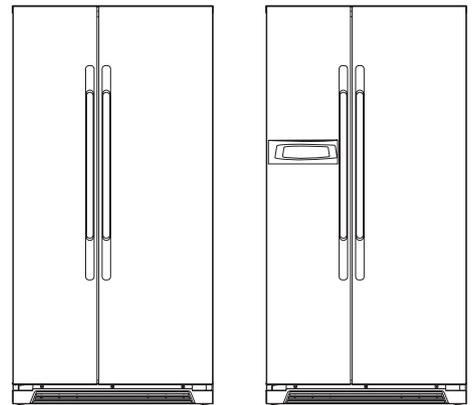


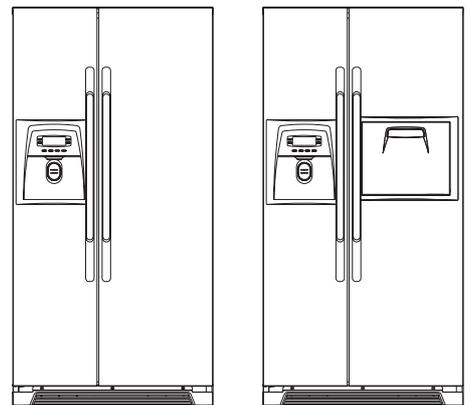
S/M No:

Service Manual

Refrigerator



| | | |
|------------------------------|-------------|-------------|
| Refrigerant Type (R-134a) | FRS-U20IV.. | FRS-U20BV.. |
| Refrigerant Type (R-600a) | FRN-U20IV.. | FRN-U20BV.. |



| | | |
|------------------------------|----------------|----------------|
| Refrigerant Type (R-134a) | FRS-U20D(E)V.. | FRS-U20F(G)V.. |
| Refrigerant Type (R-600a) | FRN-U20D(E)V.. | FRN-U20F(G)V.. |

4 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://svc.dwe.co.kr>)

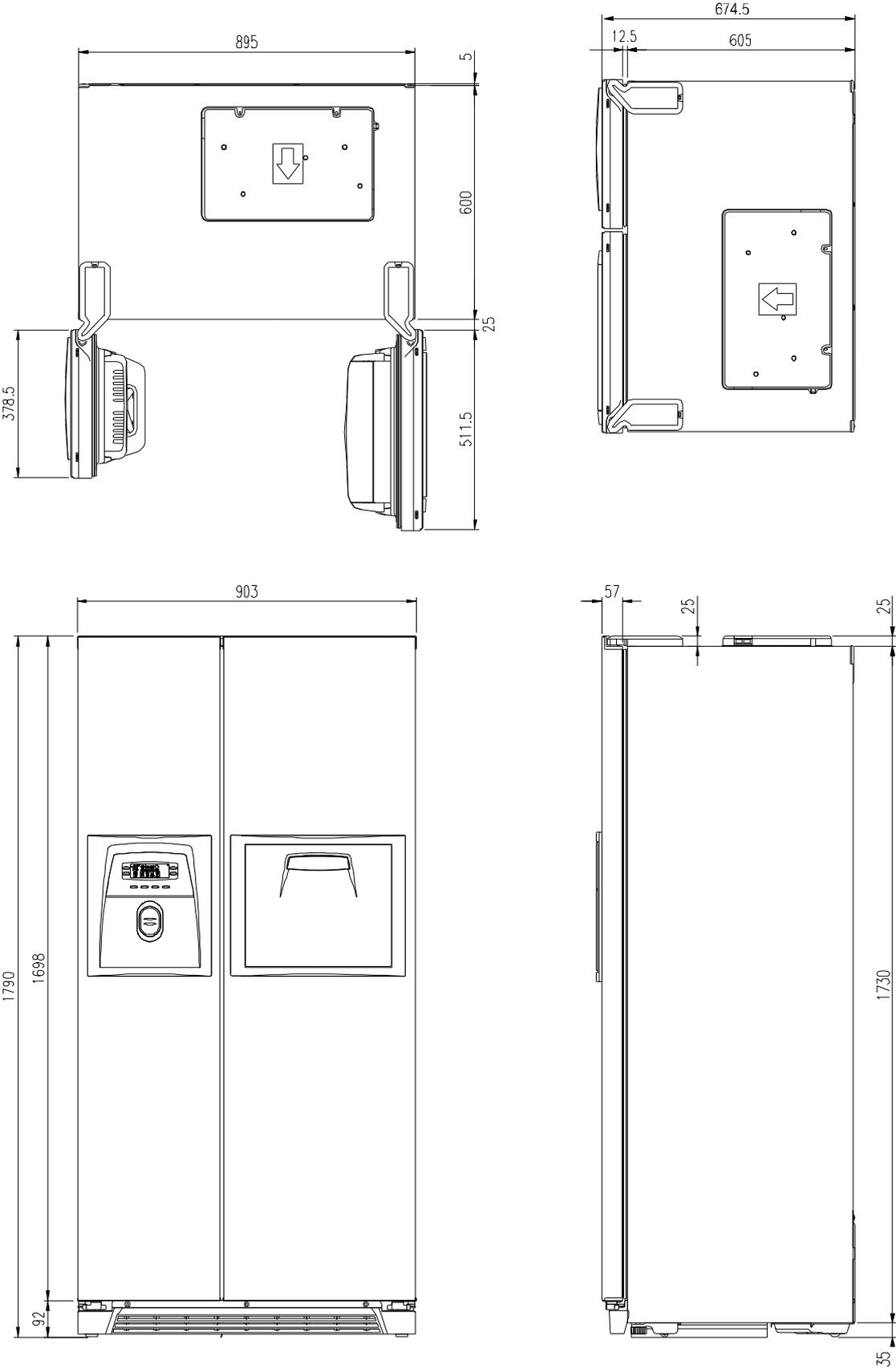
D
V
E
C
O

1. Specification

| Buyer No. | | U20IV.. | U20BV.. | U20DV.. | U20FV.. | U20EV.. | U20GV.. |
|-----------------------------|--------------|------------|------------|------------|------------|------------|------------|
| Factory No. | | FRU-57VI.. | FRU-57VB.. | FRU-54VD.. | FRU-54VF.. | FRU-54VE.. | FRU-54VG.. |
| Feature | Dispenser | x | x | O | O | O | O |
| | H/Bar | x | x | x | O | x | O |
| | Magic Room | x | x | x | x | O | O |
| Gross Vol. (ISO 15502) | Total | 618 | 618 | 604 | 604 | 604 | 604 |
| | Freezer | 241 | 241 | 227 | 227 | 227 | 227 |
| | Refrigerator | 377 | 377 | 377 | 377 | 377 | 377 |
| Storage Vol. (ISO 15502) | Total | 555 | 555 | 531 | 531 | 518 | 518 |
| | Freezer | 201 | 201 | 175 | 175 | 161 | 161 |
| | Refrigerator | 354 | 354 | 356 | 356 | 357 | 357 |
| Diemension | Width (mm) | 903 | | | | | |
| | Depth (mm) | 730.5 | | | | | |
| | Height (mm) | 1790 | | | | | |
| Weight (kg) | | 104 | 104 | 113 | 115 | 115 | 117 |

| | | | | | | | |
|-----------------|------------------------|-----------------------|---------------|---|---------------|--|--|
| Cooling Cycle | Refrigerant Type | R-600a or R-134a | | | | | |
| | Refrigerant Charge | 76g or 190g | | | | | |
| | Evaporator Type | Fin Type | | | | | |
| | Condenser Type | Fan Cooling System | | | | | |
| | Dryer | Molecular Sieve xH-9 | | | | | |
| | Capillary Tube | ID0.7 x T0.55 x L2200 | | | | | |
| Heater | Defrost Heater | AC 220V / 192W | | | | | |
| | Dispenser Heater | x | AC 220V / 5W | | | | |
| | Water Pipe Heater | x | AC 220V / 5W | | | | |
| | Main Duct Heater | AC 220V / 7W | | | | | |
| | Home Bar Heater | x | AC 220V / 10W | X | AC 220V / 10W | | |
| Sensor | Defrost Sensor | PBN-43 | | | | | |
| | Freezer Sensor | PT-38 | | | | | |
| | Refrigerator Sensor | PBN-43 | | | | | |
| Electronic Part | Fuse Temp. (Defrost) | AC 250V, 10A, 77C | | | | | |
| | Freezer Fan Motor | DC 13V, 2050rpm | | | | | |
| | Refrigerator Fan Motor | DC 13V, 1850rpm | | | | | |
| | Condenser Fan Motor | DC 13V, 1100rpm | | | | | |
| | Freezer Lamp | 25W x 1EA | | | | | |
| | Refrigerator Lamp | 25W x 2EA | | | | | |

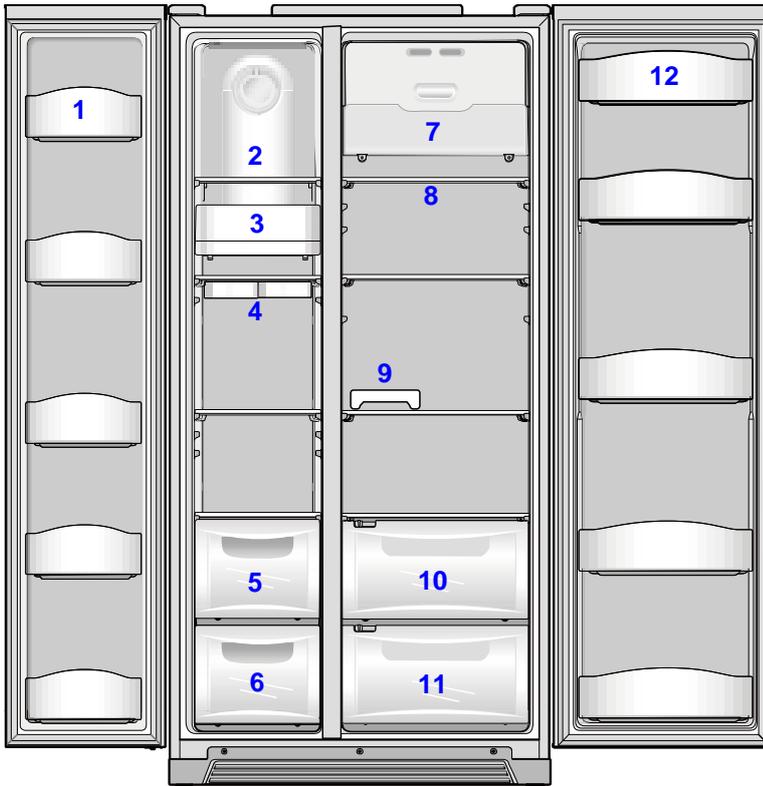
2. External Size



* Features are model dependent. All model has same size.

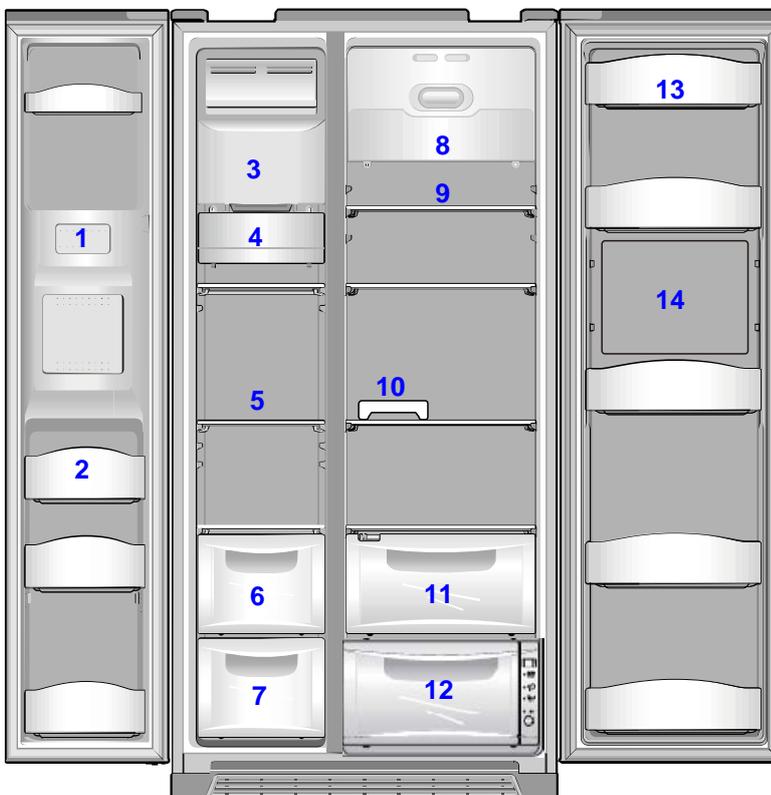
3. Interior Parts

3-1. Basic Models



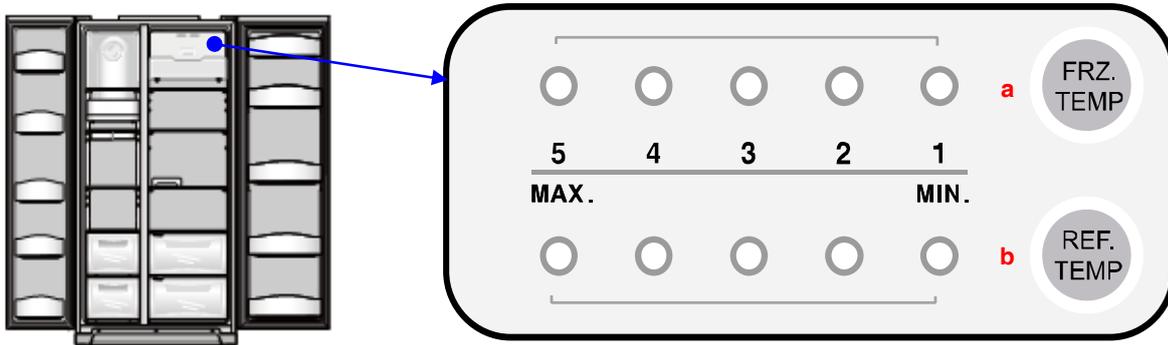
- 1) Freezer Pocket
- 2) Freezer Shelf
- 3) Freezer Lamp (25W x 1ea)
- 4) Ice Tray
- 5),6) Freezer Case
- 7) Refrigerator Lamp (25W x 2ea)
- 8) Refrigerator Shelf
- 9) Egg Tray
- 10), 11) Refrigerator Case
- 12) Refreshment Pocket

3-2. Dispenser Models (*Option : Homebar / Magic Room)



- 1) Water/Ice Dispenser
- 2) Freezer Pocket
- 3) Ice Storage Case
- 4) Freezer Lamp (25W x 1ea)
- 5) Freezer Shelf
- 6),7) Freezer Case
- 8) Refrigerator Lamp (25W x 2ea)
- 9) Refrigerator Shelf
- 10) Egg Tray
- 11) Refrigerator Case
- 12) Magic Room (*Option)
- 13) Refreshment Pocket
- 14) Homebar (*Option)

1. Display (Inner Basic Model)



- a Temperature adjustment button for freezer compartment
- b Temperature adjustment button for refrigerator compartment

2. Display Control

| FCP | Cotrol |
|---------------------------|--|
| Temp. Display (Set Temp.) | Initial Mode : Freezer / Refrigerator set medium (3 / 3) |

3. FRZ. SET button

- 1) Temperature control of freezer compartment
- 2) Initial power plug in : Medium (3)

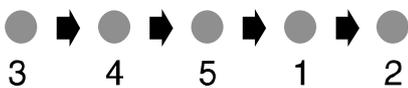
- Every time you press the FRZ. SET button, the setting temperature changes below order.



4. REF. SET button

- 1) Temperature control of refrigerator compartment
- 2) Initial power plug in : Medium (3)

- Every time you press the REF. SET button, the setting temperature changes below order.



1. Display (Basic Model)



- a Temperature adjustment button for freezer compartment
- b Super(Quick) freezer compartment button
- c Super(Quick) refrigerator compartment button
- d Temperature adjustment button for refrigerator compartment

2. Display Control

| FCP | Control |
|----------------------------|---|
| Temp. Display (Set Temp.) | Initial Mode : Freezer / Refrigerator set medium (-19C / 4C) |
| SUPER FRZ, SUPER REF. Icon | Button |

3. FRZ. SET button

- 1) Temperature control of freezer compartment
- 2) Initial power plug in : Medium (-19C)
- Every time you press the FRZ. SET button, the setting temperature changes below order.



4. SUPER FRZ. Button

When this button press, the QUICK and Speed icon is flicker 6 times and keep ON.
 (By pressing the SUPER FRZ. Button again you can stop this function.)

5. REF. SET button

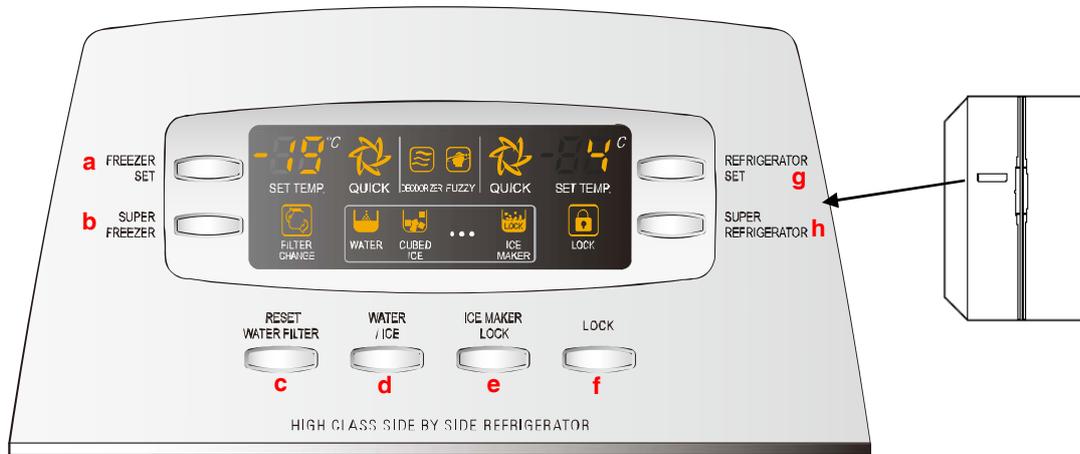
- 1) Temperature control of refrigerator compartment
- 2) Initial power plug in : Medium (4C)
- Every time you press the REF. SET button, the setting temperature changes below order.



6. SUPER REF. Button

When this button press, the QUICK and Speed icon is flicker 6 times and keep ON.
 (By pressing the SUPER REF. Button again you can stop this function.)

1. Display (Dispenser Type)



- a Temperature adjustment button for freezer compartment
- b Super(Quick) freezer compartment button
- c Reset water filter button after exchanging the filter
- d Dispenser selection button. (Water / Cubed ice)
- e Ice maker lock button
- f Children lock button (Hold 3 seconds)
- g Temperature adjustment button for refrigerator compartment
- h Super(Quick) refrigerator compartment button

2. Display Control

| FCP | Control |
|----------------------------|--|
| Temp. Display (Set Temp.) | Initial Mode : Freezer / Refrigerator set medium (-19C / 4C) |
| SUPER FRZ, SUPER REF. Icon | Button |
| WATER / CUBED ICE | Button |
| KEY LOCK ICON | Button |
| FILTER CHANGE LED | AFTER 6 Month, LED ON |

3. FRZ. SET button

- 1) Temperature control of freezer compartment
 - 2) Initial power plug in : Medium (-19C)
- Every time you press the FRZ. SET button, the setting temperature changes below order.



4. SUPER FRZ. Button

When this button is pressed, the QUICK and Speed icon flickers 6 times and stays ON.
 (By pressing the SUPER FRZ. Button again you can stop this function.)

5. REF. SET button

- 1) Temperature control of refrigerator compartment
- 2) Initial power plug in : Medium (4C)

- Every time you press the REF. SET button, the setting temperature changes below order.



6. SUPER REF. Button

When this button press, the QUICK and Speed icon is flicker 6 times and keep ON.

(By pressing the SUPER REF. Button again you can stop this function.)

7. RESET WATER FILTER

After 6 month of first power input, 'Change Filter Icon' is on. When the time comes to change follow the steps.

- 1) Push the Lock button.
- 2) Push the 'Filter Reset' button for 3 seconds. Then 'Change Filter' icon is off.

8. WATER/ICE select

- 1) WATER / CUBED ICE mode available.
- 2) Every the button press, the order is WATER - CUBED ICE
- 3) The initial mode is WATER.

9. ICE MAKER LOCK

- 1) Press the 'Dispenser' button continue. (Press again, the mode is OFF.)



- 2) When cleaning the ice storage case or when not use for a long period of time.

9. LOCK button

- 1) When lock the other buttons, press this button and LOCK icon is active.
(In this mode other button is unable except LOCK button.)
- 2) To unlock, push the button again.

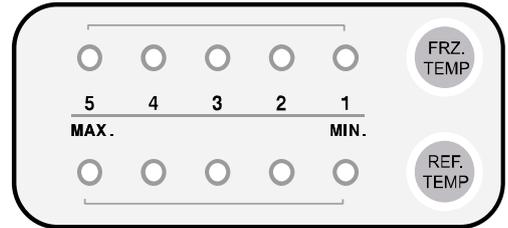
< REFERENCE >

: Please wait for 2 ~ 3 seconds in order to take final ice or drops of water when taking out cup from the pressing switches after taking ice or water.

: The actual inner temperature varies depending on the frood status, as the indicated setting temperature is a target temperature, not actual temperautre within refrigerator.

