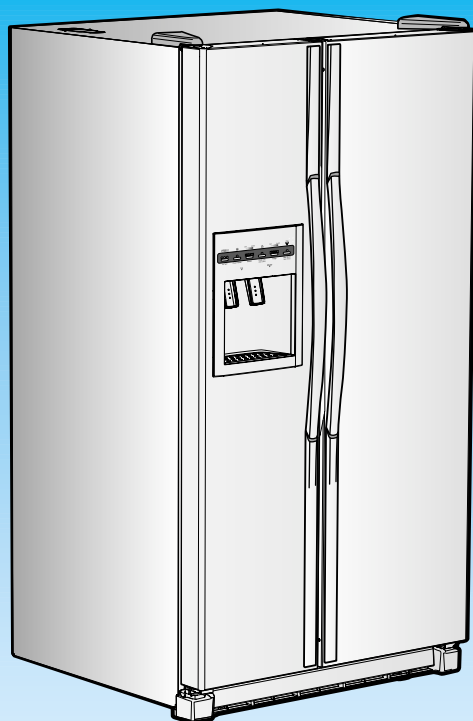


**SAMSUNG**

**SAMSUNG Home Appliance Service**

# ***SERVICE*** ***MANUAL***

## **SIDE-BY-SIDE REFRIGERATOR**





## **WARNING**

### **IMPORTANT SAFETY NOTICE**

The service guide is for service men with adequate backgrounds of electrical, electronic, and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or dealer cannot be responsible for the interpretation of this information.

**SAMSUNG ELECTRONICS AMERICA, INC.**

*Technical Service Guide*

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## 1. Safety Instructions on Service

- Unplug the refrigerator before making any repair or any replacement.
  - ⇒ Avoid the electric shock.
- Use the rated components on the replacement.
  - ⇒ Check the correct model number, rated voltage, rated current, operating temperature and so on.
- On repair, be sure that the wires such as harness are bundled tightly and are not exposed by water.
  - ⇒ Bundle wires tightly in order not to be detached by the external force.
- On repair, remove completely dust, particles or other things on housing parts, harness parts, and connectors.
  - ⇒ Cleaning may prevent fire by tracking or short.
- Check if there is any trace indicating the infiltration of water on electrical parts.
  - ⇒ If there is kind of trace, change the related components or do the necessary action such as taping using the insulating tape.
- After repair, check the assembled state of parts.
  - ⇒ It must be in the same assembled state when compared with the state before disassembly.
- Check the surrounding conditions of the installed refrigerator.
  - ⇒ When the refrigerator is located at humid or wet place, or the installed state is unstable, change the location.
- If needed, do the ground.
  - ⇒ Especially, if there is a possibility of the electric leakage, this appliance must be properly grounded.
- Do not allow consumers to use one outlet for several plugs.
- Check whether the power cord is placed under other appliance and so, damaged, worm-out squeezed.
  - ⇒ Repair immediately the defective power plug or outlet.
  - ⇒ Make sure that the power cord is not placed under other appliance or squeezed.
- Do not allow consumers to keep bottles or the likes in the Freezer or to keep foods in unstable position.
- Do not allow consumers to repair the appliance by themselves.
- Do not allow consumers to keep other chemicals except food.
  - ⇒ Medicines and other materials for research ; This appliance will not maintain the precisely constant temperature for them.
  - ⇒ Volatile material(Alcohol, Benzene, Ether, LP gas etc.) : possibility of explosion

## 2. Warranty information

### SAMSUNG REFRIGERATOR

#### LIMITED WARRANTY TO ORIGINAL PURCHASER

This SAMSUNG brand product, as supplied and distributed by Samsung Electronics America, Inc. (SAMSUNG) and delivered new, in the original carton to the original consumer purchaser, is warranted by SAMSUNG against manufacturing defects in materials and workmanship for a limited warranty period of:

**One (1) Year Parts and Labor on Refrigerator**  
**Five (5) Years Parts and Labor on Sealed Refrigeration System Only\***  
(\*Compressor, evaporator, condenser, drier, connecting tubing)

This limited warranty begins on the original date of purchase, and is valid only on products purchased and used in the United States. To receive warranty service, the purchaser must contact SAMSUNG for problem determination and service procedures. Warranty service can only be performed by a SAMSUNG authorized service center. The original dated bill of sale must be presented upon request as proof of purchase to SAMSUNG or SAMSUNG's authorized service center.

SAMSUNG will repair or replace any part found to be defective, at our option and at no charge as stipulated herein, with new or reconditioned parts during the limited warranty period specified above. All replaced parts and products become the property of SAMSUNG and must be returned to SAMSUNG. Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer.

In-home service will be provided during the warranty labor period subject to availability within the contiguous United States. In-home service is not available in all areas. To receive in-home service, the product must be unobstructed and accessible from floor level to service personnel. If during in-home service repair cannot be completed, it may be necessary to remove, repair and return the product. If in-home service is unavailable, SAMSUNG may elect, at our option, to provide for transportation of our choice to and from a SAMSUNG authorized service center. Otherwise, transportation to and from the SAMSUNG authorized service center is the responsibility of the purchaser.

This limited warranty covers manufacturing defects in materials and workmanship encountered in normal, noncommercial use of this product, and shall not apply to the following, including, but not limited to: damage which occurs in shipment; delivery and installation; applications and uses for which this product was not intended; altered product or serial numbers; cosmetic damage or exterior finish; accidents, abuse, neglect, fire, water, lightning or other acts of nature; use of products, equipment, systems, utilities, services, parts, supplies, accessories, applications, installations, repairs, external plumbing and leaks, external wiring, circuit breakers, fuses or connectors not supplied and authorized by SAMSUNG, or which damage this product or result in service problems; incorrect electrical line voltage, fluctuations and surges; customer adjustments and failure to follow operating instructions, cleaning, maintenance and environmental instructions that are covered and prescribed in the instruction book; loss of food due to spoilage; consumable items including filters and light bulbs.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE LISTED AND DESCRIBED ABOVE, AND NO WARRANTIES WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY AFTER THE EXPRESS WARRANTY PERIODS STATED ABOVE, AND NO OTHER EXPRESS WARRANTY OR GUARANTY GIVEN BY ANY PERSON, FIRM OR CORPORATION WITH RESPECT TO THIS PRODUCT SHALL BE BINDING ON SAMSUNG. SAMSUNG SHALL NOT BE LIABLE FOR LOSS OF REVENUE OR PROFITS, FAILURE TO REALIZE SAVINGS OR OTHER BENEFITS, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY THE USE, MISUSE OR INABILITY TO USE THIS PRODUCT, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF SAMSUNG HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. NOR SHALL RECOVERY OF ANY KIND AGAINST SAMSUNG BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT SOLD BY SAMSUNG AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, PURCHASER ASSUMES ALL RISK AND LIABILITY FOR LOSS, DAMAGE OR INJURY TO PURCHASER AND PURCHASER'S PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF THE USE, MISUSE OR INABILITY TO USE THIS PRODUCT SOLD BY SAMSUNG NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF SAMSUNG. THIS LIMITED WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THIS PRODUCT, IS NONTRANSFERABLE AND STATES YOUR EXCLUSIVE REMEDY.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

To obtain warranty service, please contact SAMSUNG at:

### 3. Mechanical Disassembly

#### 3-1) Refrigerator Disassembly

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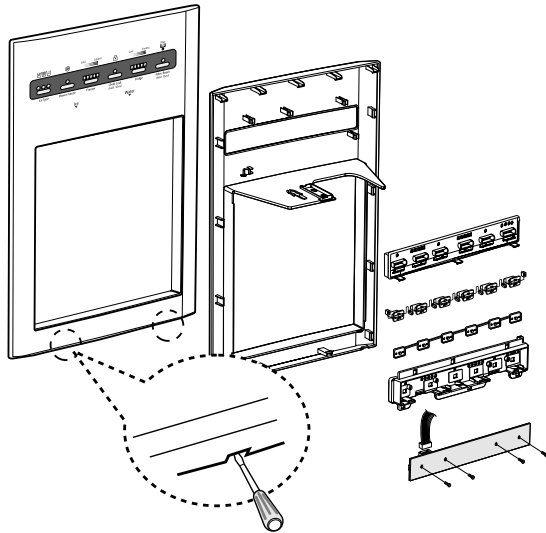
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### 3. Mechanical Disassembly

#### 3-1) Refrigerator Disassembly

##### Control Panel

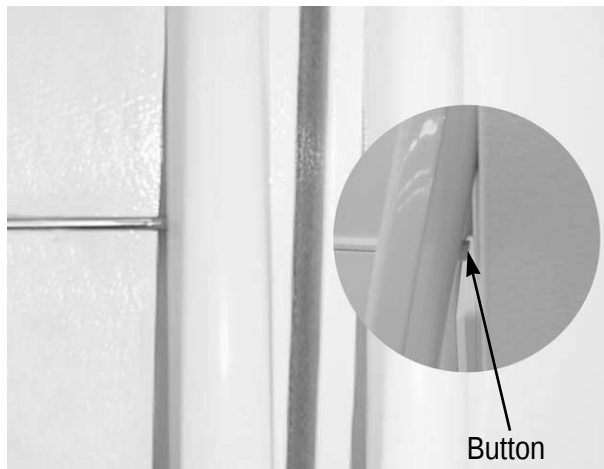
1. Insert a flat-blade screwdriver on the slot as shown, and unlock the tabs.
2. Disconnect the wire connector.



##### Door Handle

The door handles allow access into the refrigerator and freezer. They are front mounted with Phillips head screws.

1. With a small flat-blade screwdriver, press the small button and pull handle cover out.
2. Remove the Phillips screws (5).
3. Lift the handle with an in and upward motion until it disengages the locking tabs. Pull the handle outward to remove it.



##### Door Gasket

The door gasket is a molded gasket set into a channel located in the door liner.

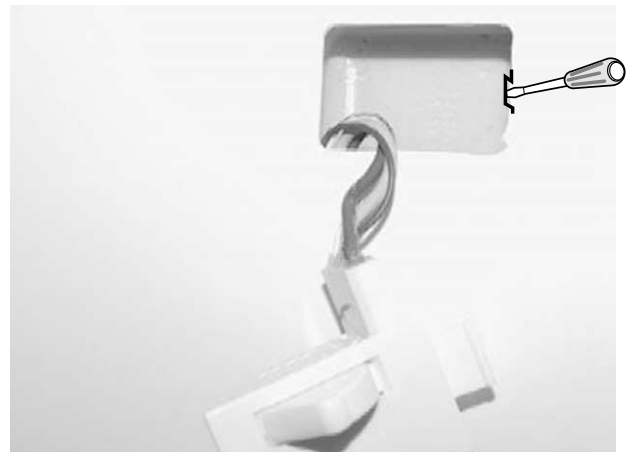
1. Open the door.
2. Grasp the gasket and pull in an outward motion until the molded gasket separates from the door liner.



##### Refrigerator Door Light Switch

The refrigerator has a door light switch located in the upper right corner for the refrigerator.

1. Use a small flat-blade screwdriver to unlock the locking tab and pull the switch out until the wire connector is visible.

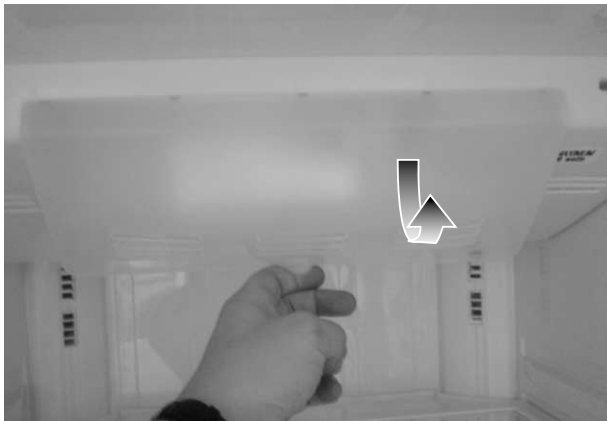


## Mechanical Disassembly

### Refrigerator Light

The refrigerator light is located in the upper portion of refrigerator.

1. Pull the tip on the cover.



### Gallon Door Bin

The door bins allow storage of perishable items.

1. Push the bin up and slide it out.



### Tempered Glass Shelf

These shelves allow the storage of larger items and pull out for easy access.

1. Pull the shelf out as far as it goes.
2. Lift it up and remove it.



### Water Filter

The water filter is located in the bottom left-hand corner of the refrigerator. The water filter filters water for the ice maker and the water dispenser.

1. Turn the water filter 1/2 turn counterclockwise and pull it down.
2. To install the filter, align the indication mark (unlock position) and push it up while turning 1/2 turn clockwise until the lock position is aligned. Do not over tighten.



### Plastic Drawers in Refrigerator

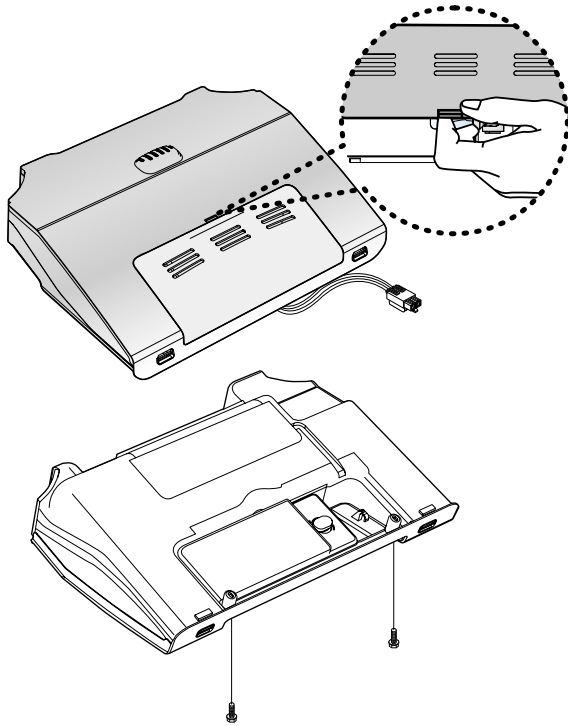
Drawers are designed for storage of fruits, vegetables, and deli items. The drawers are located in the lower portion of the refrigerator.

1. Pull out the drawer as far as it goes.
2. Tilt the drawer up and pull it out until it is removed.

## Mechanical Disassembly

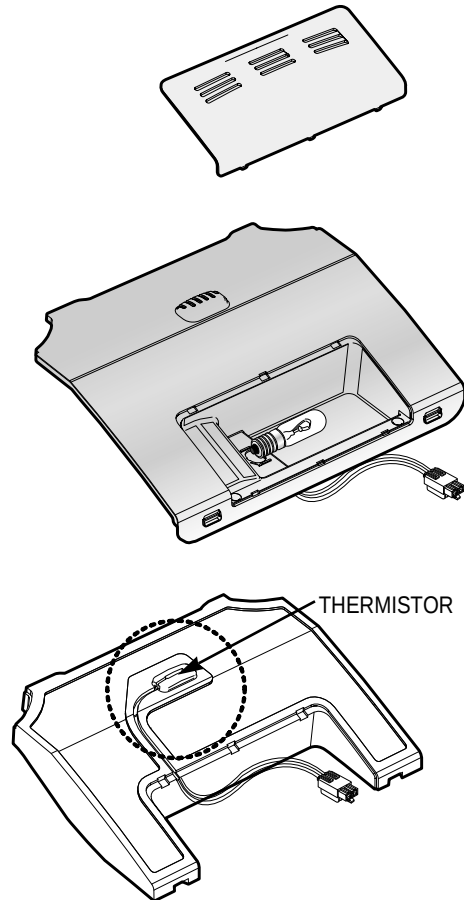
### Damper in the Refrigerator

1. Pull out the screw cap and remove the screw.
2. Remove the lamp cover by unlocking the tabs and pulling the cover down.
3. Remove the screw at the cover damper.
4. Take off sensor and lamp wire connector located on the upper liner.
6. Remove the damper from the refrigerator.



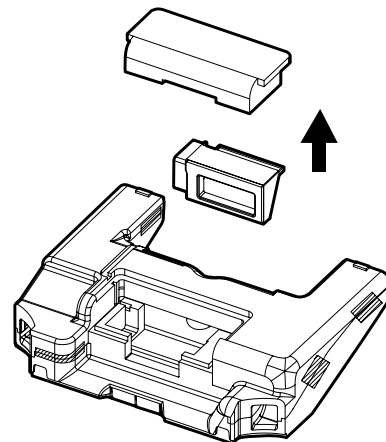
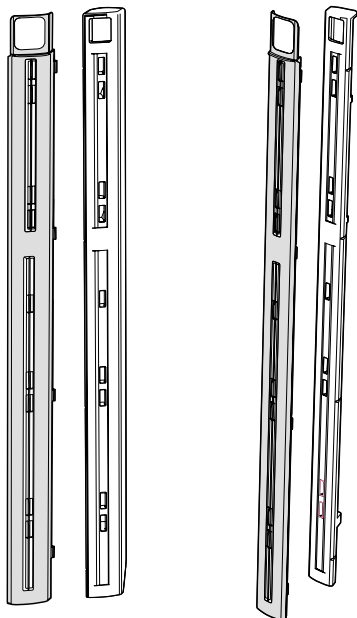
### Refrigerator Thermistor

The refrigerator thermistor is located inside of the upper light cover of the refrigerator.



### Twin cool in the Refrigerator

1. Pull out the Twin cool by unlocking the hooks.



## Mechanical Disassembly

### 3-2) Freezer Disassembly

#### Door Bin in Freezer

The door bins allow storage of perishable items.

1. Push the bin up and slide it out.



#### Freezer Shelf

The shelves slide out for easy access for frozen items.

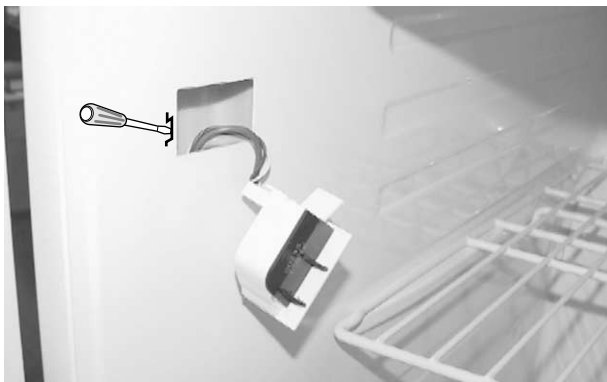
1. Slide the shelf out until it reaches its stop.
2. Tilt down and slide it out of the compartment.



#### Freezer Door Light Switch

This switch is located in the left-hand portion of the freezer and sends a signal to the processor.

1. With a small flat-blade screwdriver, unlock the locking tabs and pull the switch out until the wire connector is visible.
2. Disconnect the wire connector and remove the switch.



#### Plastic (Wire) Drawer in Freezer

Drawers are designed for storage of meat and dry foods. The drawers are located in the lower portion of the freezer.

