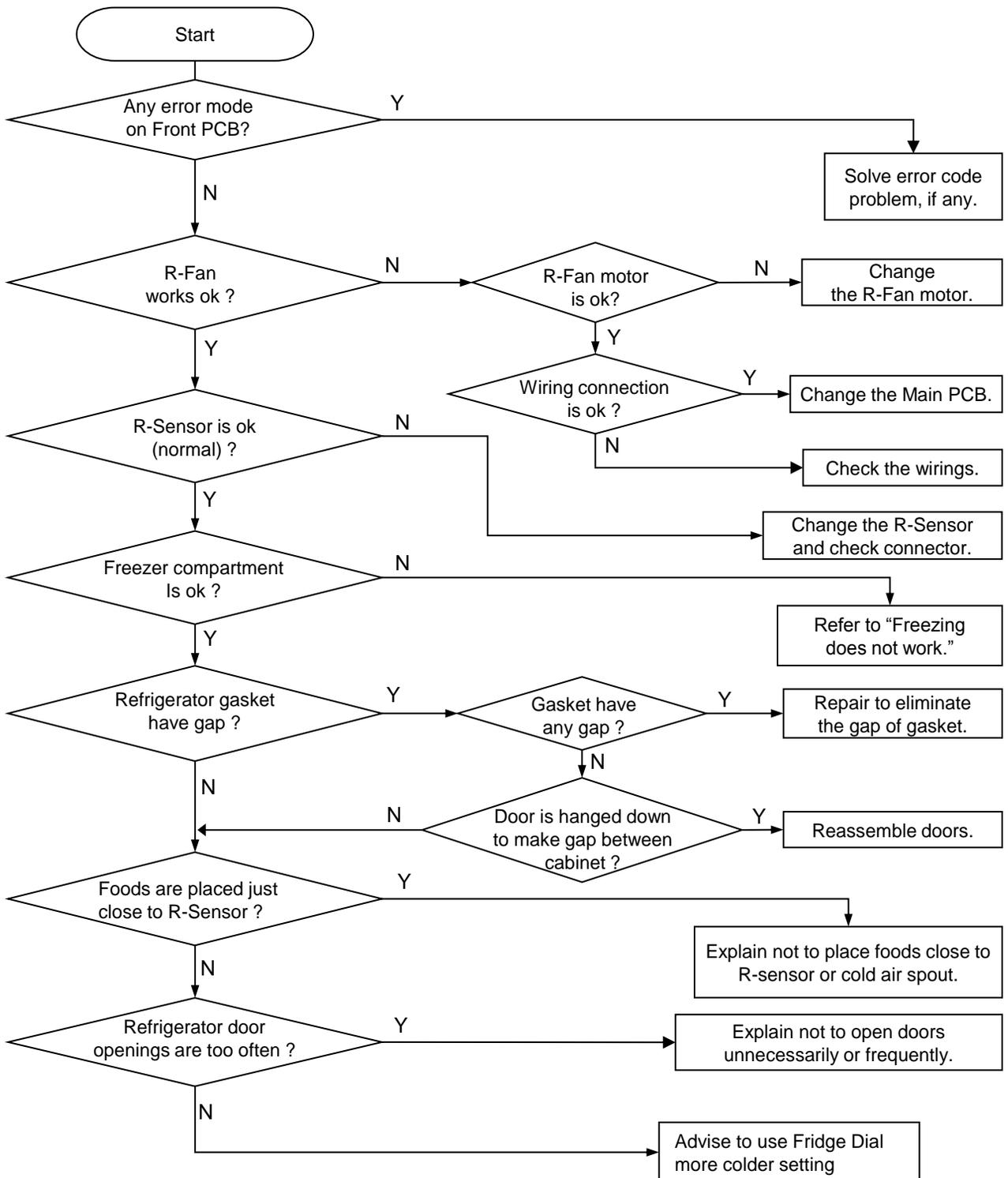
	Door Open(Lamp On)	Door Close(Lamp Off)
R Switch Circuit	Close	Open
Terminal of R Switch	Pin 1, 2 (2pc.)	
Connector on M-PCB Connected to R Switch	Dispenser Door : Pin 5, 10 of CN14 Right Door : pin 4, 9 of CN14	