1. Freezer Compartment Control

- 1) Adjust by the pushing the FRZ.SET button.
- 2) Compressor & Freezer Fan controlled by each mode ON/OFF point.
- 3) Freezer Compartment ON/OFF Difference : 2C



- MEDIUM OFF point : -19C
- When Room Temperature (RT) is below 13C, Freezer sensor OFF point 2C up (so, MEDIUM OFF : -17C)

4) Control Temperature Point in Each Mode

| Division | | Initially On | 1st Press | 2nd Press | 3rd Press | 4th Press |
|---------------------|------------|--------------|------------|-----------|-----------|------------|
| Display | | 3 | 4 | 5 | 1 | 2 |
| Temperature Control | | Medium | Medium Max | Max | Min | Medium Min |
| Normal | Sensor On | -14.0 | -15.5 | -17.5 | -9.0 | -12.0 |
| | Sensor Off | -16.0 | -17.5 | -19.5 | -11.0 | -14.0 |
| RT <= 13C | Sensor On | -12.0 | -13.5 | -15.5 | -7.0 | -10.0 |
| | Sensor Off | -14.0 | -15.5 | -17.5 | -9.0 | -12.0 |

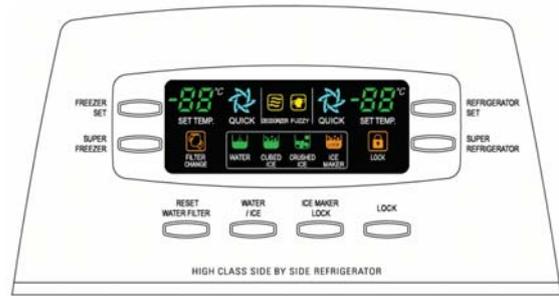
2. Refrigerator Compartment Control

- 1) Adjust by the pushing the REF.SET button.
- 2) Refrigerator Fan controlled by each mode ON/OFF point.
- 3) Freezer Compartment ON/OFF Difference : 0.5C

- MEDIUM OFF point : 4.2C
- When Room Temperature (RT) is below 13C, Refrigerator sensor OFF point 2C up (so, MEDIUM OFF : 6.2C)

4) Control Temperature Point in Each Mode

| Division | | Initially On | 1st Press | 2nd Press | 3rd Press | 4th Press |
|--------------------------------|------------|--------------|------------|-----------|-----------|------------|
| Display | | 3 | 4 | 5 | 1 | 2 |
| Temperature | | Medium | Medium Max | Max | Min | Medium Min |
| Normal | Sensor On | 4.7 | 3.7 | 2.7 | 6.7 | 5.7 |
| | Sensor Off | 4.2 | 3.2 | 2.2 | 6.2 | 5.2 |
| RT <= 13C | Sensor On | 6.7 | 5.7 | 4.7 | 8.7 | 7.7 |
| | Sensor Off | 6.2 | 5.2 | 4.2 | 8.2 | 7.2 |
| Weak refrigeration | Sensor On | 11.2 | 10.2 | 9.2 | 13.2 | 12.2 |
| | Sensor Off | 4.2 | 3.2 | 2.2 | 6.2 | 5.2 |
| Weak refrigeration & RT <= 13C | Sensor On | 13.2 | 12.2 | 11.2 | 15.2 | 14.2 |
| | Sensor Off | 6.2 | 5.2 | 4.2 | 8.2 | 7.2 |



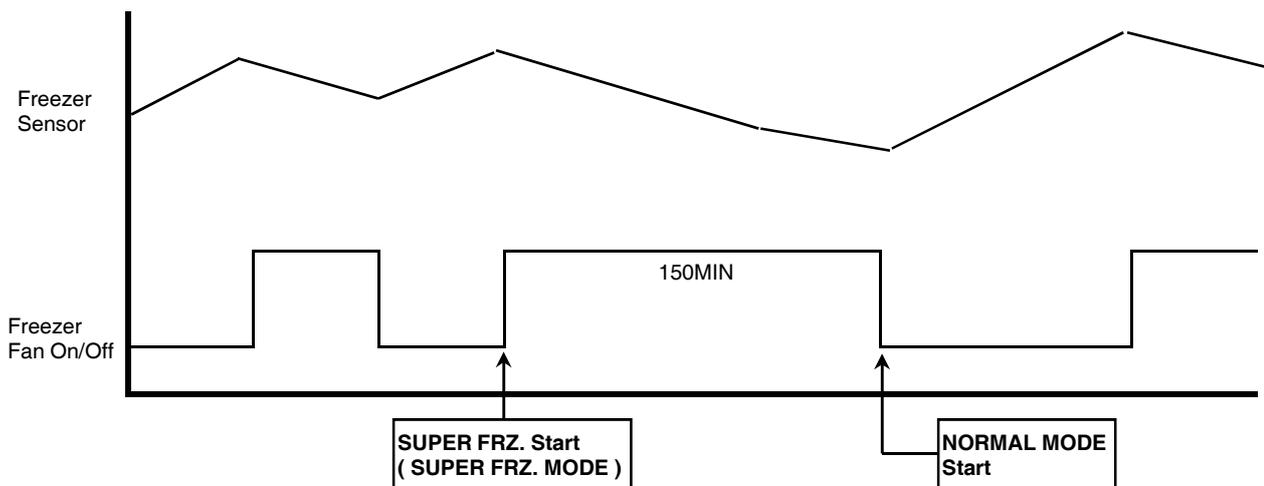
1. Freezer Compartment Control

- 1) Adjust by the pushing the FRZ.SET button.
- 2) Compressor & Freezer Fan controlled by each mode ON/OFF point.
- 3) Freezer Compartment ON/OFF Difference : 2C
 - MEDIUM OFF point : -19C
 - When Room Temperature (RT) is below 13C, Freezer sensor OFF point 2C up (so, MEDIUM OFF : -17C)
- 4) Control Temperature Point in Each Mode

| Division | | Initially On | 1st Press | 2nd Press | 3rd Press | 4th Press | 5th Press | 6th Press |
|---------------------|------------|--------------|------------|-----------|-----------|-----------|------------|-----------|
| Display | | -19 | -20 | -21 | -22 | -16 | -17 | -18 |
| Temperature Control | | Medium | Medium Max | | Max | Min | Medium Min | |
| Normal | Sensor On | -14.8 | -15.8 | -16.8 | -17.8 | -11.8 | -12.8 | -13.8 |
| | Sensor Off | -16.8 | -17.8 | -18.8 | -19.8 | -13.8 | -14.8 | -15.8 |
| RT <= 13C | Sensor On | -12.8 | -13.8 | -14.8 | -15.8 | -9.8 | -10.8 | -11.8 |
| | Sensor Off | -14.8 | -15.8 | -16.8 | -17.8 | -11.8 | -12.8 | -13.8 |

6) SUPER FRZ. (QUICK) Mode

- In this mode, Compressor & Freezer Fan motor is on unconditionally for 150min. (free of freezer sensor)



2. Refrigerator Compartment Control

1) Adjust by the pushing the REF.SET button.

LOW - MEDIUM LOW - MEDIUM - MEDIUM MAX - MAX

2) Refrigerator Fan controlled by each mode ON/OFF point.

3) Refrigerator Compartment ON/OFF Difference : 0.5C

- MEDIUM OFF point : 5.2C

- When Room Temperature (RT) is below 13C, Refrigerator sensor OFF point 2C up (so, MEDIUM OFF : 7.2C)

4) Weak Cooling Prevention Function

- This funtion is free of Freezer sensor.

- When refrigerator compartment reaches the Fan OFF point, the Fan is OFF.

and then Compressor controlled by Freezer sensor.

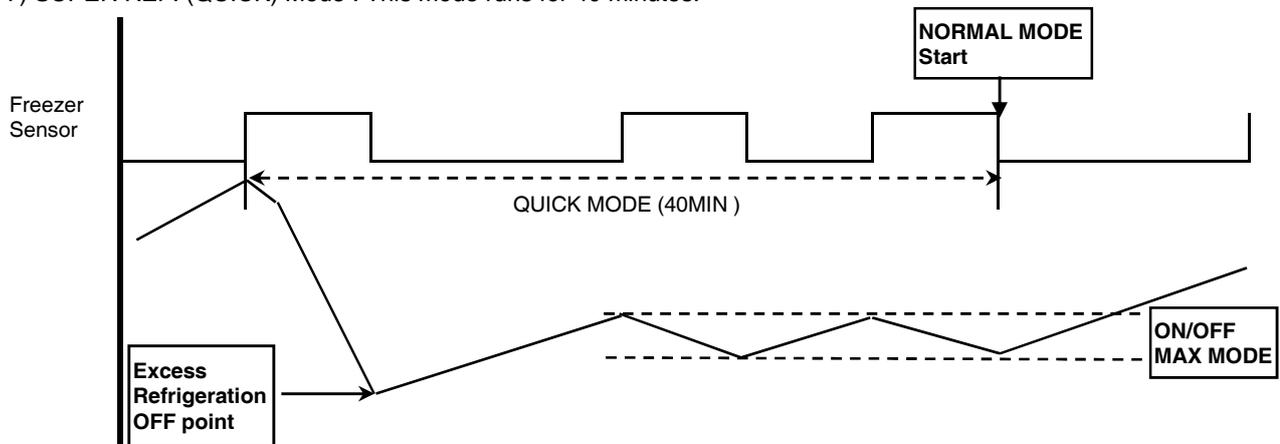
- Weak cooling temperautre is + 7C in each sensor OFF temperature.

- Weak cooling terminate temperautre is same as each sensor OFF temperature.

6) Control Temperature Point in Each Mode

| Division | | Initially On | 1st Press | 2nd Press | 3rd Press | 4th Press | 5th Press | 6th Press |
|--------------------------------|------------|--------------|------------|-----------|-----------|------------|-----------|-----------|
| Display | | 4 | 3 | 2 | 8 | 7 | 6 | 5 |
| Temperature | | Medium | Medium Max | Max | Min | Medium Min | | |
| Normal | Sensor On | 5.7 | 4.7 | 3.7 | 9.7 | 8.7 | 7.7 | 6.7 |
| | Sensor Off | 5.2 | 4.2 | 3.2 | 9.2 | 8.2 | 7.2 | 6.2 |
| RT <= 13C | Sensor On | 7.7 | 6.7 | 5.7 | 11.7 | 10.7 | 9.7 | 8.7 |
| | Sensor Off | 7.2 | 6.2 | 5.2 | 11.2 | 10.2 | 9.2 | 8.2 |
| Weak refrigeration | Sensor On | 12.2 | 11.2 | 10.2 | 16.2 | 15.2 | 14.2 | 13.2 |
| | Sensor Off | 5.2 | 4.2 | 3.2 | 9.2 | 8.2 | 7.2 | 6.2 |
| Weak refrigeration & RT <= 13C | Sensor On | 14.2 | 13.2 | 12.2 | 18.2 | 17.2 | 16.2 | 15.2 |
| | Sensor Off | 7.2 | 6.2 | 5.2 | 11.2 | 10.2 | 9.2 | 8.2 |

7) SUPER REF. (QUICK) Mode : This mode runs for 40 minutes.



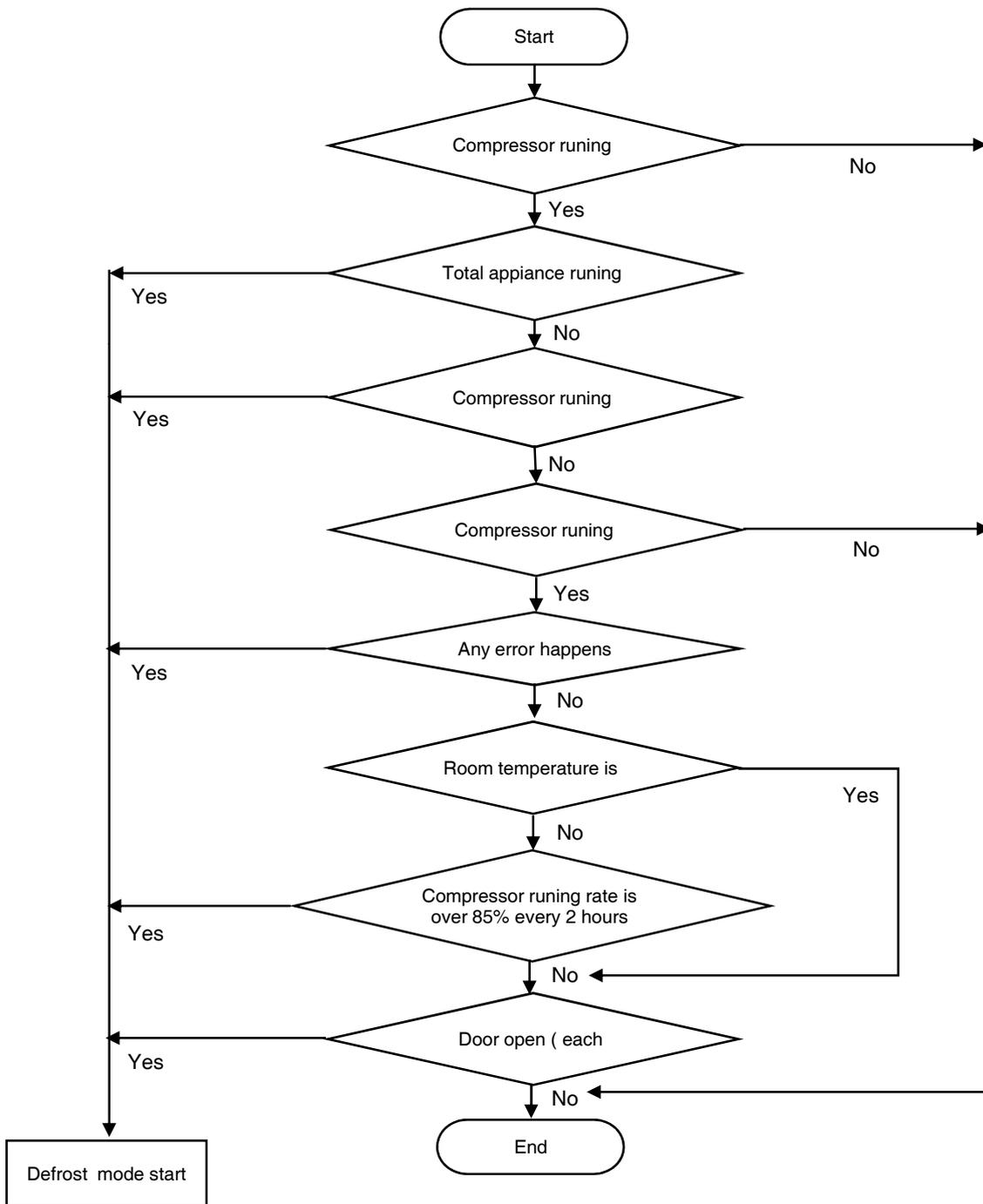
- Until the sensor reaches the Excess Refrigeration OFF point (-7C), Refrigerator Fan and compressor is ON.

- Until the QUICK Mode ends, the appliance runs with MAX dial mode.

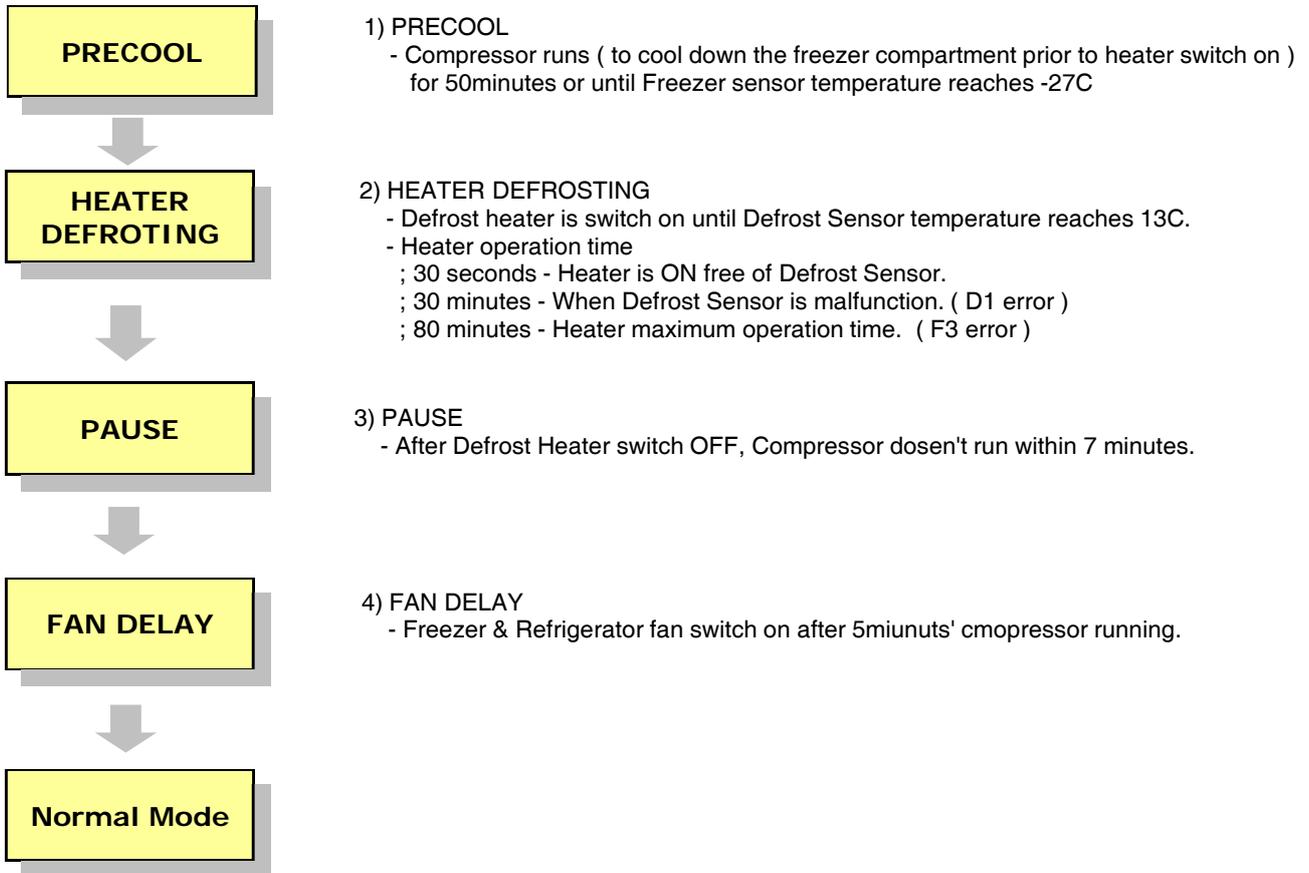
- After QUICK Mode (about 40 mins) the normal mode start.

1. When Defrost Mode start?

- ; When total Compressor running time becomes at 6, 8, 10, ..., 24hours.
- The compressor running rate is over 85% every 2 hours.
- Door opening time is over 2 minutes (Each Freezer / Refrigerator door)
- Total compressor running time (on time + off time) is 60hours.
- Any error happens. (R1, F1, D1, F3, RT-Sensor, C1, Door switch etc.)
- (But, F3 error happens then defrost mode start without Pre-cool)



2. Normal Defrost Mode



| Division | PRECOOL | HEATER DEFROST | PAUSE | FAN DELAY |
|------------------|---------|--|-------|-----------|
| Compressor | ON | OFF | OFF | ON |
| Freezer Fan | ON | OFF | OFF | OFF |
| Refrigerator Fan | Control | OFF | OFF | OFF |
| Defrsot Heater | Off | ON | OFF | OFF |
| Time | 50min | 30min (D1 error) 80min (F3 error) | 7min | 5min |

3. Forced Defrost Mode

1) How to start

(Basic Models Only)

; Press the REF. SET button 5 times while pushing the FRZ. SET button.

(Dispenser Models Only)

- Press the LOCK button.

- Press the Refrigerator Set button 5 times while pushing the Freezer Set button.

2) Except PRECOOL, steps are same as above **2. Normal Defrost Mode**.

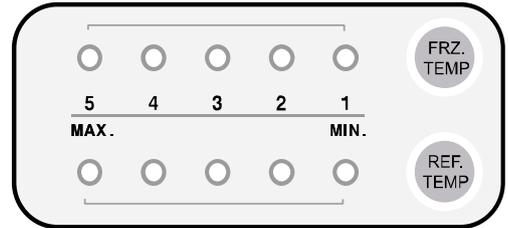
1. How to enter this check mode

; Press the FRZ. SET button 5 times while pushing the REF. SET button.

2. The Front LED displays the current error code (if happens).

3. How to exit this mode

- 1) Press the FRZ.SET button
- 2) After 4 minutes automatically exit.



4. Error Code

| No | Display (LED flicker) | Remark |
|----|-----------------------|--|
| 1 | | Freezer sensor disconnection or short |
| 2 | | Refrigerator sensor disconnection or short |
| 3 | | Room temperature sensor disconnection or short |
| 4 | | Defrost sensor disconnection or short |
| 5 | | Refrigerator Door switch is defective. |
| 6 | | Freezer Door switch is defective. |
| 7 | | Abnormal or defective cycle |
| 8 | | Abnormal return after defrosting |

; All Error Code reset, when the relative parts turn into normal.

5. Troubleshooting when error happens

(If the relative parts is normal, Error code display will be reset.)

1) Freezer sensor error

- Cause : Freezer sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN9 of the Main PCB.
If sensor is disconnected or short, change that in the freezer compartment.

2) Refrigerator sensor error

- Cause : Refrigerator sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN8 of the Main PCB.
If sensor is disconnected or short, change that in the refrigerator compartment.

3) Room temperature sensor error

- Cause : Room temperature sensor disconnection or short.
- Check point : Measure the voltage of sensor part on the Main PCB.
If voltage is 0.5~4.5V, normal. If voltage is 0V (short) or 5V (disconnect), change new one.

4) Defrost sensor error

- Cause : Defrost sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN9 of the Main PCB.
If sensor is disconnected or short, change that on the evaporator.

5) Refrigerator door switch error

- Cause : When it senses the door open for more than 1 hour.
- Check point : Check the each door switch and exchange.

6) Freezer door switch error

- Cause : When it senses the door open for more than 1 hour.
- Check point : Check the each door switch and exchange.

7) Cycle error

- Cause : When compressor works for over 3 hours although Defrost sensor is over -5C.
- Check point : Refrigerant leakage.

8) Abnormal defrosting end error

- Cause : in case defrosting mode ends after 80 minutes.
- Check point : Measure the resistance between both terminals of the defrost heater.
If the resistance is infinity (disconnection) or 0 ohm (short).



1. How to enter this check mode

; Press the SUPER FRZ. button 5 times while pushing the FRZ. SET button.

2. The Front LED displays the current error code (if happens).

; Every time you press the FRZ. Set button, the following value display.

- 1) The appliance running time. (From the plug in.)
- 2) Freezer sensor temperature.
- 3) Defrost sensor temperature.
- 4) Refrigerator sensor temperature.
- 5) Room temperature.

3. How to exit this mode

- 1) Press the REF.SET button
- 2) After 4 minutes automatically exit.

4. Error Code

| No | Display (Error Code) | Remark |
|----|----------------------|---|
| 1 | F1 | Freezer sensor disconnection or short |
| 2 | r1 | Refrigerator sensor disconnection or short |
| 3 | rt | Room temperature sensor disconnection or short |
| 4 | d1 | Defrost sensor disconnection or short |
| 5 | dr | Refrigerator Door switch is defective. |
| 6 | dF | Freezer Door switch is defective. |
| 7 | dH | Home Bar Door switch is defective. |
| 8 | C1 | Abnormal or defective cycle |
| 9 | F3 | Return after defrosting : abnormal or defective |
| 10 | Co | Pull-Down mode display (No error) |
| 11 | d2 | Forced Defrost mode display (No error) |

; All Error Code reset, when the relative parts turn into normal.

5. Troubleshooting when error happens

(If the relative parts is normal, Error code display will be reset.)

1) Freezer sensor error

- Cause : Freezer sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN9 of the Main PCB.
If sensor is disconnected or short, change that in the freezer compartment.

- Error code display



Freezer sensor is short.



Freezer sensor is disconnected.

2) Refrigerator sensor error

- Cause : Refrigerator sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN8 of the Main PCB.
If sensor is disconnected or short, change that in the refrigerator compartment.

- Error code display



Refrigerator sensor is short.



Refrigerator sensor is disconnected.

3) Room temperature sensor error

- Cause : Room temperature sensor disconnection or short.
- Check point : Measure the voltage of sensor part on the Main PCB.
If voltage is 0.5~4.5V, normal. If voltage is 0V (short) or 5V (disconnect), change new one.

- Error code display



RT sensor is short.



RT sensor is disconnected.

4) Defrost sensor error

- Cause : Defrost sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN9 of the Main PCB.
If sensor is disconnected or short, change that on the evaporator.

- Error code display



Defrost sensor is short.



Defrost sensor is disconnected.

5) Refrigerator door switch error

- Cause : When it senses the door open for more than 1 hour.
- Check point : Check the each door switch and exchange.

6) Freezer door switch error

- Cause : When it senses the door open for more than 1 hour.
- Check point : Check the each door switch and exchange.

7) Cycle error

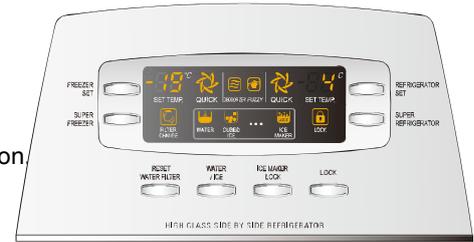
- Cause : When compressor works for over 3 hours although Defrost sensor is over -5C.
- Check point : Refrigerant leakage.

8) Abnormal defrosting end error

- Cause : in case defrosting mode ends after 80 minutes.
- Check point : Measure the resistance between both terminals of the defrost heater.
If the resistance is infinity (disconnection) or 0 ohm (short).

1. How to enter this check mode

- 1) Press the LOCK button.
- 2) Press the Super Freezer button 5 times while pushing the Freezer Set button



2. The Front LED displays the current error code (if happens).

; Every time you press the Freezer Set button, the following value display.

- 1) The appliance running time. (From the plug in.)
- 2) Freezer sensor temperature.
- 3) Defrost sensor temperature.
- 4) Refrigerator sensor temperature.
- 5) Room temperature.
- 6) P Factor display.
- 7) Filter remaining time until exchange. (Filter running time is about 4,320Hr)

3. How to exit this mode

- 1) Press the LOCK button
- 2) After 4 minutes automatically exit.