1. Pull out the drawer as far as it goes.
2. Tilt the drawer up and pull it out until it is removed.

## Mechanical Disassembly

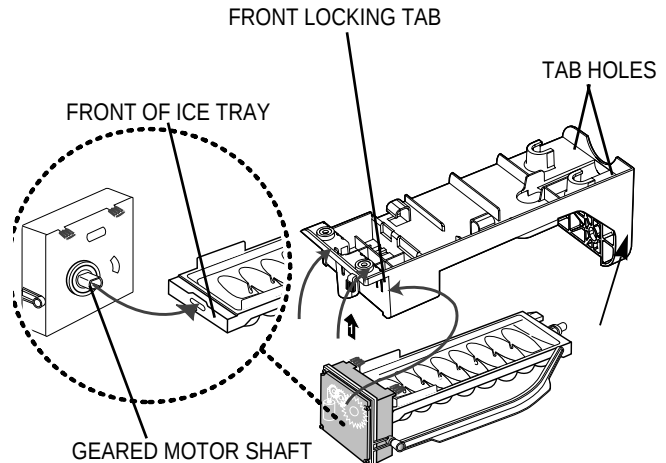
### Ice Dispenser & Ice Maker

The ice dispenser is located in the upper portion of the freezer. This assembly stores ice made by the icemaker and dispenses ice.

1. Lift the ice bucket up ① and slide out the ice dispenser assembly ②.



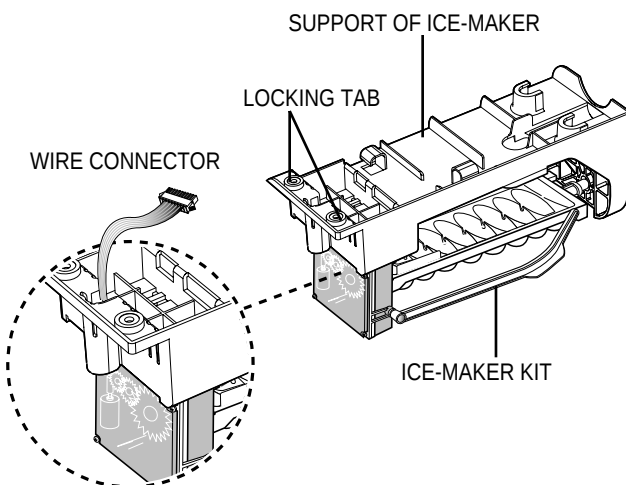
5. Tighten the screws (2) of the ice maker support.



### Auger Motor Case

This shelf is designed to support the ice maker & ice dispensed and Xtra Space™.

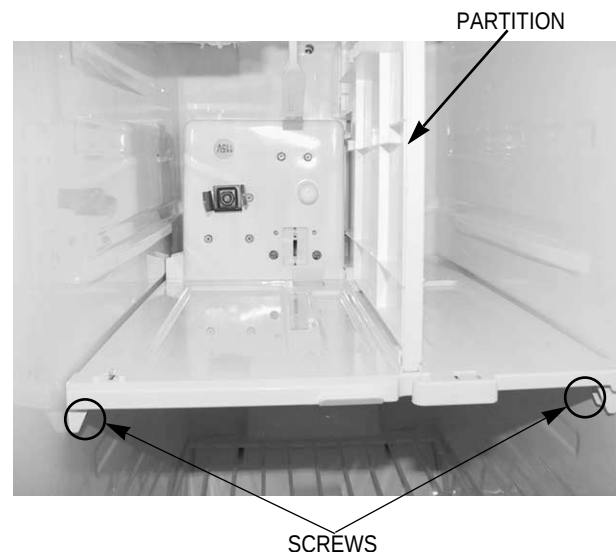
1. Remove ice maker support screws (2), and slide out.
2. Disconnect the ice maker wire connector.
3. Unlock the locking tabs to separate the ice maker kit.



In order to assemble the icemaker kit.

1. Assemble the geared motor shaft and the front of ice tray.
2. Lift the front locking tab and assemble the ice maker kit.
3. Connect the ice maker wire connector.
4. Match the tab holes and tabs(2) located on the

1. Remove the Xtra Space™ cover to push it down and pull front.
2. Slide the partition out.
3. Remove the screws (2) on the bottom front of the case.
4. Slide out the case while disconnecting the wire connect.



## Mechanical Disassembly

### Freezer Light

The freezer light is located in the bottom of the auger motor case. The light is covered by an opaque cover.

1. Remove the screw and the light cover.



### Evaporator Fan Motor

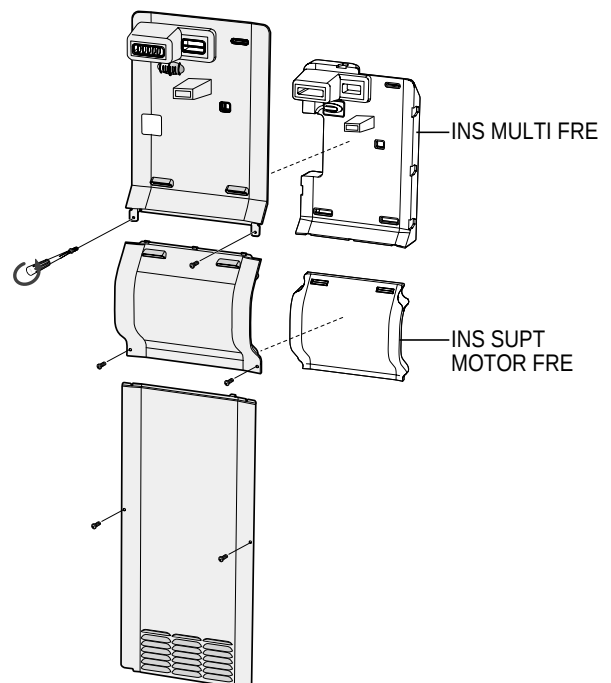
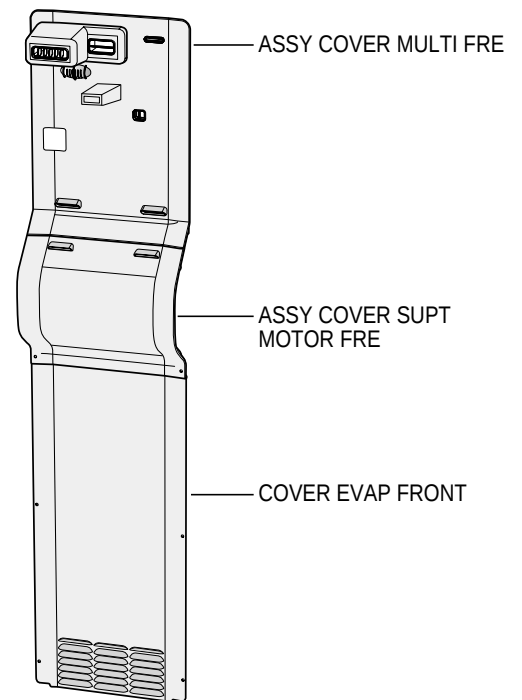
The evaporator fan is located in the middle rear of refrigerator. This fan circulates cold air in the refrigerator.

1. Remove the fan spring, and than remove fan and protector motor.
2. Remove screw located at the four corners of the fan bracket.
3. Take the fan motor assembly off.



### Evaporator Cover in Freezer

1. Remove screw (6).
2. Remove the assy cover multi fre.
3. Remove the assy cover supt motor fre.
4. Remove screw (2).
5. Remove the cover evap front.
6. Disconnect the sensor wire connector.

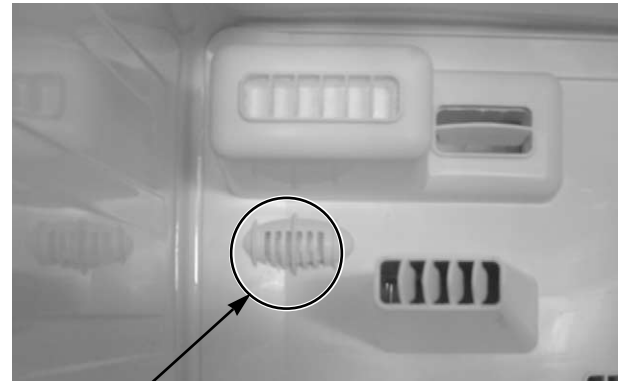
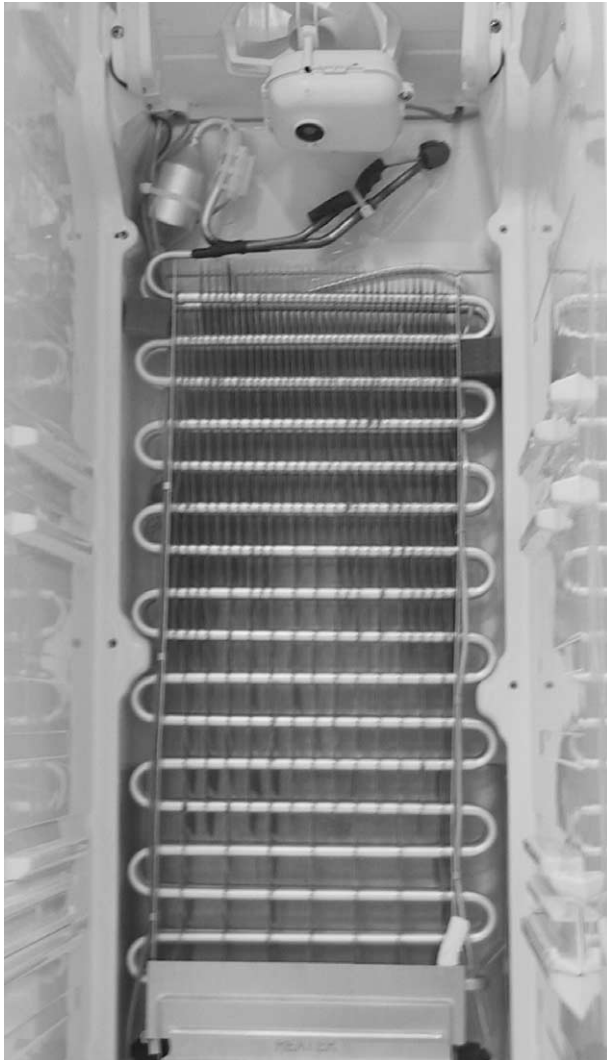


## Mechanical Disassembly

### Evaporator in Freezer

Evaporator is located in the bottom of freezer to produce cold air driven across the evaporator coils.

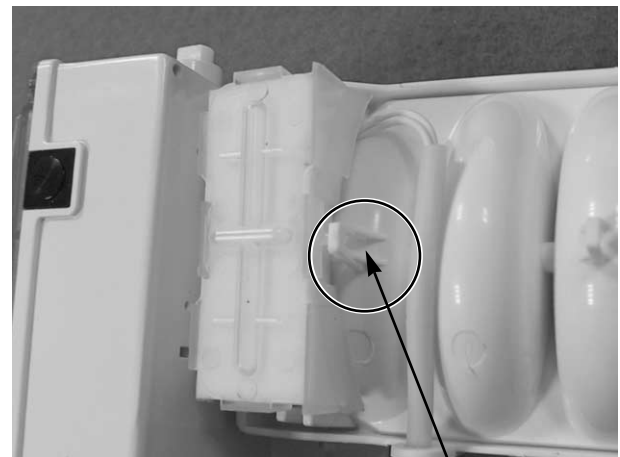
1. Take off the ductwork in Freezer.
2. Disconnect the wire connector (Heater, Bimetal, and Thermistor).
3. Desolder the inlet and outlet tubes.
4. Remove the evaporator.
5. Take the same steps to seal the system as mentioned earlier.



THERMISTOR

### Ice-Maker Thermistor

The Ice-Maker thermistor is located in its bottom. The temperature signal sends the micro-processor.



THERMISTOR

### Freezer Thermistor

The freezer thermistor is located at the top left of freezer vent. It sends temperature signals to the micro-processor.

## Mechanical Disassembly

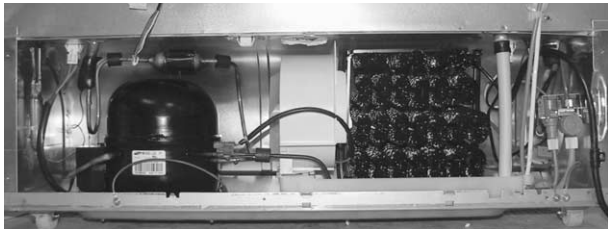
### 3-3) Machine Compartment Disassembly

#### Machine Compartment & Electric Box

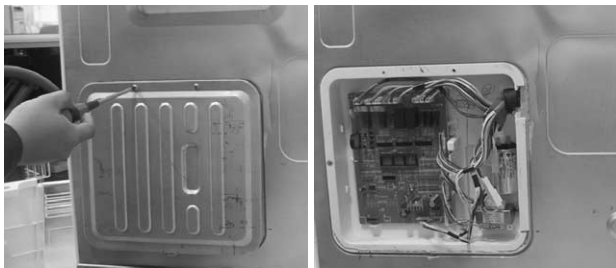
1. Disconnect the power cord of the refrigerator.
2. Remove the fixed screws (6) of compressor cover.



3. Slide up and take off the compressor cover to see the machine compartment.



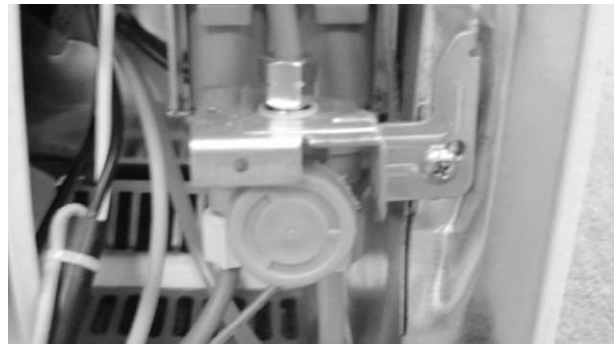
4. Remove screw (2) on the cover.



#### Water Solenoids

When the solenoids receive a signal from the micro-processor, they supply water to the water dispenser or the ice maker.

1. Remove bracket screw on cabinet.
2. Take the solenoids assembly out.
3. Disconnect water tubes.



#### Condenser Fan

The condenser Fan is located in the middle of machine compartment. It cools down the sub-condenser and the compressor.

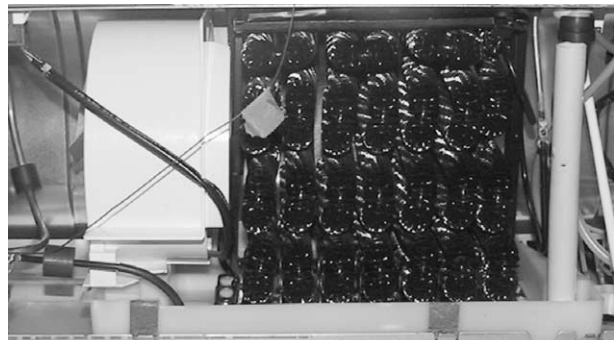
1. Lift up the rib under the support motor.
2. Pull the support motor.



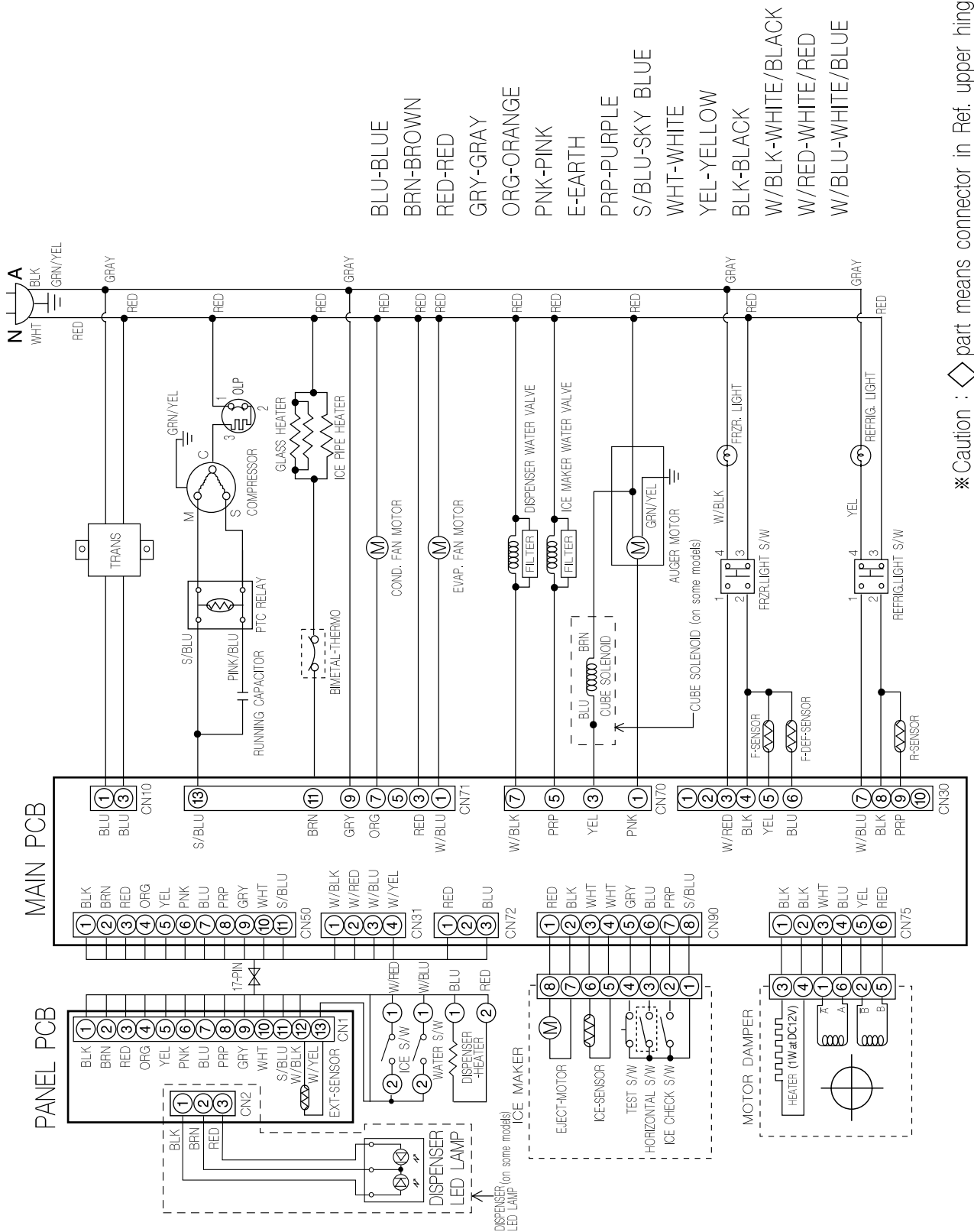
#### Condenser

The condenser is located in the machine compartment. The heat is extracted by condenser fan.