**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-6. Refrigeration Failure (Foods does not get cool or cold soon.)

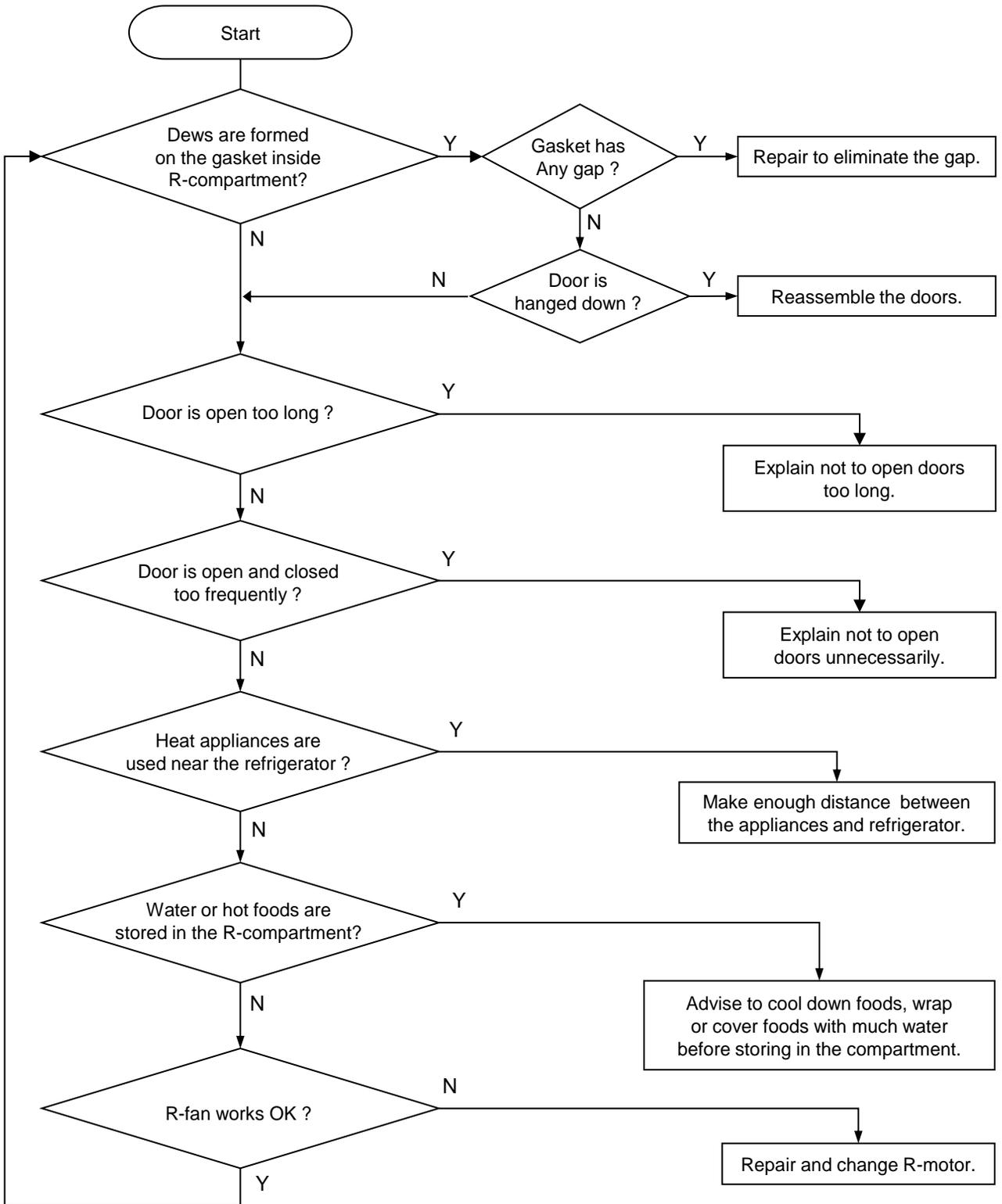


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 9. How to Service

## 9-7. Dews on Refrigerator Compartment

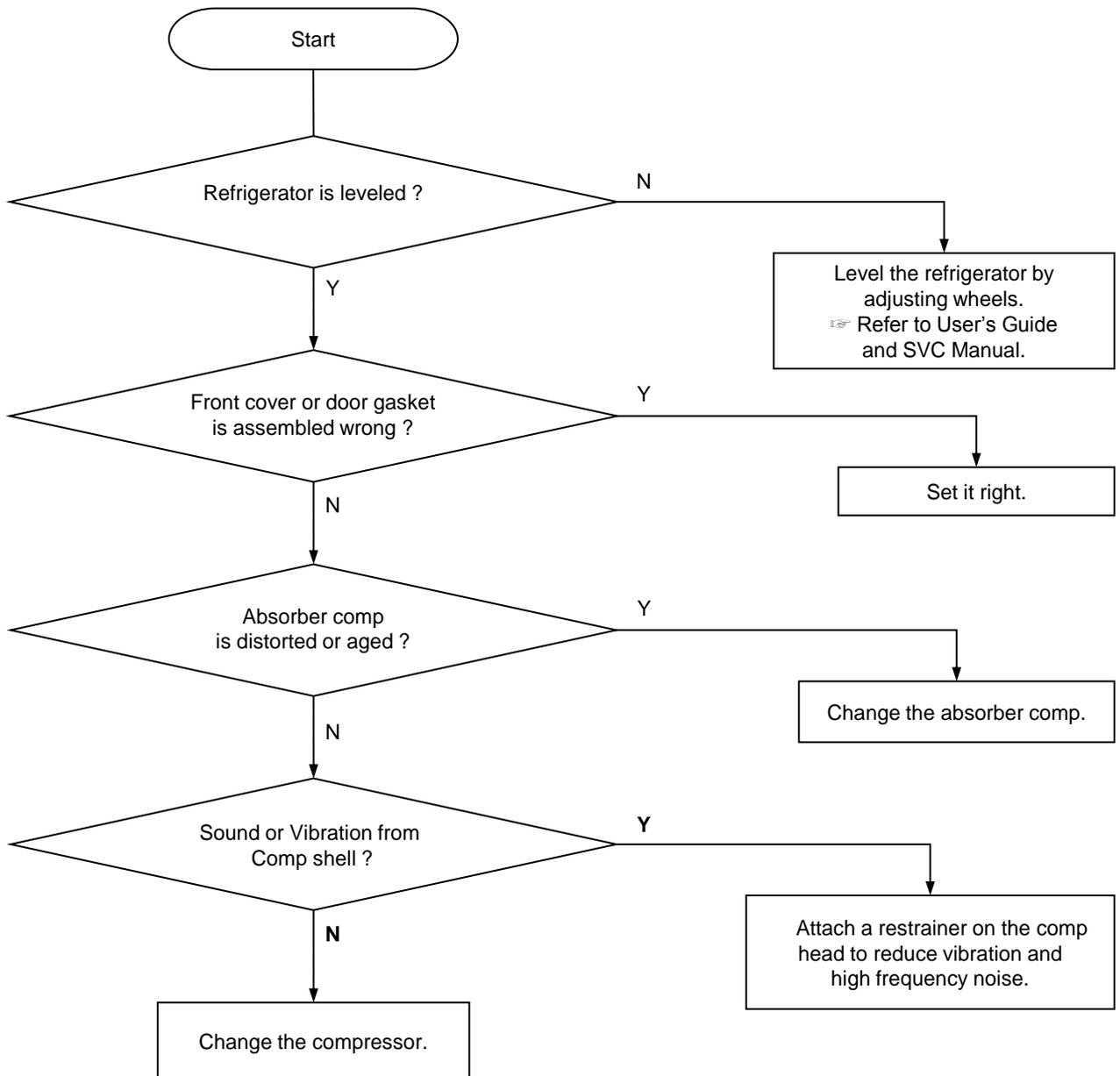


### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-8. Comp. Operation Noise



#### Remarks

- Compressor sound is somewhat normal because it works like a heart to circulate the refrigerant in the pipes during the refrigerator operation.
- Rattling or metallic touch sound of motor, piston of comp. can be heard when it starts or stops.

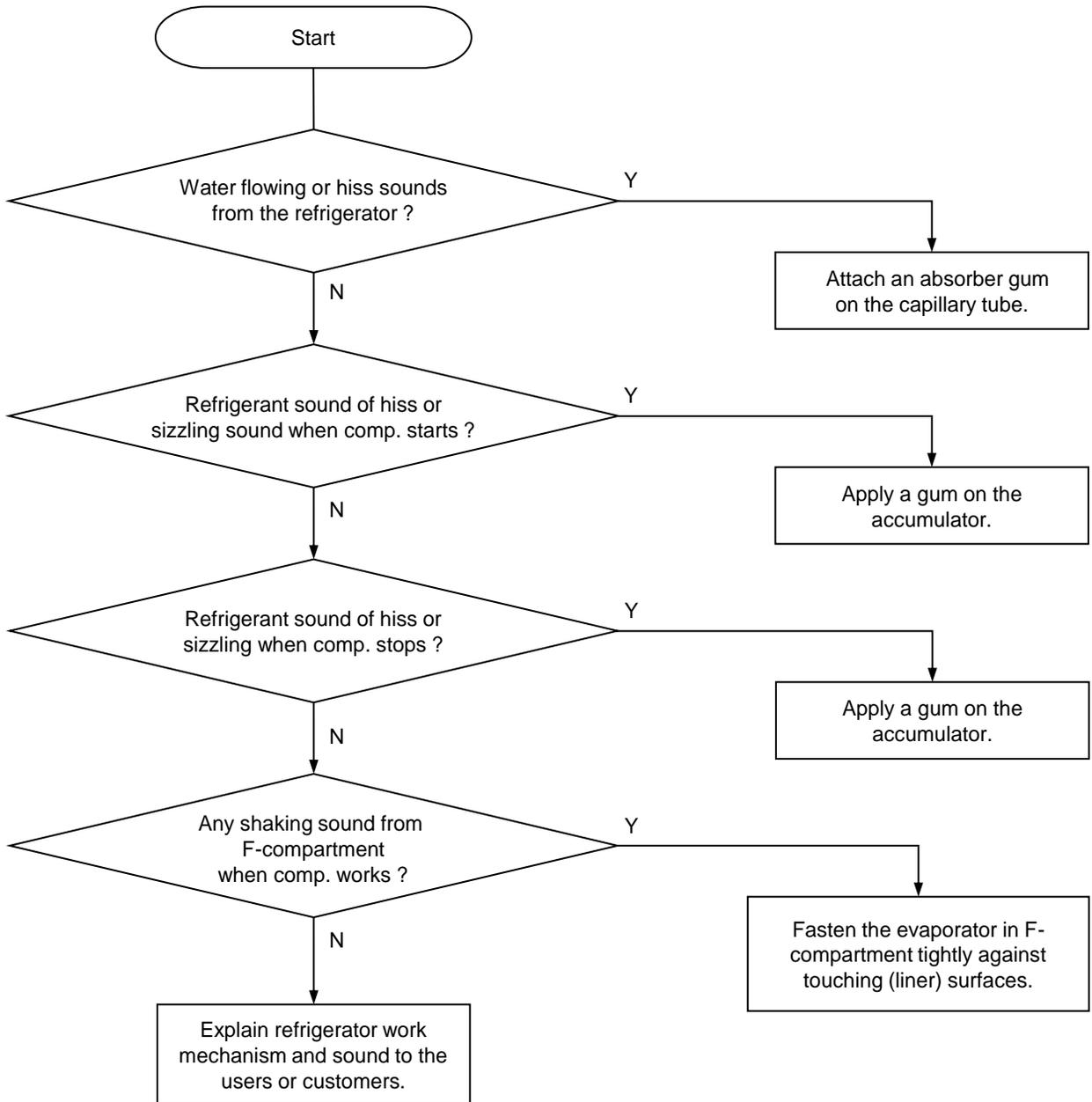


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-9. Refrigerant Flow Sound



#### Remarks

- Water flowing sound, hiss or sizzling sound can make while refrigerant in the pipes is changing from liquid to gas state when comp. starts or stops. It is normal to the refrigerator.