4. Error Code

| No | Display (Error Code) | Remark |
|----|----------------------|---|
| 1 | F1 | Freezer sensor disconnection or short |
| 2 | r1 | Refrigerator sensor disconnection or short |
| 3 | rt | Room temperature sensor disconnection or short |
| 4 | d1 | Defrost sensor disconnection or short |
| 5 | dr | Refrigerator Door switch is defective. |
| 6 | dF | Freezer Door switch is defective. |
| 7 | dH | Home Bar Door switch is defective. |
| 8 | EI | Ice sensor disconnection or short |
| 9 | EF | Flow sensor is defective. |
| 10 | Et | Horizontal switch error |
| 11 | Eg | Water supply error |
| 12 | EA | Drop the ice while Et |
| 13 | Eu | Full ice switch error |
| 14 | C1 | Abnormal or defective cycle |
| 15 | F3 | Return after defrosting : abnormal or defective |
| 16 | Co | Pull-Down mode display (No error) |
| 17 | d2 | Forced Defrost mode display (No error) |

; All Error Code reset, when the relative parts turn into normal.

5. Troubleshooting when error happens

(If the relative parts is normal, Error code display will be reset.)

1) F1 error

- Cause : Freezer sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN15 of the Main PCB.

If sensor is disconnected or short, change that in the freezer compartment.

- Error code display



Freezer sensor is short.



Freezer sensor is disconnected.

2) R1 error

- Cause : Refrigerator sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN14 of the Main PCB.

If sensor is disconnected or short, change that in the refrigerator compartment.

- Error code display



Refrigerator sensor is short.



Refrigerator sensor is disconnected.

3) rt error

- Cause : Room temperature sensor disconnection or short.
- Check point : Measure the voltage of sensor part on the Main PCB.

If voltage is 0.5~4.5V, normal. If voltage is 0V (short) or 5V (disconnect), change new one.

- Error code display



RT sensor is short.



RT sensor is disconnected.

4) d1 error

- Cause : Defrost sensor disconnection or short.
- Check point : Measure the resistance between both terminals after separating CN15 of the Main PCB.

If sensor is disconnected or short, change that on the evaporator.

- Error code display



Defrost sensor is short.



Defrost sensor is disconnected.

5) Door switch error (dr, dF, dH on display)

- Cause : When it senses the door open for more than 1 hour.
- Check point : Check the each door switch and exchange.

6) EI error

- Cause : Ice sensor is abnormal.
- Check point : Measure the resistance between both terminals after separating CN11 of the Main PCB.

If sensor is disconnected or short, change that in the automatic ice maker.

7) EF error

- Cause : When Flow-sensor abnormal. (There is no pulse during some time.)
The number of pulse signal is below 10 by 1 second during water supply.
- Check point : Water supply line.

8) Et error

- Cause : Level switch abnormal. (No pulse is sensed for some time.)
- Control : By time. (Supply mode is skipped.)

9) Eg error

- Cause : When Ice sensor temperature (5 minutes after water supply) doesn't go up.
- Check point : Ice sensor or water supply line.

10) EA error

- Cause : When sensing ice drop 3 times in level sensor switch error.
- Control : Stop ice maker
- After 1 time rotation EA error code disappear if level switch is normal.

11) Eu error

- Cause : Sensor which senses if ice is full or not is abnormal.
- Control : When drops the ice, the motor rotates 90 degree.

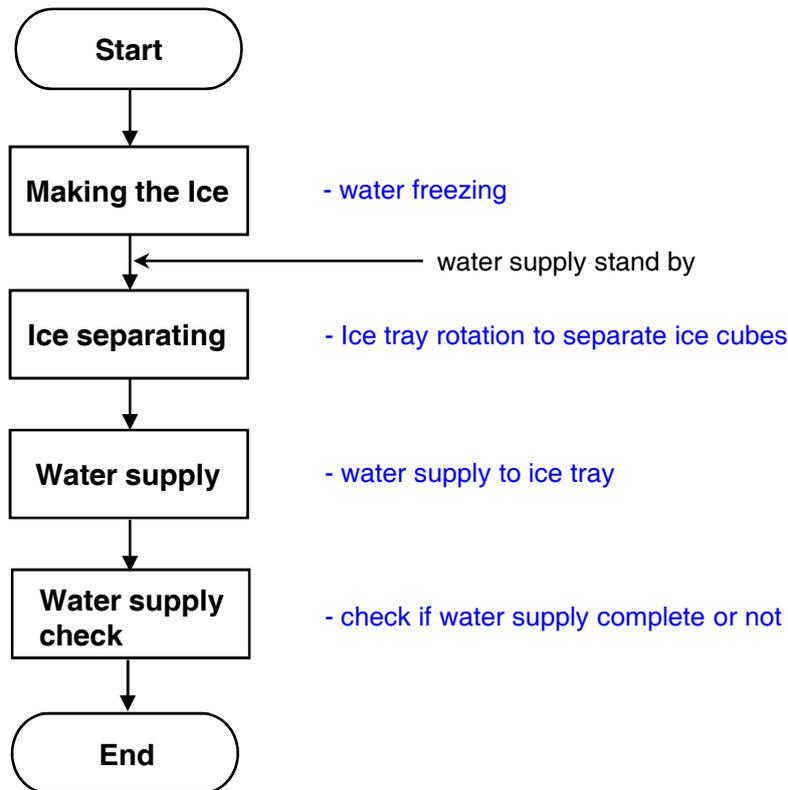
12) C1 error

- Cause : When compressor works for over 3 hours although Defrost sensor is over -5C.
- Check point : Refrigerant leakage.

13) F3 error

- Cause : in case defrosting mode ends after 80 minutes.
- Check point : Measure the resistance between both terminals of the defrost heater.
If the resistance is infinity (disconnection) or 0 ohm (short).

1. Ice making flow



1) Press Test switch (which is under the ice tray) for more than 1 second and then test starts.

- Test mode starts from ice separating mode.
- In case test switch is abnormal, test is done only 1 time.

2) When the initial power input, ice tray turns to be horizontal.

3) Water supply hose heater control - defrost heater linkage operation

- Heater is always ON if Room temperature sensor is abnormal or room temperature is below 15 degree.
- Heater is ON for 60minutes (max limit time) if Flow sensor is abnormal.

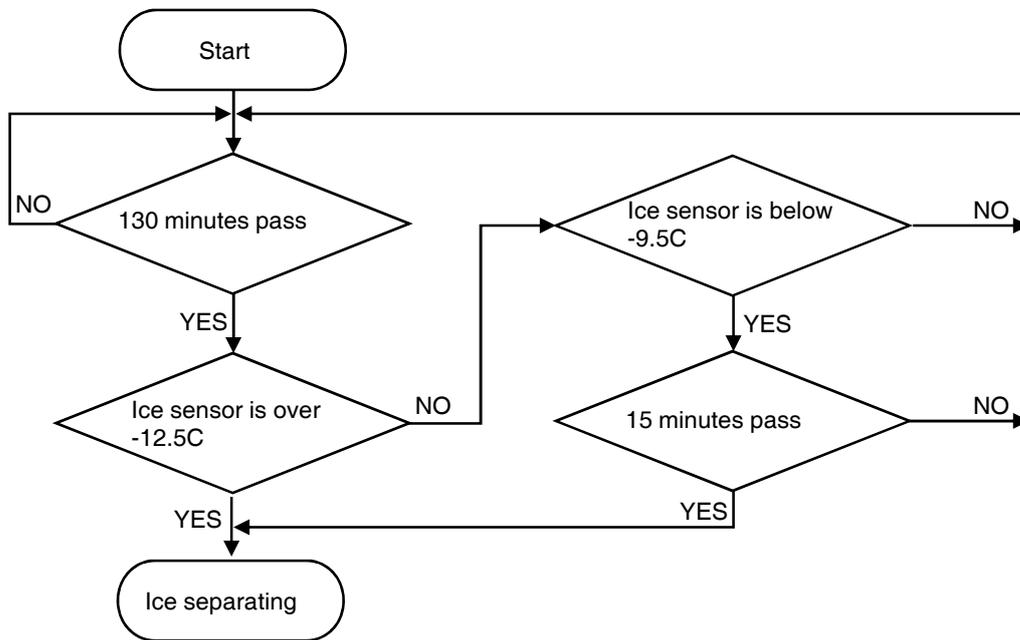
4) Water supply stand by

- Condition : When ice is full
- Operation : Proceeds to ice making mode. (stop ice separating and water supply mode)

5) Crusher function

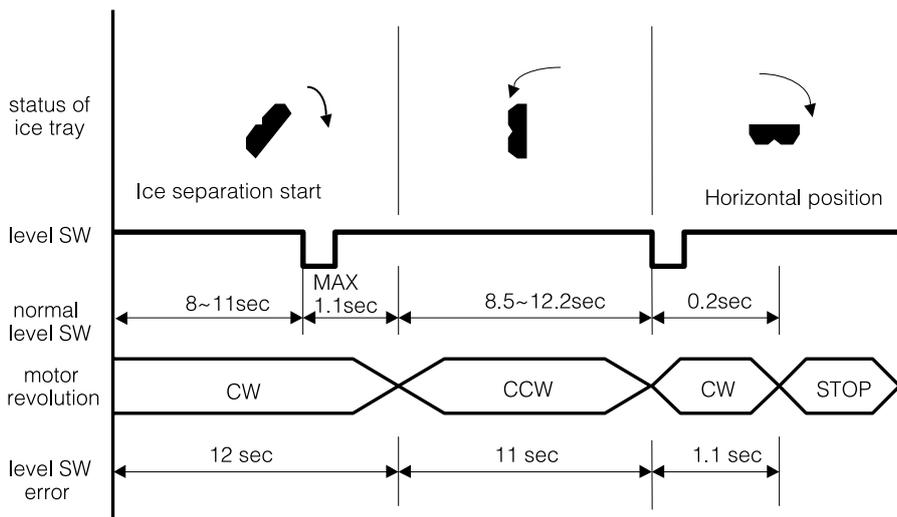
- It stops operation when freezer door is open.
- It operates if door is close.

2. Ice making mode



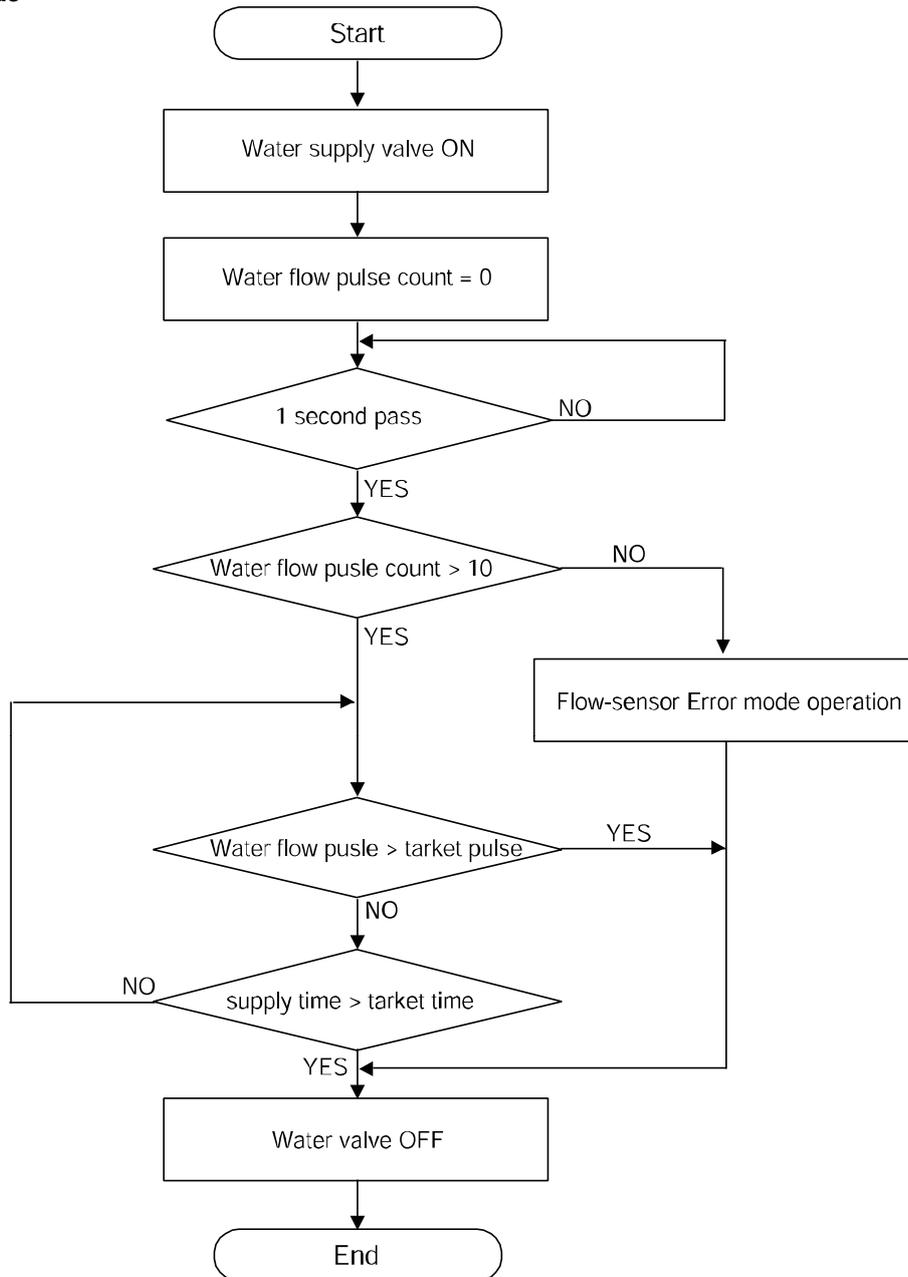
- 1) If Ice sensor temperature is below -12.5C after 130minutes, ice making completes.
- 2) If Ice sensor temperature keep below -9.5C for 15 minutes ice making complete, although the sensor is not below -12.5C
- 3) After 4.8hours ice making complete, when ice sensor is abnormal,

3. Ice separating(drop) mode



- 1) Time of each section is to verify level switch error.
- 2) It senses the rotation in each section.
- 3) When level switch is error, ice separation controlled by the time.
- 4) When rotation motor is error, the mode is pause.

4. Water supply mode



- 1) If water supply mode starts, the water valve is ON.
- 2) When Flow sensor is abnormal, supply mode controlled by the time.
- 3) Factor value is variable when After sales action. (Adjust water quantity)
 - Normal Water flow pulse setting is 238. (When controlled by the time, maximum time limit is 15 seconds.)
 - When the flow sensor is abnormal, time limit is 5.5 seconds.

5. Water supply check mode

Verify water supply completion by comparing room temperature sensor with ice sensor after 5 minutes from water supply.

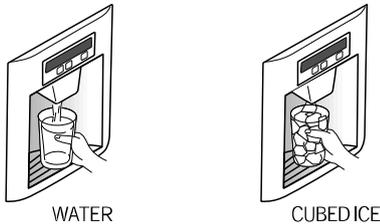
| | | | | | | |
|--------------------------------|----------|-------|-------|-------|-------|----------|
| Room temperature sensor | Below 9C | ~ 15C | ~ 21C | ~ 31C | ~ 41C | Over 41C |
| Ice sensor | -10C | -9C | -8C | -7C | -6C | -5C |

1. Water / Crushed Ice / Cubed Ice Select button

1) Default mode is Water

The selection order is Water - Cubed Ice - Water.

2) In each mode the selected is active by the dispenser button press.



2. Icemaker Lock button : It is active after pushing button

3. Display

1) Water icon turns ON as default mode.

2) The icon of each mode turns ON by pressing its button.

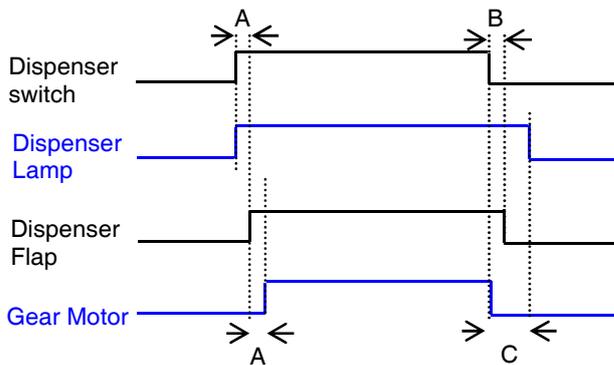
(If display switch makes error during operation of a mode, its icon is OFF.)

3) When Icemaker Lock button is ON, the Lock LED turns ON and Cubed Ice is OFF.

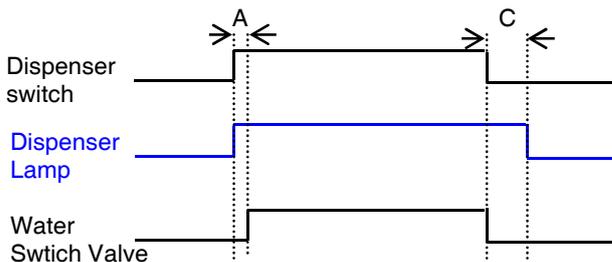
4) When no operation in Cubed / Crushed Ice mode for 1 hour, the mode change into Water mode automatically.

4. Control Flow and Timing Chart

1) Cubed Ice



2) Water Mode



| | |
|-----------------------------|-----------|
| < Delay Time > | |
| A | = 500msec |
| B | = 2.0Sec |
| C | = 5.0Sec |

1. Prevention compressor restart function

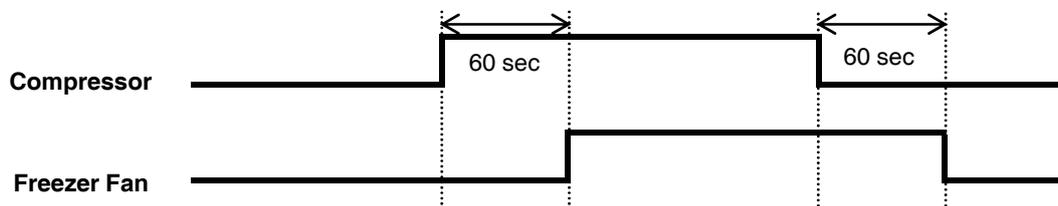
Although Freezer sensor temperature is low, compressor doesn't restart for 6 minutes from compressor OFF.

2. Beep function

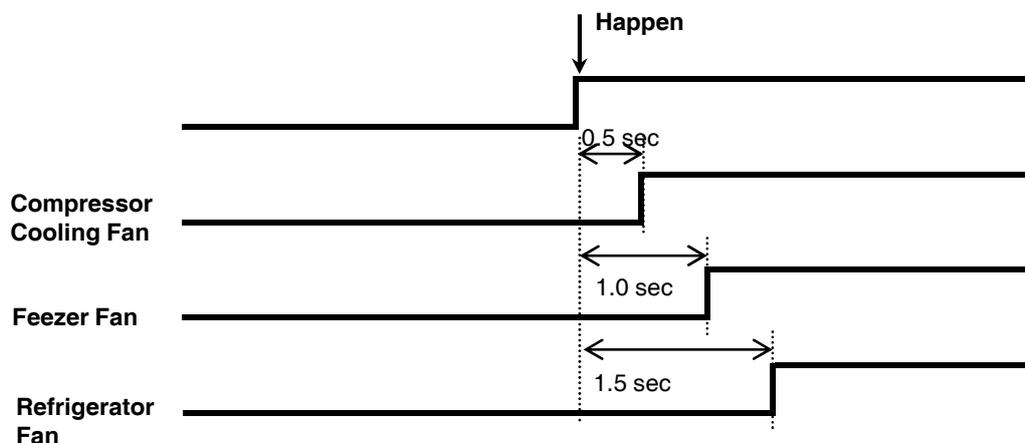
- 1) When pushing the button on the Front Control Panel.
- 2) When initial power input. (4 beeps after 3 seconds.)
- 3) When Forced Defrost Mode starts (3 beeps), Pull Down Mode Starts (1 beep).
- 4) When Door is open. (Every 1 minute for 5 minutes.)

3. Fan Delay Function

1) Compressor ON/OFF vs Freezer Fan



2) Fan priority and delay function



4. Freezer, Refrigerator and Dispenser Lamp Control

1) Refrigerator Lamp

- ; This lamp operates depending on Refrigerator door switch or Homebar door switch.
- ; The lamp is automatically off when the switch (Refrigerator or Homebar) keeps opened for 10 minutes.

2) Freezer Lamp

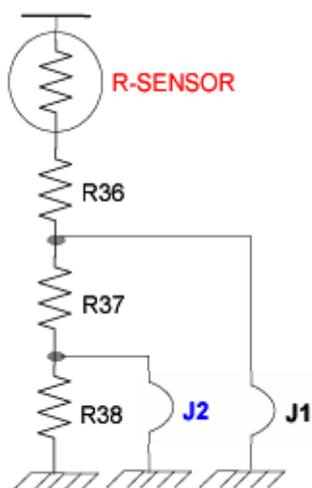
- ; This lamp operates depending on Freezer door switch.
- ; The lamp is automatically off when the switch (Freezer compartment) keeps opened for 10 minutes.

3) Dispenser Lamp (Dispenser Models Only)

- ; This lamp operates depending on micro switch which locates dispenser button.
- ; The lamp keeps ON for 5 seconds after micro switch is close.

5. Weak Cooling Trouble Shooting

; Adjust refrigerator sensor OFF point



- Normal sensor resistance. (31.4kohm)
- Cut the J18 and increase sensor resistance. (33.4kohm)
- Cut the J18, J19 and increase resistance. (35.4kohm)

| Option | Normal | Weak Cooling happens | |
|-----------|--------|----------------------|-----------|
| | | 1.5C down | 3.0C down |
| J1 | - | Cut | Cut |
| J2 | - | - | Cut |

6. Pull Down Mode

1) How to start

(Inner Basic Model)

; Push the Freezer door switch 5 times while pushing the FRZ. SET button.

(Basic Model)

; Push the SUPER FRZ. 5 times while pushing REF.SET.

(Dispenser Model)

; Push the Lock button. Then Refrigerator Set + Freezer Set + Water/Ice 5 times at the same time.

2) How to control : Compressor, Freezer Fan, Refrigerator Fan and Compressor Cooling Fan is ON for 30 hours.

3) Termination : After 30 hours or power reset.

7. How to check the filter running time. (Dispenser models only)

1) Press the LOCK button.

2) Press the Super Freezer Button 5 times while pushing the Freezer SET button.

3) Push the Freezer SET button until display **Fi-Lt**.

4) Remaining time display when push the Dispenser button.

(ex. 40 : 12 means that 4012 minutes remains until exchange.)

8. Adjust the amount of water (Default setting is P100, 86cc water supply) - Dispenser Models only

; Function to adjust the amount of water supply.

1) Press the LOCK button.

2) Press the SUPER FRZ. 5 times while pressing the FRZ. SET button.

3) Press the FRZ. SET button until display **P100** on LCD.

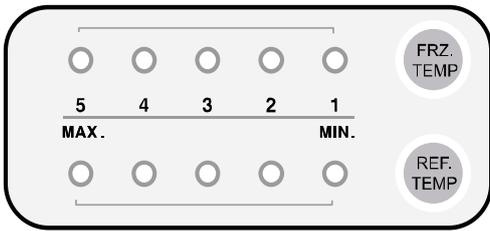
When need more water supply : Press the SUPER REF button.

- P101 (87cc), P102 (88cc), P103 (89cc).....

When need less water supply : Press the REF. SET button.

- P99 (85cc), P98 (84cc), P97 (83cc).....