1. Desolder the compressor discharge & the condenser outlet.
2. Take out the condenser.



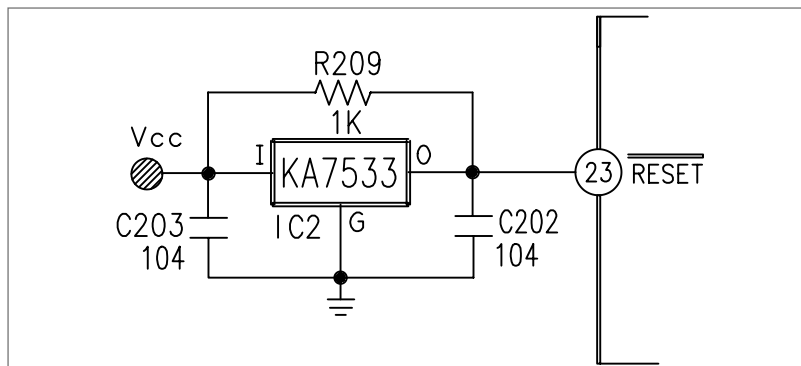
## 4. CIRCUIT DIAGRAM





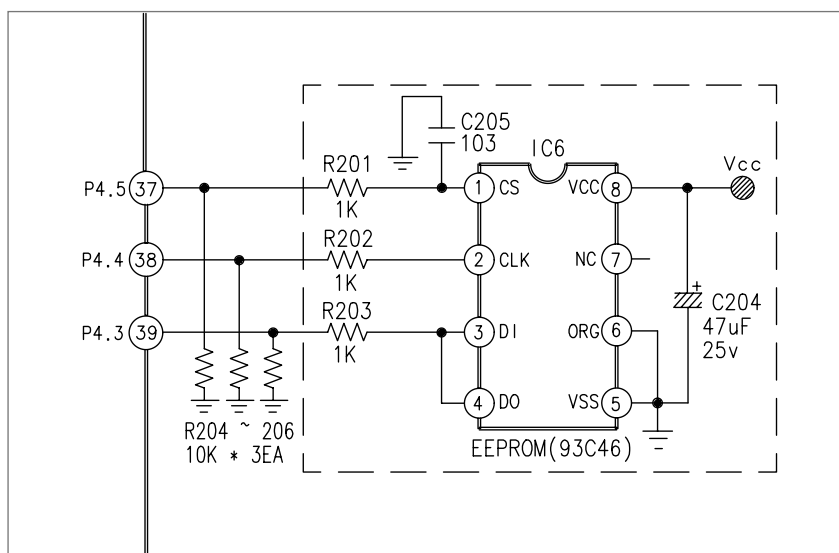
## OPERATION PRINCIPLES BY PARTS OF CIRCUIT

### 5-3) RESET CIRCUIT



- RESET Circuit allows the whole program to go back to the initial setting by initializing parts such as the RAM in MICOM with the power supply into MICOM or with an instant power failure. Upon the power supply, the reset terminal voltage becomes "LOW" for several tens of  $\mu s$  compared to Vcc voltage(DC 5V) at MICOM, and it maintains "HIGH"(Vcc Voltage) during normal operation. But, when Vcc drops down to 3.4~3.7V, the reset terminal voltage becomes "LOW".

### 5-4) EEPROM DETECTION CIRCUIT

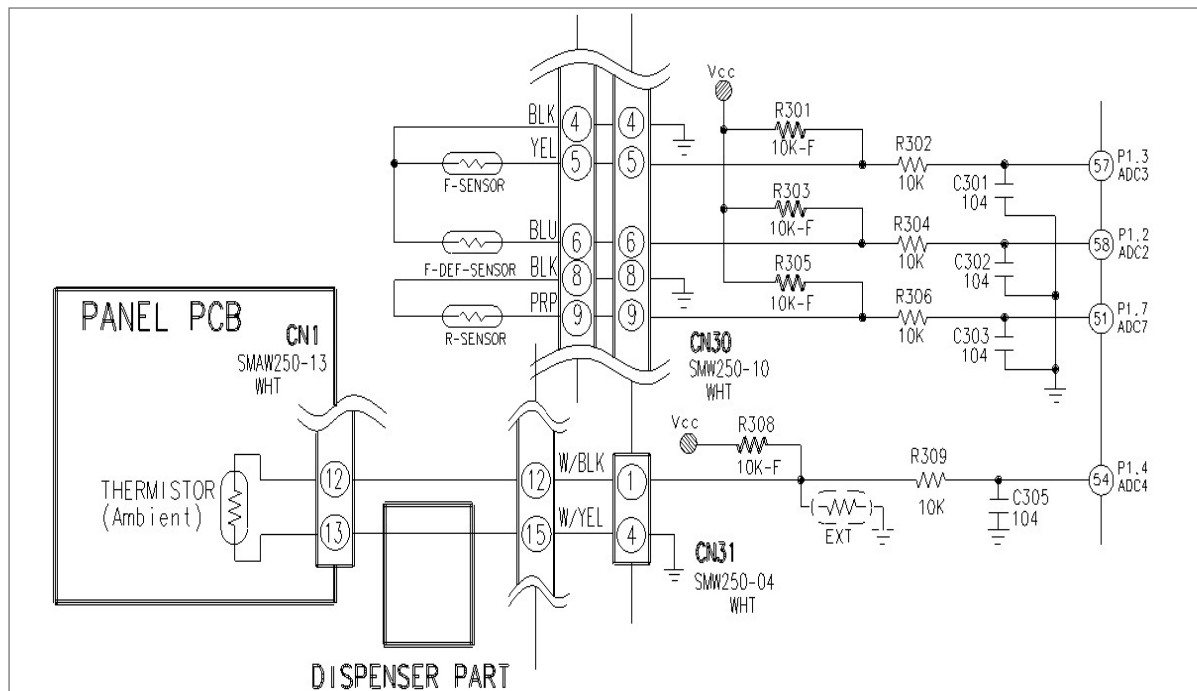


- A semiconductor memory EEPROM stores data remembering previous settings regardless of power-off, which are indispensable especially in power fluctuating areas. Also, EEPROM sets and uses other options in principle.



## OPERATION PRINCIPLES BY PARTS OF CIRCUIT

### 5-6) TEMP SENSING CIRCUIT



- 1) Sensor uses a thermistor which has a temp coefficient of negative resistance and controls resistance. When the heat goes up, the resistance gets down and vice versa. R302, 4, 6, 9 and C301~C303, C305 are parts for noise prevention but they are not related to temp sensing characteristics.
- 2) If  $V_f$  is the incoming voltage to MICOM in case of F-Sensor,  $V_f$  equals  $(R_{th} * V_{cc}) / (R_{301} + R_{th})$ . Where  $R_{th}$  is resistance of THERMISTOR corresponding to Temp. Please refer to the Appendix Temp-to-Sensor Resistance/Voltage conversion table(Temp-to-MICOM Terminal Voltage included) on A/S. (Next page)

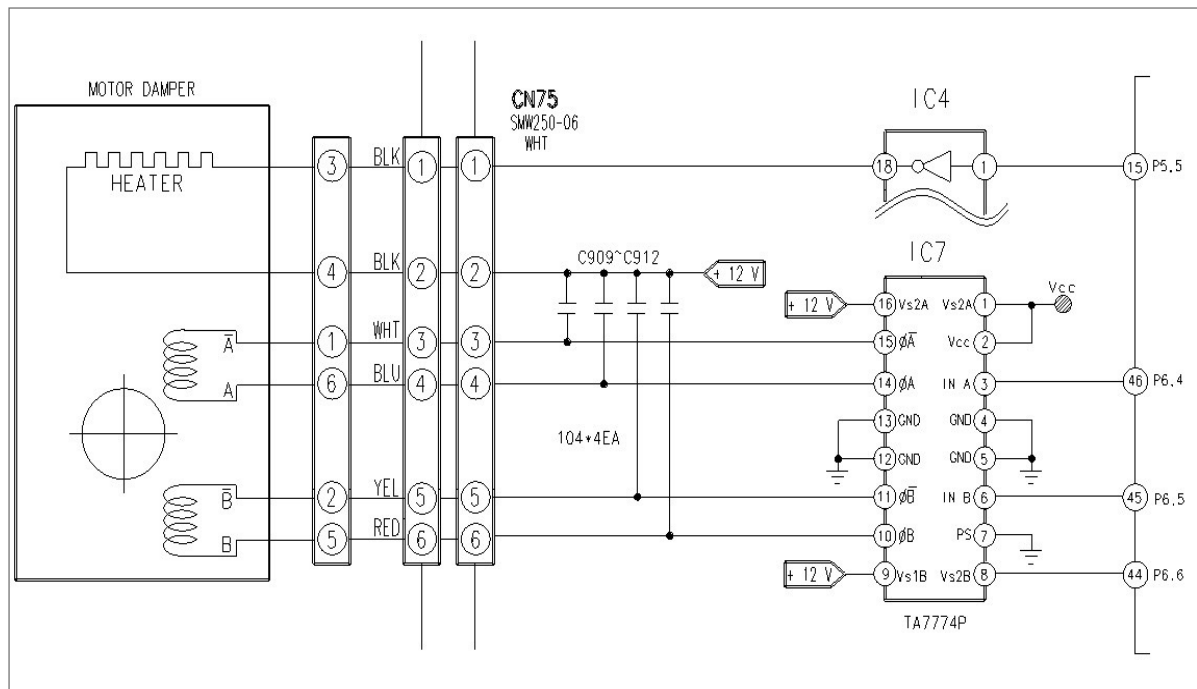
## OPERATION PRINCIPLES BY PARTS OF CIRCUIT

\* Temp to Resistance of Sensor & MICOM PORT Voltage  
Sensor CHIP : PX41C Standard

| Temp.         | Resistance(k $\Omega$ ) | Voltage(V) | Temp.         | Resistance(k $\Omega$ ) | Voltage(V) | Temp.        | Resistance(k $\Omega$ ) | Voltage(V) | Temp.       | Resistance(k $\Omega$ ) | Voltage(V) |
|---------------|-------------------------|------------|---------------|-------------------------|------------|--------------|-------------------------|------------|-------------|-------------------------|------------|
| -50°F/-45.6°C | 153319                  | 4.694      | -19°F/-28.3°C | 30752                   | 3.773      | 12°F/-11.1°C | 8200                    | 2.253      | 43°F/6.1°C  | 2714                    | 1.068      |
| -49°F/-45.0°C | 144794                  | 4.677      | -18°F/-27.8°C | 29350                   | 3.729      | 13°F/-10.6°C | 7888                    | 2.205      | 44°F/6.7°C  | 2627                    | 1.04       |
| -48°F/-44.4°C | 136798                  | 4.659      | -17°F/-27.2°C | 28021                   | 3.685      | 14°F/-10.0°C | 7590                    | 2.158      | 45°F/7.2°C  | 2543                    | 1.014      |
| -47°F/-43.9°C | 129294                  | 4.641      | -16°F/-26.7°C | 26760                   | 3.64       | 15°F/-9.4°C  | 7305                    | 2.111      | 46°F/7.8°C  | 2462                    | 0.988      |
| -46°F/-43.3°C | 122248                  | 4.622      | -15°F/-26.1°C | 25562                   | 3.594      | 16°F/-8.9°C  | 7032                    | 2.064      | 47°F/8.3°C  | 2384                    | 0.963      |
| -45°F/-42.8°C | 115631                  | 4.602      | -14°F/-25.6°C | 24425                   | 3.548      | 17°F/-8.3°C  | 6771                    | 2.019      | 48°F/8.9°C  | 2309                    | 0.938      |
| -44°F/-42.2°C | 109413                  | 4.581      | -13°F/-25.0°C | 23345                   | 3.501      | 18°F/-7.8°C  | 6521                    | 1.974      | 49°F/9.4°C  | 2237                    | 0.914      |
| -43°F/-41.7°C | 103569                  | 4.56       | -12°F/-24.4°C | 22320                   | 3.453      | 19°F/-7.2°C  | 6281                    | 1.929      | 50°F/10.0°C | 2167                    | 0.891      |
| -42°F/-41.1°C | 98073                   | 4.537      | -11°F/-23.9°C | 21345                   | 3.405      | 20°F/-6.7°C  | 6052                    | 1.885      | 51°F/10.6°C | 2100                    | 0.868      |
| -41°F/-40.6°C | 92903                   | 4.514      | -10°F/-23.3°C | 20418                   | 3.356      | 21°F/-6.1°C  | 5832                    | 1.842      | 52°F/11.1°C | 2036                    | 0.846      |
| -40°F/-40.0°C | 88037                   | 4.49       | -9°F/-22.8°C  | 19537                   | 3.307      | 22°F/-5.6°C  | 5621                    | 1.799      | 53°F/11.7°C | 1973                    | 0.824      |
| -39°F/-39.4°C | 83456                   | 4.465      | -8°F/-22.2°C  | 18698                   | 3.258      | 23°F/-5.0°C  | 5419                    | 1.757      | 54°F/12.2°C | 1913                    | 0.803      |
| -38°F/-38.9°C | 79142                   | 4.439      | -7°F/-21.7°C  | 17901                   | 3.208      | 24°F/-4.4°C  | 5225                    | 1.716      | 55°F/12.8°C | 1855                    | 0.783      |
| -37°F/-38.3°C | 75077                   | 4.412      | -6°F/-20.6°C  | 17142                   | 3.158      | 25°F/-3.9°C  | 5000                    | 1.675      | 56°F/13.3°C | 1799                    | 0.762      |
| -36°F/-37.8°C | 71246                   | 4.385      | -5°F/-20.0°C  | 16419                   | 3.107      | 26°F/-3.3°C  | 4861                    | 1.636      | 57°F/13.9°C | 1745                    | 0.743      |
| -35°F/-37.2°C | 67634                   | 4.356      | -4°F/-45.6°C  | 15731                   | 3.057      | 27°F/-2.8°C  | 4690                    | 1.596      | 58°F/14.4°C | 1693                    | 0.724      |
| -34°F/-36.7°C | 64227                   | 4.326      | -3°F/-19.4°C  | 15076                   | 3.006      | 28°F/-2.2°C  | 4526                    | 1.558      | 59°F/15.0°C | 1642                    | 0.706      |
| -33°F/-36.1°C | 61012                   | 4.296      | -2°F/-18.9°C  | 14452                   | 2.955      | 29°F/-1.7°C  | 4369                    | 1.52       | 60°F/15.6°C | 1594                    | 0.688      |
| -32°F/-35.6°C | 57977                   | 4.264      | -1°F/-18.3°C  | 13857                   | 2.904      | 30°F/-1.1°C  | 4218                    | 1.483      | 61°F/16.1°C | 1547                    | 0.67       |
| -31°F/-35.0°C | 55112                   | 4.232      | 0°F/-17.8°C   | 13290                   | 2.853      | 31°F/-0.6°C  | 4072                    | 1.447      | 62°F/16.7°C | 1502                    | 0.653      |
| -30°F/-34.4°C | 52406                   | 4.199      | 1°F/-17.2°C   | 12749                   | 2.802      | 32°F/0.0°C   | 3933                    | 1.412      | 63°F/17.2°C | 1458                    | 0.636      |
| -29°F/-33.9°C | 49848                   | 4.165      | 2°F/-16.7°C   | 12233                   | 2.751      | 33°F/0.6°C   | 3799                    | 1.377      | 64°F/17.8°C | 1416                    | 0.62       |
| -28°F/-33.3°C | 47431                   | 4.129      | 3°F/-16.1°C   | 11741                   | 2.7        | 34°F/1.1°C   | 3670                    | 1.343      | 65°F/18.3°C | 1375                    | 0.604      |
| -27°F/-32.8°C | 45146                   | 4.093      | 4°F/-15.6°C   | 11271                   | 2.649      | 35°F/1.7°C   | 3547                    | 1.309      | 66°F/18.9°C | 1335                    | 0.589      |
| -26°F/-32.2°C | 42984                   | 4.056      | 5°F/-15.0°C   | 10823                   | 2.599      | 36°F/2.2°C   | 3428                    | 1.277      | 67°F/19.4°C | 1297                    | 0.574      |
| -25°F/-31.7°C | 40938                   | 4.018      | 6°F/-14.4°C   | 10395                   | 2.548      | 37°F/2.8°C   | 3344                    | 1.253      | 68°F/20.0°C | 1260                    | 0.56       |
| -24°F/-31.1°C | 39002                   | 3.98       | 7°F/-13.9°C   | 9986                    | 2.498      | 38°F/3.3°C   | 3204                    | 1.213      | 69°F/20.6°C | 1225                    | 0.546      |
| -23°F/-30.6°C | 37169                   | 3.94       | 8°F/-13.3°C   | 9596                    | 2.449      | 39°F/3.9°C   | 3098                    | 1.183      | 70°F/21.1°C | 1190                    | 0.532      |
| -22°F/-30.0°C | 35433                   | 3.899      | 9°F/-12.8°C   | 9223                    | 2.399      | 40°F/4.4°C   | 2997                    | 1.153      | 71°F/21.7°C | 1157                    | 0.519      |
| -21°F/-29.4°C | 33788                   | 3.858      | 10°F/-12.2°C  | 8867                    | 2.35       | 41°F/5.0°C   | 2899                    | 1.124      | 72°F/22.2°C | 1125                    | 0.506      |
| -20°F/-28.9°C | 32230                   | 3.816      | 11°F/-11.7°C  | 8526                    | 2.301      | 42°F/5.6°C   | 2805                    | 1.095      | 73°F/22.8°C | 1093                    | 0.493      |

## OPERATION PRINCIPLES BY PARTS OF CIRCUIT

### 5-7) DAMPER CIRCUIT



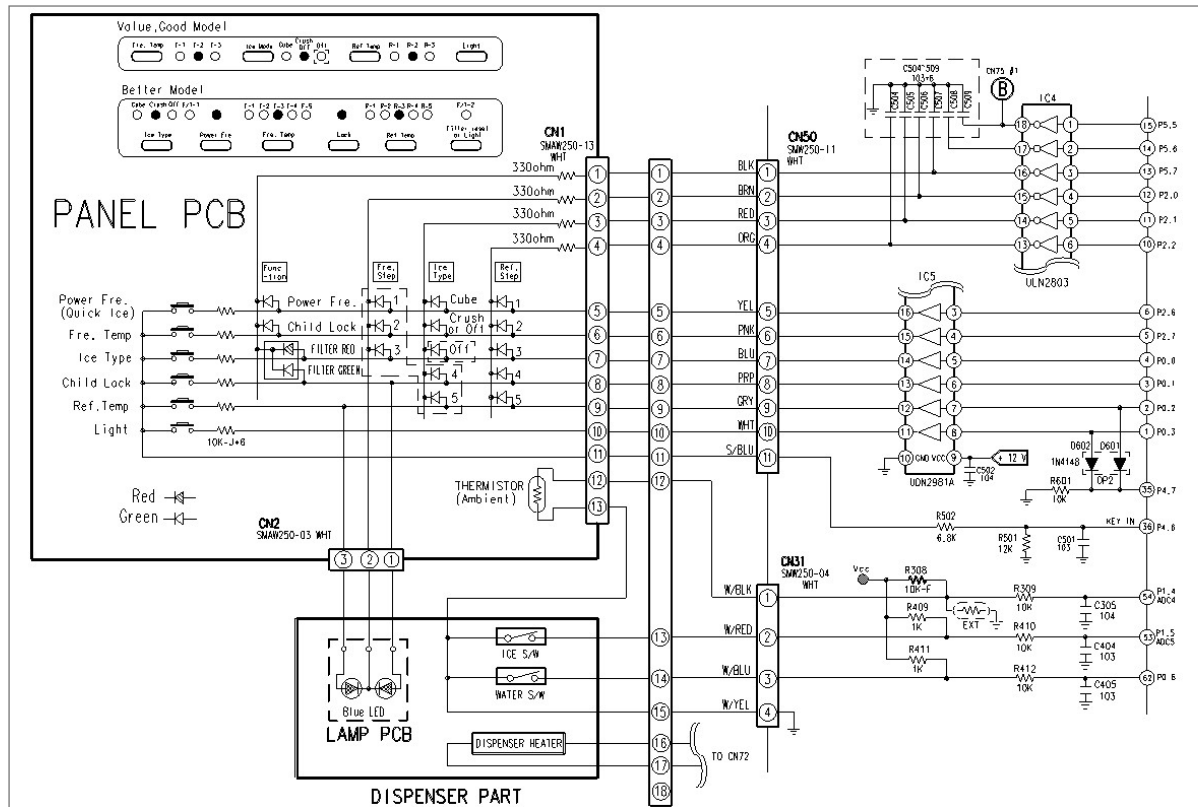
- 1) The temperature of R-room is controlled by opening and closing of damper with stepping motor, supplying & blocking cold air.
- 2) TA7774P (IC07) operates the damper. TA7774P is the driver IC only for step motor. If the regular signal is provided to TA7774P from Micom, send combined signal to Quad-Polar step motor to rotate on certain direction. This makes clockwise or counter clockwise rotation to make the damper open or close.
- 3) Since the damper always touches the cold air, DC 12V/1W heater is installed, always on to prevent the malfunction from moisture and is controlled on conditions. (Operation conditions can be changed). Micon #15 pin connected to IC4 controls the damper heater like category 3.