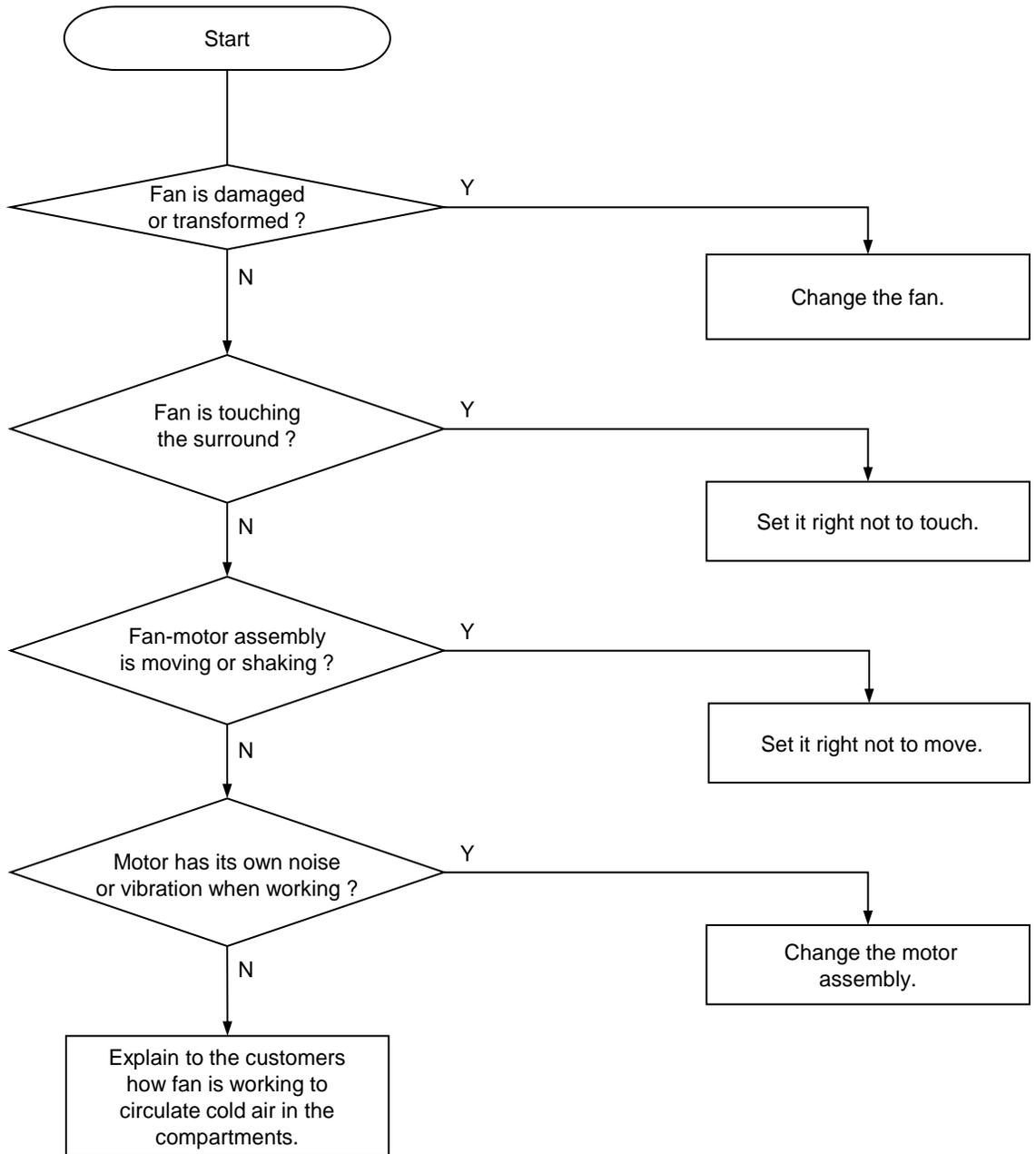


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-10. Fan Noise



#### Remarks

- The fan is sending out cold air to circulate it through the compartments. When the air is touching the surface of louver or liner wall, such sound can make.

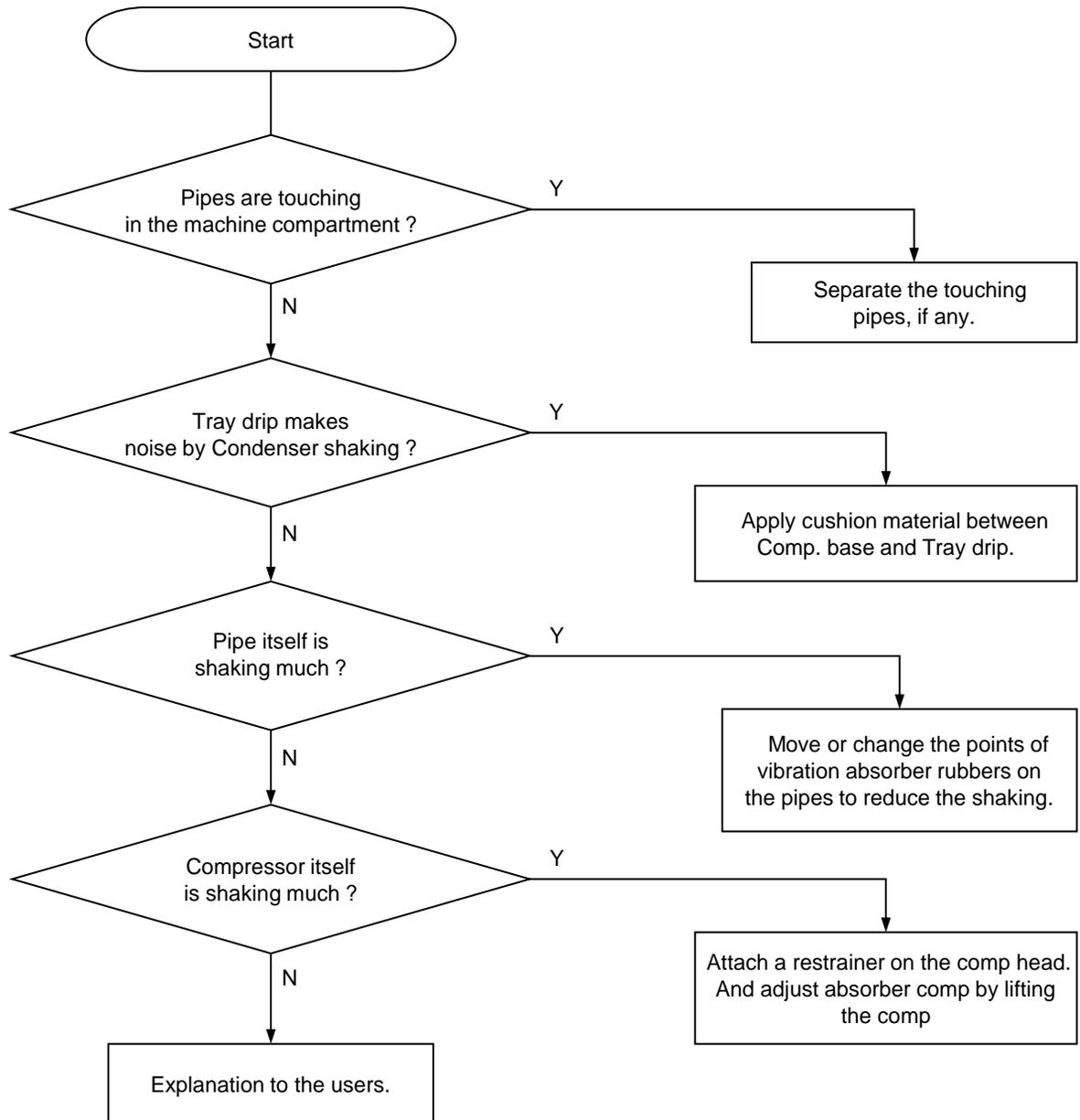


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-11. Pipe Noise



#### Remarks

- Refrigerant is erupting rapidly from the compressor to circulate pipes, so pipe shaking noise can make to some degree.
- In case compressor vibration is sent to a pipe directly, apply vibration absorber rubbers to welding points of the pipe and comp. or to a much bent point on the pipe.