1. Inner Basic Model



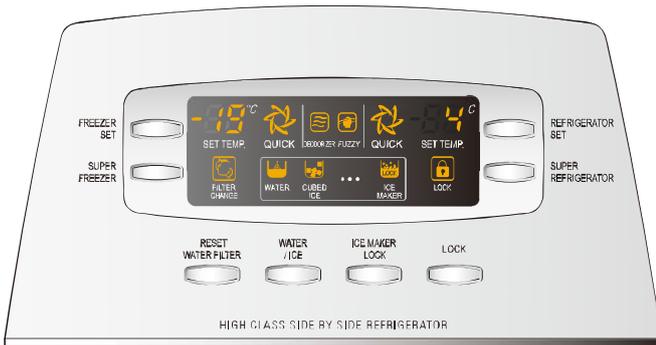
| Mode | How to enter |
|-------------------|--|
| Forced Defrosting | FRZ. SET + REF. SET 5 times |
| Pull Down | REF. SET + Freezer door switch 5 times |
| Error Display | REF. SET + FRZ. SET 5 times |

2. Basic Model



| Mode | How to enter |
|-------------------|-------------------------------|
| Forced Defrosting | FRZ. SET + REF. SET 5 times |
| Pull Down | REF. SET + SUPER FRZ. 5 times |
| Error Display | FRZ. SET + SUPER FRZ. 5 times |

3. Dispenser Model

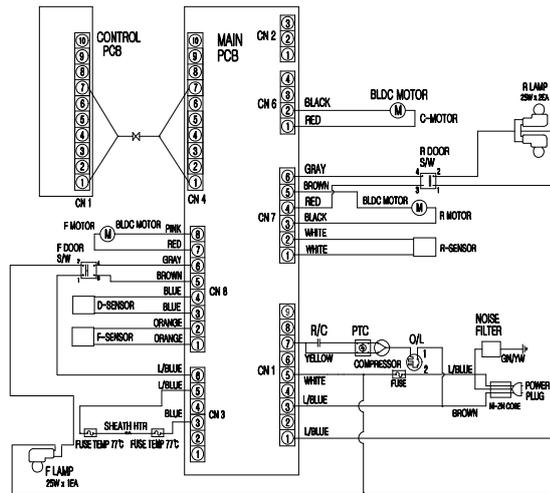
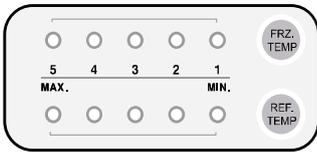


- All the modes active in LOCK condition except 'Reset Water Filter'. (Push the LOCK button)

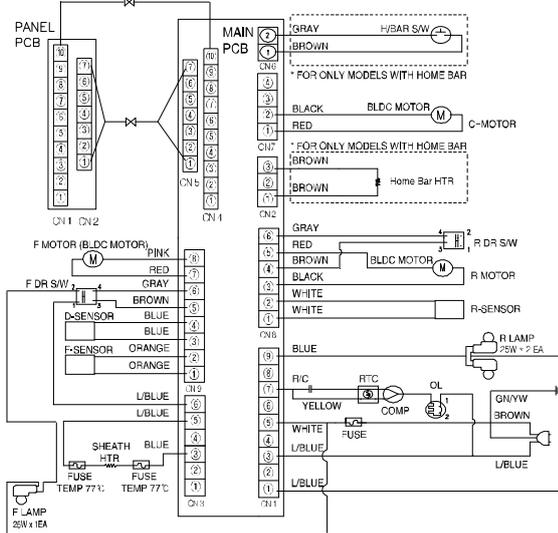
| Mode | How to enter |
|--------------------|--|
| Forced Defrosting | FREEZER SET + REFRIGERATOR SET 5 times |
| Pull Down | REFRIGERATOR SET + FREEZER SET + WATER/ICE 5 times |
| Error Display | FREEZER SET + SUPER FREEZER 5 times |
| Reset Water Filter | Reset Water Filter button for 5seconds |

WIRING DIAGRAM (Refrigerant : R-134a Type)

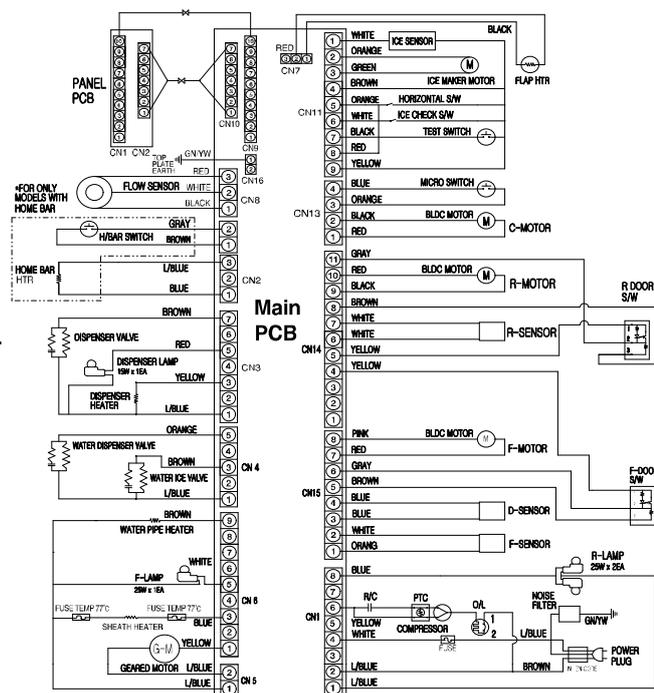
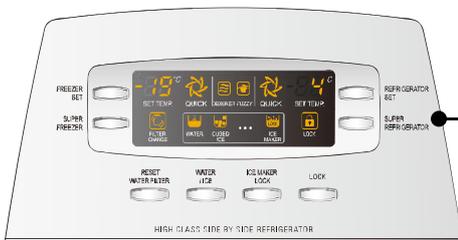
1. Inner Basic Model



2. Basic Model

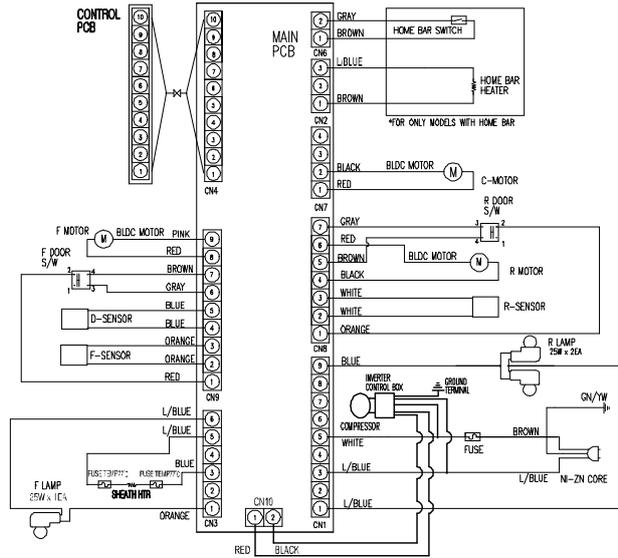
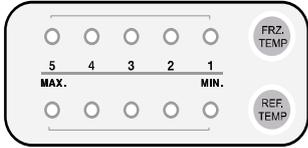


3. Dispenser Model

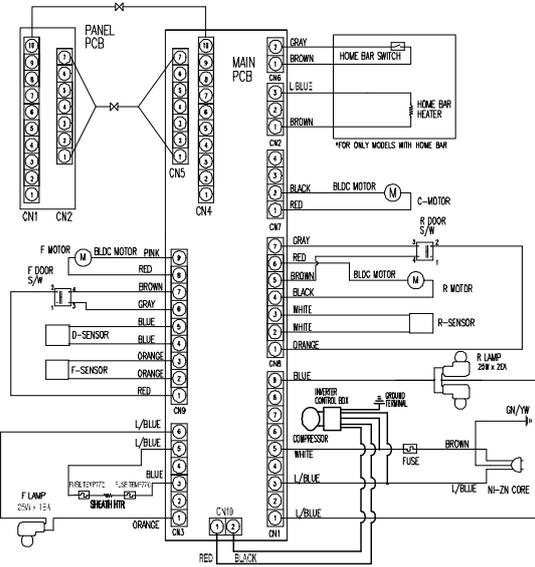


WIRING DIAGRAM (Refrigerant : Inverter Type)

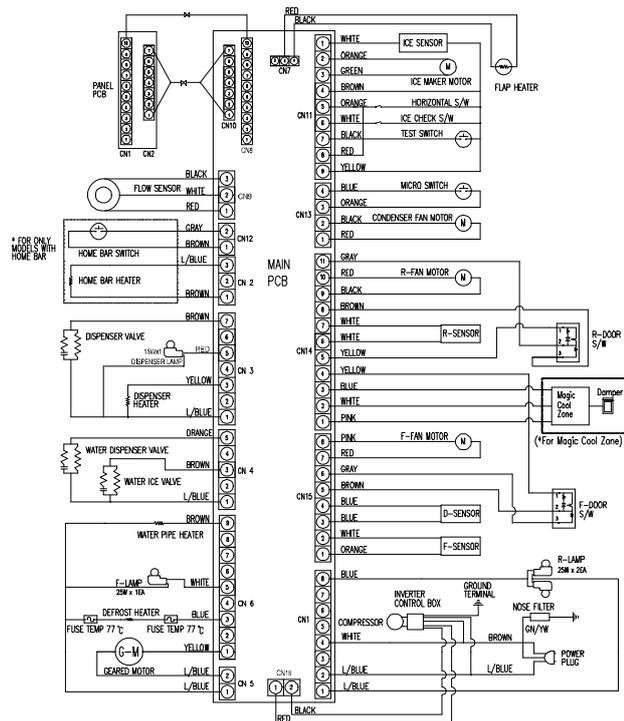
1. Inner Basic Model



2. Basic Model



3. Dispenser Model



1. Hose Ice maker Tube Assembly. (Dispenser Models Only)

1) Disassembling Procedure

| No | Procedure | No | Procedure |
|----|--|----|---|
| 1 |  Pull forward Ice Storage Case. | 5 |  Unscrew to remove Cover Guide Cab. |
| 2 |  Remove 2 screws. | 6 |  Disassemble Guide Cab Water Tube A As. |
| 3 |  Pull Ice Maker | 7 |  Pull Hose Ice Maker Tube As. |
| 4 |  Remove Water Hose Heater's connector. | | |

2) How to check the Hose Ice Maker Tube As.



; Measure the resistane of two wire.

(Good) : 9680 Ohm (+ - 8%)
(8900 ~ 10456 ohm)

(If Defective) : exchange the new one.

2. Bracket Geared Motor Assembly (Dispenser Models Only)

1) Disassembling Procedure

| No | Procedure | No | Procedure |
|----|--|----|---|
| 1 |  <p>Remove 2 screws.</p> | 4 |  <p>Check solenoid Motor.</p> |
| 2 |  <p>And unscrew 4 points.</p> | | |
| 3 |  <p>Separate 6 pin connector of Geared Motor.</p> | | |

2) How to check the Hose Ice Maker Tube As.

| Parts | How to Check | Remark |
|--------------|---|--|
| Geared Motor |  <p>Check the resistance of 2 terminals with a Tester.</p> | <p>(Good): 11.3 Ohm (+-10%) (10.8 ~ 12.7 Ohm)</p> <p>(Defective): Change the part.</p> |

3. Dispenser Micro Switch (Dispenser Models Only)

1) Disassembling Procedure (Features are model dependent)

| No | Procedure | No | Procedure |
|----|--|----|---|
| 1 |  Insert (-) screw driver into bottom hole of Dispenser Button and pull up. | 2 |  Pull out the Micro Switch. (Be careful not to damage the hook.) |

2) How to check the Hose Ice Maker Tube As.



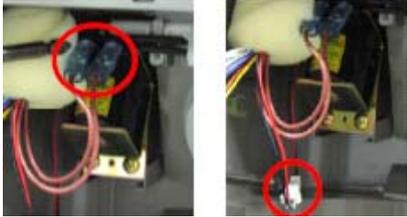
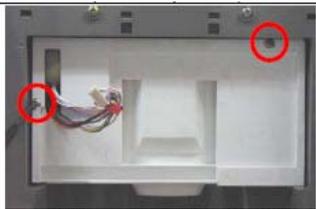
; Check both terminals (Red circle) with a Multi-Tester.
 (Test Mode : Resistance)

| Tact Switch (Blue circle) | Terminals (Red circle) | Test Result |
|---------------------------|------------------------|-------------|
| ON (Close) | Connected | Some Value |
| OFF (Open) | Disconnected | No Value |

; (If defective) Exchange new one.

4. Dispenser Solenoid Valve (Dispenser Models Only)

1) Disassembling Procedure (Features are model dependent)

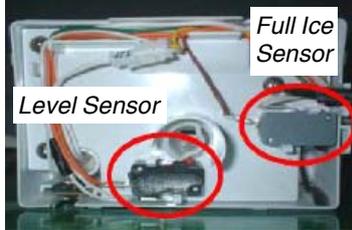
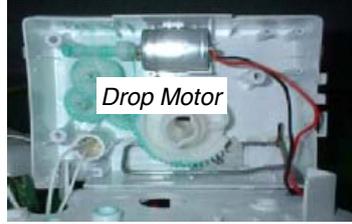
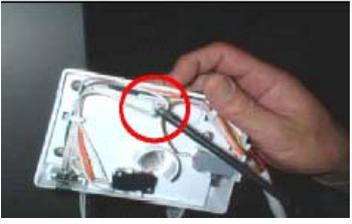
| No | Procedure | No | Procedure |
|----|---|----|--|
| 1 |  Disassemble the Cover dispenser Box As | 4 |  Disconnect 2 terminals and 2P Wire. |
| 2 |  Separate Front PCB connector. (Features are model dependent.) | 5 |  Unscrew and remove Solenoid Valve. |
| 3 |  Unscrew to remove Box Dispenser Ice Shut. | 6 |  Unscrew and remove Cover Ice Flap. |

2) How to check Dispenser Solenoid Valve

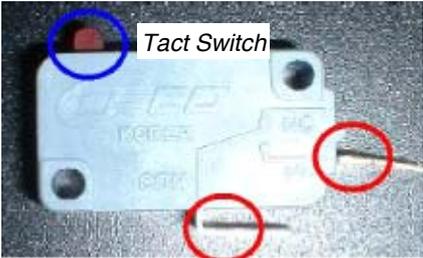
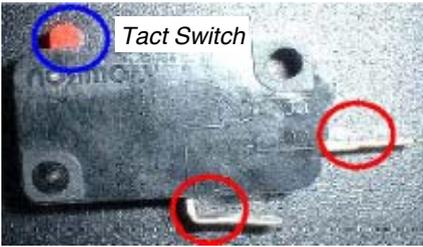
| Parts | How to Check | Remark |
|--------------------------|---|---|
| Dispenser Solenoid Valve |  Check the resistance of both terminals. | (Good): 215 Ohm (+-10%) (193 ~ 236 Ohm) (Defective): Change the part. |
| Flap Heater Assembly |  Check the resistance of 2 terminals with a Tester. | (Good): 96 Ohm (+-8%) (88 ~ 104 Ohm) (Defective): Change the part. |

5. Ice Maker (Dispenser Models Only)

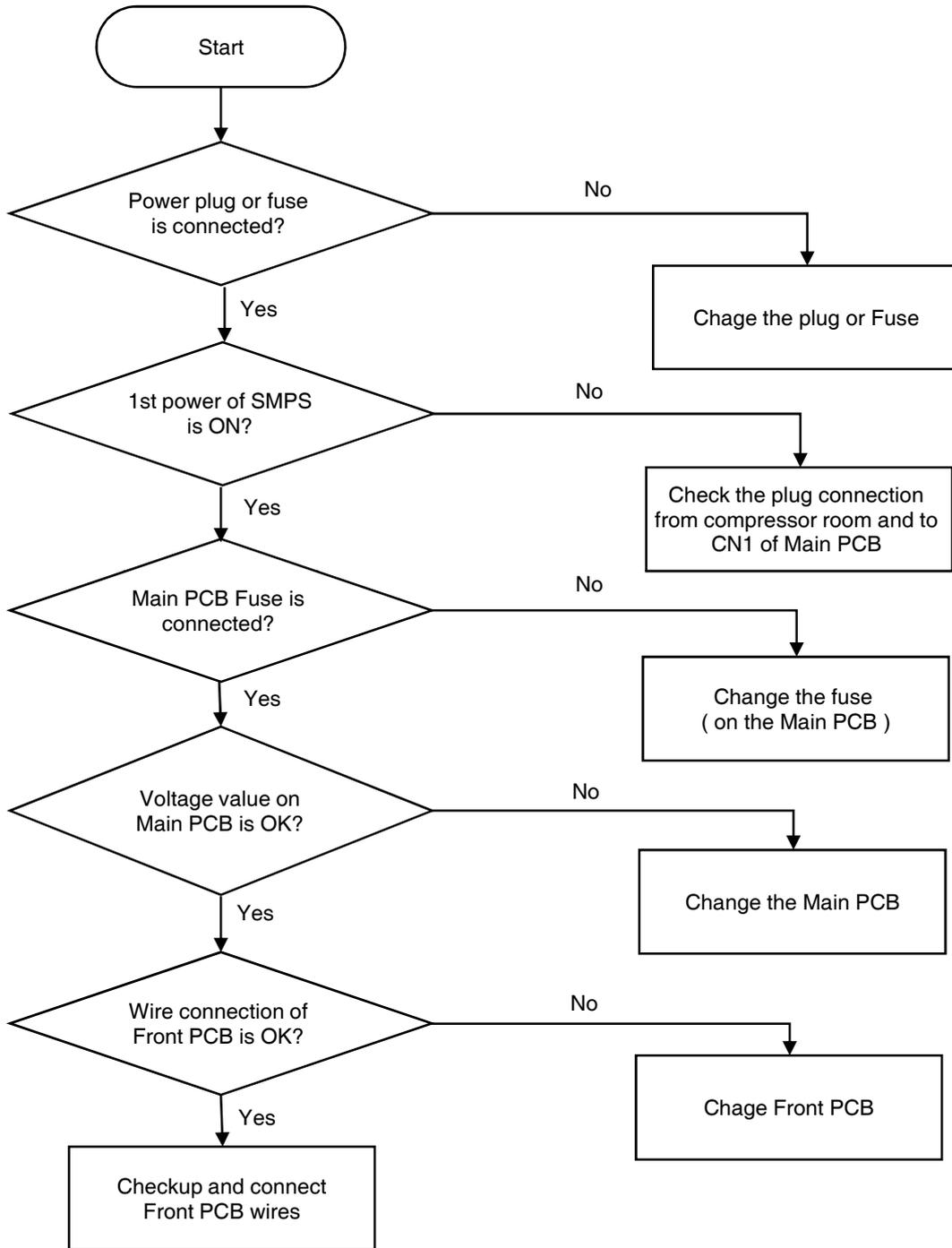
1) Disassembling Procedure

| No | Procedure | No | Procedure |
|----|---|----|---|
| 1 |  <p>Remove 2 screws.</p> | 6 |  <p>Remove full ice sensor and level sensor.</p> |
| 2 |  <p>Pull out the Ice Maker.</p> | 7 |  <p>Unscrew 3 points.</p> |
| 3 |  <p>Unscrew Fixture of Frame Ice Maker.</p> | 8 |  <p>Drop Motor</p> <p>Check if ice dropping motor is normal or not.</p> |
| 4 |  <p>Separate Ice Maker from Frame Ice Maker.</p> | 9 |  <p>Remove 2 Pin housing (Ice sensor)</p> |
| 5 |  <p>Separate Cover I/M (A) from Cover I/M (B).</p> | 10 |  <p>Remove Ice sensor from Case Icing.</p> |

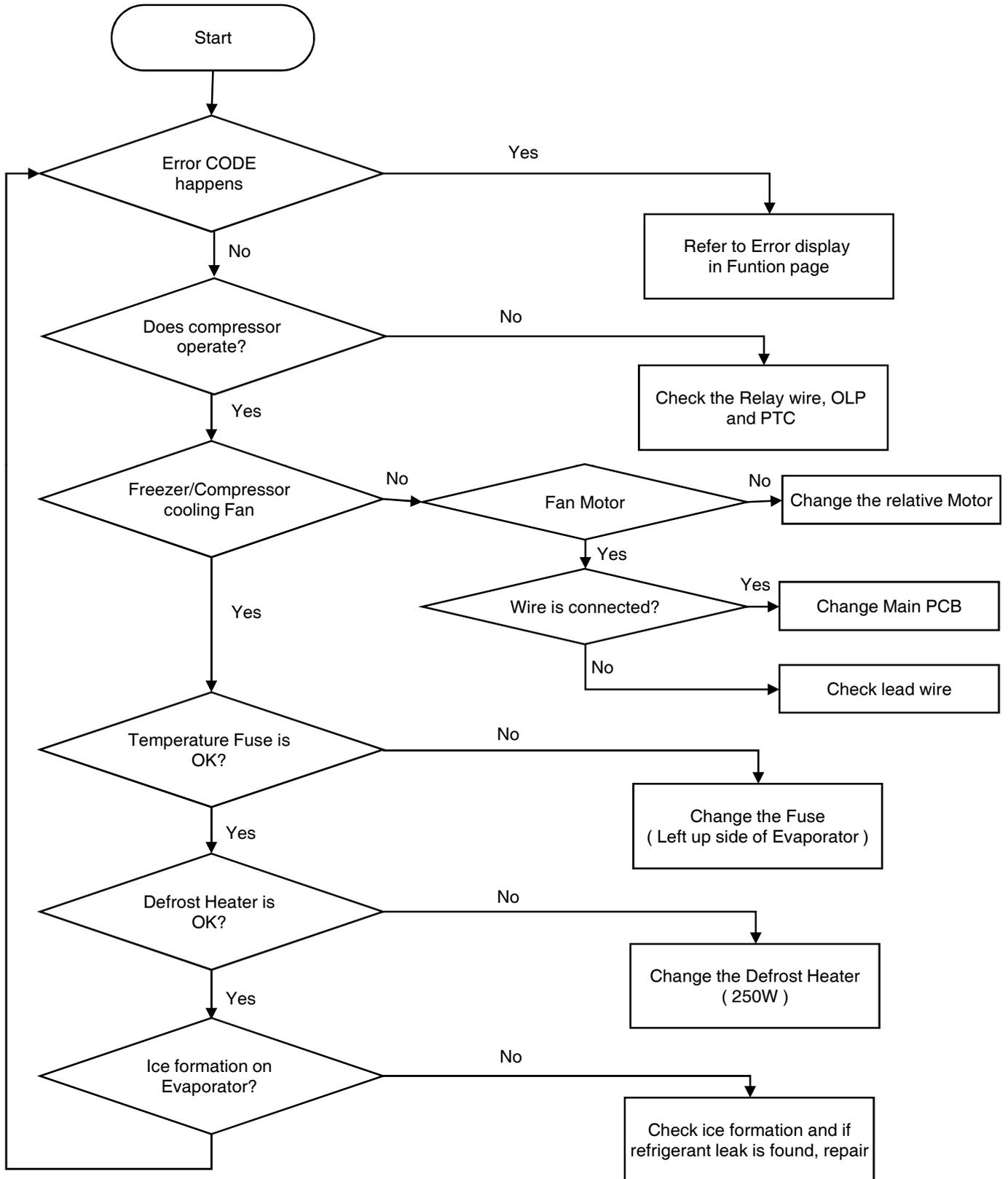
2) How to check Ice Maker

| Parts | How to check | Remark | | | | | | | | | | | | |
|--------------------------------------|--|---|----------|--|--|-------------|----------|--------|------------|---------|------------|------------|------------|--------------|
| <p>Ice Drop Motor</p> |  <p>Check resistance between 2 wires.</p> | <p>(Good): 6 ~ 14 ohm (If defective) : Change the motor</p> | | | | | | | | | | | | |
| <p>Ice Sensor</p> |  <p>Check resistance between 2 wires.</p> | <p>(Good): 4.4 ~ 50 kohm ; It depends on room temperature. (If defective) : Change the sensor</p> | | | | | | | | | | | | |
| <p>Full Ice Sensor Switch</p> |  <p>Check resistance between reds.</p> | <table border="1"> <thead> <tr> <th colspan="3" data-bbox="930 1088 1426 1122">(Good)</th> </tr> <tr> <th data-bbox="930 1133 1094 1167">Tact Switch</th> <th data-bbox="1094 1133 1262 1167">Terminal</th> <th data-bbox="1262 1133 1426 1167">Result</th> </tr> </thead> <tbody> <tr> <td data-bbox="930 1178 1094 1211">ON (Close)</td> <td data-bbox="1094 1178 1262 1211">Connect</td> <td data-bbox="1262 1178 1426 1211">Some value</td> </tr> <tr> <td data-bbox="930 1223 1094 1256">OFF (Open)</td> <td data-bbox="1094 1223 1262 1256">Disconnect</td> <td data-bbox="1262 1223 1426 1256">No value (0)</td> </tr> </tbody> </table> <p>(If defective) : Change the Switch</p> | (Good) | | | Tact Switch | Terminal | Result | ON (Close) | Connect | Some value | OFF (Open) | Disconnect | No value (0) |
| (Good) | | | | | | | | | | | | | | |
| Tact Switch | Terminal | Result | | | | | | | | | | | | |
| ON (Close) | Connect | Some value | | | | | | | | | | | | |
| OFF (Open) | Disconnect | No value (0) | | | | | | | | | | | | |
| <p>Level Sensor Switch</p> |  <p>Check resistance between reds.</p> | <table border="1"> <thead> <tr> <th colspan="3" data-bbox="930 1424 1426 1458">(Good)</th> </tr> <tr> <th data-bbox="930 1469 1094 1503">Tact Switch</th> <th data-bbox="1094 1469 1262 1503">Terminal</th> <th data-bbox="1262 1469 1426 1503">Result</th> </tr> </thead> <tbody> <tr> <td data-bbox="930 1514 1094 1547">ON (Close)</td> <td data-bbox="1094 1514 1262 1547">Connect</td> <td data-bbox="1262 1514 1426 1547">Some value</td> </tr> <tr> <td data-bbox="930 1559 1094 1592">OFF (Open)</td> <td data-bbox="1094 1559 1262 1592">Disconnect</td> <td data-bbox="1262 1559 1426 1592">No value (0)</td> </tr> </tbody> </table> <p>(If defective) : Change the Switch</p> | (Good) | | | Tact Switch | Terminal | Result | ON (Close) | Connect | Some value | OFF (Open) | Disconnect | No value (0) |
| (Good) | | | | | | | | | | | | | | |
| Tact Switch | Terminal | Result | | | | | | | | | | | | |
| ON (Close) | Connect | Some value | | | | | | | | | | | | |
| OFF (Open) | Disconnect | No value (0) | | | | | | | | | | | | |