### 5-8) DISPLAY Circuit

#### 1) KEY SCAN

When Grid #6 is output, this signal goes through PCB resistance  $10\text{ k}\Omega$  and provided to power frequency. When the switch is pressed, R502( $6.8\text{ k}\Omega$ ) and R501 ( $12\text{ k}\Omega$ ) decrease the signal and less than 5.1V peak to peak signal is provided to MICOM, the MICOM recognizes the grid #6 is provided, and change the function corresponding to switch key. [Refer the circuit diagram below]

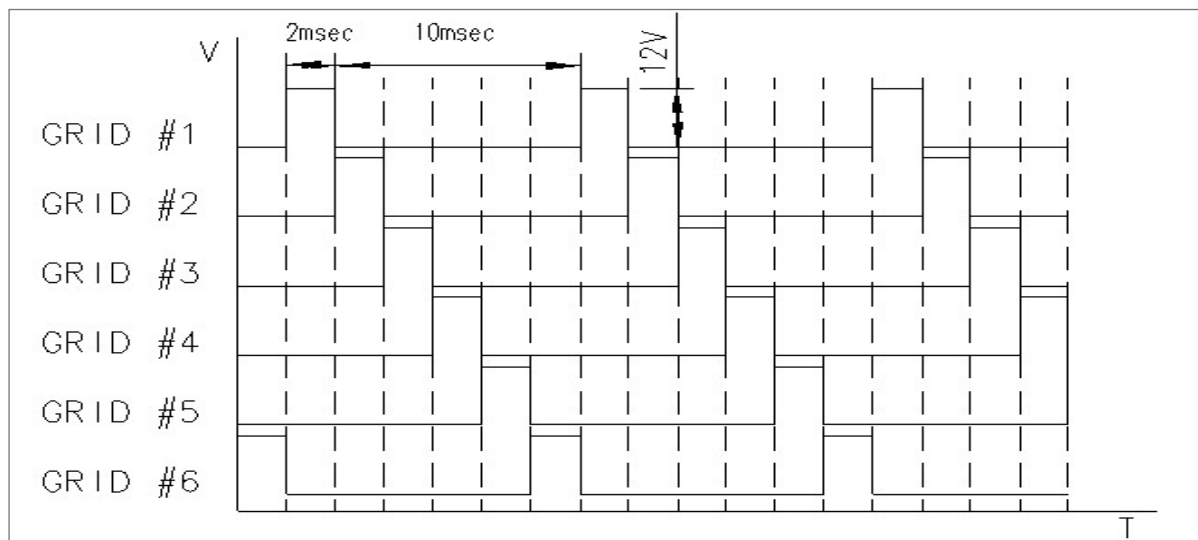
## OPERATION PRINCIPLES BY PARTS OF CIRCUIT



### 2) DISPLAY OPERATION

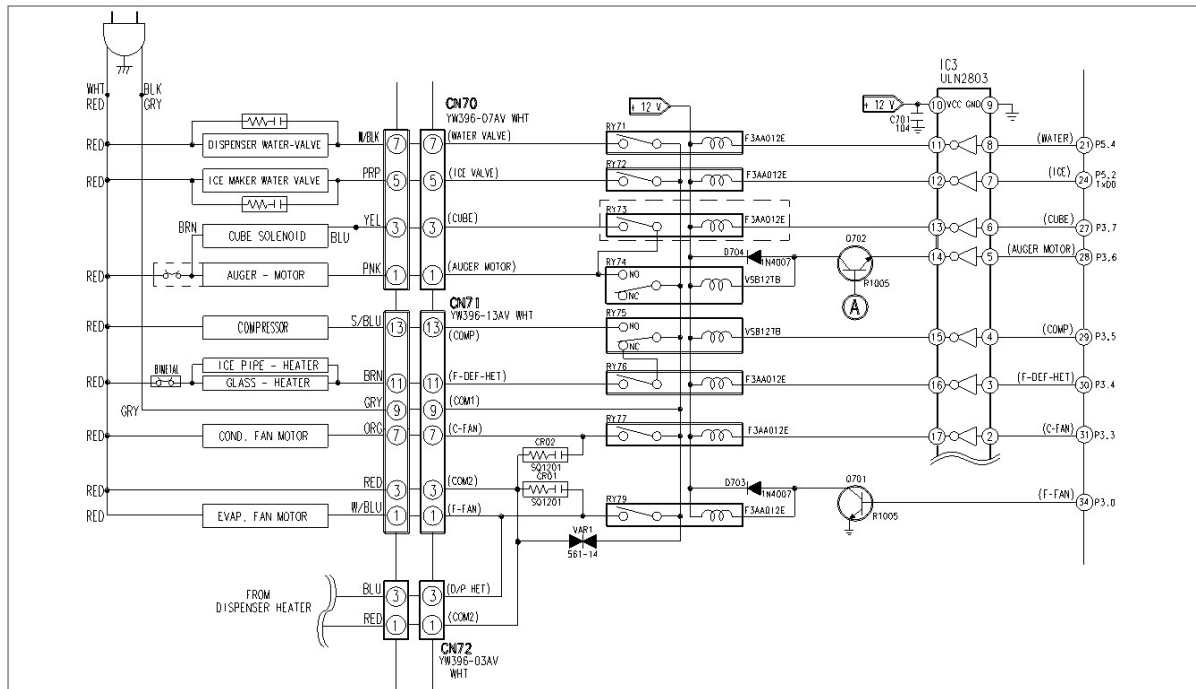
Like the signal diagram below, Micom sends "high" signal through MICOM 6 terminals of NO #1 → 2 → 3 → 4 → 5 → 6 for 2ms every 12ms. This signal goes to output terminal via input terminal of IC5 (KID65783AP or TD62783AP). Output wave always goes through LED input terminal with DC11~12V on every period. At this time, if SINK signal comes out at IC4, DC11~12V is applied to LED input terminal and output terminal sinks to 0V which turn on LED for 2ms. For example, to turn on "Power Fre." LED, IC4 #16 pin sinks to 0V when IC5 #16 becomes DC 11~12V making "Power Fre" LED turn on.

### \* GRID WAVE PATTERN

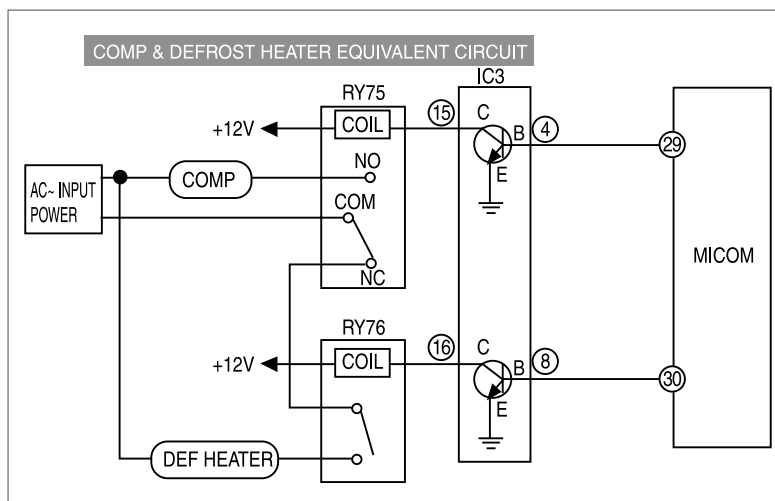


# OPERATION PRINCIPLES BY PARTS OF CIRCUIT

## 5-9) Load Control Circuit



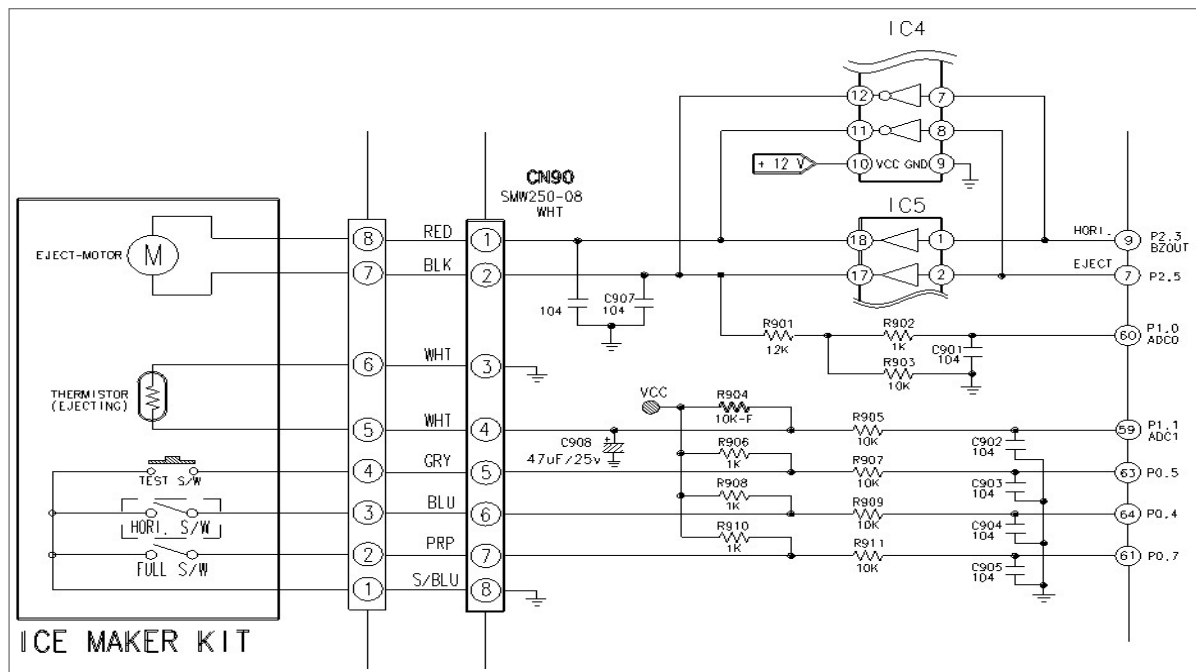
- 1) Main PCB processes most of the load control for electronic refrigerators.
- 2) Compressor, F-Room, defrost heater, and other functions are controlled with relay.
- 3) For example, to operate compressor, MICOM 29 pin outputs high (5V) signal which goes into IC3 Pin #4. The IC3 pin NO 4 plays the same role as the base of NPN TR. The pin #14 works as collector of TR. So, if 5V is supplied to pin #4 of IC3, the pin #15 turned on and connected to the ground. Then, the relay RY75 and coil connected to the pin #15 of IC3 becomes low (0V) and +12V (opposite side of coil) flows to the pin #15 of IC3 via coil and goes into the ground. While current flows to the coil, the magnetic power arise, it turns on the secondary contact point inside of RY75, and operates when the AC power is supplied to the both side of comp. When MICOM #29 Pin becomes Low(0V), IC3 #4 Pin becomes Low which makes Power cut and current of RY75 RELAY cut. So, secondary contact becomes off due to magnetic field cut, which makes Comp off.
- 4) All other loads work basically on same principle, defrost heater operates only on the condition that the compressor is turned off like the circuit above, and connected like the equivalent circuit below.



\* Q710 is connected to the F door switch to prevent PL accident due to continuous operation of motor when the auger motor control circuit is not working properly. It must be turned off when the door is opened.

## OPERATION PRINCIPLES BY PARTS OF CIRCUIT

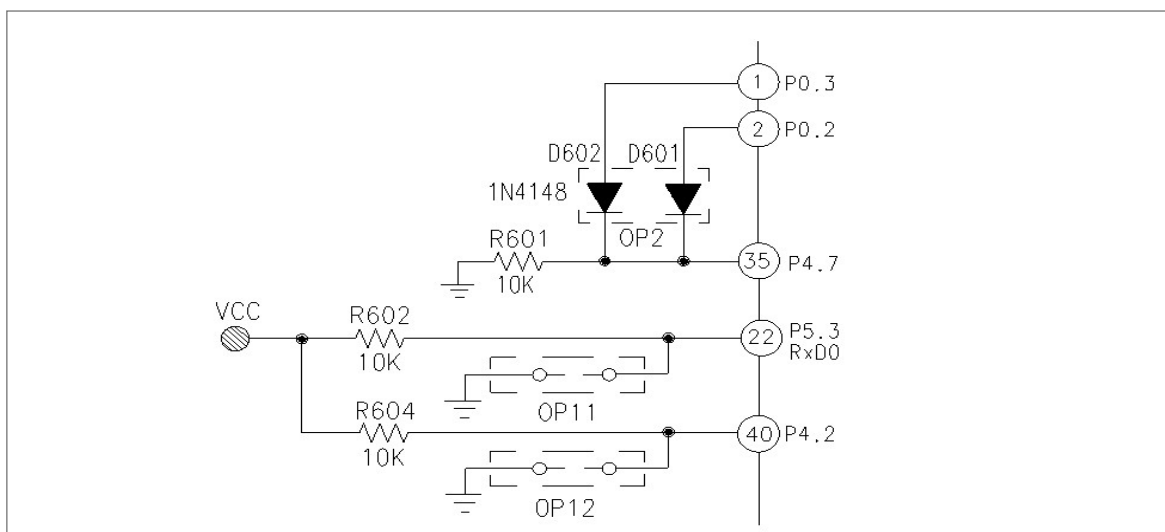
### 5-10) ICE MAKER OPERATION CIRCUIT



- 1) The ice maker circuit above is to control the ice maker kit installed on the F room.
- 2) This circuit is the hardware to control ejection and horizontal positioning, ice making temperature detection and full icing detection. Temperature detection circuit is the same as temperature detection circuit on 4-6 and the explanation will be skipped and only the ejection circuit will be explained. If MICOM PORT #7 is outputted with High to rotate motor in ejection direction and the pin #2 of IC5 is inputted, 12V is outputted on pin #17 of IC5, goes to motor and supplied to pin #11 of IC4. As pin #8 of IC4 and eject MICOM port #7 are connected in common, 11 output port of IC4 gets on and the current flows into Ground making motor rotates. This motor rotates the gear and rotates the ejection tray. The tray twists to separate the ice from the tray and return to the horizontal state.
- 3) For restoration, motor stops for 2 seconds when the ejection is completed and to rotate in opposite direction, output horizontal MICOM port with high and perform horizontal positioning.
- 4) The test S/W is off in normal cases and MICOM PORT 63 stays high. When necessary, press the switch for more than 1.5 seconds making forced ejection executed. Full S/W has a lever that detects the amount of ice on ice-maker kit and based on the status of MICRO S/W connected to the lever, if the ice is full on the container, ejection is not executed, and only if it is off (MICRO PORT 61 is high), the ejection is executed.

## OPERATION PRINCIPLES BY PARTS OF CIRCUIT

### 5-11) OPTION Circuit

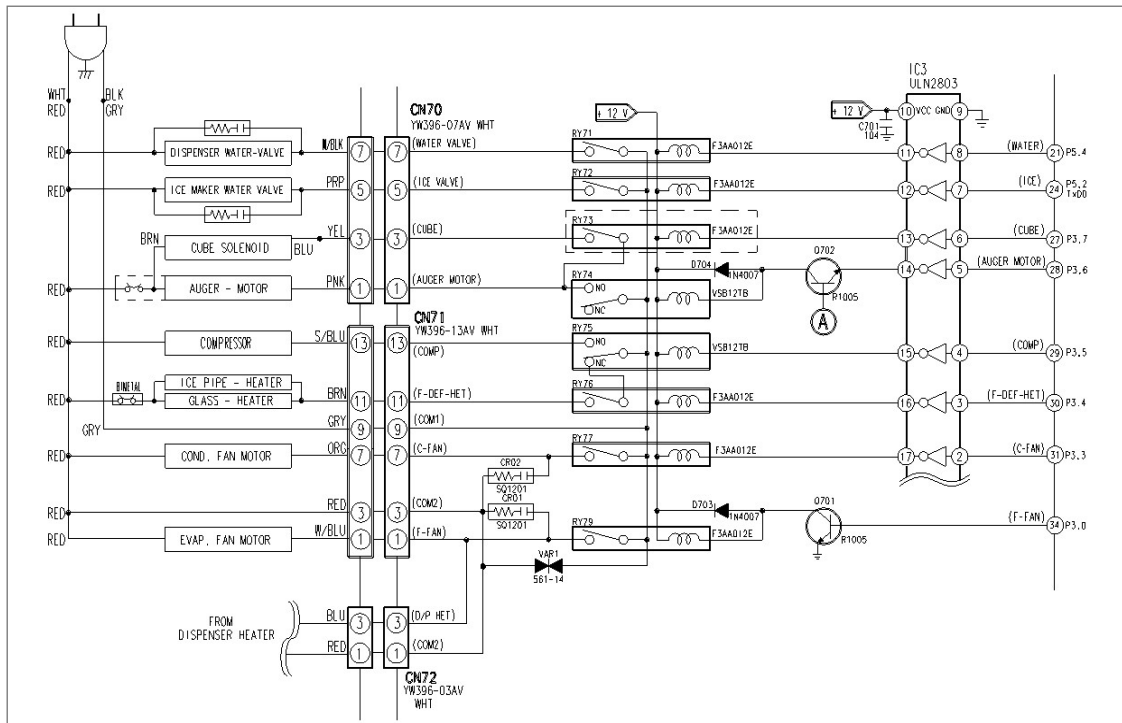


- This circuit operates with the initial power on, uses DIODE (1N4148) or JUMPER WIRE.  
To modify option circuit, Power must be turned off before modification and turned on after the modification.  
Refer to the table below, the default factory values are highly recommended unless exceptional cases.

| OP11, OP12                                                                           |                                  |           |                                                 |
|--------------------------------------------------------------------------------------|----------------------------------|-----------|-------------------------------------------------|
| OP11                                                                                 | OP12                             | MODEL     | FUNTION                                         |
| <input type="radio"/>                                                                | <input type="radio"/>            | RS2*11    | No Cruch, 3 Step, Light                         |
| <input type="radio"/>                                                                | <input checked="" type="radio"/> | RS2*21    | Cruch, 3 Step, Light                            |
| <input checked="" type="radio"/>                                                     | <input type="radio"/>            | RS2*31    | Cruch, 5 Step, P/F, L/T Lock, Filter, Indicator |
| * <input checked="" type="radio"/> Jumper USE OP2 < Water Fill Time Control Option > |                                  |           |                                                 |
| D601                                                                                 | D602                             | Fill Time | Remark                                          |
| <input checked="" type="radio"/>                                                     | <input checked="" type="radio"/> | 5 Sec     | Flow Sensor Not USE                             |
| <input checked="" type="radio"/>                                                     | <input type="radio"/>            | 6 Sec     |                                                 |
| <input type="radio"/>                                                                | <input checked="" type="radio"/> | 7 Sec     |                                                 |
| <input type="radio"/>                                                                | <input type="radio"/>            | 10 Sec    |                                                 |
| * <input checked="" type="radio"/> Diode(1N4148) USE                                 |                                  |           |                                                 |