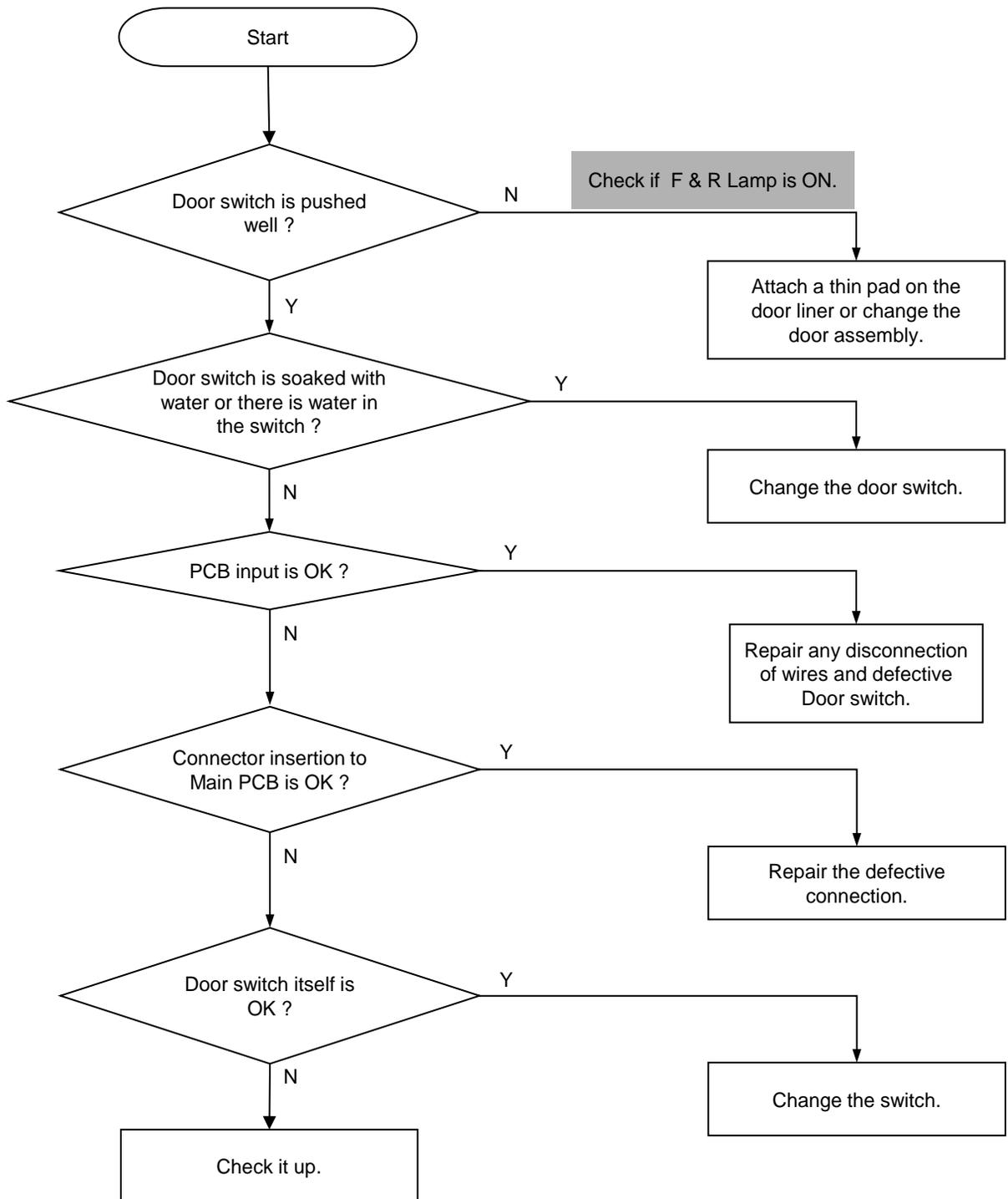


#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

## 9. How to Service

### 9-12. Door opening alarm continues though the door is closed.



#### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 10. Cooling Cycle Heavy Repair

## 10-1. Summary of Heavy Repair

Process	Contents	Tools
Remove refrigerant residuals	Cut charging pipe ends(compressor & dryer) and discharge refrigerant from dryer and compressor.	Nipper, side cutters
Parts replacement and welding	<ul style="list-style-type: none"> <li>▪ Confirm refrigerant (R134a or R600a) and oil for compressor and dryer.</li> <li>▪ Confirm N2 sealing and packing conditions before use. Use good one for welding and assembly.</li> <li>▪ Weld under nitrogen gas atmosphere.</li> <li>▪ Repair in a clean and dry place.</li> </ul>	Pipe, gas welder, N2 gas
Vacuum	Evacuate for more than forty minutes after connecting manifold gauge hose and vacuum pump to high (dryer) and low (compressor) pressure sides.	Vacuum pump, manifold gauge
Refrigerant charging and charging inlet welding	<ul style="list-style-type: none"> <li>▪ Weigh and control the bombe in a vacuum conditions with electronic scales and charge through compressor inlet (process tube).</li> <li>▪ Charge while refrigerator operates.</li> <li>▪ Weld carefully after inlet pinching.</li> </ul>	Bombe(mass cylinder), refrigerant manifold gauge, electronic scales, punching off flier, gas welding machine
Check refrigerant leak and cooling capacity	<ul style="list-style-type: none"> <li>▪ Check leak at weld joints.               <ul style="list-style-type: none"> <li>※ Note :Do not use soapy water for check.</li> </ul> </li> <li>▪ Check cooling capacity               <ul style="list-style-type: none"> <li>→ Check condenser manually to see if warm.</li> <li>→ Check hot pipe manually to see if warm.</li> <li>→ Check frost formation on the whole surface of the evaporator.</li> </ul> </li> </ul>	Electronic leak detector, driver.
Compressor compartment and tools arrangement	<ul style="list-style-type: none"> <li>▪ Remove flux from the silver weld joints with soft brusher wet rag. (Flux may be the cause of corrosion and leaks.)</li> <li>▪ Clean tools and store them in a clean tool box or in their place.</li> </ul>	Copper brush, rag, tool box
Transportation and installation	Installation should be conducted in accordance with the standard installation procedure. (Leave space of more than 5 cm from the wall for compressor compartment cooling fan mounted model.)	

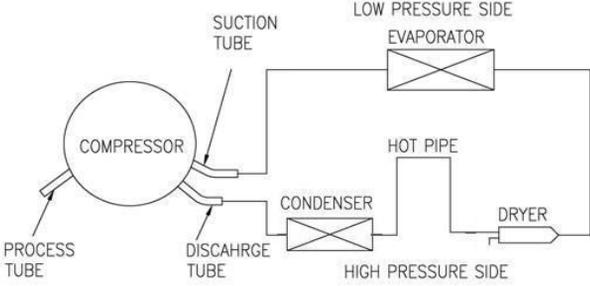


### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 10. Cooling Cycle Heavy Repair

## 10-2. Precautions During Heavy Repair

Items	Precautions
Use of tools	Use special parts and tools for R-134a or R-600a
Removal of retained refrigerant.	<p>1) Input 'Forced Comp On Mode' at Control Panel.            (※ To force open the step valve for 2 evaporators in series:            Press/hold "Refrigerator Temp" and Freezer Temp" buttons,            then press "Light" button 5 times.)            Turn off a refrigerator after 10 Minutes to open STEP VALVE.</p> <p>2) Remove retained refrigerant more than 5 minutes after turning off a refrigerator.            (If not, oil will leak inside.)</p> <p>3) Remove retained refrigerant by cutting first high pressure side (dryer part) with a nipper            and then cut low pressure side. (If the order is not observed, oil leak will happen.)</p>  <p>The diagram illustrates a refrigeration cycle. On the left is a circular compressor. A suction tube connects the compressor to the evaporator, which is labeled 'LOW PRESSURE SIDE'. A process tube is also connected to the compressor. A discharge tube connects the compressor to the condenser, which is labeled 'HIGH PRESSURE SIDE'. A hot pipe connects the condenser to the evaporator. A dryer is located on the high pressure side between the condenser and the evaporator.</p>
Replacement of dryer	Be sure to replace dryer when repairing pipes and injecting refrigerant.
Nitrogen blowing welding	Weld under nitrogen atmosphere in order to prevent oxidation inside a pipe. (Nitrogen pressure : 0.1~0.2 kg/cm2.)
Others	<p>1) Nitrogen only should be used when cleaning inside of cycle pipes inside and sealing.</p> <p>2) Check leakage with an electronic leakage tester.</p> <p>3) Be sure to use a pipe cutter when cutting pipes.</p> <p>4) Be careful not the water let intrude into the inside of the cycle.</p>

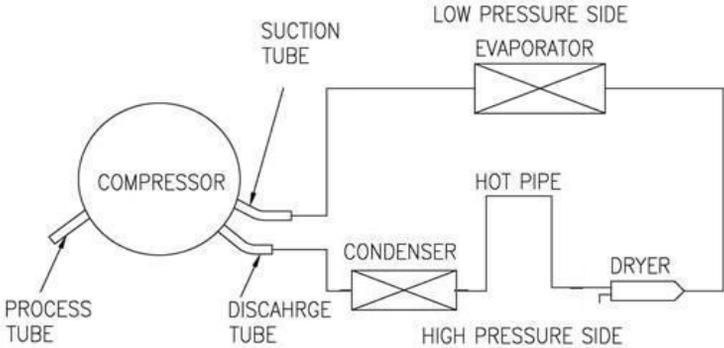
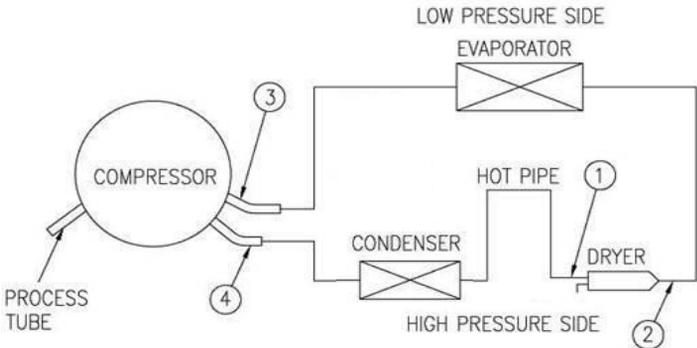


### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 10. Cooling Cycle Heavy Repair

## 10-3. Practical Work for Heavy Repair

Items	Precautions
<p>1. Removal of residual refrigerant</p>	<p>1) Remove residual refrigerant more than 5 minutes later after turning off the refrigerator. (If not, compressor oil may leak inside.)</p> <p>2) Remove retained refrigerant slowly by cutting first high pressure side (dryer part) with a nipper and then cut low pressure side.</p> 
<p>2. Nitrogen blowing welding</p>	<ul style="list-style-type: none"> <li>▪ <b>When replacing a dryer :</b> Weld ① and ② parts by blowing nitrogen (0.1~0.2kg/cm<sup>2</sup>) to high pressure side after assembling a dryer.</li> <li>▪ <b>When replacing a compressor :</b> Weld ③ and ④ parts by blowing nitrogen to the low pressure side.  <ul style="list-style-type: none"> <li>※ Note) For other parts, nitrogen blowing is not necessary because it does not produce oxidized scales inside pipe because of its short welding time.</li> </ul> </li> </ul> <p>■ <b>KEYPOINTING</b> ■</p> <p>Welding without nitrogen blowing produces oxidized scales inside a pipe, which affect on performance and reliability of a product.</p> 

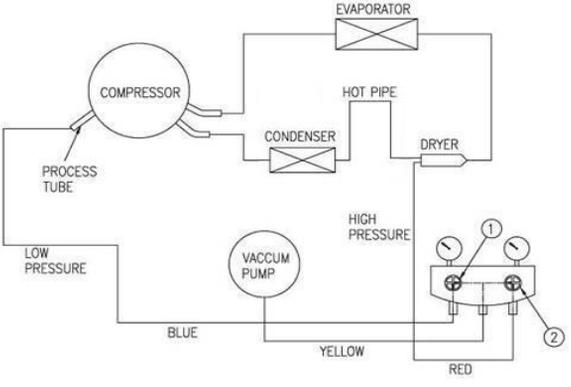
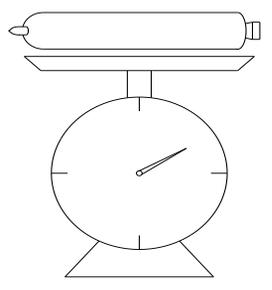


**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 10. Cooling Cycle Heavy Repair

## 10-3. Practical Work for Heavy Repair (continued)

Items	Precautions
<p>3. Vacuum degassing</p>	<p>▪ <b>Pipe Connection :</b> Connect a "red" hose to the high pressure side and a "blue" hose to the low pressure side.</p> <p>▪ <b>Vacuum Sequence :</b> Open ①,② valves and evacuate for 40 minutes. Close valve ①.</p> <p>■ <b>KEYPOINTING</b> ■</p> <ol style="list-style-type: none"> <li>1) If power is applied during vacuum degassing, vacuum degassing shall be more effective.</li> <li>2) Operate compressor while charging refrigerant. (It is easier and more certain to do like this.)</li> </ol> 
<p>4. Refrigerant charging</p>	<p>▪ <b>Charging sequence :</b></p> <ol style="list-style-type: none"> <li>1) Check the amount of refrigerant supplied to each model after completing vacuum degassing.</li> <li>2) Evacuate bombe with a vacuum pump.</li> <li>3) Measure the amount of refrigerant charged.             <ul style="list-style-type: none"> <li>→ Measure the weight of an evacuated bombe with an electronic scale.</li> <li>→ Charge refrigerant into a bombe and measure the weight.</li> <li>→ Calculate the weight of refrigerant charged into the bombe by subtracting the weight of an evacuated bombe.</li> </ul> </li> </ol> <p>■ <b>KEYPOINTING</b> ■</p> <ol style="list-style-type: none"> <li>1) Be sure to charge the refrigerant at around 25°C.</li> <li>2) Be sure to keep -5g in the winter and +5g in summer.</li> </ol> <p>※ Calculation of amount of refrigerant charged (Wc)</p> <p><b>Wc = Wa - Wb</b></p> <p>Wa : weight after charging Wb : weight before charging ( = weight of an evacuated cylinder)</p> 

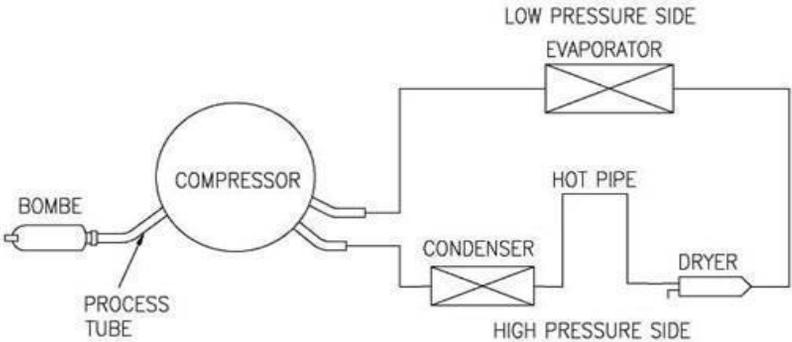


**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 10. Cooling Cycle Heavy Repair

## 10-3. Practical Work for Heavy Repair (continued)

Items	Precautions
<p>4. Refrigerant charging (continued)</p>	<p>4) Refrigerant Charging Charge refrigerant while operating a compressor as shown above.</p> <p>5) Pinch a charging pipe with a pinch-off pliers after completion of charging.</p> <p>6) Lockring the end of a pinched charging pipe with lockring and take a gas leakage test on the welded parts.</p>  <p>The diagram illustrates a refrigeration cycle. On the left, a 'BOMBE' (charging cylinder) is connected to a 'PROCESS TUBE' which leads into a 'COMPRESSOR'. The cycle then proceeds to the 'LOW PRESSURE SIDE' containing an 'EVAPORATOR'. From the evaporator, the refrigerant flows to the 'CONDENSER' on the 'HIGH PRESSURE SIDE'. The condenser is connected to a 'HOT PIPE' which then leads to a 'DRYER' before returning to the compressor. The evaporator and condenser are represented by rectangles with an 'X' inside, indicating they are heat exchangers.</p>
<p>5. Gas-leakage test</p>	<p>Take a leakage test on the welded or suspicious area with an electronic leakage tester.</p>
<p>6. Pipe arrangement in each cycle</p>	<p>Check each pipe is placed in its original place before closing a cover back-M/C after completion of work.</p>

## 9-4. Standard Regulations for Heavy Repair

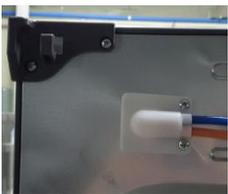
- 1) Observe the safety precautions for gas handling.
- 2) Use JIG (or wet towel) in order to prevent electric wires from burning during welding.  
(In order to prevent insulation break and accident.)
- 3) The inner case shall be melted and insulation material (polyurethane) shall be burnt if not cared during welding inner case parts.
- 4) The copper pipe shall be oxidized by overheating if not cared during welding.
- 5) Not allow the aluminum pipes to contact to copper pipes. (In order to prevent corrosion.)
- 6) Make sure that the inner diameter should not be distorted while cutting a capillary tube.
- 7) Be sure that a suction pipe and a filling tube should not be substituted each other during welding.  
( High efficiency pump.)