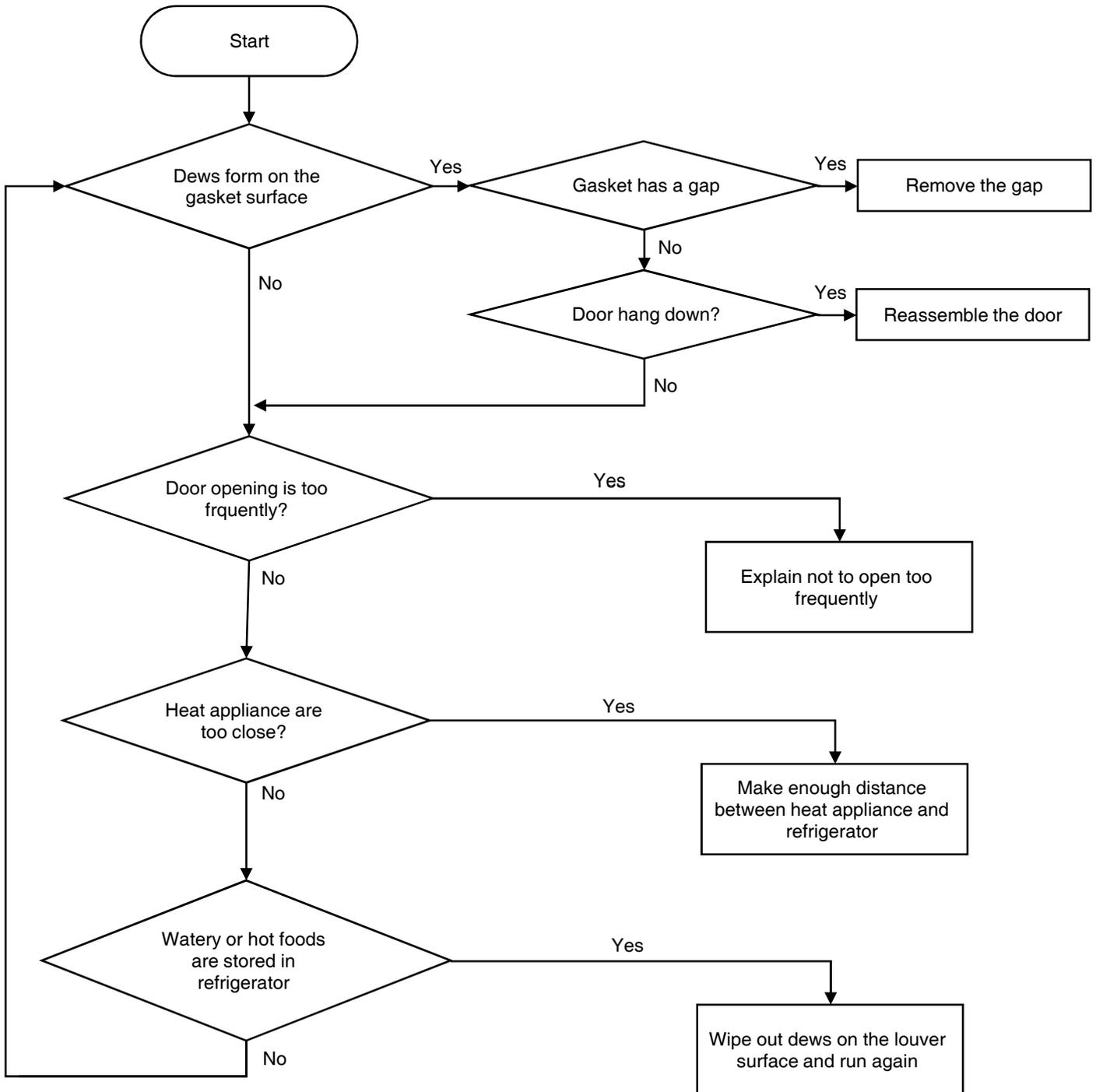
1. Faulty Start (Lights OFF, Front PCB Power Dead)