## Appendix I (Reference for circuit diagnostics)

### Ref.1) Measure Load Terminals



\* Turn off Power, disassemble Housing connected to MAIN PCB CN70,71,72 and measure followings

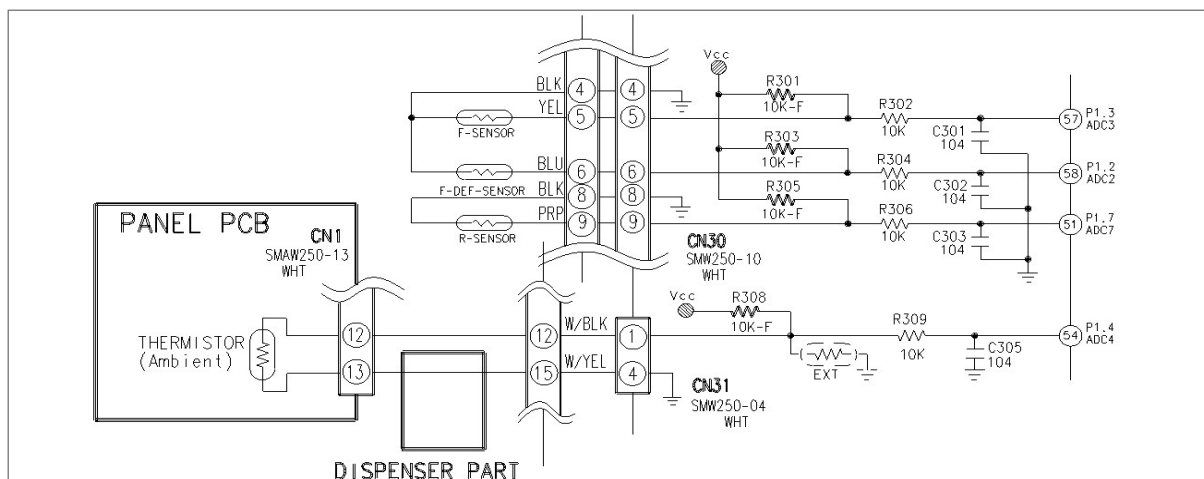
| LOAD                                    | TERMINALS PCB CASE | VALUE | DEFECTS                                  | OTHERS |
|-----------------------------------------|--------------------|-------|------------------------------------------|--------|
| 1) DEFROST HEATER<br>2) ICE PIPE HEATER | CN71 ⑪ & ③         | 0Ω    | THERMAL FUSE, HEATER, WIRE SHORT THERMAL |        |
|                                         |                    | ∞Ω    | BIMETAL, HEATER, WIRE CUT                |        |
| DISPENSER HEATER                        | CN72 ① & ③         | 0Ω    | HEATER, WIRE SHORT                       |        |
|                                         |                    | ∞Ω    | HEATER, WIRE CUT OR HOUSING SLIPPED AWAY |        |
| WATER VALVE<br>ICE MAKER                | CN70 ⑤ &<br>CN71 ③ | 0Ω    | COIL, WIRE SHORT                         |        |
|                                         |                    | ∞Ω    | COIL, WIRE CUT                           |        |
| WATER VALVE<br>DISPENSER                | CN70 ⑦ &<br>CN71 ③ | 0Ω    | COIL, WIRE SHORT                         |        |
|                                         |                    | ∞Ω    | COIL, WIRE CUT                           |        |
| AUGER MOTOR                             | CN70 ① &<br>CN71 ③ | 0Ω    | COIL, WIRE SHORT                         |        |
|                                         |                    | ∞Ω    | COIL, WIRE CUT                           |        |
| CUBE SOLENOID                           | CN70 ③ &<br>CN71 ③ | 0Ω    | COIL, WIRE SHORT                         |        |
|                                         |                    | ∞Ω    | COIL, WIRE CUT                           |        |
| COMP. FAN MOTOR                         | CN71 ⑦ & ③         | 0Ω    | MOTOR, WIRE SHORT MOTOR, WIRE CUT OR     |        |
|                                         |                    | ∞Ω    | HOUSING SLIPPED AWAY                     |        |
| F FANMOTOR                              | CN71 ① & ③         | 0Ω    | MOTOR, WIRE SHORT                        |        |
|                                         |                    | ∞Ω    | MOTOR, WIRE CUT OR HOUSING SLIPPED AWAY  |        |

## Appendix I (Reference for circuit diagnostics)

\* Turn on Power and check status of Relay & Driving Circuit by checking followings according to load operation.

| LOAD                            | RELAY      | TERMINALS   | VALUE              | WHEN IT IS DIFFERENT FROM MEASURED VALUE                   |
|---------------------------------|------------|-------------|--------------------|------------------------------------------------------------|
| DEFROST / COMP OFF              | RY76 /RY75 | CN71⑪~⑨     | SUPPLY VOLTAGE(SV) | RY76 CONTACT SHORT,FAULTY DRIVING CIRCUIT                  |
|                                 | RY75       | CN71⑬~⑨     | SV                 | RY75 NO CONTACT SHORT,FAULTY DRIVING CIRCUIT               |
| COMP ON                         | RY76 /RY75 | CN71⑪~⑨     | SV                 | FAULTY RY75 / RY76 NO CONTACT SHORT,FAULTY DRIVING CIRCUIT |
|                                 | RY75       | CN71⑬~⑨     | 0V                 | RY75 NO CONTACT OPEN, FAULTY DRIVING CIRCUIT               |
| DEFROST                         | RY76 /RY75 | CN71⑪~⑨     | 0V                 | FAULTY RY76 / RY75 NC CONTACT OPEN, FAULTY DRIVING CIRCUIT |
|                                 | RY75       | CN71⑬~⑨     | SV                 | RY75 NO CONTACT SHORT,FAULTY DRIVING CIRCUIT               |
| CUBE & AUGER MOTOR OFF          | RY73 /RY74 | CN71⑨~CN70③ | SV                 | RY73 &RY74 NO CONTACT SHORT,FAULTY DRIVING CIRCUIT         |
|                                 | RY74       | CN71⑨~CN70① | SV                 | RY74 NO CONTACT SHORT,FAULTY DRIVING CIRCUIT               |
| CUBE & AUGER MOTOR OPERATING    | RY73 /RY74 | CN71⑨~CN70③ | 0V                 | RY73 OR RY74 NO CONTACT OPEN, FAULTY DRIVING CIRCUIT       |
|                                 | RY74       | CN71⑨~CN70① | 0V                 | RY74 NO CONTACT OPEN, FAULTY DRIVING CIRCUIT               |
| F FAN ON                        | RY79       | CN71①~⑨     | 0V                 | RY79 NO CONTACT OPEN, FAULTY DRIVING CIRCUIT               |
| C FAN ON                        | RY77       | CN71⑦~⑨     | 0V                 | RY77 NO CONTACT OPEN, FAULTY DRIVING CIRCUIT               |
| WATER VALVE DISPENSER OPERATING | RY71       | CN71⑨~CN70⑦ | 0V                 | RY71 NO CONTACT OPEN, FAULTY DRIVING CIRCUIT               |
| WATER VALVE ICE MAKER OPERATING | RY72       | CN71⑨~CN70⑤ | 0V                 | RY72 NO CONTACT OPEN, FAULTY DRIVING CIRCUIT               |

### Ref.2) Check SENSOR



\* Check after disassembling connected to MAIN PCB CN30 &CN32

\* Because it is NTC TYPE Sensor, resistance decreases as temp increases

1. Measure resistance between CN30 ⑧ and ⑨ for R-Sensor.
2. Measure resistance between CN30 ⑤ and ④ for F-Sensor.
3. Measure resistance between CN30 ⑥ and ④ for DEF-Sensor.
4. Measure resistance between CN30 ① and ④ for Ambient-Sensor.
5. Compare the above values with current temps of Sensoer locations and Part Spec in Manual and evalute them.

## Appendix I (Reference for circuit diagnostics)

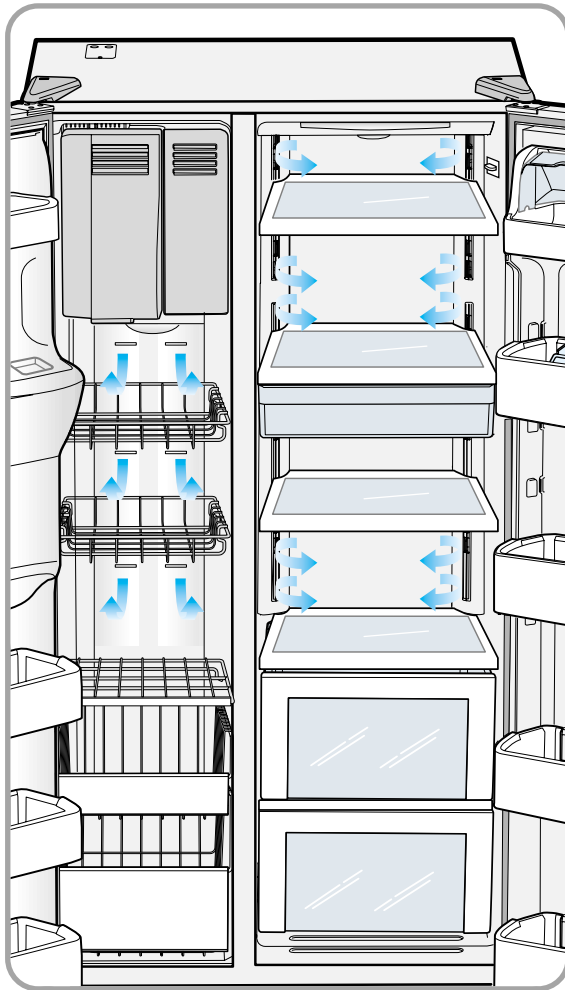
### Ref. 3) SERVICE PARTS LIST FOR CIRCUIT

| NO | ITEM          | SPEC                 | CODE NO      | OTHERS |
|----|---------------|----------------------|--------------|--------|
| 1  | PBAMAIN       | AD ELECTRONIC RS2*11 | DA41-00219A  |        |
|    |               | AD ELECTRONIC RS2*21 | DA41-00219B  |        |
|    |               | AD ELECTRONIC RS2*3* | DA41-00219C  |        |
| 2  | PBA PANEL     | RS2*11               | DA41-00218A  |        |
|    |               | RS2*21               | DA41-00218B  |        |
|    |               | RS2*31               | DA41-00235A  |        |
|    |               | RS2*30               | DA41-00235B  |        |
| 3  | PBA-LAMP ASSY | DISPENSER LAMP       | DA41-00217A  |        |
| 4  | TRANS DC      | 115V/60Hz            | DA26-00022A  |        |
|    |               | 220V/50,60Hz         | DA26-00022B  |        |
| 5  | SENSOR        | DEF SENSOR           | DA32-00006D  |        |
|    |               | F SENSOR             |              |        |
|    |               | R SENSOR             | DA32-00006B  |        |
|    |               | AMBIENT SENSOR       | PBA PANEL IN |        |

※ The second part DA41-xxxxx? of CODE for MAIN PCB ASS'Y PART can be changed according to MICOM or Option change, so check it when asking for parts.

## 1. INTRODUCTION

- A newly developed SAMSUNG side by side refrigerator in 2004 has the following characteristics.



### 1) Twin X AirFlow

- Cool air circulates through side vents on every shelf level. This provides even distribution of cooling inside cabinets to keep your food fresh longer.

### 2) Xtra Space™

- Vertical room next to the ice maker in the freezer provides space for pizza etc.

### 3) Door Alarm

- Beep sound reminds you the door is open.

### 4) Vegetable Crisper

- Optimized humidity control keeps vegetables & fruits fresh.

## 2. INSTALLATION



### 1) To protect refrigerator in movement

Use padded hand truck as shown. If entrance width is less than 39", remove doors prior to installation and reattach doors according to procedure below.

### 2) Remove all protective tape and pad in refrigerators.

Connect water lines and power cord. Adjust the clearance between the doors.

### 3) Set the temperature control to the temperature and wait for an hour.

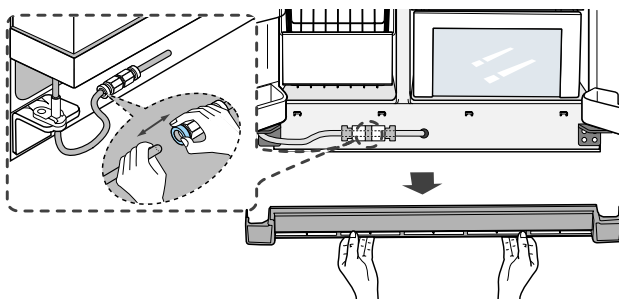
The refrigerator should get slightly chilled and the motor runs smoothly.

### 4) Once the refrigerator temperature is sufficiently low

You can store food in the refrigerator. After starting the refrigerator, it takes a few hours to reach the appropriate temperature.

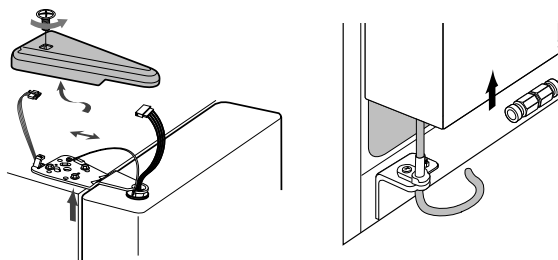
#### ● Removing Doors(Freezer)

Open the freezer and refrigerator doors, and then take off the front leg cover assembly by unlocking the hook(upper side:3EA, lower side:3EA) of the front leg.



With the door closed, remove the upper hinge cover using a screwdriver, and then disconnect the wires. Remove hinge screws and ground screw counter-clockwise, and take off the upper hinge. Take care removing the door to ensure that it does not fall on you.

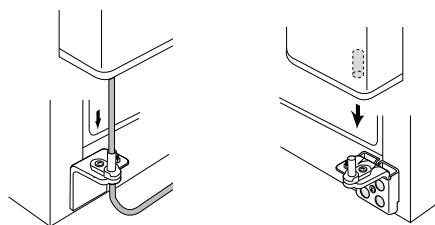
Remove the door from the lower hinge by carefully lifting the door so as not to damage the water tube.



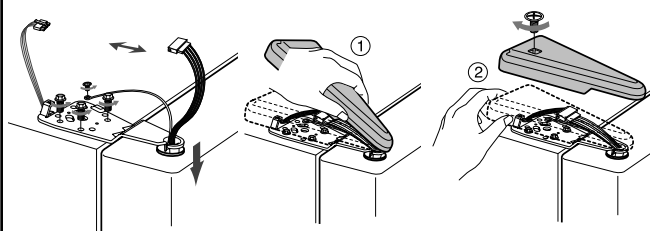
#### ● Attaching Doors

**-Freezer :** Attach the freezer door by inserting the hose in the lower side of the door into the hole in the lower hinge and pulling the hose down.

**-Refrigerator :** Insert the lower hinge in the bracket lower hinge. Attach the door to the cabinet.

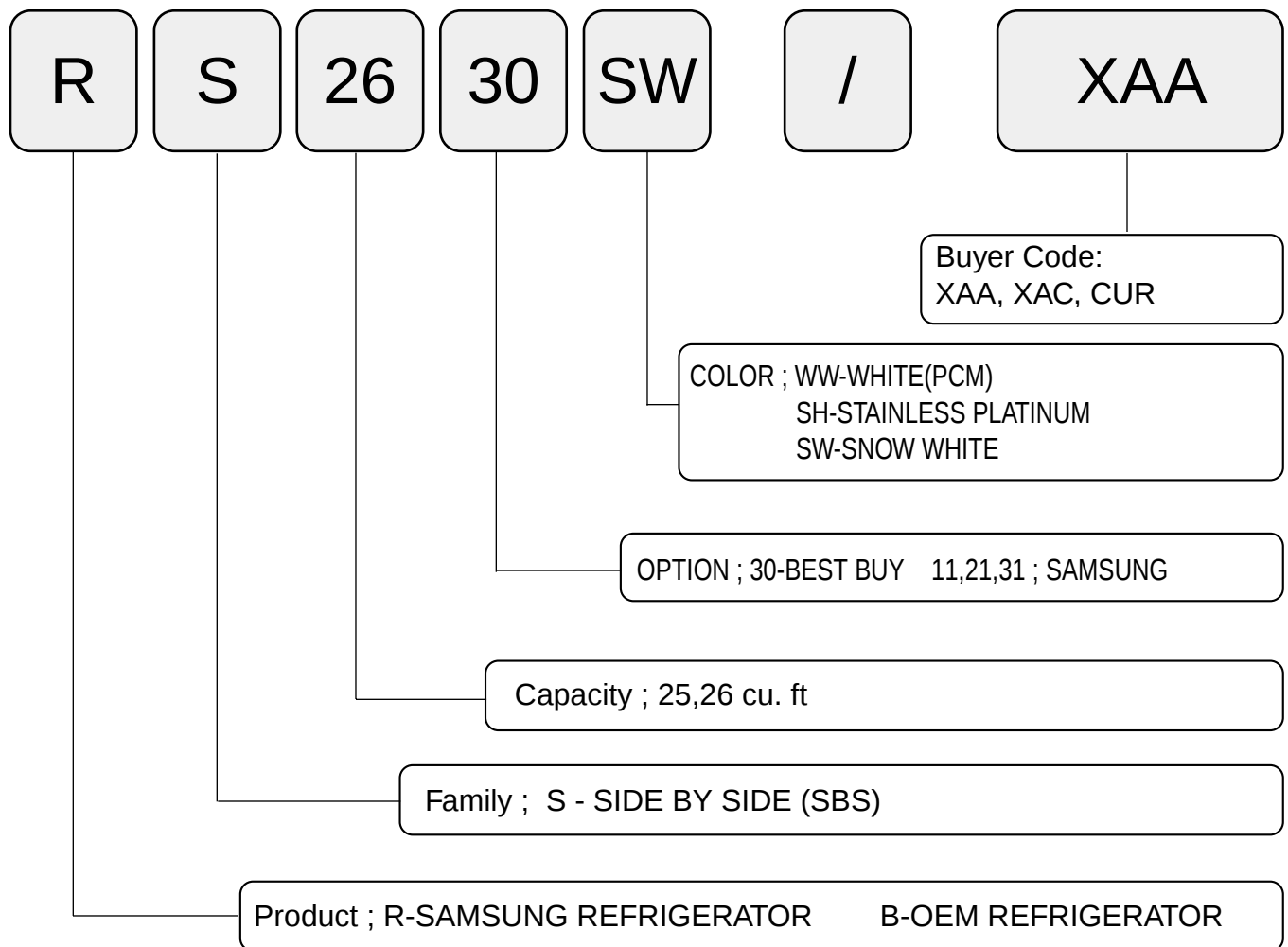


Insert the upper hinge shaft into the hole. After leveling between the upper hinge hole and the hole of the cabinet. Reattach hinge screws and screw in the clockwise direction. Connect the wires. Put the front part of the upper hinge cover on the front part of the upper hinge(①) and reattach from the front part of the upper hinge cover first(②).