# 11. Disassemble/Assemble Procedures

## 11-1. Holder Water Filter Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <b>CAUTION</b> <b>Turn off the main water supply to the appliance.</b>	5	 <p>Remove a screw</p>
2	 <p>Separate the tube fixture on the upper left side cabinet back face.</p>	6	   <p>Pull down the Holder Assembly and tubes gently to remove.</p>
3	 <p>Separate the tube fixtures, if necessary.</p>	<p>MODEL : RFP71KE**</p>  <p>MODEL : RFP71KD**</p>  <p>① ② ③ ④</p>	
4	 <p>Remove 1/4" tube connected to water filter outlet from the water valve while pressing the part (A). Remove the locking clip before pushing the part (A). See the left figure.</p>	<p>① Black(1/4") – Ice Maker Tube(R room)                  ② White(1/4") – Water Filter Outlet                  ③ White(5/16") – Water Tank Inlet                  ④ Blue(1/4") - Ice Maker tube(F room)</p>	

□ Remark :

- Remove any residual matter inside the water supply line after installation.
  - 1) Turn on the main water supply to the refrigerator .
  - 2) Dispense water using dispenser for approx.10min to clean water and remove air from the lines.
  - 3) And then check there are no water leaks or drips coming out from the water filter and dispenser.
  - 4) If necessary, run water through the dispenser more.



**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-2. Water Tank and Cover Vegetable Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	<p>Remove two vegetable cases.</p> 	5	<p><b>⚠ CAUTION</b></p> <p>Turn off the main water supply to the appliance.</p>
2	 <p>Press two fixing hooks in top of the divider and pull the divide out from the vegetable cover.</p>	6	 <p>Remove one screws and pull the tank to the front.</p>
3	 <p>Push the underside of the divider back and lift it up. And then remove it from the pantry cover.</p>	7	 <p>Take off the front cover from the water tank assembly to see the water storage condition.                      ※ The water need to be removed from the water line of refrigerator to replace new tank.</p>
4	 <p>Remove the vegetable cover.</p>	8	 <p>Unscrew the water valve assembly in machine room. And separate the 5/16"(the big one) tube from water valve.  <b>Be careful not to be wet on the floor.</b> Remove the water inside water tank and water line.</p>

□ Remark :

- Remove any residual matter inside the water supply line after installation.
  - 1) Turn on the main water supply to the refrigerator .
  - 2) Dispense water using dispenser for approx.10min to clean water and remove air from the lines.
  - 3) And then check there are no water leaks or drips coming out from the water tank and dispenser.
  - 4) If necessary, run water through the dispenser more.



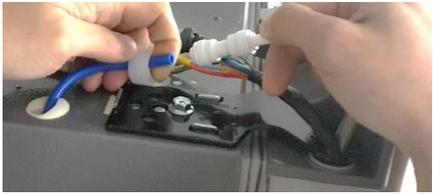
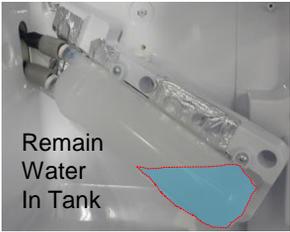
**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

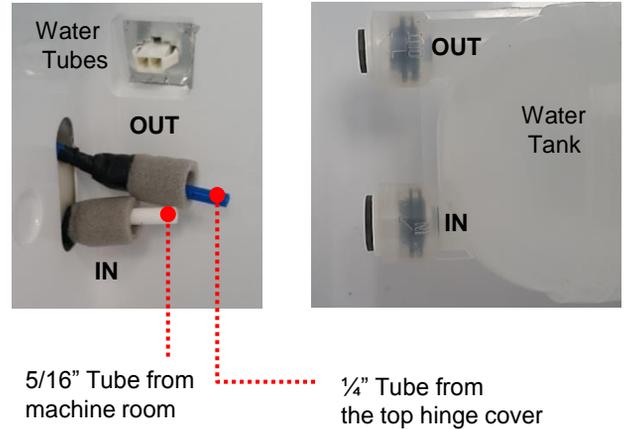
# 11. Disassemble/Assemble Procedures

## 11-2. Water Tank and Cover Vegetable Assembly (continued)

※ Follow the reverse order when assembling.

Step	Description
9	 <p>Separate the fixture to protect 5/16" (the big one) tube from bending damage.</p>
10	 <p>After removing the water toward the machine room, put a large cup on dispenser and prepare to fill the remain water in door water line.</p>
11	 <p>Remove the top hinge cover and disconnect water tube from the water tube fitting.</p>
12	 <p>Tilt the tank toward the under right side and then pull the tank and tubes out slowly to remove.</p>

Water Tank Assembly (tank + tubes + cover + heater + ...)



□ Remark :

- Cutting 5/16" plastic tube can make disassembly from valve easier. But **Be careful not to be wet on the floor.**
- The water line must be fully inserted into the water tube fitting to prevent water leakage.



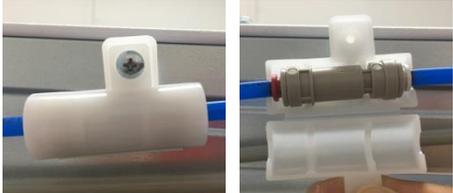
**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-3. Hose Ice Maker Tube Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Separate the cover icemaker Water tube on the top of cabinet Using (-) driver.</p>	5	 <p>Remove the icemaker water tube cover.</p>
2	 <p>Pull the water outlet parts.</p>	6	 <p>Remove water tube from the water tube fitting.</p>
3	 <p>Remove a lock clip from the bend-type fitting.</p>	7	 <p>Pull out the tube to remove from the fixtures on back of cabinet.</p>
4	 <p>Remove one screw attached to the cover Remove the check valve.</p>	8	 <p>Pull out the tube in the direction of the top cabinet to remove.</p>

Remark :



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-4. Icemaker

※ Follow the reverse order when assembling.

Step	Description
1	 <p>Hold the handle of the bucket and then pull it straight out.</p>
2	  <p>Unscrew and remove the wires cover.</p>
3	 <p>Disconnect the connector of icemaker.</p>
4	 <p>Remove the icemaker.</p>



□ Remark :

- If the bucket does not fit, turn the helix 90 degree and try again.

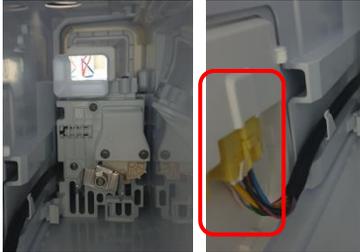


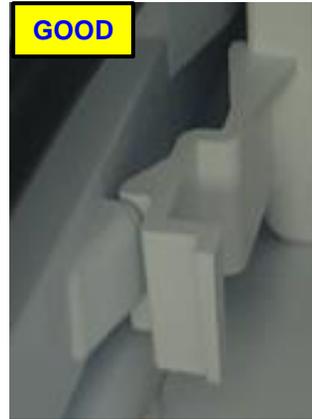
**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-5. Fixture Geared Motor

※ Follow the reverse order when assembling.

Step	Description
1	 <p data-bbox="529 417 708 529">Disconnect the connector of the Fixture Geared Motor assembly.</p>
2	 <p data-bbox="446 720 644 774">Separate wires from hooks gently.</p>
3	 <p data-bbox="568 987 691 1068">Pull a hook to the right to remove.</p>
4	 <p data-bbox="404 1280 615 1335">Remove the Fixture G/Motor.</p>



□ Remark :

- Locking Good : Put and arrange the connectors deeply into the right side of the motor.



**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-6. Pantry Drawer Cover and Cover Multi-duct Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove vegetable cases, vegetable cover, pantry drawer. Loosen two screws from water tank assembly.</p>	5	 <p>Hold the top side of the Cover Multi-duct and then pull it to release hooks.</p>
2	 <p>Lift up the cover and pull it out a little to remove the connector from back wall.</p>	6	 <p>Disconnect two sensor connectors and two damper Connectors from back wall.</p>
3	 <p>Remove two caps with a thin flat tool.</p>	 	
4	  <p>Loosen the upper screw(big one; outside diameter of thread 5mm) and lower screw(small one; outside diameter of thread 4mm)</p>	 	

□ Remark :

- Do not use the small screw in the upper side of Multi-duct Assembly. The screw could be loose.



**WARNING**

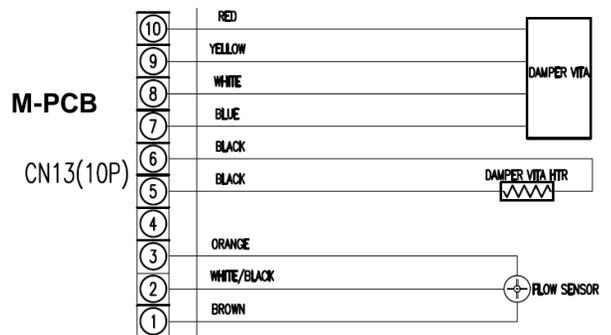
To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-7. Refrigerator Sensor, Pantry Drawer Sensor, Dampers in Cover Multi-duct Assembly

※ Follow the reverse order when assembling.