2. Freezing failure (Weak cooling)

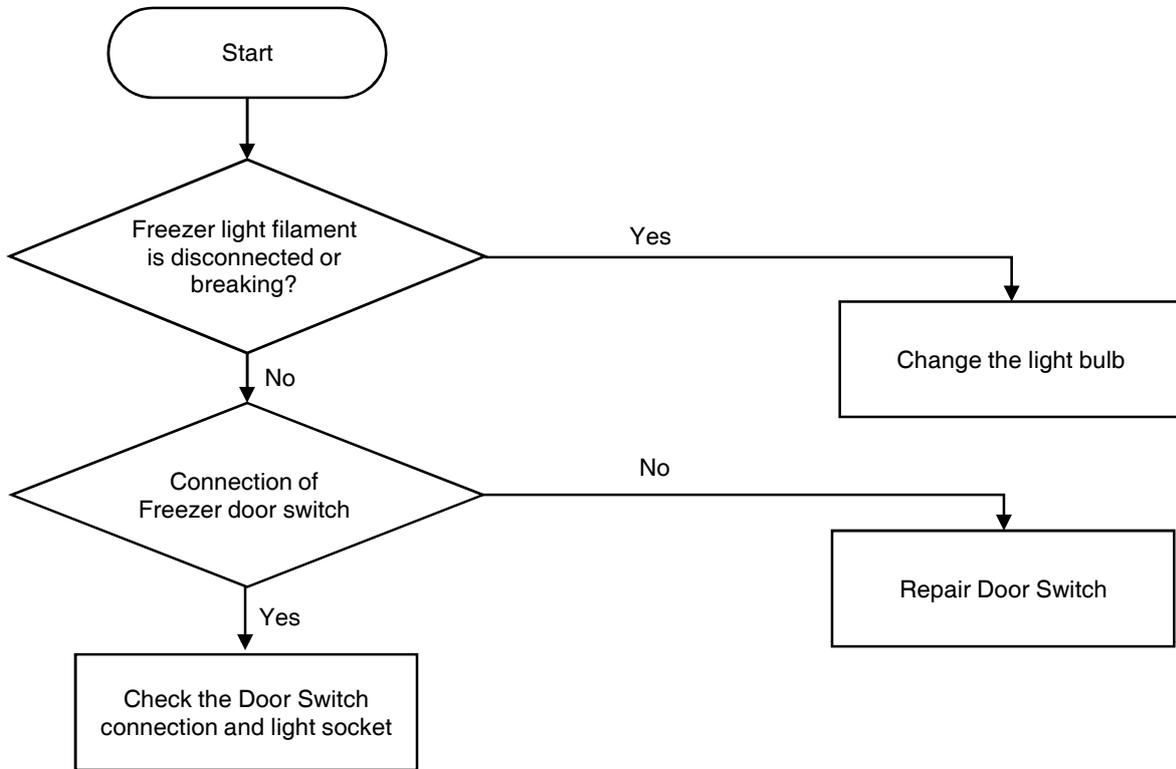


3. Ice formation on Freezer Louver

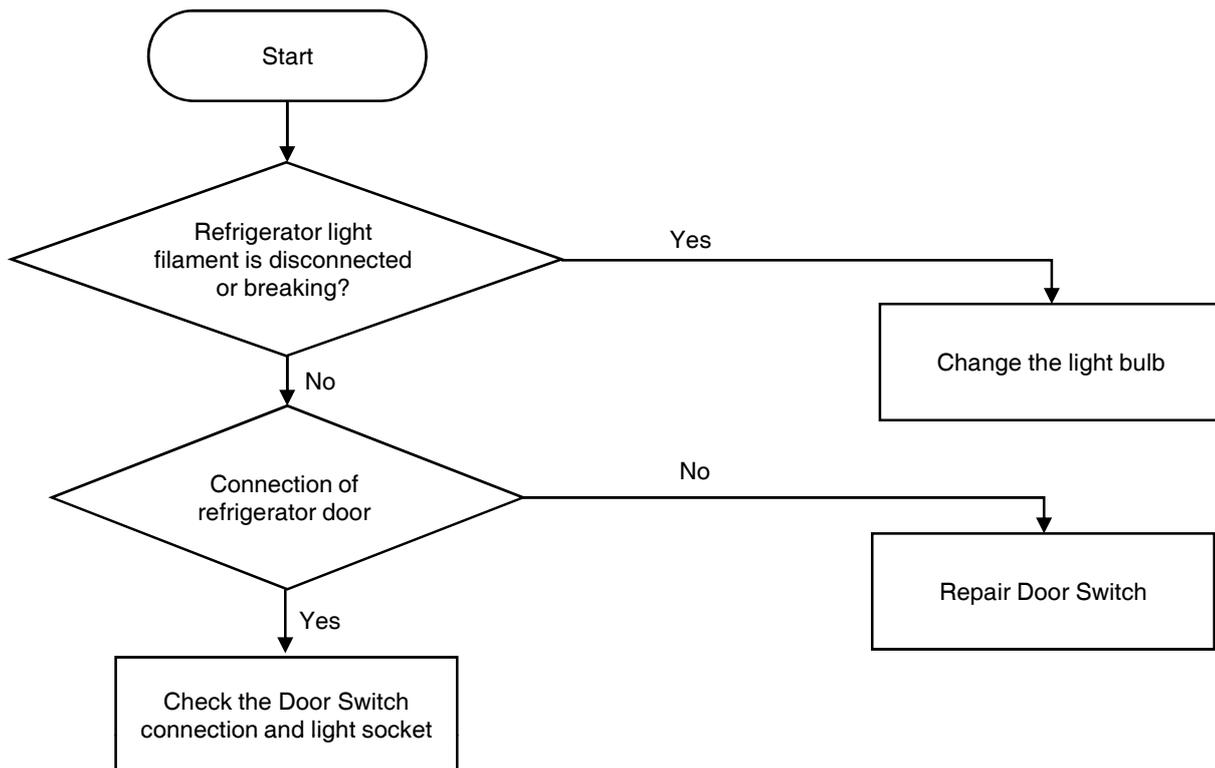


4. Disconnection / Breaking of Interior Lights Wire

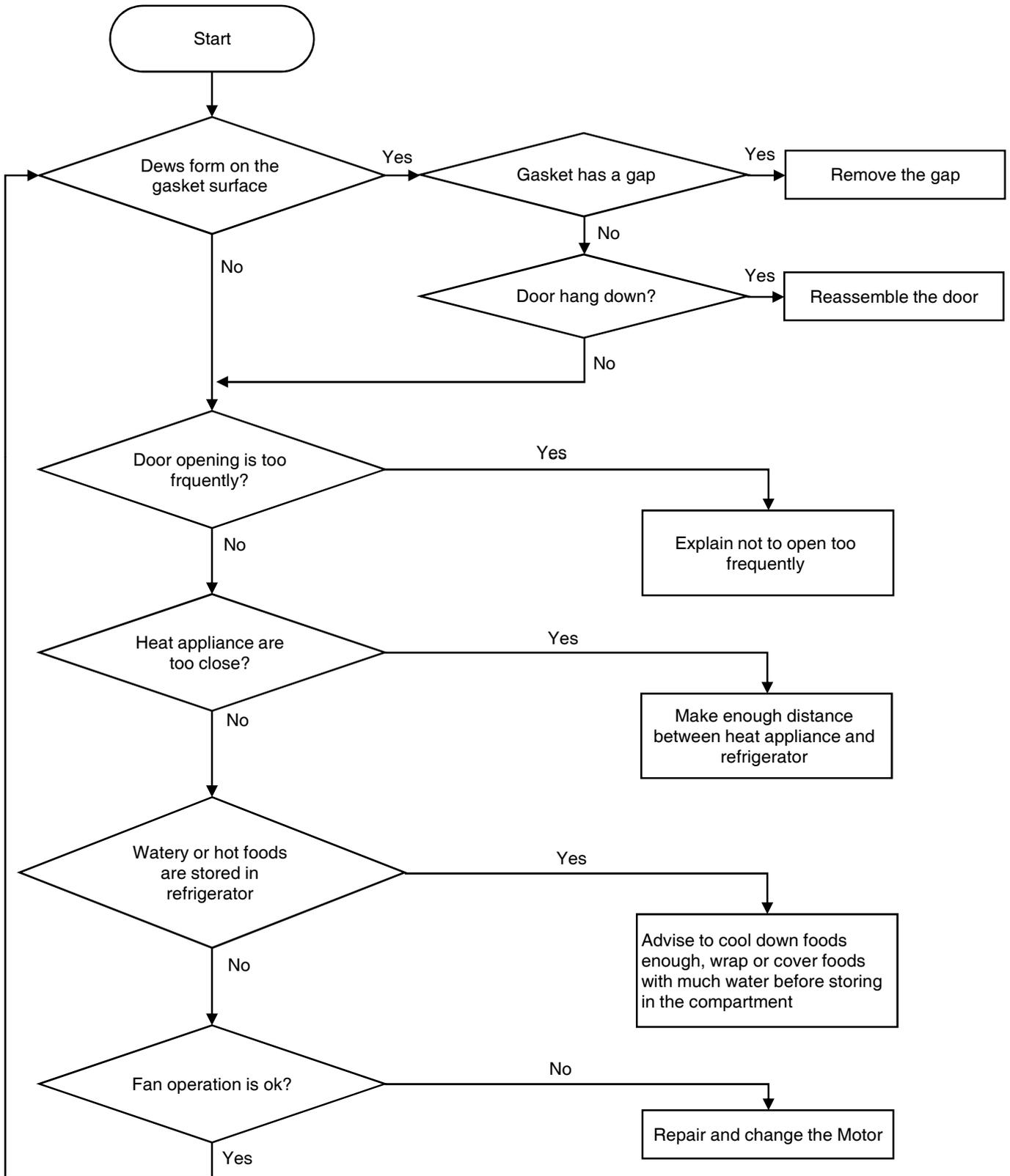
4-1. Freezer Door



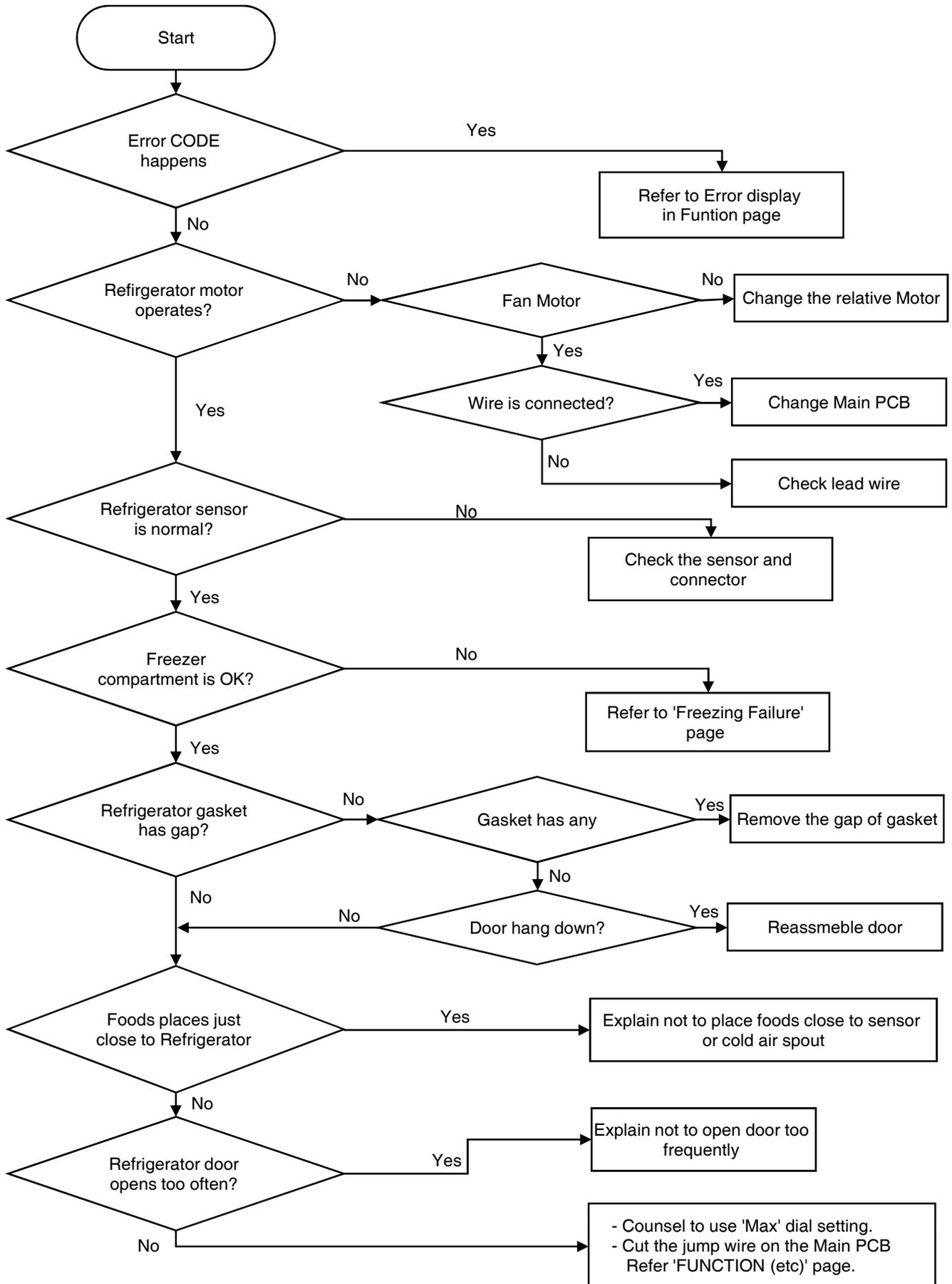
4-2. Refrigerator Door



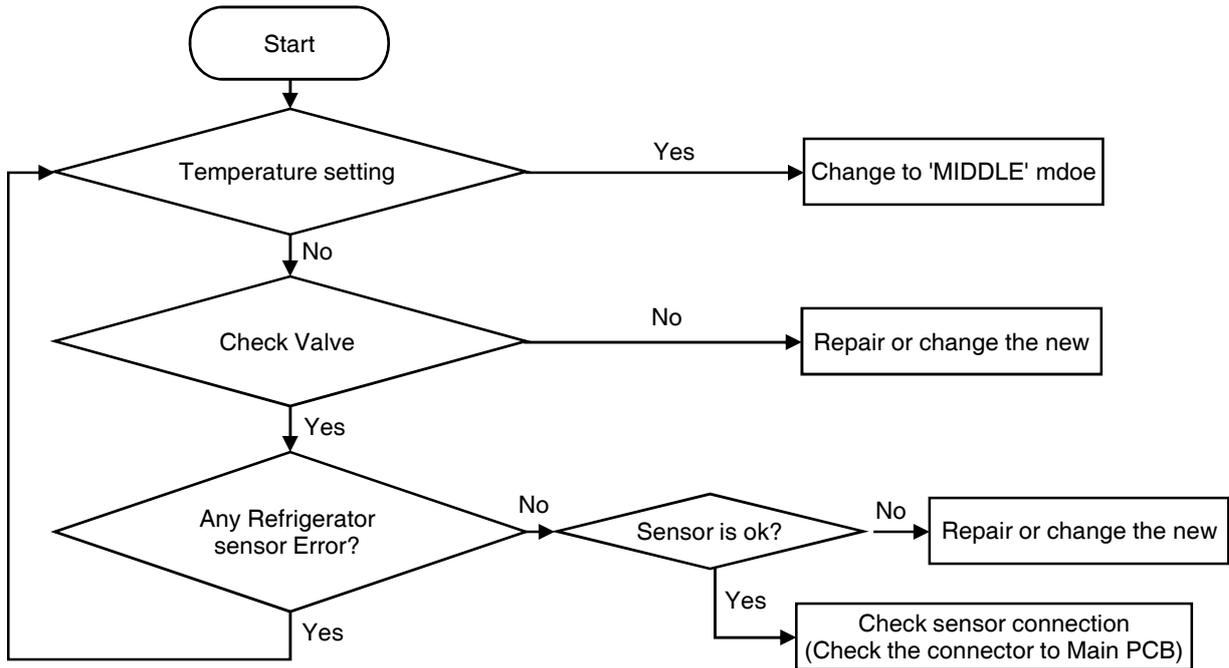
6. Dews on Refrigerator Compartment



5. Refrigeration failure (Foods does not get cool or cold soon)

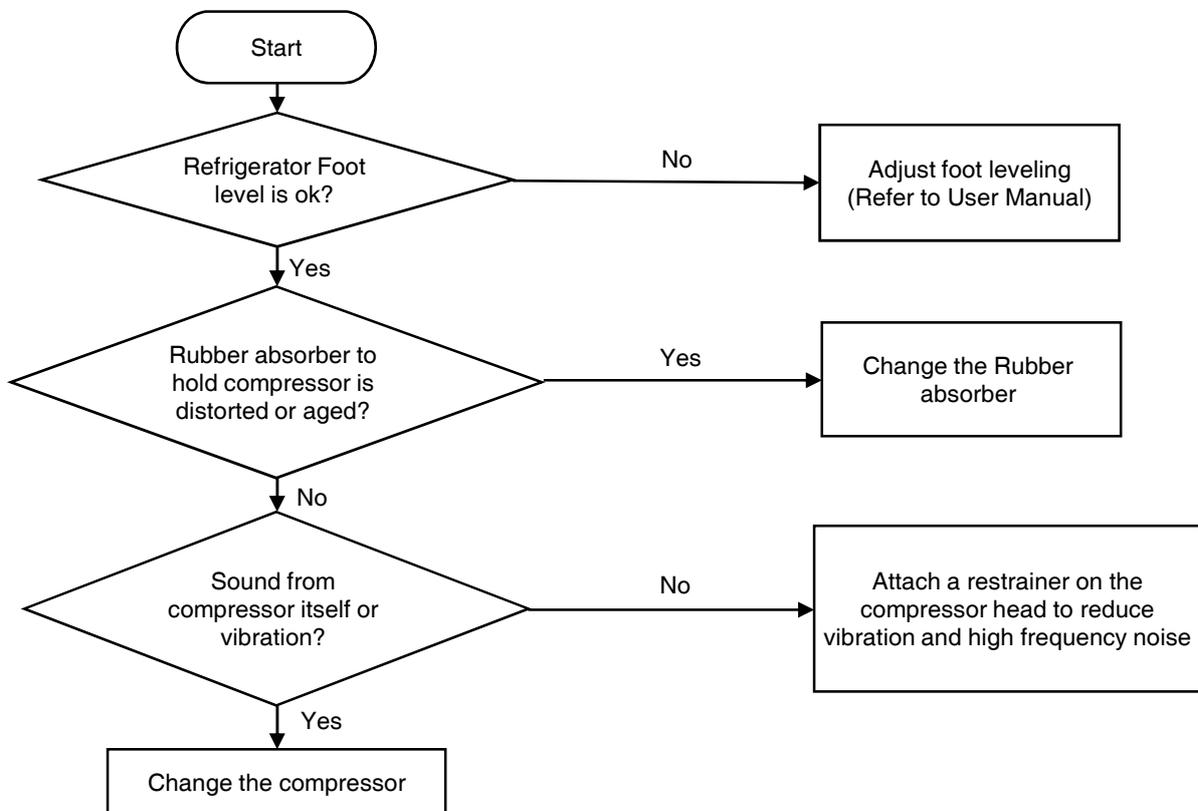


7. Cold of Vegetable Case



8. Operation Noise of Refrigerator

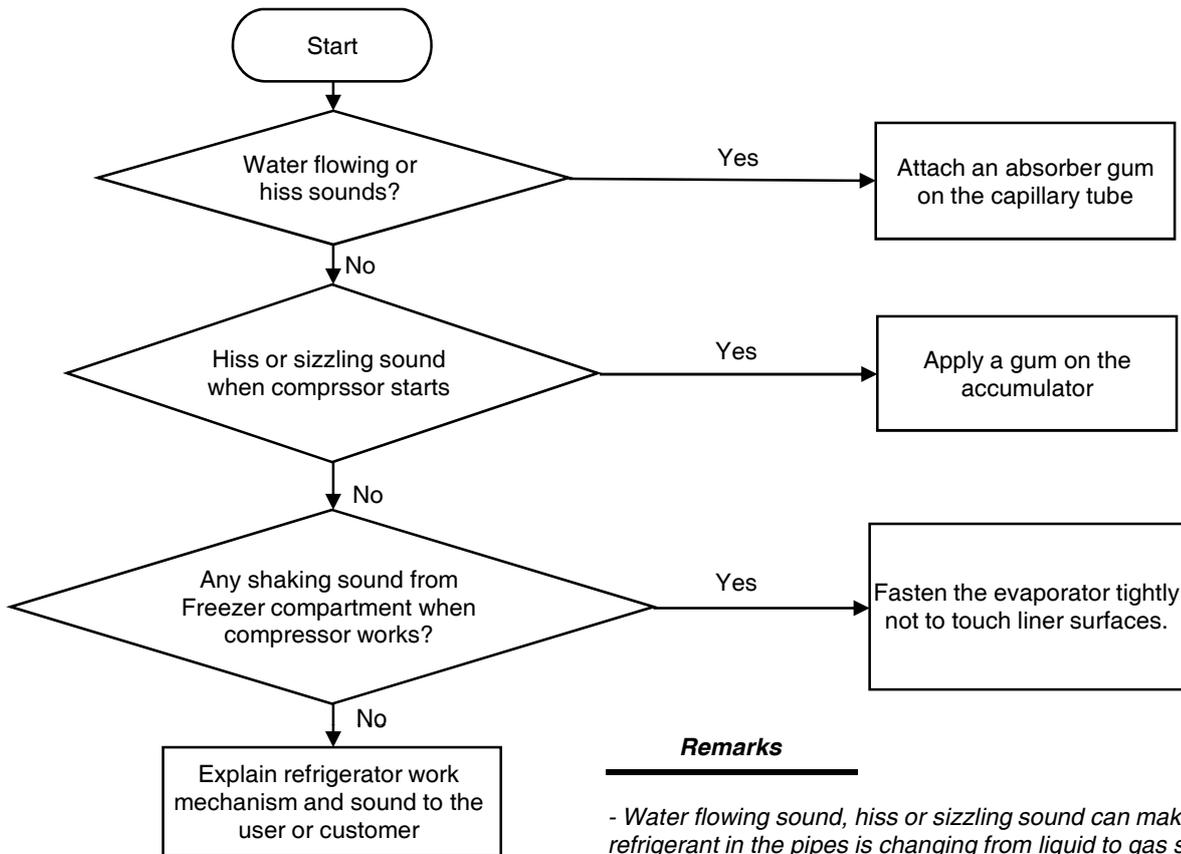
8-1. Compressor operation noise



Remark

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

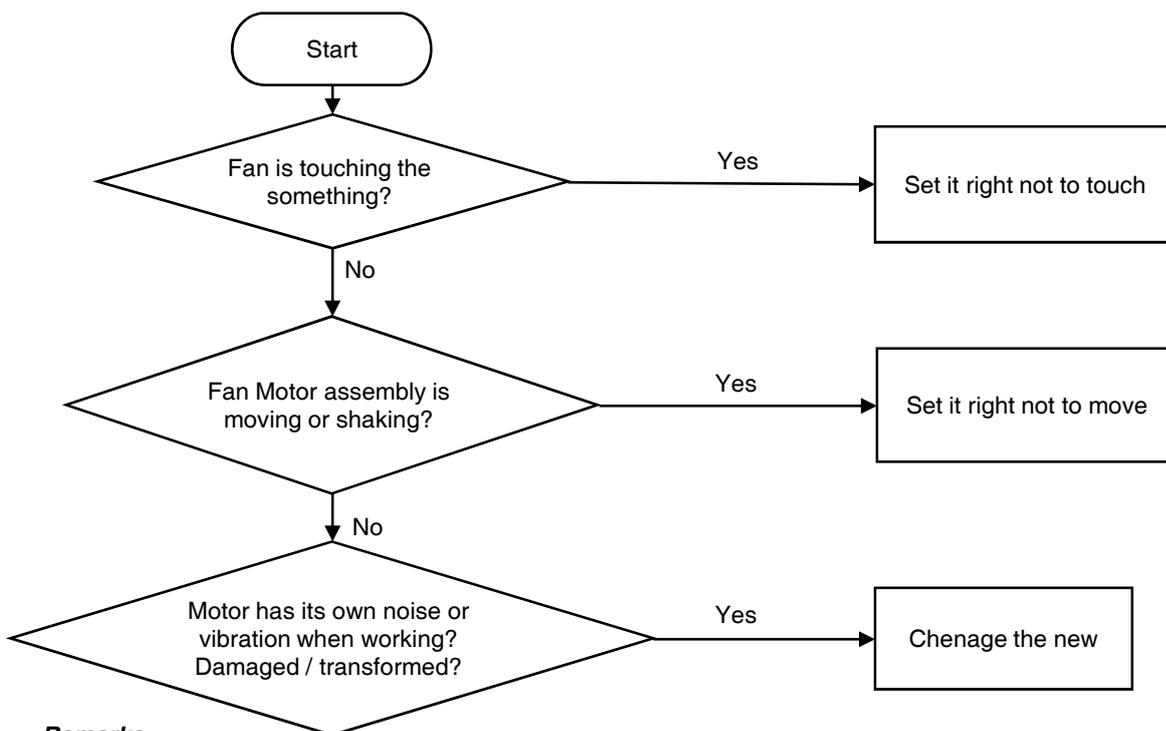
8-2. Refrigerant Flow Sound



Remarks

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

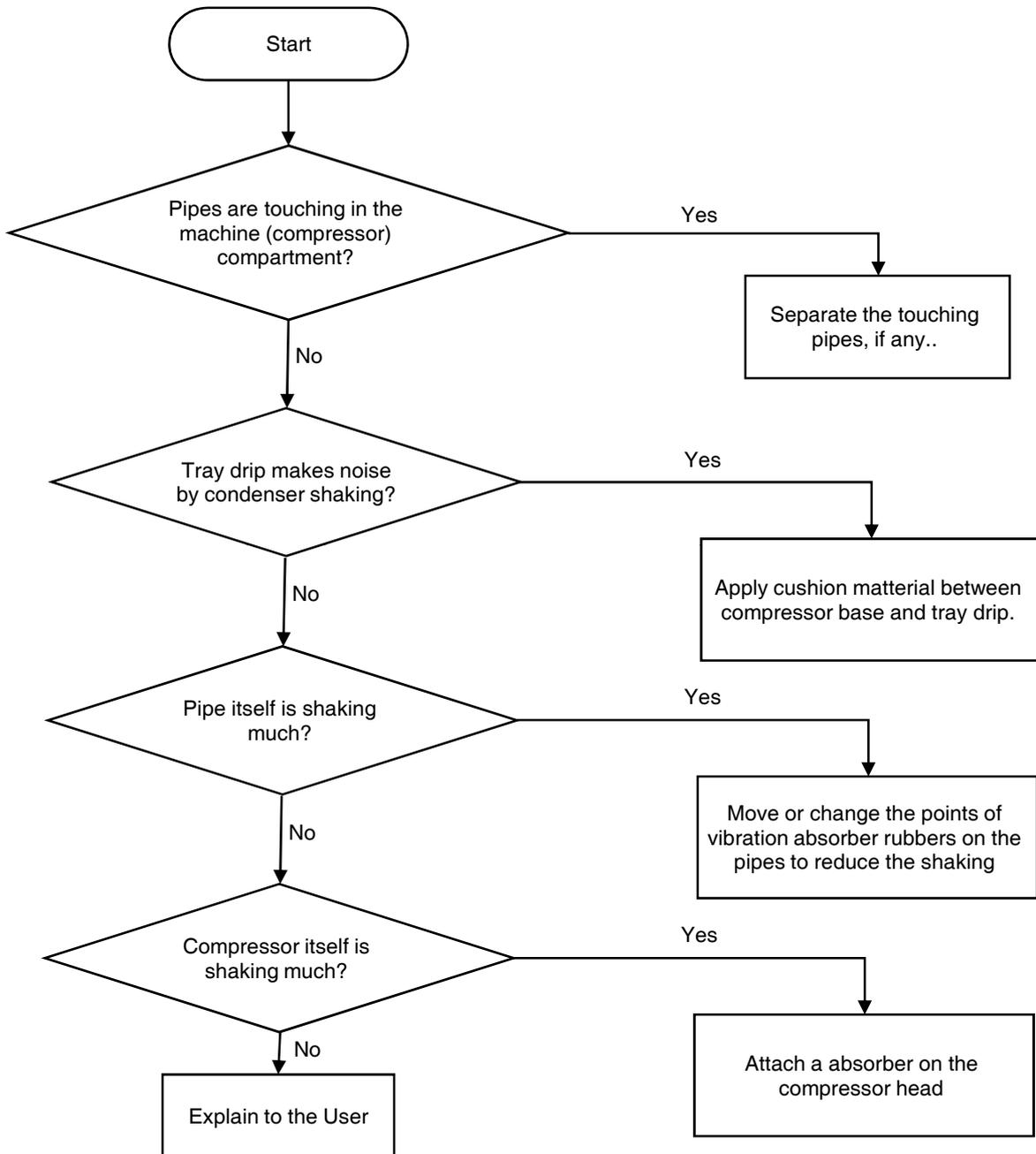
8-3. Fan Noise



Remarks

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

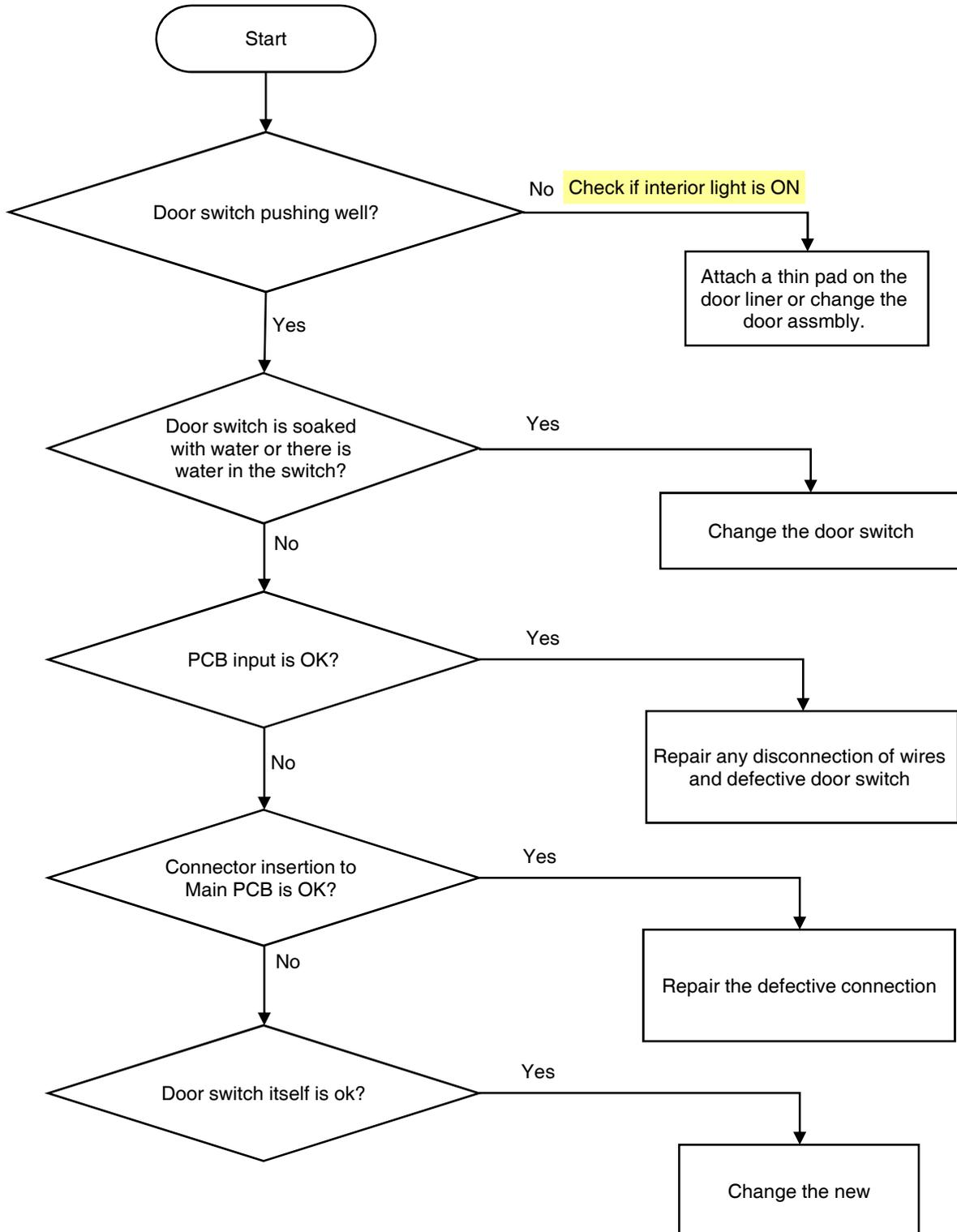
8-4. Pipe Noise



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 pionts of pipepe and comprrsor or to a much bent piont on the pipe.

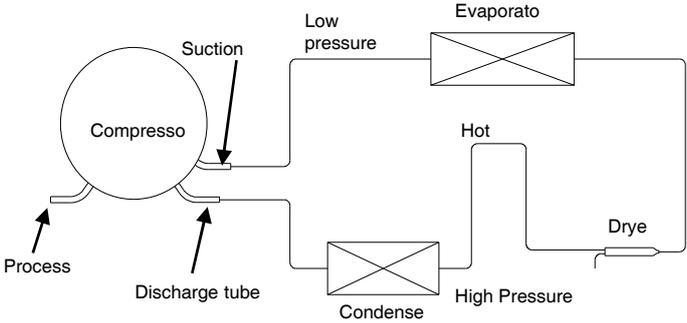
9. Door opening alarm continues after closing



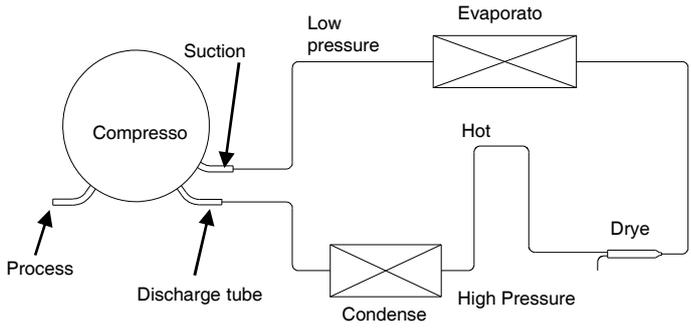
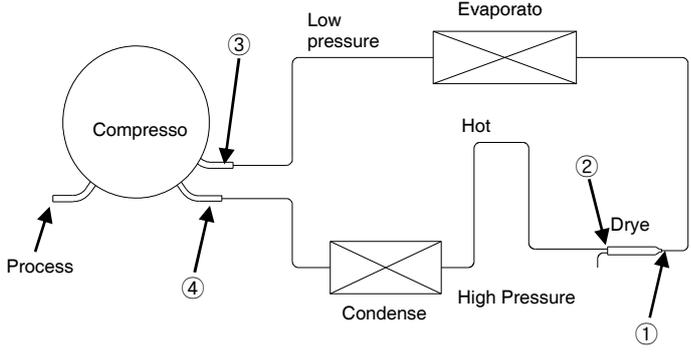
1. Summary of Heavy Repair

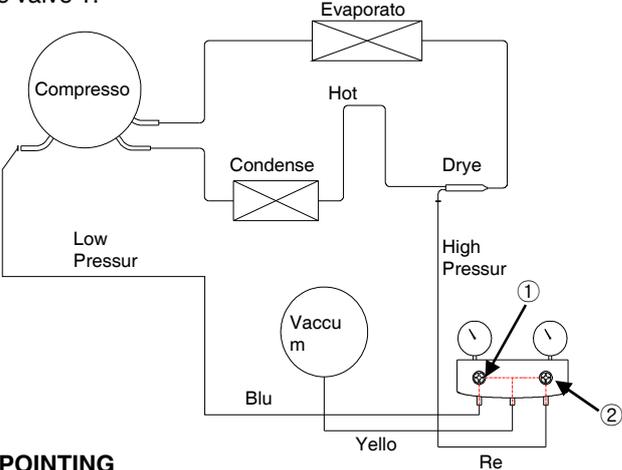
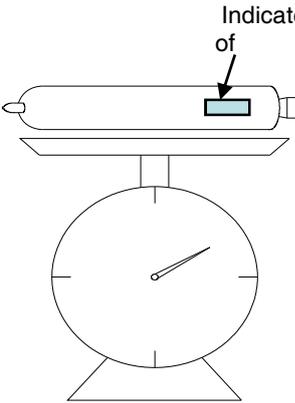
| Process | Contents | Tools |
|---|---|---|
| Remove refrigerant Residuals | Cut charging pipe ends (Comp. & Dryer) and discharge refrigerant from drier and compressor. | Nipper, side cutters |
| Parts replacement and welding | Confirm refrigerant (R-134a or R-600a) and oil for compressor and drier.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

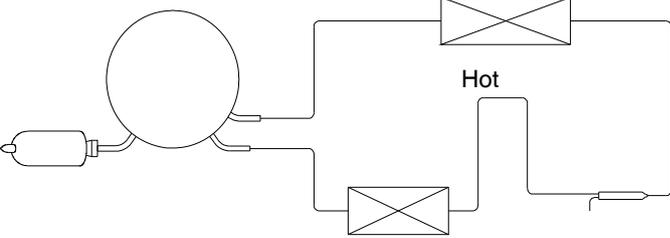
2. Precautions During Heavy Repair

| Items | Precautions |
|----------------------------------|--|
| Use of tools. | - Use special parts and tools for R-134a or R-600a. |
| Removal of retained refrigerant. | <p>1) Remove retained refrigerant more than 5 minutes after turning off a refrigerator. (If not, oil will leak inside.) 2) Remove retained refrigerant by cutting first high pressure side (drier part) with a nipper and then cut low pressure side. (If the order is not observed, oil leak will happen.)</p>  |
| Replacement of drier. | - Be sure to replace drier 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. 2) Check leakage with an electronic leakage tester. 3) Be sure to use a pipe cutter when cutting pipes. 4) Be careful not the water let intrude into the inside of the cycle.</p> |

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.) 2) Remove retained refrigerant slowly by cutting first high pressure side (drier part) with a nipper and then cut low pressure side.</p>  |
| <p>2. Nitrogen blowing welding.</p> |  <p>* When replacing a drier: Weld 1 and 2 parts by blowing nitrogen (0.1~0.2kg/cm²) to high pressure side after assembling a drier.</p> <p>* When replacing a compressor: Weld 3 and 4 parts by blowing nitrogen to the low pressure side. Note) For other parts, nitrogen blowing is not necessary because it does not produce oxidized scales inside pipe because of its short welding time.</p> <p>- KEYPOINTING Welding without nitrogen blowing produces oxidized scales inside a pipe, Which affect on performance and reliability of a product.</p> |

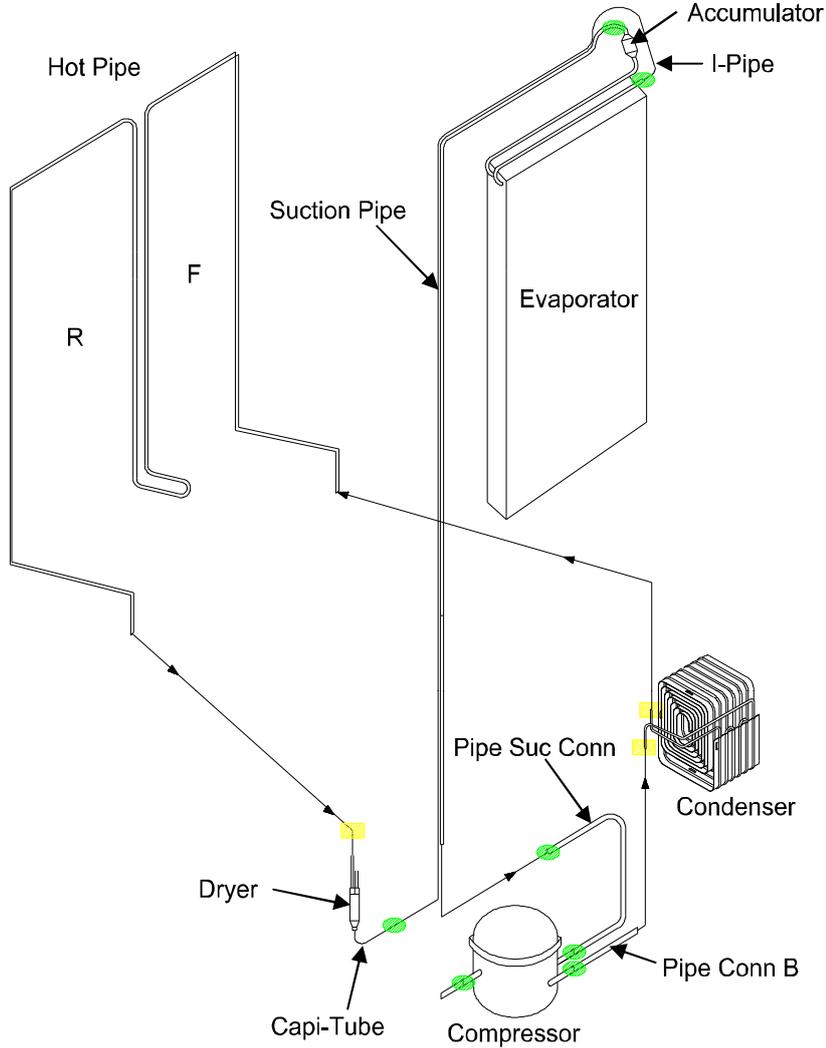
| Items | Precautions |
|-------------------------------|---|
| <p>3.Vacuum degassing</p> | <p>* Pipe Connection Connect a red hose to the high pressure side and a blue hose to the low pressure side.</p> <p>* Vacuum Sequence Open 1,2 valves and evacuate for 40 minutes. Close valve 1.</p>  <p>KEYPOINTING</p> <ol style="list-style-type: none"> 1) If power is applied during vacuum degassing, vacuum degassing shall be more effective. 2) Operate compressor while charging refrigerant. (It is easier and more certain to do like this.) |
| <p>4.Refrigerant charging</p> | <p>* Charging sequence</p> <ol style="list-style-type: none"> 1) Check the amount of refrigerant supplied to each model after completing vacuum degassing. 2) Evacuate bombe with a vacuum pump. 3) Measure the amount of refrigerant charged. <ul style="list-style-type: none"> - Measure the weight of an evacuated bombe with an electronic scale. - Charge refrigerant into a bombe and measure the weight. Calculate the weight of refrigerant charged into the bombe by subtracting the weight of an evacuated bombe.  <p>- KEYPOINTING</p> <ol style="list-style-type: none"> 1) Be sure to charge the refrigerant at around 25C. 2) Be sure to keep -5g in the winter and +5g in summer. <div style="border: 1px solid black; background-color: #cccccc; padding: 2px; margin: 10px 0;"> <p>Calculation of amount of refrigerant</p> </div> <p>the amount of refrigerant charged = a weight after charging - a weight before charging (a weight of an evacuated cylinder)</p> |

| Item | Precautions |
|--|--|
| <p>4. Refrigerant charging</p> | <p>4) Refrigerant Charging Charge refrigerant while operating a compressor as shown above. 5) Pinch a charging pipe with a pinch-off plier after completion of charging. 6) Braze the end of a pinched charging pipe with copper brazer and take a gas leakage test on the welded parts.</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> |

< 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.)