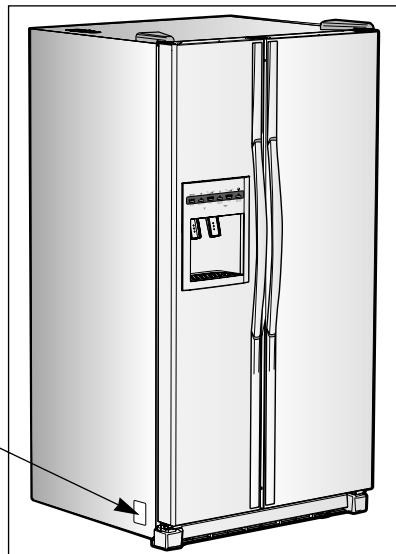


### 3. Nomenclature

#### 2004 Models



Label Location



## 4. Specifications

### ELECTRICAL SPECIFICATIONS

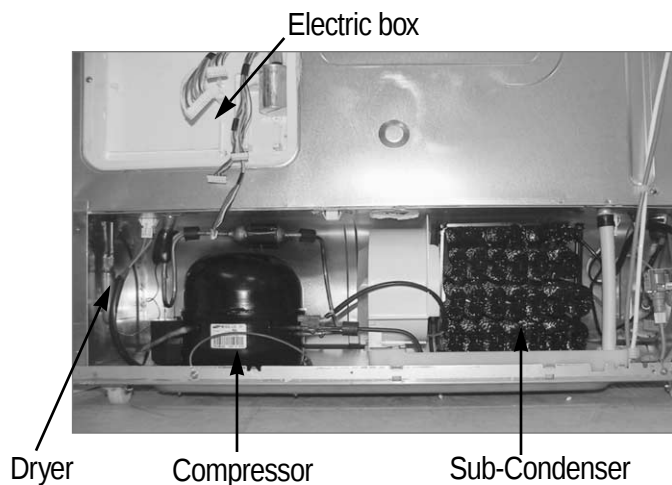
Defrost Control ..... From 6 to 11 hrs  
 Defrost Thermistor(502AT)..... 59°F (off)  
 Electrical Rating ..... AC115V 60Hz 11.6 Amps  
 Maximum Current Leakage ..... 0.25 mA  
 Maximum Ground Path Resistance ..... 0.10hm  
 Energy Consumption ..... kWh/mo.  
 Bimetal..... 104°F (on)/140°F (off)

### NO LOAD PERFORMANCE

|                     |         |         |
|---------------------|---------|---------|
| Ambient Temperature | 70°F    | 90°F    |
| Refrigerator, °F    | 34 ~ 46 | 34 ~ 46 |
| Freezer, °F         | -11 ~ 7 | -11 ~ 7 |
| Run Time, %         | < 40    | < 60    |

### REFRIGERATION SYSTEM

Refrigerant Charge (R134a)..... 6.17 oz  
 Compressor(MK183C-L2U)..... 1032 Btu/hr  
 Compressor oil ..... Freol α -15  
 Capillary tube(Dia, Length) ..... 0.033 " ,130 "  
 Dryer ..... Molecular Sieve XH-9

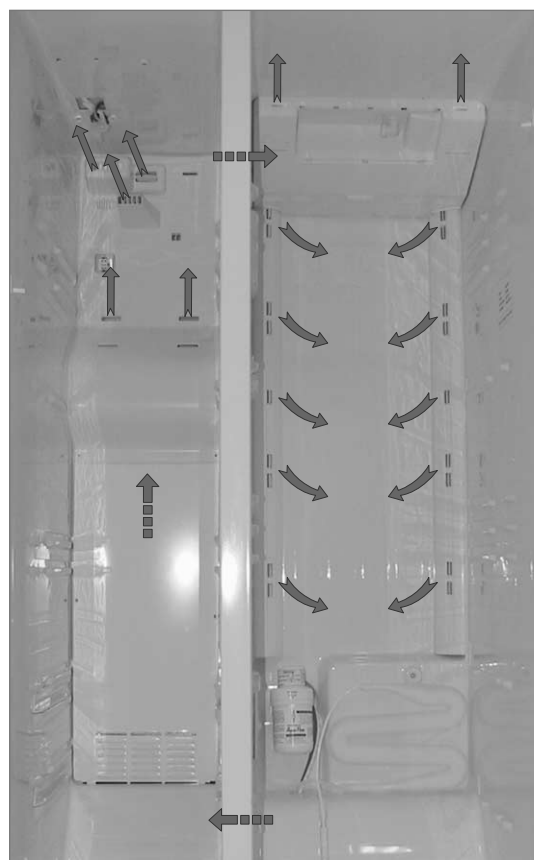


### INSTALLATION

Clearance must be provided for air circulation  
 AT TOP ..... 1 "  
 AT SIDES ..... 1/8 "  
 AT REAR ..... 1 "

### Freezer

### Refrigerator



### MODELS

RS2530, RS2630

### REPLACEMENT PARTS

|                          |             |
|--------------------------|-------------|
| PBA MAIN(RS2*11)         | DA41-00216A |
| PBA MAIN(RS2*21)         | DA41-00217B |
| PBA MAIN(RS2*30)         | DA41-00218C |
| PBA MAIN(RS2*31)         | DA41-00219D |
| PBA PANEL(RS2*11)        | DA41-00218A |
| PBA PANEL(RS2*21)        | DA41-00218B |
| PBA PANEL(RS2*30)        | DA41-00235A |
| PBA PANEL(RS2*31)        | DA41-00235B |
| TRANS DC(115V/60Hz)      | DA26-00022B |
| TRANS DC(220V/50,60Hz)   | DA26-00022C |
| TRANS DC(127V/60Hz)      | DA26-00022D |
| SENSOR(DEF SENSOR)       | DA32-00006D |
| SENSOR(F SENSOR)         | DA32-00006D |
| SENSOR(R SENSOR)         | DA32-00006B |
| SENSOR(ICE MAKER SENSOR) | DA32-10108B |
| RELAY                    | DA35-10013Q |
| OVERLOADED REALY         | DA35-10013D |
| RUN CAPACITOR(12 Bfi)    | 2501-001045 |
| FAN MOTOR(FREEZER)       | DA31-00003W |
| FAN MOTOR(UNIT)          | DA31-00103A |

## 5. Interior Views and Dimensions

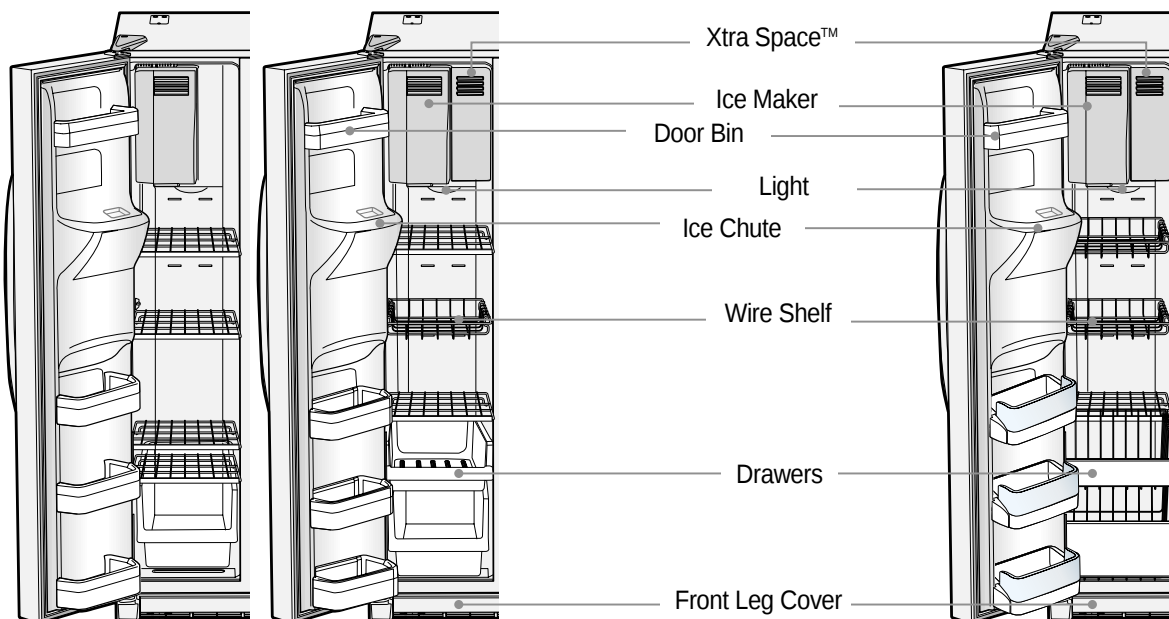
### 5-1) Shelves and Bins

#### Freezer

RS2511\*\* / RS2611\*\*

RS2521\*\* / RS2621\*\*

RS2531\*\* / RS2631\*\*

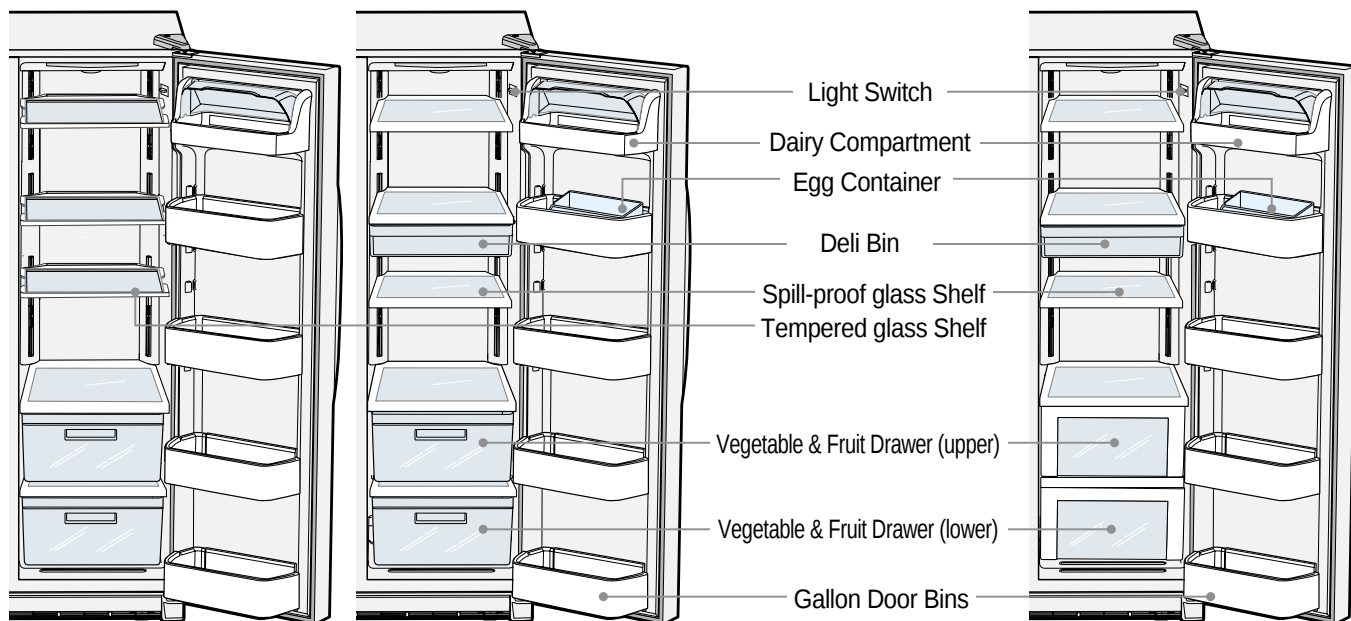


#### Refrigerator

RS2511\*\* / RS2611\*\*

RS2521\*\* / RS2621\*\*

RS2531\*\* / RS2631\*\*

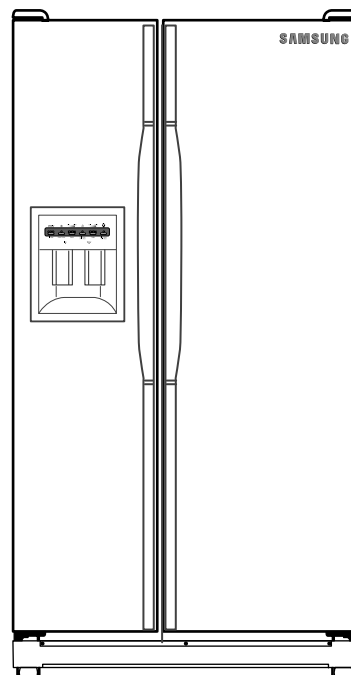
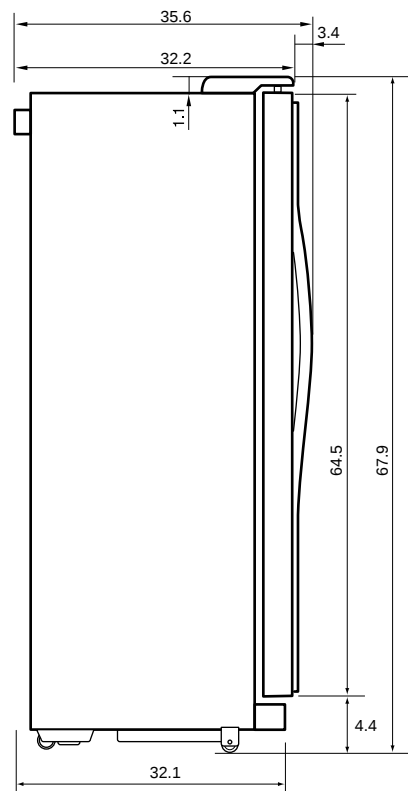
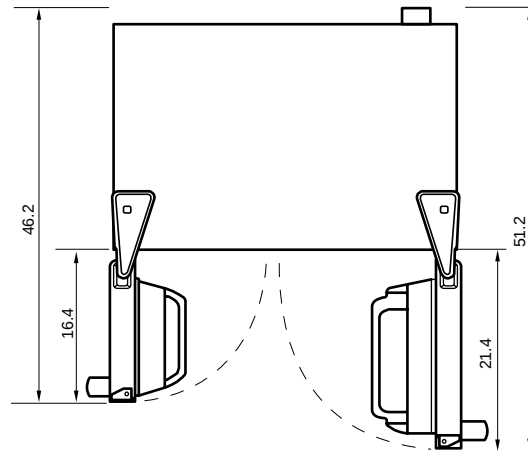
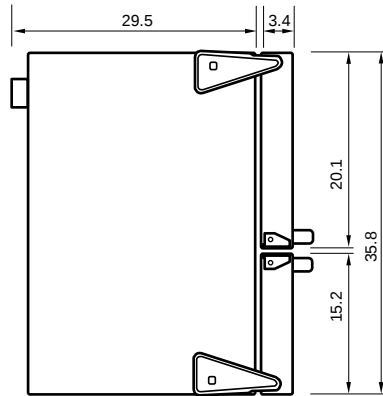


#### Preparing to Move

Secure all loose items such as shelves and drawers by taping them securely in place to prevent damage. When using a hand truck to move the refrigerator, do not rest the front or back of the refrigerator against the hand truck. This could damage the refrigerator. Handle only from the sides of the refrigerator. Be sure the refrigerator stays in an upright position during moving.

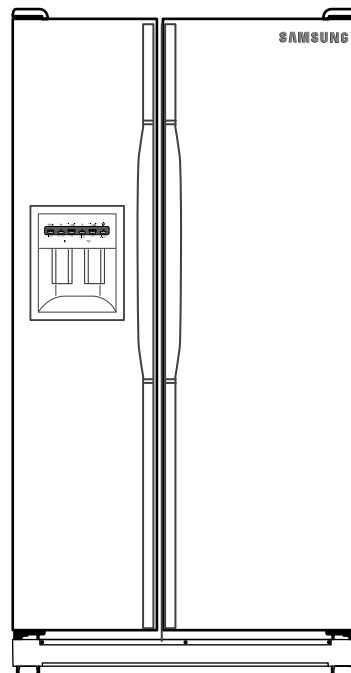
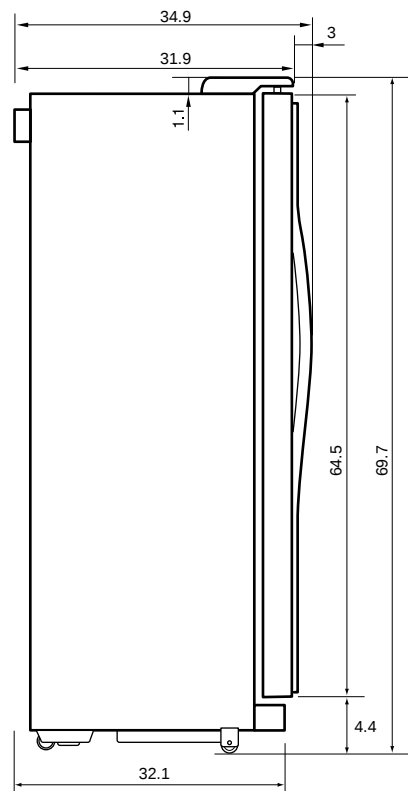
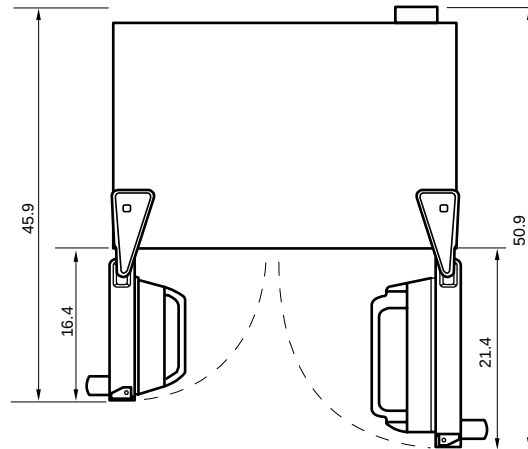
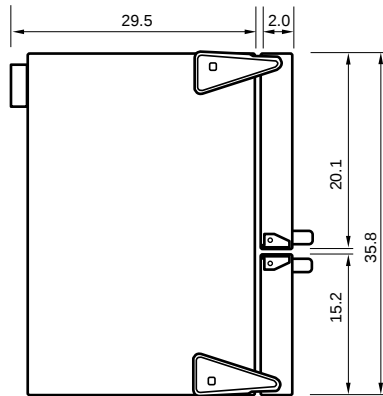
## Interior Views and Dimensions