Step	Description
1	 <p>Separate the insulator from the multi-duct cover.</p>
2	 <p>Remove R sensor on the upper side of cover. Remove the pantry drawer sensor on the lower side of cover.</p>
3	 <p>Take off the tape and separate insulator covered pantry drawer damper. And remove the damper. Before disassembly check the arrangement of wires and connector.</p>



□ Remark :



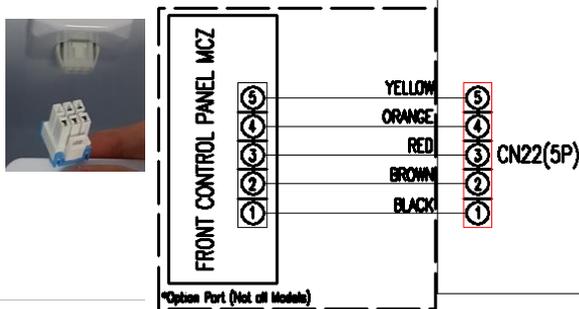
**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-8. Control Panel PCB and Wires in Pantry Drawer Cover Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove two screws to disassemble the pantry control panel PCB and wires.</p>	5	 <p>Separate the wires from hooks in the pantry cover.</p>
2	  <p>Remove the cover in front of the pantry drawer cover assembly. And loosen two screws to remove the PCB.</p>		 
3	 <p>Separate the PCB and disconnect the connector.</p>		
4	 <p>Unlock and pull the wire cover to remove the wires assembly.</p>		 <p>FRONT CONTROL PANEL ICZ</p> <p>5 YELLOW 4 ORANGE 3 RED 2 BROWN 1 BLACK</p> <p>CN22(5P)</p> <p><small>*Option Part (Not all Models)</small></p>

□ Remark :



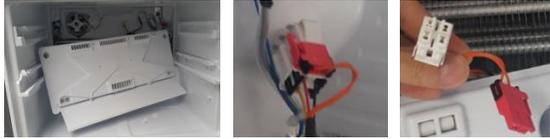
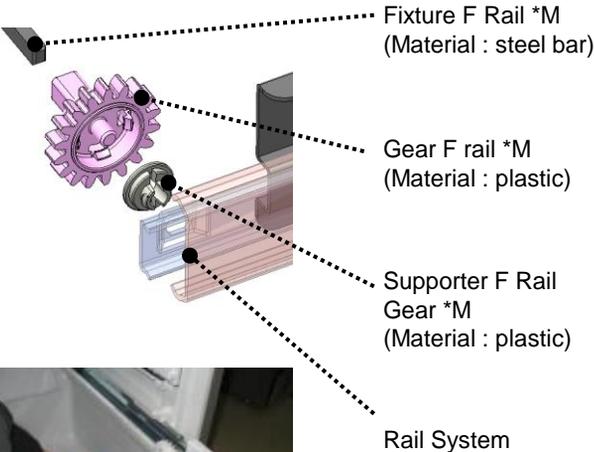
### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-9. Freezer Louver Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove freezer drawers.</p>	5	 <p>Disconnect the connectors of F fan motor and F sensor.</p>
2	 <p>Press the left fixing hook of the rail system. Holding the top of the F door, pull it out a little to release. Repeat release the right hook as same way. And then fully open the door to remove.</p>		
3	 <p>Remove two screws.</p>		
4	 <p>Holding the left side of Louver, pull it forward. Be careful no to damage the wires in the right side.</p>		
			

□ Remark :

- After installing the f door, fully push and close it to align left and right rack gear tooth. And check locking rail system.
- If necessary, assemble one Gear F Rail \*M in the rail system. Push and assemble another one Gear Rail F \*M on opposite side of rail.



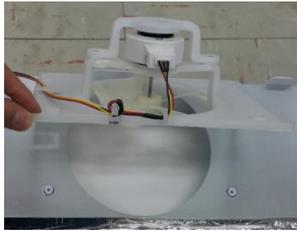
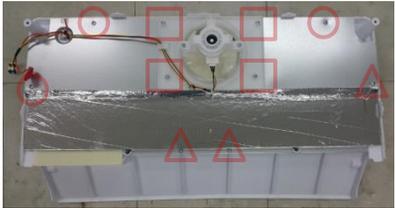
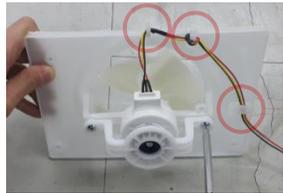
**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

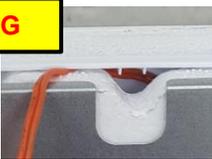
# 11. Disassemble/Assemble Procedures

## 11-10. Freezer Sensor, F Fan and Fan Motor

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove the tape to separate wires of F-sensor and F Fan motor.</p>	5	 <p>Loosen 4 screws marked by rectangle. And remove F Fan motor assembly from the Louver.</p>
2	 <p>Loosen 7 screws marked by circle and rectangle to remove F-sensor.</p>	6	 <p>Remember how to arrange the wires. Remove wires from 3 hooks and loosen 2 screws to remove the motor.</p>
3	 <p>Separate the wires from hook.</p>	7	 <p>Supporting the back side of fan with a finger, pull out and remove the fixing spring with a long nose plier. If necessary, scratch the lock paint (green one). ※ The diameter and shape of this F Fan is different from the R and C Fan.</p>
4	 <p>Make a gap slightly and remove the D-sensor from the hook.</p>	8	 <p>Break the shaft (plastic) of fan blade. Do not use the old fan again. Be careful not to damage the shaft of motor if the motor is used again. Remove the fan and motor.</p>

□ Remark :

			<p>Show the left picture. If you strongly pull out the fan blade and remove, the fan and shaft of the motor will be damage and have a bad performance.</p>
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**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-11. Refrigerator Fan and Fan Motor in freezer

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	  <p>Loosen 3 special screws(stay bolts) and disconnect the connector.</p>	5	 <p>Supporting the back side of fan with a finger, pull out and remove the fixing spring with a long nose plier. If necessary, scratch the lock paint(green one). ※ The diameter and shape of this R Fan is different from the F and C Fan.</p>
2	 <p>Separate the R Fan Motor assembly.</p>	6	  <p>Break the shaft(plastic) of fan blade. Do not use the old fan again. Be careful not to damage the shaft of motor if the motor is used again. Remove the fan and motor.</p>
3	 <p>Remember how to arrange the wires. Remove wires from a hooks. And loosen a screw to remove the cable clamp.</p>	7	 <p>If necessary, remove the rubber vibration isolator in the front of the Fixture R Motor.</p>
4	 <p>Loosen the opposite screw and remove the rubber vibration isolator.</p>		

□ Remark :

NG





Show the left picture. If you strongly pull out the fan blade and remove, the fan and shaft of the motor will be damage and have a bad performance.

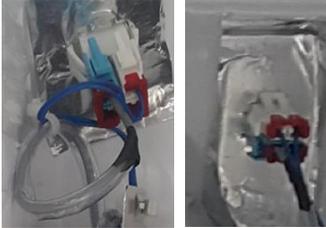
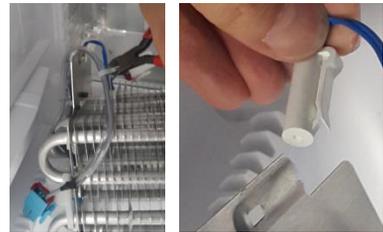
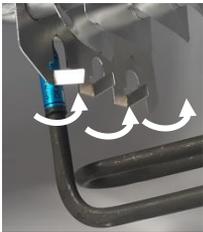
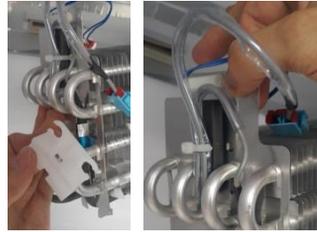


**WARNING** To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-12. Freezer Defrost Sensor and Heater in the Evaporator Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove the connectors</p> <p>※ Two D-Sensor with each connector            ※ One D-Heater with two Connectors</p>	5	 <p>Remove two temp fuses of defrost heater.</p>
2	 <p>Pull out the evaporator from 3 hooks on the back wall.</p>	6	 <p>Spread out the upper clamping parts (the left and right side of Eva) to remove the pipe of defrost heater.</p>
3	 <p>Cut the cable ties and remove the defrost sensors on left and right side of Eva.</p>	7	 <p>Bend out the lower clamping parts (the left and right side of Eva) to remove the pipe of defrost heater.</p>
4	 <p>Cut the cable ties and remove two temp fuse covers on left and right side of Eva.</p>	8	 <p>Remove the heater from Eva.</p>

□ Remark :

- Do not miss 4 cable ties(2 big, 2 small). They could block two drain holes and the drain water will overflow into freezer.