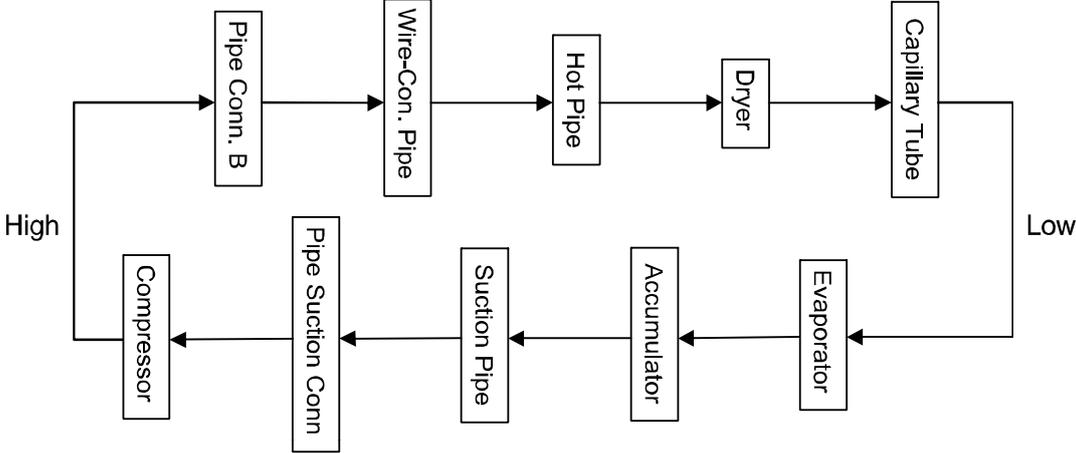
Brzing Reference Drawings

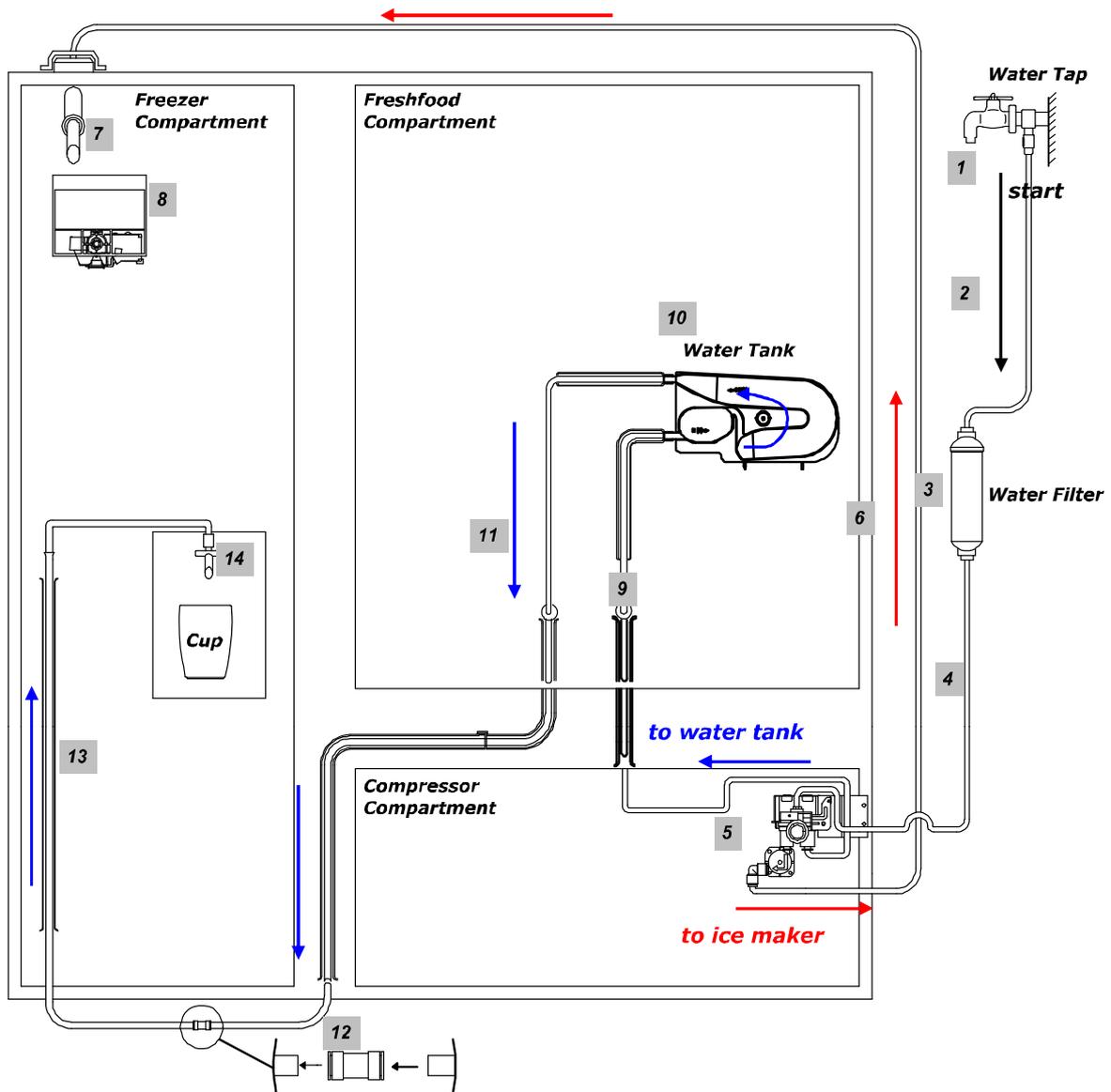


► Welding Point

| | | |
|---|-------------------------|----------|
| ● | Copper Welding (Ag 5%) | 7 Points |
| ■ | Silver Welding (Ag 35%) | 3 Points |

► Flow of Refrigeration Cycle





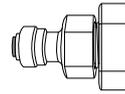
| No | Part Code | Part Name | Specification |
|----|------------|-----------------------|---------------------------|
| 1 | 3014454520 | PIPE CONN C | POM |
| 2 | 3019503200 | TUBE WATER A | LDPE, (OD)1/4" X L5000 |
| 3 | 3019974100 | S/PART WATER FILT | FR-S650CD |
| 4 | 3019503300 | TUBE WATER B | LDPE, (OD)1/4" X L1500 |
| 5 | 3015402330 | VALVE WATER AS | FRU-54QD |
| 6 | 3012519212 | GUIDE CAB W/TUBE A AS | FRU-541D,L1525 |
| 7 | 3013224830 | HOSE I/MAKER TUBE AS | FRU-54QD |
| 8 | 3012205810 | FRAME I/MAKER AS | FRU-541D |
| 9 | 3019504200 | TUBER WATER C | LDPE(OD)5/16, L1150 |
| 10 | 3018200901 | TANK WATER | HDPE-NATUAL HIVOREX 5200B |
| 11 | 3019504300 | TUBE WATER D | LDPE(OD)5/16 |
| 12 | 3013064200 | HOLDER TUBE A | A5UC5 |
| 13 | 3014462210 | PIPE DR WATER AS | FRU-541D |
| 14 | 3012519000 | GUIDE DR WATER PIPE | SILICON |

How to install Water Line (Dispenser Models Only)

- The water pressure should be 2.0~12.5 kgf/cm² or more to run the automatic icemaker.
 ※Checkup your tap water pressure ; if a cup of 180cc is full within 10 seconds, the pressure is OK.
- When installing the water tubes, ensure they are not close to any hot surfaces.
- The water filter only "filters" water ; it does not eliminate any bacteria or microbes.
- If the water pressure is not so high to run the icemaker, call the local plumber to get an additional water pressure pump.
- The filter life depends on the amount of use. We recommend you replace the filter at least once every 6months.
 ※When attaching the filter, place it for easy access (removing & replacing)
- After installation of refrigerator and water line system, select [WATER] on your control panel and press it for 2~3 minutes to supply water into the water tank and dispense water.
- Use sealing tape to every connection of pipes/tubes to ensure there is no water leak.
- The water tube should be connected to the cold water line.

WATER SUPPLY KIT

- ※ Check the parts below for installing water supply. Some other necessary parts are available at your local service agents.



Connector



Holder



Screw × 4ea



Fastener A × 3ea



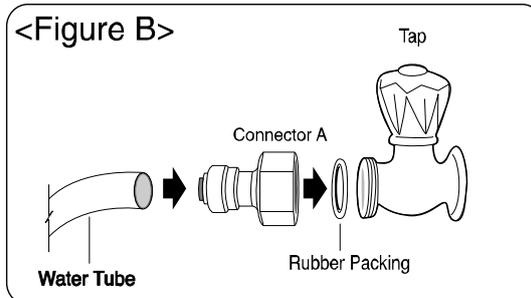
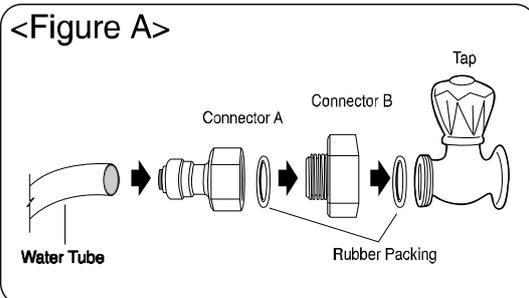
Filter Box



Water tube A/B

Installation Procedure (Dispenser Models Only)

1. Join Connector to the tap water line



N.B.

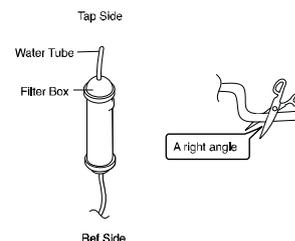
Place the rubber washer inside the tap connector and screw onto the water tap.

2. Get ready to install the Water Filter

- Measure an approximate distance between the filter and the Water Tube and cut the tube off filter vertically.
- Connect the tubes to the filter as the figure shows.

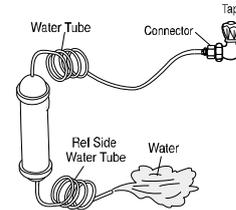
N.B.

Leave a sufficient distance when cutting the tubes.



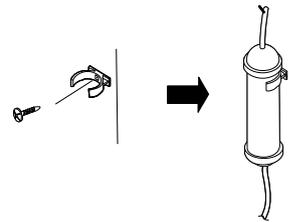
3. Remove any substances in the filter.

- 1) Open the main tap water valve and check if water comes out of the Water Tube.
 - 2) Check if the Water Valve is open in case water does not come out.
 - 3) Leave the valve open until clean water is coming out.
- ※ Initial water may contain some substances out of filter (manufacturing process).



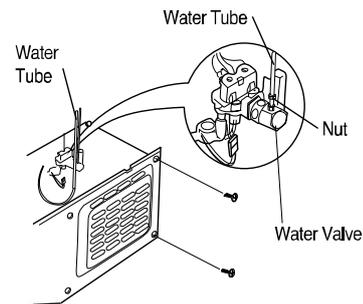
4. Attach the Filter Box

- 1) Screw and fasten the filter holder to the left/right side of the back of refrigerator.
 - ※ In case the holder is not fastened well, remove the back paper of the tape on the filter holder and attach it."
- 2) Insert the filter box into the holder.



5. Connect the Water Tube to the refrigerator.

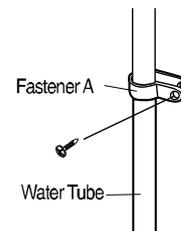
- 1) Remove the rear cover at the bottom back of the refrigerator.
- 2) Insert the fastening ring into the Water tube. (Be careful to follow the direction of the nut.)
- 3) Insert the Water Tube into the top of the Water Valve, turn the nut clockwise to fasten it. (The Water valve is to the right of the motors.)
- 4) Check for any bent tubes or water leaks; if so, re-check installation procedure.
- 5) Replace the rear cover. (The Water Tube should be placed between the groove of the refrigerator back and motor cover.)



N.B. Set the tube upright as the figure shows.

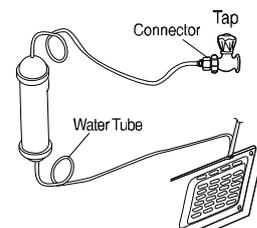
6. Fasten the Water Tube.

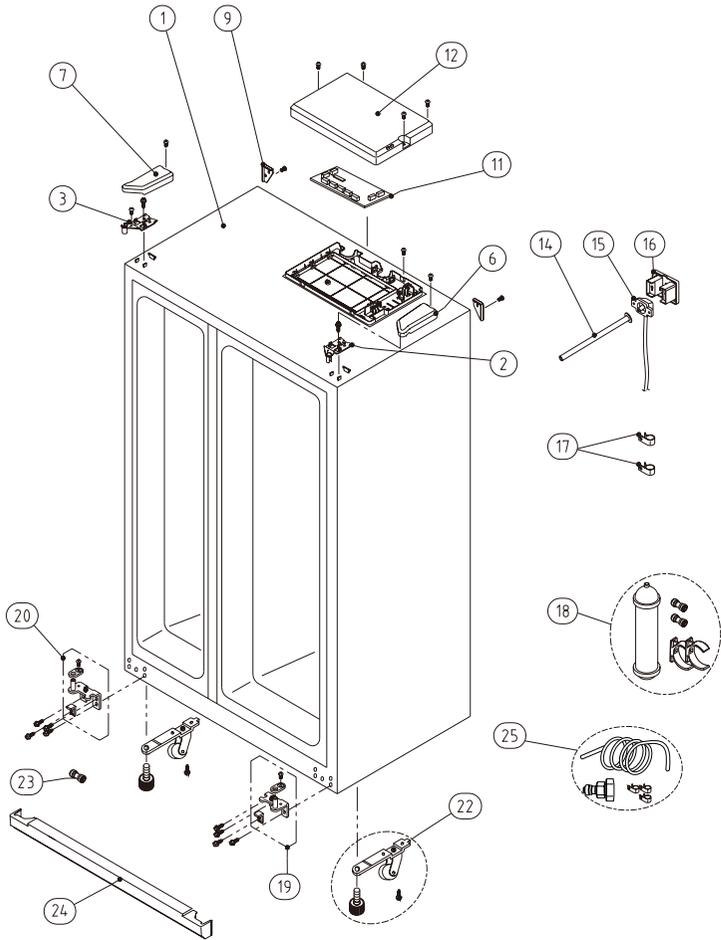
- 1) Fasten the Water Tube with the [Fastener A] .
- 2) Check if the tube is bent or squeezed. If so, set it right to prevent any water leak.



7. After installation of Water Supply System

- 1) Plug in the refrigerator, press the [WATER] button on the control panel for 2~3 minutes to remove any air (bubble) in the pipes and drain out the initial water.
- 2) Check for the water leaks again through the water supply system (tubes, connectors and pipes) Rearrange the tubes again and do not move the refrigerator.

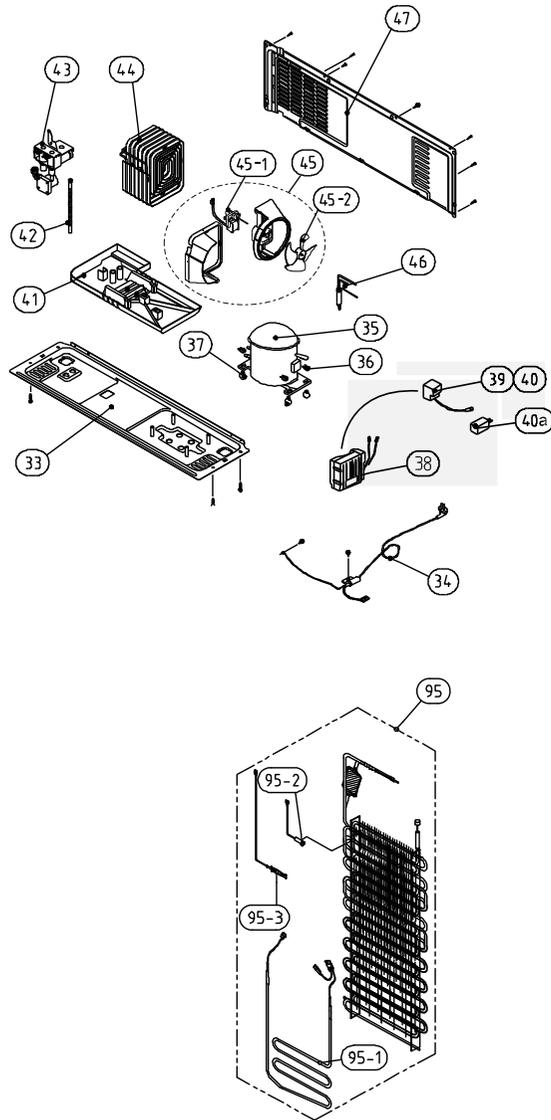




| NO | PART-CODE | PART NAME | SPEC. | Q'ty | | |
|------------|------------------|------------------------|--------------------------|-------------|-------|-------|
| | | | | Inner Basic | Basic | Disp. |
| 1 | | ASSY CAB URT | | - | - | - |
| 2 | 3012924400 | HINGE *T *R AS | PO T3.0+PAINT | 1 | 1 | 1 |
| 3 | 3012924300 | HINGE *T *L AS | PO T3.0+PAINT | 1 | 1 | 1 |
| 6 | 3011446200 | COVER HI *T *R | PP | 1 | 1 | 1 |
| 7 | 3011446100 | COVER HI *T *L | PP | 1 | 1 | 1 |
| 9 | 3010968400 | CAP CAB COVER | PP | 2 | 2 | 2 |
| 11 | 30143D6061 | PCB MAIN AS | FRU-5711, R-134a | 1 | x | x |
| | 30143D6070 | | FRU-5711, R-600a | | | |
| | 30143E1020 | | FRU-579B, R-134a | x | 1 | x |
| | 30143E1060 | | FRU-573B, R600a | | | |
| | 30143KA060 | | FRU-54, R-134a | | | |
| | 30143KA070 | | FRU-54, R-600a | x | x | 1 |
| 30143KA090 | FRU-54, INVERTER | | | | | |
| 12 | 3011446001 | COVER M/PCB BOX | PP(FB-72) | 1 | 1 | 1 |
| 14 | 3013224800 | HOSE I/MAKER TUBE AS | FRU-541D | x | x | 1 |
| 15 | 3012519210 | GUIDE CAB W/TUBE A AS | L1525 | x | x | 1 |
| 16 | 3011444100 | COVER GUIDE CAB W/T A | HIPS | x | x | 1 |
| 17 | 3011202000 | CLAMP WATER TUBE A | PA-66, 5N | x | x | 2 |
| 18 | 3019974800 | S/PART FILTER WATER AS | FR-S660CW | x | x | 1 |
| 19 | 3012924004 | HINGE *U *R AS | P/O T5.0+PAINT | 1 | 1 | 1 |
| 20 | 3012923902 | HINGE *U *L AS | P/O T5.0 + PAINT | 1 | 1 | 1 |
| 22 | 3010658002 | BRACKET ADJ FOOT AS | SPCC/T2.6/BK PAINT | 2 | 2 | 2 |
| 23 | 3013064200 | HOLDER TUBE A | A5UC5 | x | x | 2 |
| 24 | 3011447230 | COVER CAB BRKT AS | COVER+VINYL(DAEWOO) | 1 | 1 | 1 |
| 25 | 3019974020 | S/PART W/TUBE AS | W/DISPENSER EXPORT MODEL | x | x | 1 |

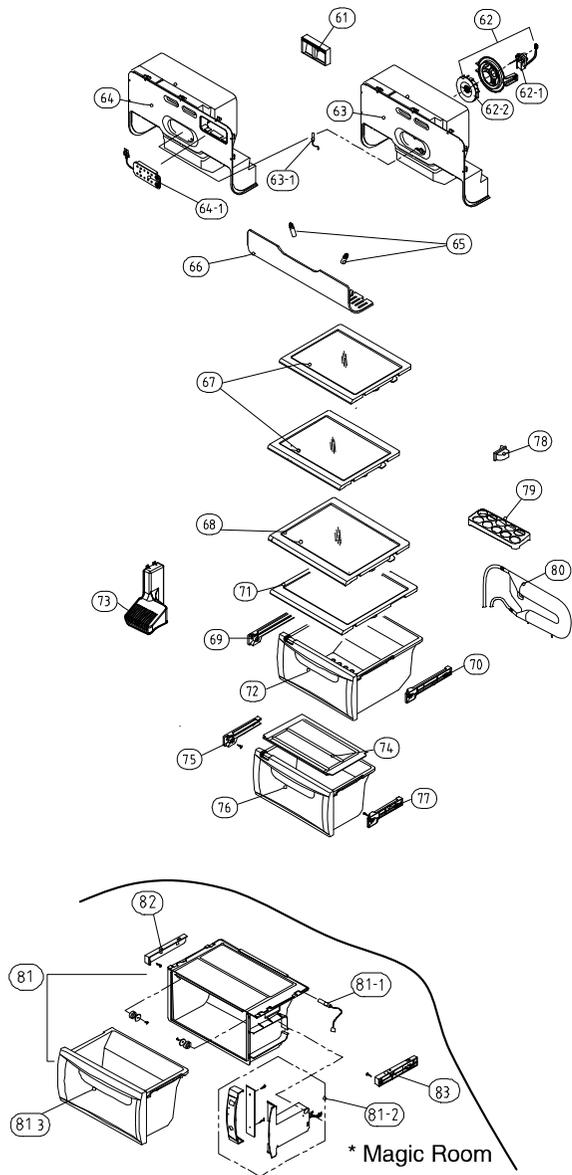
- Some parts can be chaged for improving their performace without notice.