### 5-2) Dimensions of Refrigerator(RS26\*\*) (Inches)



## Interior Views and Dimensions

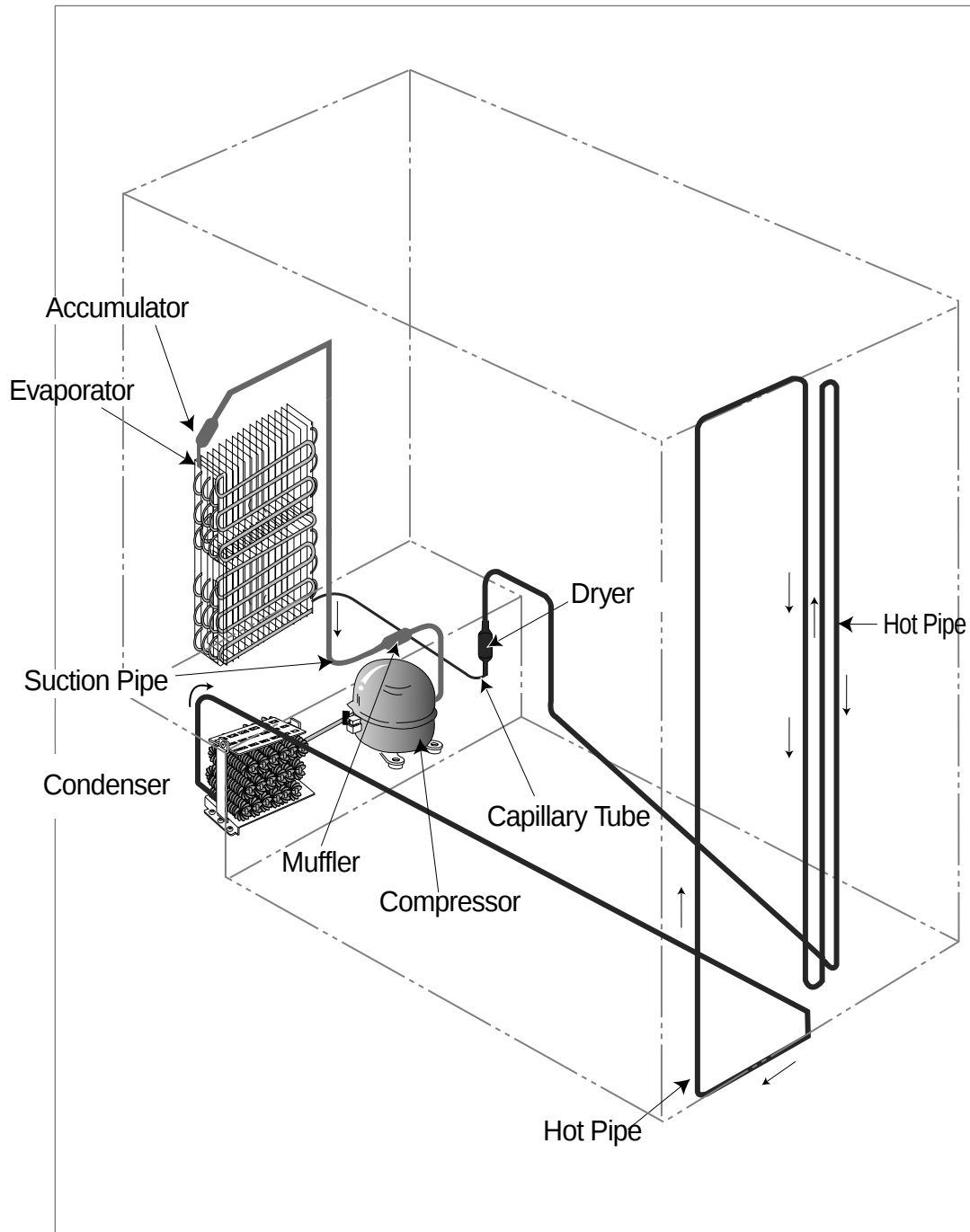
### 5-3) Dimensions of Refrigerator(RS25\*\*) (Inches)



## 6. Refrigeration Cycle and Cool Air Circulation Route

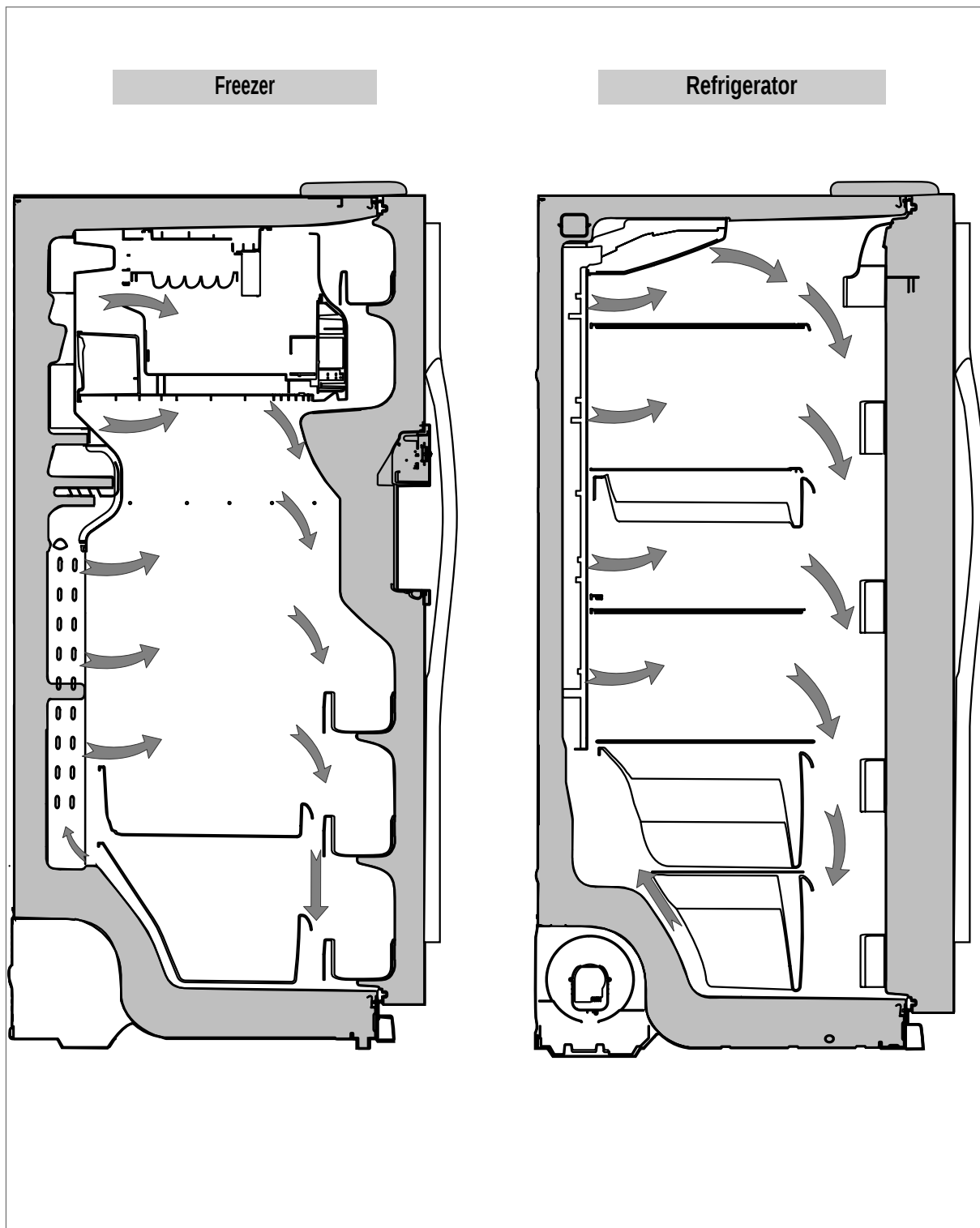
### 6-1) Refrigerant Route in Refrigeration cycle

Compressor → Condenser → Hot Pipe → Dryer → Capillary Tube → Evaporator → Suction Pipe → Compressor



## Refrigeration Cycle and Cool Air Circulation Route

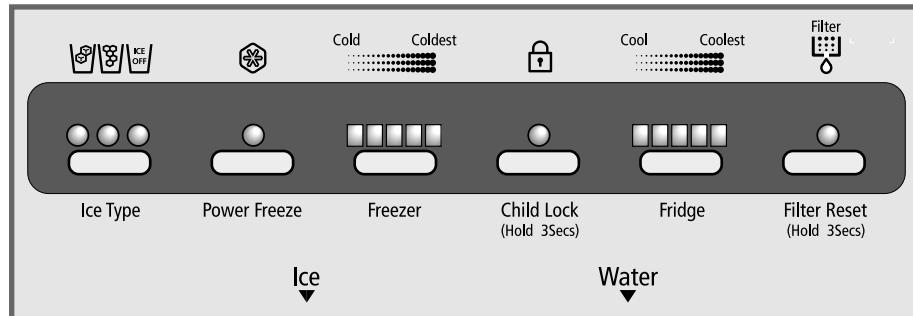
### 6-2) Cool Air Circulation



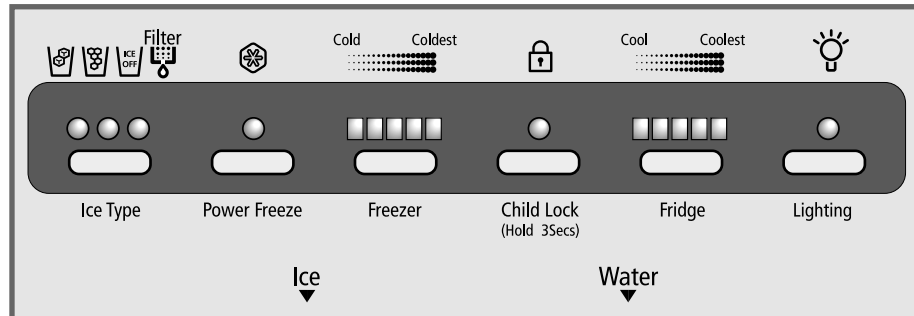
## 7. Function & How- to-use By Products

### 7-1) DISPLAY DESIGN

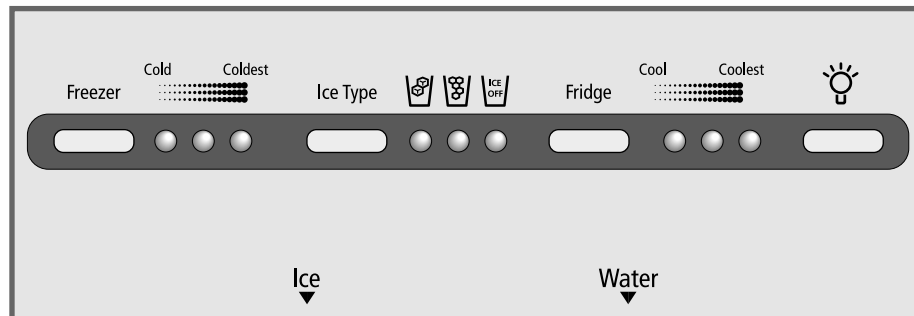
RS2630SW/XAA (for Best Buy)



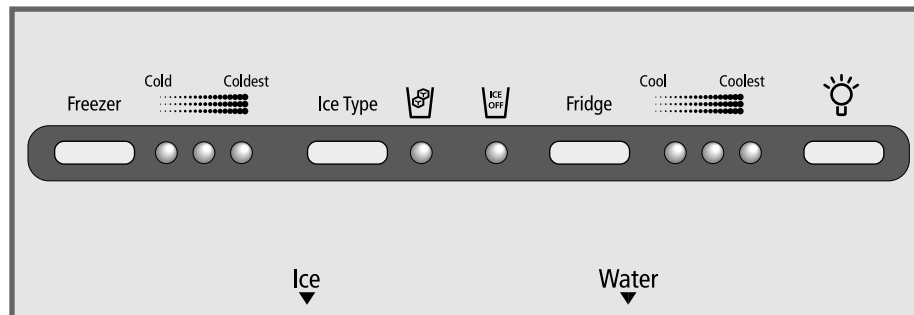
RS2531\*\*/RS2631\*\*



RS2521\*\*/RS2621\*\*



RS2511\*\*/RS2611\*\*



## 7. Function & How- to-use By Products

### 7-2) TEMP CONTROL

#### 1) Freezer Temp Setting

1-1) With the initial power on, Freezer will be set at MID (-4°F/-20°C) and Refrigerator will be set at MID (37°F/3°C) automatically. At this time, the number of LEDs (1 ~ 5) lighting up on the display panel means intensity (MIN ~ MAX) of room control temperature (6.8 ~ -13°F/-14 ~ -25 °C) and as the intensity gets increased, the number of LEDs increases and the set temperature become lowered.

1-2) Freezer Temp can be set from (6.8°F/-14°C)(MIN) to (-13°F/-25°C)(MAX) with Freezer temp setting button.

#### 2) Refrigerator Temp Setting

2-1) Refrigerator Temp can be set from (44.6°F/7°C)(MIN) to (33.8°F/1°C)(MAX) with Refrigerator temp setting button.

2-2) Refrigerator set temp varies slightly from actual temperature according to the user's way of storing food and peripheral temp. (If food is stored too close to Refrigerator Temp Sensor, it can block air circulation resulting in weak or over cooling. So, be careful not to block it.)

Note) When power is out due to an instant power failure or the problems in an electric circuit and restored again, the ref checks Refrigerator Temp. At this time, When Freezer Temp is lower than (41°F/5°C) , Refrigerator considers it as an instant power failure and restores the previous temp and functions stored in EEPROM for use.

### 7-3) POWER FREEZING (on some models)

- It is selected with Power Freeze Button.
- Each time you press Power Freeze Button, it repeats SELECT ↔ CANCEL (Relevant ICON ON/OFF).
- When Power Freeze is selected, the temp settings of Refrigerator/Freezer does not change.
- When Power Freeze is selected, it is possible to change the temp settings of Refrigerator/Freezer.

#### 1) POWER FREEZING

1-1) When Power Freeze is selected by pressing Power Freeze Button, ICON gets on immediately but Power Freeze starts its operation in 10 sec. However, when Power Freeze Button is reselected during Power Freeze, ICON gets off and operation ends with the selection of Power Freezing.

1-2) When Power Freeze is selected, Comp & Freezer-Fan operates continuously for 2hr. and 30min.

1-3) During Power Freeze, Refrigerator continues its previous operation.

1-4) After turning off of Power Freeze, Power Freeze lamp goes off automatically and Freezer operates according to the set temp.

1-5) When it becomes conditions for Defrost during Power Freeze, Defrost gets delayed and it starts operating upon completion of Power Freeze.

When Power Freeze is selected during Defrost, Power Freeze ICON lights up immediately. But, Comp and Freezer-Fan gets on upon completion of Defrost. (But, the initial 4hr. Defrost comes before Power Freeze)

### 7-4) CHILD LOCK (on some models)

- When Child Lock Button on the front panel is pressed for a certain period (3sec.), Child Lock LED gets on and all other buttons on the front panel except for Child Lock Button do not operate. Also, Ice/Water Dispensers do not work.  
(Display & all Ref functions will maintain the conditions before Child Lock gets on)
- In the above status, when Child Lock Button is pressed for a certain period (3sec.) again, Child Lock LED gets off and all other buttons on the frontal panel start operating and Ice/Water Dispensers work.
- This function is developed to prevent random controlling by children. It can be used according to the user's need and it needs to be well informed and reminded in advance because it could make Non-sense Calls by customers.

### 7-5) ICE DISPENSER & WATER DISPENSER (on some models)

#### 1) CUBE/CRUSHED/ICE OFF SELECTION

- 1-1) Upon the initial Power On, when F-Room Temp is above (41°F/5°C), CUBE LED on the Display lights up and the other LEDs remains OFF. But, when F-Room Temp is lower than (41°F/5°C), it restores the ice selection before the POWER OFF and displays it on the panel.
- 1-2) It is selected in the order of CUBE → CRUSHED → ICE OFF repeatedly by ICE TYPE key.
- 1-3) When operating Ice Dispenser Lever with CUBE or ICE OFF selected, it sends out ice cubes.
- 1-4) When pressing Ice Dispenser Lever with CRUSHED selected, it sends out crushed ice.
- 1-5) When ICE OFF is selected, ICE-MAKER does not make ice.

Note) When taking out ice with ICE OFF selected, only ice lefted in the storing box is extracted.

#### 2) FILTER RESET OR LIGHT

- 2-1) When FILTER INDICATOR LED and LIGHT LED on the front Panel becomes orange or red, Filter should be changed.
- 2-2) - When FILTER RESET button is pressed for a certain period (3sec) after changing Filter, FILTER INDICATOR LED and LIGHT LED becomes green with "Ding Dong" sound. (When FILTER RESET is pressed, water count is reset to 0)  
- When the filter is replaced, reset the indicator by pressing the "POWER FREEZE" and "ICE TYPE" button for 3 second at the same time.
- 2-3) After Filter reset, when 450 Gallon water is used (including water used in making ice), FILTER INDICATOR LED and LIGHT LED becomes orange, and when 500 Gallon water is used, FILTER INDICATOR LED and LIGHT LED becomes red.
- 2-4) When the water filter is not needed due to the use of purified water or other reasons, the Filter Indicator can be turned off. When pressing the Filter Reset Button for ("POWER FREEZE and ICE TYPE BUTTON) 5 seconds continuously, the Filter Indicator will be off with a "Ding Dong" sound. (At this time, when 3 sec has passed, the filter will be reset with a "Ding Dong" sound and when 5 sec has passed, the Filter Indicator will be off.)
- 2-5) When the Freezer temperature is higher than 41 °F upon the initial power on, the Filter Indicator will be turned on. And, when it is lower than 41 °F, it will display the previous setting (before the power off).

## 7-6) FAN MOTOR DELAY (COMPRESSOR ROOM)

- Among the functions depending on Peripheral Temp, Comp Cooling Fan (Comp Room Fan) is controlled according to Peripheral Temp as follows.  
Therefore, make sure to check the contents to refer to during A/S because Cooling Fan can operate or not according to conditions during Comp operation.

|                    | Range of Ambient Temp                   | Load operation state                                |
|--------------------|-----------------------------------------|-----------------------------------------------------|
| Comp Room<br>DELAY | Above (64.4°F/18°C)                     | With COMP.ON, Comp Room Fan will be on immediately  |
|                    | Between (55.4°F/13°C) and (62.6°F/17°C) | After 5 min. from COMP.ON, Comp Room Fan will be on |
|                    | Below (53.6°F/12°C)                     | Regardless of COMP., Comp Room Fan will be off      |

## 7-7) ICE MAKER

### 1) Initialization (Restoration to the initial horizontal status)

When the Ice Maker is initialized by Power On or the Ice Error Mode, the Ice Tray gets leveled again by rotating the Eject Motor regardless of the horizontal state of the Ice Tray.

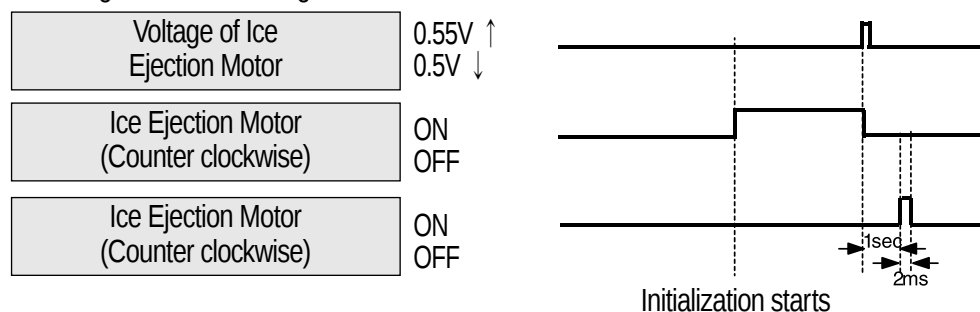
#### 1-1) Conditions for Initialization

- After pending time (5sec.) for activation of each MICOM port with the initial Power On or the Power On after Power Failure.
- When an error occurs due to full icing or the restraint of the Eject Motor, it starts initialization in 24 hours upon full icing and in an hour upon the counter-rotation error of the Eject Motor.