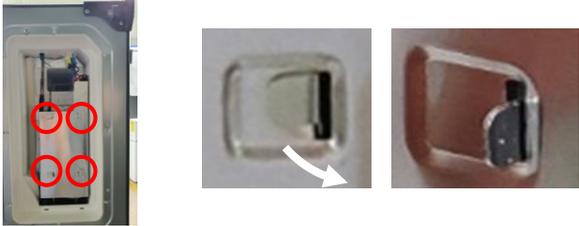
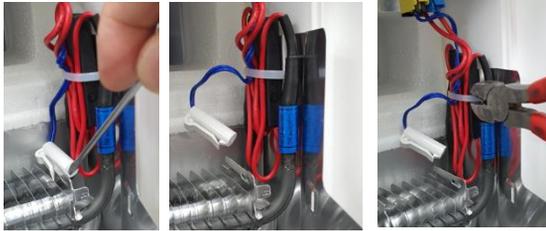
**WARNING**

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# 11. Disassemble/Assemble Procedures

## 11-13. Defrost Sensor in the Ice Maker Evaporator Assembly

※ Follow the reverse order when assembling.

Step	Description
1	 <p>Remove eight screw attached to the cover. And remove cover.</p>
2	 <p>Straighten the 4 bent positions of the cover plate.</p>
3	 <p>Remove the cover plate.</p>
4	 <p>Cut the cable tie and remove the defrost sensor on right side of Eva.</p>

□ Remark :



**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-14. Defrost Heater in the Ice Maker Evaporator Assembly

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove eight screw attached to the cover. And remove cover.</p>	5	 <p>Welding removes the remaining pipes. ※ Caution Be careful not to melt the parts.</p>
2	 <p>Cutting the pipe using a tool.</p>	6	 <p>Insert Eva all the way into the pipe.</p>
3	 <p>Remove the two connectors.</p>	7	 <p>Assemble by pressing in the direction of the arrow so that the EVA is assembled at the bottom..</p>
4	 <p>Hold the top of the eva and then pull.</p>	8	 <p>Fixing the pipe by welding. ※ Caution Be careful not to melt the parts.</p>

□ Remark :



**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-15. Condenser Fan Motor in the Machine Room

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Disconnect the connector of C Fan Motor.</p>	5	 <p>Break the shaft(plastic) of fan blade. Do not use the old fan again. Be careful not to damage the shaft of motor if the motor is used again. If necessary, scratch the lock paint(green one).</p>
2	 <p>Loosen 2 screws.</p>	6	 <p>Loosen 2 screws.</p>
3	 <p>Push the fixing hook in the left direction to separate the C Fan Motor Assembly.</p>	7	 <p>Remember how to arrange the wires. Remove the C fan motor.</p>
4	 <p>Supporting the back side of fan with 2 fingers, pull out and remove the fixing spring with a long nose plier. If necessary, scratch the lock paint(green one).                      ※ The diameter and shape of this C Fan is different from the F and C Fan.</p>		

Remark :



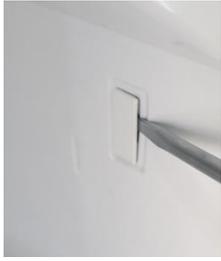
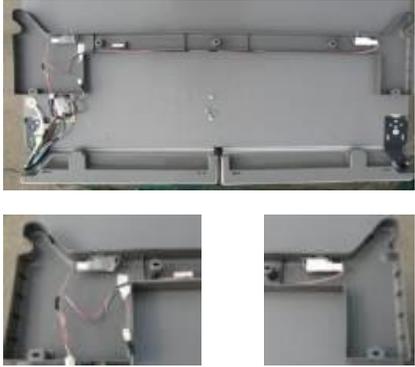
**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-16. Freezer and Refrigerator Door Switches

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove the F door switch with flat-blade screwdriver.</p>	1	 <p>Loosen 5 screws and remove the top hinge cover.</p>
2	 <p>Disconnect the connector.</p>	2	 <p>Remove two door switches and disconnect the connectors.</p>



Remark :



**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-17. Front Control Panel Dispenser in the Left Refrigerator Door

※ Follow the reverse order when assembling.

Step	Description
1	 <p>Loosen a screw at the bottom side of Front Control Panel.</p>
2	 <p>Grip the bottom side of the FCP with two hands and lift and pull it forward to remove.</p>
3	 <p>Disconnect the connector.</p>

Remark :



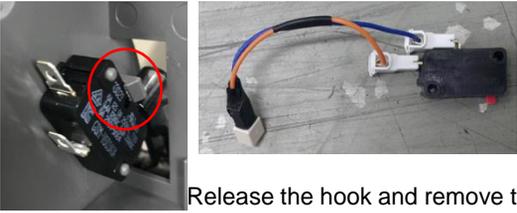
**WARNING**

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-18. Dispenser Lever

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Remove the Front Control Panel. Loosen 4 screws to remove the Box Dispenser Ice Shutter Assembly.</p>	5	 <p>Remember how to link the dispenser flap moving motor and the Box Dispenser Ice shut Assembly. Loosen a screw to remove the motor.</p>
2	 <p>Pull and remove the assembly.</p>	6	 <p>Release the hook and remove the water dispenser lever switch.</p>
3	 <p>Remember how to arrange the dispenser water tube. See the yellow tape for guide line. Separate the water tube which is assembled to hook and cylinder.</p>	7	  <p>Loosen 2 screws and the lever kit with the switch.</p>
4	 <p>Disconnect 5 connectors.</p>		

□ Remark :



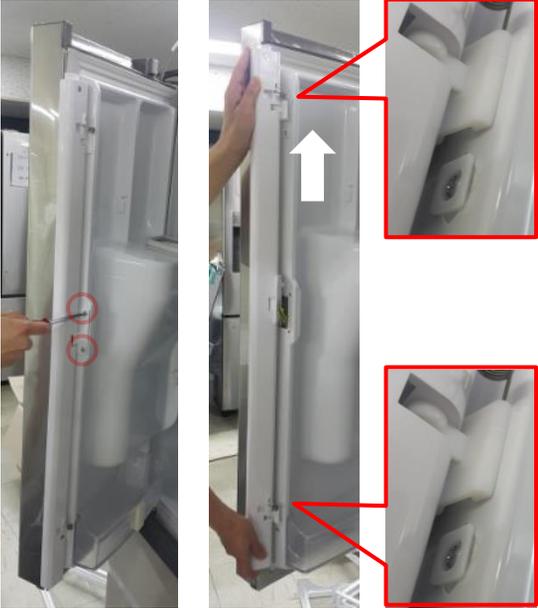
**WARNING**

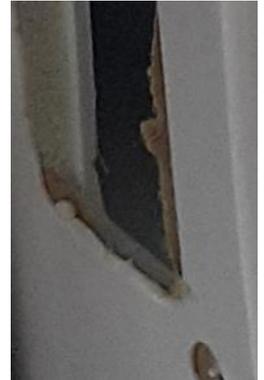
To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.

# 11. Disassemble/Assemble Procedures

## 11-19. Mullion Bar Assembly

※ Follow the reverse order when assembling.

Step	Description
1	 <p data-bbox="178 1023 606 1110">Loosen 2 screws. Grip the upper and lower side of the bar. Push it up to remove.</p>
2	 <p data-bbox="406 1284 692 1342">Disconnect the mullion bar heater(AC) connector.</p>



※ Assemble Procedures at Middle Hinge Part

Align the 2 screw holes on the door with the mounting holes on the middle hinge of mullion bar after fitting two hooks certainly. And then tighten 2 screws.

□ Remark :



### WARNING

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# 11. Disassemble/Assemble Procedures

## 11-21. Interior F/R Lamp

※ Follow the reverse order when assembling.

Step	Description	Step	Description
1	 <p>Pushing the front side of F lamp cover, pull it down to remove.</p>	2	 <p>Loosen 2 screws</p>
2	 <p>Loosen 2 screws to remove the lamp.</p>	3	 <p>Make a gap between the lamp holder and the top side of refrigerator using thin flat tip tool. And pull the holder down to remove.</p>
3	 <p>Disconnect the F lamp connector.</p>	4	 <p>Disconnect the R lamp connector.</p>
1	 <p>Release two hooks at the back side of R lamp cover carefully and remove the ramp cover.</p>	5	 <p>Release hooks and remove the lamp.</p>

□ Remark :



### WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless tests require power.