| Date | Amendment Note |
|------|----------------|
| | |
| | |
| | |



| NO | PART-CODE | PART NAME | SPEC. | Q'ty | |
|------------|-----------------------------------|-------------------|-------------------------------------|-------|-----------|
| | | | | Basic | Dispenser |
| 29 | 3010340402 | BASE COMP AS | FR-S570FRB(NO-HANDLE) | 1 | 1 |
| 34 | | CORD POWER | | 1 | 1 |
| 35 | 3956183D2B | COMPRESSOR | MK183D-L2UB (110~127V) | 1 | 1 |
| | 3956183H4B | | MK183H-L2UB(220V/60Hz) | | |
| | 3956183Q5B | | MK183Q-L2UB(220~240V/50Hz) | | |
| | 395S130R50 | | HPL30YG-5 (220~240V/50Hz) | | |
| | 3956112250 | | DG125E11RAW5 (220~240V/50Hz) | | |
| | 3956180045 | | NW80LHP4-L(220~240V/50Hz) | | |
| | 3956180055 | | NW80LHP5-L (220~240V/50Hz) | | |
| 3959115280 | EU4A5Q-L2X(Inverter)_Disp.Model | | | | |
| 3956111M51 | VEGZ11C (Inverter)_Magic RM Model | | | | |
| 36 | 3016002500 | COMP WASHER | SK-5 T0.8 | 3 | 3 |
| 37 | 3010101600 | ABSORBER COMP | NBR Type | 4 | 4 |
| | 3010101480 | | SPRING Type | | |
| 38 | 3814300300 | BOX INVERTER AS | EU4A5Q-L2X(Inverter)_Disp.Model | 1 | 1 |
| | 3010566510 | | VEGZ11C(Invrter)Magic RM Model | | |
| 39 | 3018129710 | SWITCH P RELAY AS | 445PHB,6R8M (MK183D-L2UB) | 1 | 1 |
| | 3018129720 | | 265RFB,220M (MK183H-L2UB) | | |
| | 3018129600 | | 265RHB,S330 (MK183Q-L2UB) | | |
| | 3018129810 | | 308NHB,S330 (HPL30YG) | | |
| | 3018129650 | | 232NFB,330M (DG125E11) | | |
| | 3018129750 | | 265NHBY,Y,S330(NW80LHP4-L) | | |
| | 3018129760 | | 213NHBY,Y,S330(NW80LHP5-L) | | |
| 40 | 3811400503 | COVER RELAY | HPL30YG-5 DAEWOO COMP. | 1 | 1 |
| | 3012610000 | CLAMP BAND RELAY | | | |
| | 3811402100 | COVER RELAY | MK183 Series SAMSUNG COMP. | | |
| 40a | 3016405020 | CAPACITOR RUN | 250VAC/12 μ F (MK183D..) | 1 | 1 |
| | 3016405900 | | 350VAC/5 μ F (MK183H, MK183Q..) | | |
| | 3016406100 | | 400VAC/5 μ F (HPL30YG..) | | |
| | 3016405800 | | 350VAC/4 μ F (DG125E..) | | |
| | 3016402060 | | 400VAC/6 μ F (NW80LHP..) | | |
| 41 | 3011181310 | CASE VAPORI AS | FRS-551F PP(NATURAL) | 1 | 1 |
| 42 | 3013201710 | HOSE DRN B | PE FRB-5970NB | 1 | 1 |
| 43 | 3015402300 | VALVE WATER AS | FR-S660CW | x | 1 |
| 44 | 3014461530 | PIPE WICON AS | FRU-57(SBS) | 1 | 1 |
| 45 | 3018500510 | M/BELL AS | FRU-5711 PP(NATURAL) | 1 | 1 |
| 45-1 | 3015916100 | MOTOR C FAN | D4612AAA22 | 1 | 1 |
| 45-2 | 3011834710 | FAN | PP OD3.17XD150 | 1 | 1 |
| 46 | 3016808100 | DRYER AS | SBS 12G | 1 | 1 |
| 47 | 3011497001 | COVER MACH RM AS | FRU-5711 | 1 | 1 |

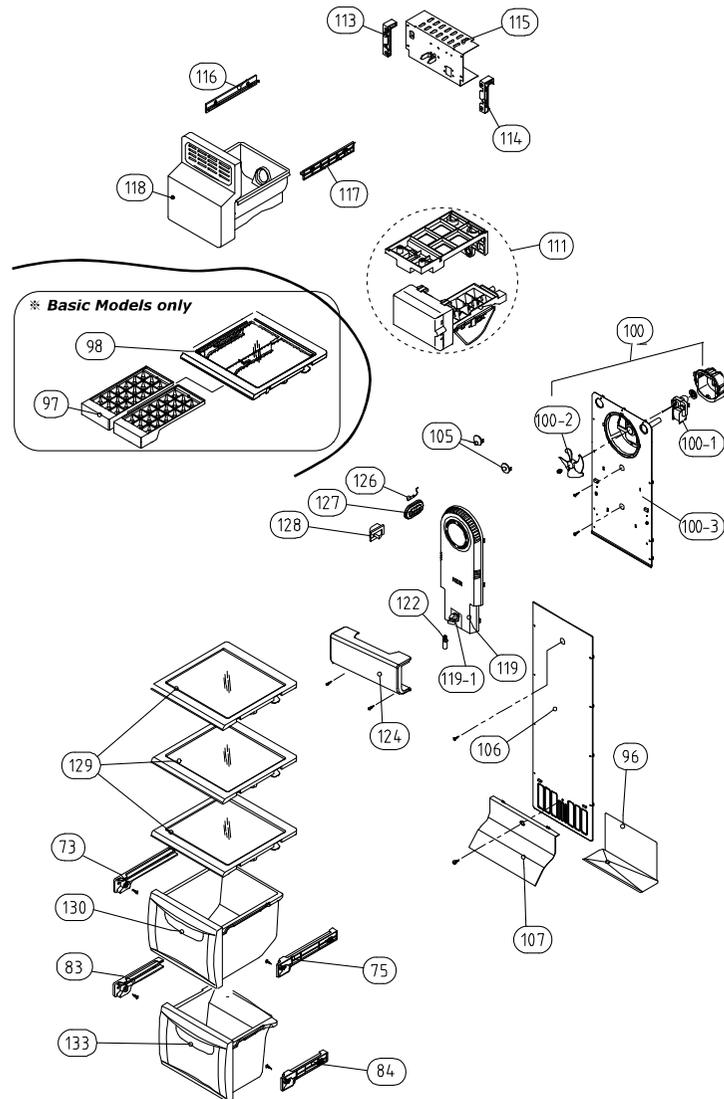
| NO | PART-CODE | PART NAME | SPEC. | Q'ty | |
|------|------------|------------------|----------------|-------|-----------|
| | | | | Basic | Dispenser |
| 95 | 3017053540 | EVA AS | 110~127V/192W | 1 | 1 |
| | 3017053550 | | 220~240V/192W | | |
| 95-1 | 3012818410 | HEATER SHEATH AS | 110~127V/192W | 1 | 1 |
| | 3012818310 | | 220~240V/192W | | |
| 95-2 | 3014806900 | SENSOR D AS | PBN-43 | 1 | 1 |
| 95-3 | 3017202010 | FUSE TEMP AS | AC250V 77C 10A | 1 | 1 |



| NO | PART-CODE | PART NAME | SPEC. | Q'ty | | |
|------|------------|------------------------|---------------------|-------------|-------|-----------|
| | | | | Inner Basic | Basic | Dispenser |
| 61 | 3012205001 | FRAME CHECK VALVE AS | FR-S580CG | 1 | 1 | 1 |
| 62 | 3012024200 | FIXTURE MOTR AS | . | 1 | 1 | 1 |
| 62-1 | 3015916000 | MOTOR R FAN | D4612AAA20 | 1 | 1 | 1 |
| 62-2 | 3011835410 | FAN R | PP OD3.17XD95 | 1 | 1 | 1 |
| 63 | 3011495100 | COVER DAMP AS | FRU-541D | x | 1 | 1 |
| 63-1 | 3014807100 | SENSOR R AS | PBN-43B | 1 | 1 | 1 |
| 64 | 3011492800 | COVER DAMP AS | FRU-571 | 1 | x | x |
| 64-1 | 3014235200 | PANEL CONTL *I AS | . | 1 | x | x |
| 65 | 3013602800 | LAMP F/R | AC 110-127V, 25W | 2 | 2 | 2 |
| | 3013602500 | | AC 220-240V, 25W | | | |
| 66 | 3015510800 | WINDOW R LAMP | MIPS | 1 | 1 | 1 |
| 67 | 3017842821 | SHELF INMOLDING R A AS | FRAME+PRINTED GLASS | 2 | 2 | 2 |
| 68 | 3017843321 | SHELF INMOLDING R C AS | FRAME+PRINTED GLASS | 1 | 1 | 1 |
| 69 | 3012514512 | GUIDE CASE A *L AS | FR-S580EG(PP) | 1 | 1 | 1 |
| 70 | 3012514612 | GUIDE CASE A *R AS | FR-S580EG(PP) | 1 | 1 | 1 |
| 71 | 3017842921 | SHELF INMOLDING R B AS | FRAME+PRINTED GLASS | 1 | 1 | 1 |
| 72 | 3011114670 | CASE VEGETB B AS | FRU-571, CRYSTAL | 1 | 1 | 1 |
| | 3011114630 | | FRU-571, BLUE | | | |
| 73 | 3011476011 | COVER RETURN DUCT AS | FRU-571I | 1 | 1 | 1 |
| 74 | 3011446700 | COVER VEGETB CASE B | GPPS | 1 | 1 | 1 |
| 75 | 3012529712 | GUIDE CASE C *L AS | PP | 1 | 1 | 1 |
| 76 | 3011114770 | CASE VEGETB C AS | FRU-571, CRYSTAL | 1 | 1 | 1 |
| 77 | 3012529812 | GUIDE CASE C *R AS | PP | 1 | 1 | 1 |
| 78 | 3018124000 | SWITCH DR | SP201R-7DR(R-134a) | 1 | 1 | 1 |
| | 3018128500 | | SPF101B-2D(R-600a) | | | |
| 79 | 3011190800 | CASE EGG TRAY | GPPS | 1 | 1 | 1 |
| 80 | 3018201000 | TANK WATER AS | FRU-541D | x | x | 1 |

*Magic Room (Option Parts)

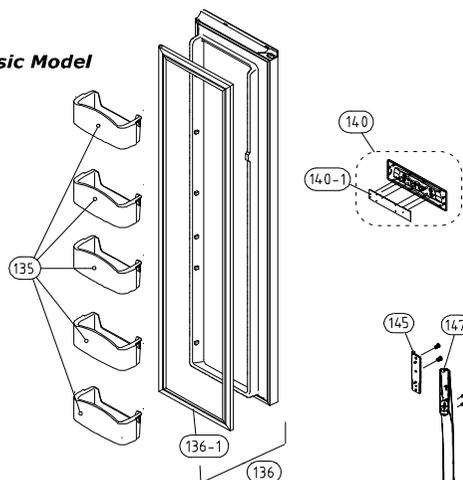
| | | | | | | | | | | |
|------|------------|------------------------|----------------------|---|--|---|---|--|---|--|
| 81 | 3010543121 | BOX CHANGE RM AS | FRU-541E/G (BLUE) | x | | 1 | | | | |
| | 3010543131 | | FRU-541E/G (CRYSTAL) | | | | 1 | | | |
| 81-1 | 3014806800 | SENSOR M AS | PBN-43B | | | x | | | 1 | |
| 81-2 | 3011495100 | BOX CONTL CHANGE RM AS | FRU-541E/G | | | | 1 | | | |
| 81-3 | 3011115021 | CASE CHANGE RM AS | FRU-541E/G (BLUE) | | | | | | 1 | |
| | 3011115031 | | FRU-541E/G (CRYSTAL) | | | | 1 | | | |
| 82 | 3012529500 | GUIDE CHANGE RM*L | ABS | | | | | | x | |
| 83 | 3012529600 | GUIDE CHANGE RM*R | ABS | | | | x | | | |



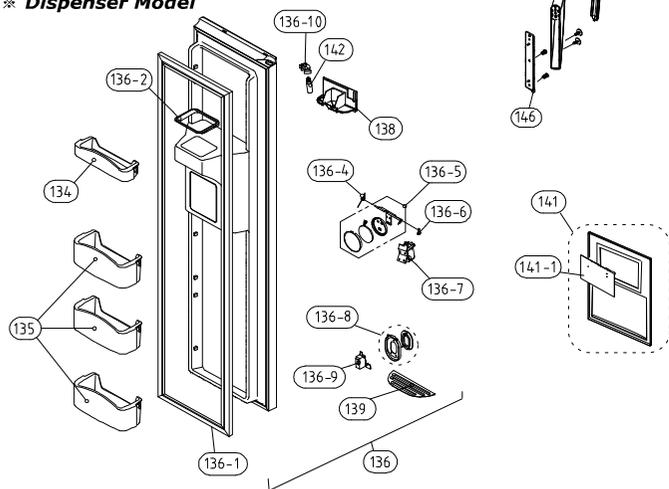
| NO | PART-CODE | PART NAME | SPEC. | Q'ty | |
|-------|------------|------------------------|-----------------------------|-------|-----------|
| | | | | Basic | Dispenser |
| 73 | 3012514512 | GUIDE CASE A *L AS | FR-S580EG(PP) | 1 | 1 |
| 75 | 3012514612 | GUDIE CASE A *R AS | FR-S580EG(PP) | 1 | 1 |
| 83 | 3012529712 | GUIDE CASE C *L AS | PP | 1 | 1 |
| 84 | 3012529812 | GUIDE CASE C *R AS | PP | 1 | 1 |
| 96 | 3012529010 | GUIDE DRN | EGI SCRAP T0.4*W248*L140 | 1 | 1 |
| 97 | 3011186310 | CASE ICE | PP+PRINT | 2 | x |
| 98 | 3017842710 | SHELF F ICE AS | FRAME+PRINTED GLASS+FIXTURE | 1 | x |
| 100 | 3018921710 | LOUVER F A AS | FRU-5711 | 1 | 1 |
| 100-1 | 3015915900 | MOTOR F FAN | D4612AAA21 | 1 | 1 |
| 100-2 | 3011834520 | FAN | PP OD130 | 1 | 1 |
| 100-3 | 3018921300 | LOUVER F A | ABS | 1 | 1 |
| 105 | 3010924600 | CAP F LOUVER | HIPS T2.3 | 2 | 1 |
| 106 | 3018921501 | LOUVER F B AS | HIPS | 1 | 1 |
| 107 | 3011443200 | COVER F RETURN | HIPS | 1 | 1 |
| 111 | 3012205810 | FRAME I/MAKER AS | FRU-541D | x | 1 |
| 113 | 3012517800 | GUIDE G/MOTR BRKT *L | ABS | x | 1 |
| 114 | 3012517900 | GUIDE G/MOTR BRKT *R | ABS | x | 1 |
| 115 | 3010671520 | BRACKET GEARED MOTR AS | 110~127V/60Hz | x | 1 |
| | 3010671540 | | 220V/60Hz | | |
| | 3010671560 | | 220~240V/50Hz | | |
| 116 | 3012520510 | GUIDE ICE CRUSHER *L | ABS | x | 1 |
| 117 | 3012517710 | GUIDE ICE CRUSHER *R | ABS | x | 1 |
| 118 | 30111152C0 | CASE I/CRUSHER AS | FRU-54VD/VF(C-600 VE MODEL) | x | 1 |
| 119 | 3001401750 | COVER F FAN AS | FRU-5711 | 1 | x |
| | 3001401760 | | FRU-541/547/549/54B | x | 1 |
| 119-1 | 3017906610 | SOCKET F LAMP AS | FR-S570FRB | 1 | 1 |
| 122 | 3013602800 | LAMP F/R | AC 110~127V, 25W | 1 | 1 |
| | 3013602500 | | AC 220~240V, 25W | | |
| 124 | 3015510700 | WINDOW F LAMP | MIPS | 1 | 1 |
| 126 | 3014807000 | SENSOR F AS | PT-38 | 1 | 1 |
| 127 | 3011442600 | COVER F SENSOR | ABS | 1 | 1 |
| 128 | 3018128500 | SWITCH DR | SPF101B-1D (R-600a) | 1 | 1 |
| | 3018128500 | | SPF101B-1D (R-600a) | 1 | 1 |
| 129 | 3017842600 | SHELF F AS | PRINTED GLASS | 3 | 3 |
| 130 | 3011114870 | CASE F A AS | FRU-541, CRYSTAL | 1 | 1 |
| 133 | 3011114970 | CASE F B AS | FRU-541, CRYSTAL | 1 | 1 |

- Some parts can be chaged for improving their performace without notice.

※ Basic Model



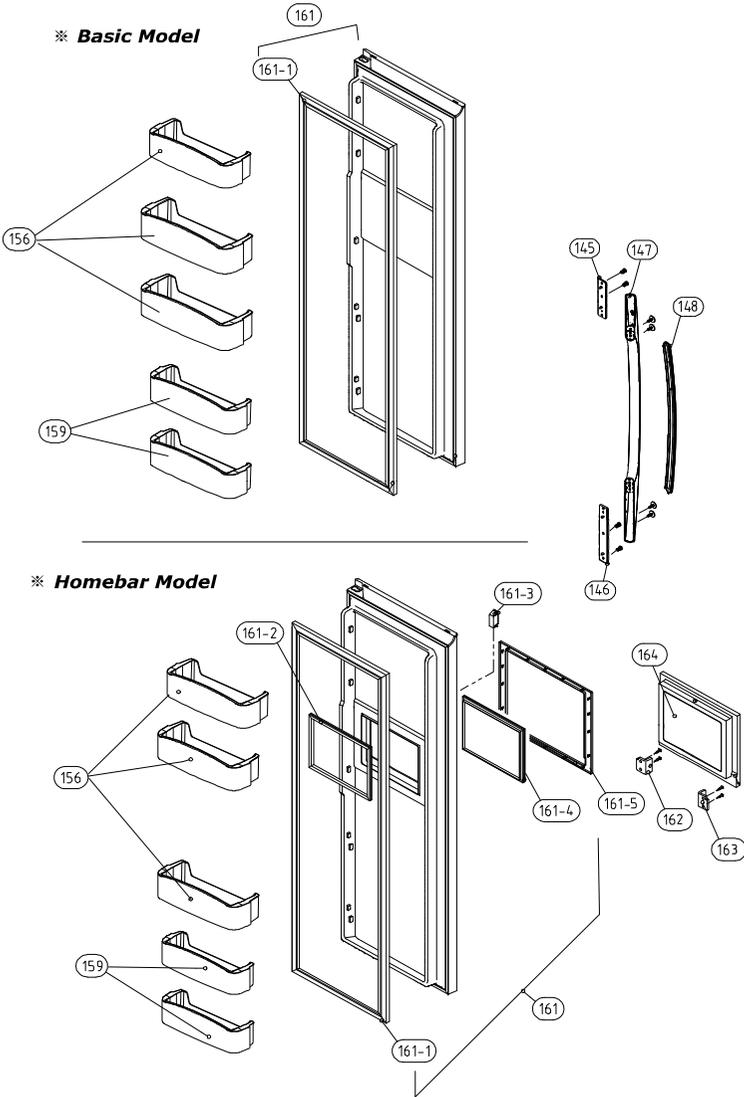
※ Dispenser Model



| NO | PART-CODE | PART NAME | SPEC. | Q'ty | | |
|--------|------------|------------------------|----------------------------|-------------|-------|-----------|
| | | | | Inner Basic | Basic | Dispenser |
| 134 | 3019026700 | POCKET F *T | HIPS | X | X | 1 |
| 135 | 3019026600 | POCKET F | HIPS | X | X | 3 |
| | 3019027401 | POCKET F AS | FRU-541D | 5 | 5 | 3 |
| 136 | 30000604E0 | ASSY F DR | FRU-57VI(TITANIUM ELLIO) | 1 | X | X |
| | 30000604F0 | | FRU-57VI(DE WHITE) | 1 | X | X |
| | 30000606C0 | | FRU-54VD/F, TITANIUM ELLIO | X | X | 1 |
| | 30000606D0 | | FRU-54VD/F, DE WHITE | X | X | 1 |
| 136-1 | 3012318830 | GASKET F DR AS | PVC+MAGNET | 1 | 1 | 1 |
| 136-2 | 3010964601 | CAP ICE PATH FRAME | PP(FRS-551F) | X | X | 1 |
| 136-4 | 3015102200 | SPRING ICE D LEVR | SUS | X | X | 1 |
| 136-5 | 3011495300 | COVER I/FLAP AS | FRU-541D | X | X | 1 |
| 136-6 | 3012019700 | FIXTURE I/SHUT LUVR | FR-S650CD | X | X | 1 |
| 136-7 | 3015402100 | VALVE SOL DISP | 220V 60HZ | X | 1 | |
| | 3015403120 | | 110~127V/60z | | | |
| | 3015403000 | | 220~240V/50Hz | | | |
| 136-8 | 3016304941 | BUTTON DISPNS AS | ABS+AL | X | X | 1 |
| 136-9 | 3018125800 | SWITCH MICRO | VP333A-2D | X | X | 1 |
| 136-10 | 3017903702 | SOCKET LAMP AS | - | X | X | 1 |
| 138 | 3010544000 | BOX DISPNS ICE SHUT AS | FRU-541D | X | X | 1 |
| 139 | 3012406900 | GRILLE DISPNS | ABS | X | X | 1 |
| 140 | 3001401040 | COVER F PCB AS | EXPORT(FRU-579B/H) | X | 1 | X |
| 140-1 | 30143E1110 | PCB FRONT AS | FR-S570ERB | X | 1 | X |
| 141 | 3011494780 | COVER DISPNS BOX AS | FRU-54V | X | X | 1 |
| 141-1 | 30143KA160 | PCB FRONT AS | FRU-54V | X | X | 1 |
| 142 | 3013600050 | LAMP AS | 110~127V/15W | X | X | 1 |
| | 3013600020 | | 220~240V/15W | | | |
| 145 | 3010339100 | BASE HNDL *T | HIPS | 1 | 1 | 1 |
| 146 | 3010339200 | BASE HNDL *U | HIPS | 1 | 1 | 1 |
| 147 | 3012640900 | HANDLE F/R AS | FR-S580DVB | 1 | 1 | 1 |
| 148 | 3011636010 | DECO HANDL F/R | ABS(NO SPRAY) | 1 | 1 | 1 |

- Some parts can be chaged for improving their performance without notice.

| Date | Amendment Note |
|------|----------------|
| | |



| NO | PART-CODE | PART NAME | SPEC. | Q'ty | |
|-------|------------|---------------------|--------------------|-------|-------|
| | | | | Basic | H/Bar |
| 145 | 3010339100 | BASE HNDL *T | HIPS | 1 | 1 |
| 146 | 3010339200 | BASE HNDL *U | HIPS | 1 | 1 |
| 147 | 3012640900 | HANDLE F/R AS | FR-S580DVB | 1 | 1 |
| 148 | 3011636010 | DECO HANDL F/R | ABS(NO SPRAY) | 1 | 1 |
| 156 | 3019026800 | POCKET R | HIPS | 3 | 3 |
| 159 | 3019026900 | POCKET R *S | FRU-571I | 2 | 2 |
| 161 | 30000607B0 | ASSY F DR | FRU-54VF(TITANIUM) | X | 1 |
| | 30000607C0 | | FRU-54VF(DE WHITE) | X | 1 |
| | 30000607D0 | | FRU-57VI(TITANIUM) | 1 | X |
| | 30000607E0 | | FRU-57VI(DE WHITE) | 1 | X |
| 161-1 | 3012318930 | GASKET R DR AS | PVC+MAGNET | 1 | 1 |
| 161-2 | 3012319300 | GASKET H/BAR B AS | PVC | x | 1 |
| 161-3 | 3018125601 | SWITCH H/BAR DR AS | SP101B-2D1(G) GRAY | x | 1 |
| 161-4 | 3012319400 | GASKET H/BAR A AS | PVC | x | 1 |
| 161-5 | 3011497200 | COVER H/BAR FRAME | FRU-541F | x | 1 |
| 162 | 3015204500 | STOPPER H/BAR DR *R | PO T4.0 | x | 1 |
| 163 | 3015204400 | STOPPER H/BAR DR *L | PO T4.0 | x | 1 |
| 164 | 3011767902 | DOOR H/BAR AS | FRU-541F | x | 1 |

- Some parts can be chaged for improving their performace without notice.

| Date | Amendment Note |
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