#### 1-2) Movement for Initialization

- Satisfy the initial horizontal status by counter-rotating the Eject Motor.
- When the voltage of the Motor Voltage Sensor becomes above 0.55V during counter-rotation of the Eject Motor, the counter-rotation stops.
- To protect the Gear by releasing its stress a second later after the above directions, rotate the Eject Motor clockwise for 2ms.
- When it is not detected that the Motor Voltage Sensor becomes more than 0.55V for a minute after the counter-rotation, it is considered as an error and initialization gets started again in an hour.
- It stands by for the initial Ejection for a cycle (2 hours) after completion of initializing movement by Power On and it stands by for normal Ejection after completion of initializing movement by error.
- After the Ejection Stand-by time has passed, check the temp of the Ice Tray and if the temp reaches to the Ejection temp, it carries out the Ejection.

#### 1-3) Initializing Movement Timing Chart



## Function & How- to-use By Products

### 2) Water Supply

It is the movement to supply water on the ICE-TRAY by using the SOLENOID VALVE after the completion of the ejection (Ejection after the completion of the normal ice making or that by the test movement)  
Considering cases with low hydraulic pressure, when it is recognized as No Water Supply, the Water Supply will be attempted for 4 times.

#### 2-1) Specifications for water supply

- After the completion of the normal ejection and the opening of the water supply valve, water is supplied for the previously set OPTION time (Set by the DIODE in PCB and normally for 5 sec) and the water supply valve gets off.
- Water is supplied regardless of the F/R-DOOR OPEN
- While supplying water, the ICE TEST S/W doesn't work.
- In one min. and 30 sec. after the completion of water supply, Water Supply/ No Water Supply will be judged.
- Under the condition of additional water supply due to No Water Supply, the additional water supplying time is 1.5 sec, 1 sec, and 2 sec.
- When judging water supply after the trial of water supply within the number of previous water supply, complete water supply. In this case, the Ejection Stand-By Time is 55(60) min.
- To prevent the additional water supply by the judgment of No Water Supply due to the ice cube on the tray cube which the ice maker sensor of the ICE-TRAY is, quit the water supplying movement for one time when it is judged as No Water Supply after trying to supply water as many as the number of the previous water supplying. After POWER ON, the number of the previous water supplying will be considered as once for the first water supplying and when No Water Supply is judged after the initial water supplying, quit the water supply movement. If the number of the previous water supply is three times, supply water for 3 times, and when judged as No Water Supply, quit the water supplying movement. In this case, the Ejection Stand-By Time is 70~100 min.
- When judged as No Water Supply in the previous water supply, supply water for 5 sec, 1.5sec, 1sec, and 2 sec for 4 times.
- According to conditions, the Ejection Stand-by Time is as follows.

| Number of water supply | Detection of Water Supply |                           | Detection of No Water Supply |                           |
|------------------------|---------------------------|---------------------------|------------------------------|---------------------------|
|                        | Lower than (62.6°F/17°C)  | Higher than (64.4°F/18°C) | Lower than (62.6°F/17°C)     | Higher than (64.4°F/18°C) |
| 1                      | 60 (55+5) min             | 55 min                    | 100 min                      | 90 min                    |
| 2~4                    | 55 min                    | 55 min                    | 70 min                       | 70 min                    |

#### 2-2) Judgment of Water Supply by the ICE-TRAY Temp sensor

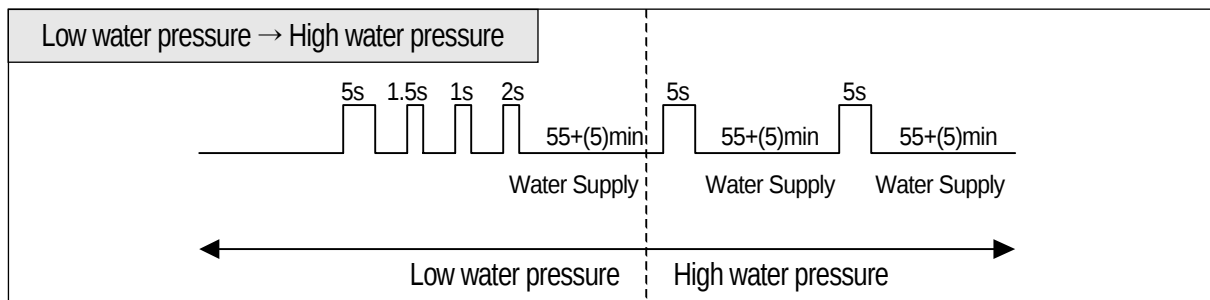
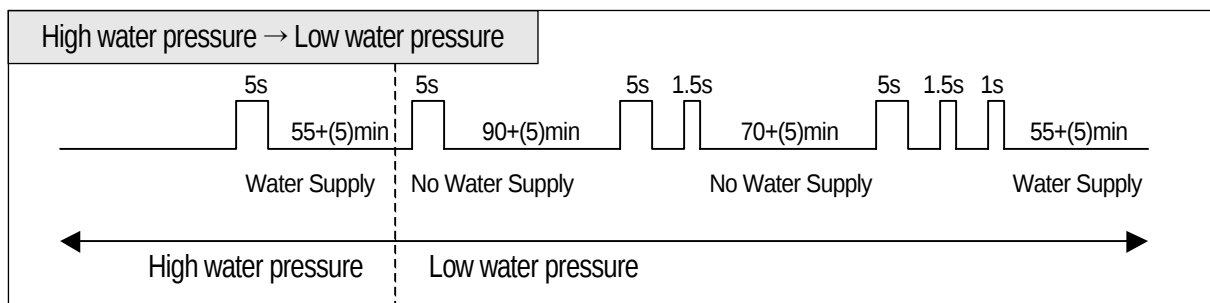
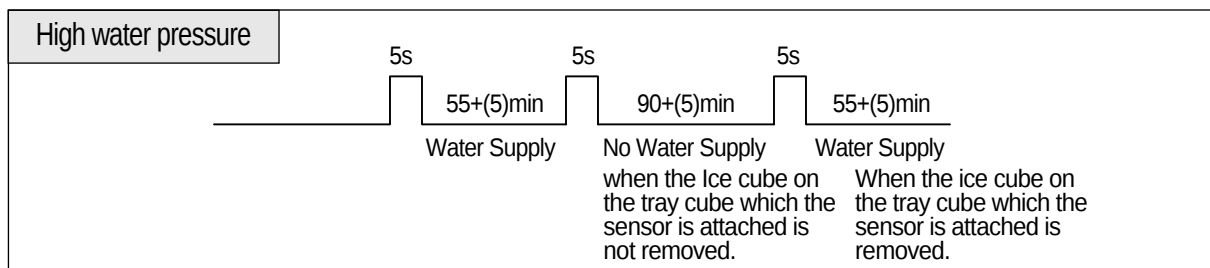
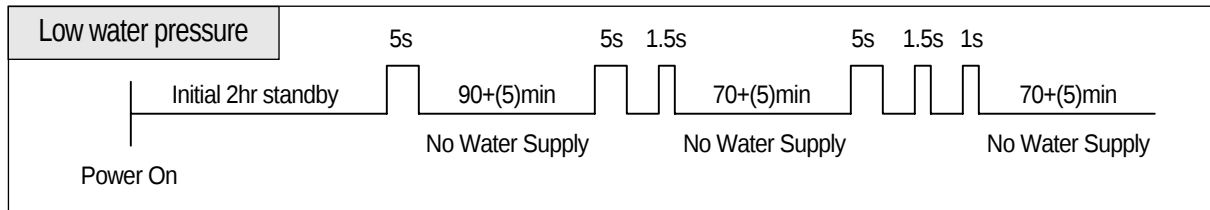
- In one and a half min after the completion of the water supply, judge either the Water Supply or the No Water Supply by comparing the temp change of the ice maker sensor on the ICE TRAY.
- In the case that the temp of the ICE-TRAY ice maker sensor in one and a half min. after the completion of the water supply is 2 degrees (5 COUNT) higher than that during the water supply movement, it is judged as the Water Supply and when the temp increases or decreases less than 2 degrees, it is considered as the No Water Supply.

#### 2-3) Specifications of water supply movement upon pressing the Ice Test S/W

- Supply water for once regardless of the previous water supply.
- The Ejection Stand-by Time after the completion of water supply is the same as that after the completion of the previous water supply movement regardless of the Water Supply/ No Water Supply recognition.
- Do not change the number of the previous Water Supply. That is, if the number of Water Supply before pressing the ICE TEST S/W is 3 times, that of the previous Water supply after the completion of the Water Supply by pressing the ICE TEST S/W is also 3 times.

## Function & How- to-use By Products

Assumption of the ambient temp of higher than 64.4 °F/ 18 °C



### 3) Ice Making

It is until the water in the ICE-TRAY after the completion of Water Supply gets frozen completely and the ice making movement is completed by the temp of the ice making temp pickup part using the ice maker sensor (THERMISTOR).

- 3-1) After water is supplied to the ICE-TRAY, check the temp pickup part of the ice maker sensor after the Ejection Stand-By Time for 55(55~100) min. (For the No Water Supply, 90 min) and judge whether the temp of the ice maker sensor is below (1.4°F/-17°C).
- 3-2) If the ice maker sensor maintains the temp below (1.4°F/-17°C) for 5 min. It is judged that ice making is completed. However, do not check the ice maker sensor within the Ejection Stand-By Time from the point of Water Supply. (Protection function when the sensor is faulty or the cold air leaks.)
- 3-3) Stand-by for 1 CYCLE: After the completion of the initialization by POWER ON, it stands by for 1 CYCLE (2hr.) and operates the Ejection although the temp condition of the ice maker sensor is satisfied.
- 3-4) As long as the temp of the temp sensing part maintains below (1.4°F/-17°C) for more than 5 min, the Ejection will be carried out. If the temp fluctuates below (1.4°F/-17°C) above (1.4°F/-17°C), the Ejection will be carried out after 5 min. at the temp below (1.4°F/-17°C) while counting the Stand-by Time entering the temp below (12.2°F/-11°C).

### 4) Ice Ejection

It is the movement to separate the ice cubes from the ICE-TRAY after the completion of ice making, which is conducted by the following steps. Check the changes in status and time for the horizontal S/W (if it is used) and the ice level check S/W in parallel and then operate Ejection. At this point, the regular rotational direction of the motors is clockwise (CC) and the reverse rotational direction of that is counter clockwise (CCW).

The Ice Ejection is carried out twice, which is to separate all the ice cubes from the ICE-TRAY.

#### 4-1) Detailed movements by step during the Ejection.

##### - 1<sup>st</sup> step: Ejection temp checking step

Check whether the temp of the temp sensing part is below (5°F/-15°C) and whether the Ejection Stand-By Time after Water Supply has passed. At this point, when the F-Defrost goes into operation during the Ejection Standby, the Ejection Standby Time will be reset. Then, check that 55(90) min. has passed by recounting from the beginning after the completion of the Defrost. If the temp of temp sensing part of ice making become below (1.4°F/-17°C) and maintain it for 5 min, carry on the next step.

##### - 2<sup>nd</sup> step: Filled up ice container checking step

To check the ice level of the ice container, CHECK the ON/OFF (Low/High) of the ice level S/W. If the ice level S/W is ON (Low), it means that the ice container is full and the Ejection stands by. And when the ice level S/W is turned OFF and 40 min. has passed, the Ejection will be carried out.

##### - 3<sup>rd</sup> step: ICE TRAY overturning step (clockwise)

It is the movement to turn over the TRAY to separate the ice cubes from the TRAY by rotating the Ejection motor clockwise for a certain time period. At this point, raise the guide ice to prevent the ice cubes from contacting the guide ice. Carry out the clockwise rotation for a minute from the start of the clockwise rotation or until the horizontal S/W is ON (Low) after 5 sec from the beginning of the third step when using horizontal S/W. If the door of the F-Room is open, stop the clockwise rotation and start the rotation after the door is closed. During the temporary pause, the clockwise rotation will not be counted.

##### - 4<sup>th</sup> step: Ice separating step (Standby for 2 sec. at the maximum twist point)

It is the movement to twist the tray again in the reversed state to separate the ice cubes from the tray completely and the tray receives torsion because the ICE-TRAY is stopped by the STOPPER. The ice cubes are separated by this strength and the tray stands by for 2 sec. at the maximum twist point for complete separation.

##### - 5<sup>th</sup> step: Reverting to horizontal level step (counter clockwise)

Rotate the Ejection motor in reverse to revert the ICE-TRAY to the horizontal level. When using the horizontal S/W, reverse rotation begins.

When the horizontal S/W is ON (Low) after 5 sec from the beginning of the reverse rotation or the voltage of the voltage sensing part of the motor is above 0.55V, the rotation will be stopped. At this point, the raised guide ice becomes lowered again and touches on the highest point of the stored ice for checking the ice level.

##### - 6<sup>th</sup> step: Motor initializing step (clockwise)

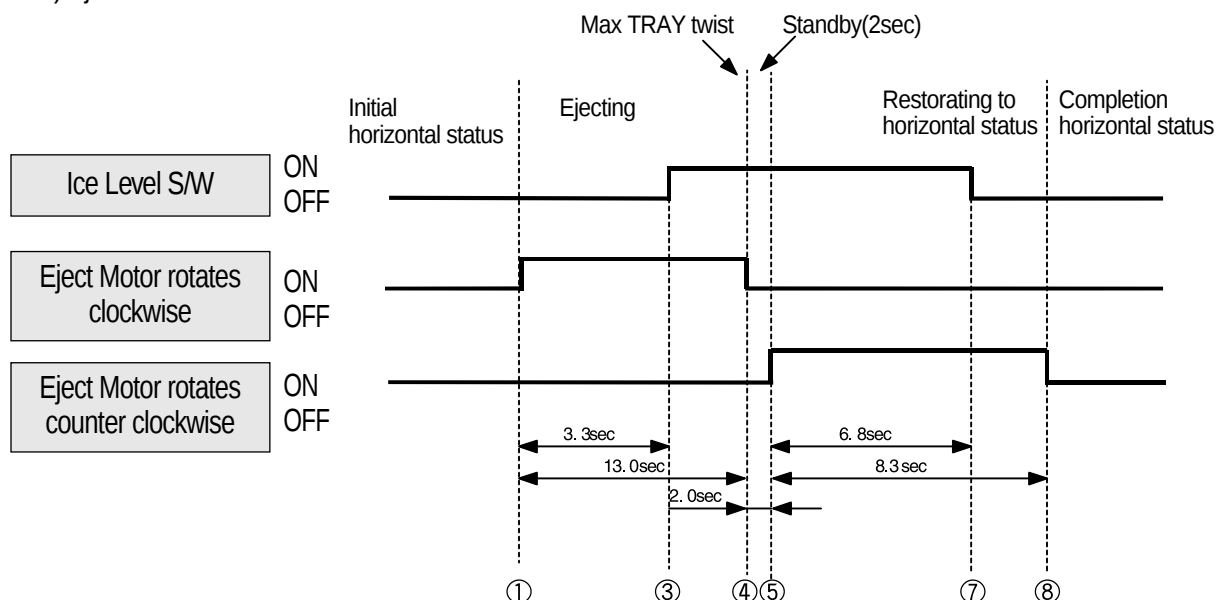
After a sec. upon the completion of the 5<sup>th</sup> step, the Ejection motor rotates clockwise for 2ms to release the stress of the gear as well as to protect it.

#### 4-2) Errors and handling methods during the ejection

- If the conditions of the completion for the reverse rotation are not satisfied in a min. after applying the counter rotation during the execution of the 5 steps of the detailed ejection movement, it is considered as an ERROR and stops the motor.
- If it is judged as an abnormal state, facilitate the initialization in an hour.  
If the ejection error occurs 3 times consecutively, it is sensed as ERROR (ICE ERROR) and when selecting the self diagnosis, it turns on the corresponding LED.
- If the ejection operates normally, the ERROR value of the existing ice making function will be deleted.

## Function & How- to-use By Products

### 4-3) Ejection Movement TIMING CHART



### 5) Ice Test

It is necessary for the forced operation for the purpose of the operation test, A/S, and cleaning, and when pressing the ICE TEST S/W for a certain time period (more than 1.5 sec.), it goes into operation.

- 5-1) The TEST button will not be selected during the Water Supply or the Ejection. Press it again with the Water Supply or the Ejection completed to run the Test function. Standby for maximum 5 min. when Water Supply operates.
- 5-2) When the TEST button is selected, the ejection will be carried out by running the eject motor regardless of the elapsed time (55 min.) after the Water Supply and the temp of the ice making. And after this, the tray will be reverted to the horizontal level and the ICE TRAY will be supplied with water.
- 5-3) It operates normally regardless of the Freezer/Refrigerator DOOR OPEN (No temporary pause functions by the DOOR OPEN)
- 5-4) Other functions are the same as the movements of the Ejection and the Water Supply.
- 5-5) When ERROR occurs more than 3 times with the normal function and the ice making stops, the ICE TEST shall operate. At this point, if the normal Ejection and Water Supply are operated by the TEST S/W, there would be "Ding Dong" sound for once before the Water Supply and the third ERROR MODE will be cancelled executing the normal ice making.

## 7-8) DEFROST

- 1) Freezer Defrost shall be determined by COMP ON total hour.
- 2) On the initial POWER ON, Defrost in Freezer will be operated after COMP ON total hour of 4 hr.
- 3) Defrost cycle changes automatically depending on the conditions from MIN 6 hr. to MAX 11 hr.
- 4) The judgment of defrost cycle shall be determined by peripheral temp, No. of DOOR OPEN in Freezer/Refrigerator, and the time for DOOR OPEN in Freezer/Refrigerator.
- 5) Point of Defrost HEATER OFF is (59 °F/15 °C) by the temp value of Freezer Defrost SENSOR.
- If F Defrost HEATER doesn't reach to the point of Defrost OFF in 7 min., turn off forcibly and complete Freezer-Defrost. ( Prevention of inferior HEATER OPEN or inferior Refrigerator Defrost Sensor )

## Function & How- to-use By Products

### 7-9) ALARM

#### 1) Button TOUCH

1-1) When selecting each button in the CONTROL PANEL, the verification sound (Ding Dong) of input shall be heard.

1-2) In the case of pressing more than two KEYS at the same time or pressing the wrong button, the sound shall not be heard.

#### 2) DOOR-OPEN

2-1) After passing 2 min. consecutively as Freezer/Refrigerator DOOR opened, SOUND alarm (Ding Dong) shall be heard.

2-2) If the door is still open afterward, sound alarm will be circulated to SOUND (Ding Dong) generating movement at the interval of a min.

2-3) Alarm stops when Freezer/Refrigerators are all closed.

### 7-10) RESTORATION OF OPERATION CONDITIONS FOR POWER FAILURE

1) In the case of instant power failure and initialization of PANEL DISPLAY, these can make customer's NON-SENSE CALL. To avoid this, if power is applied, it judges the temp of Freezer and operates as either initialization or restoration of operation conditions.

2) With initial POWER ON, it judges the temp of Freezer and if it is below (+41°F/+5°C), it is judged as instant power failure while operating and restoring the functions related to PANEL DISPLAY such as Power freezing, CHILD LOCK and Freezer/Refrigerator settings.

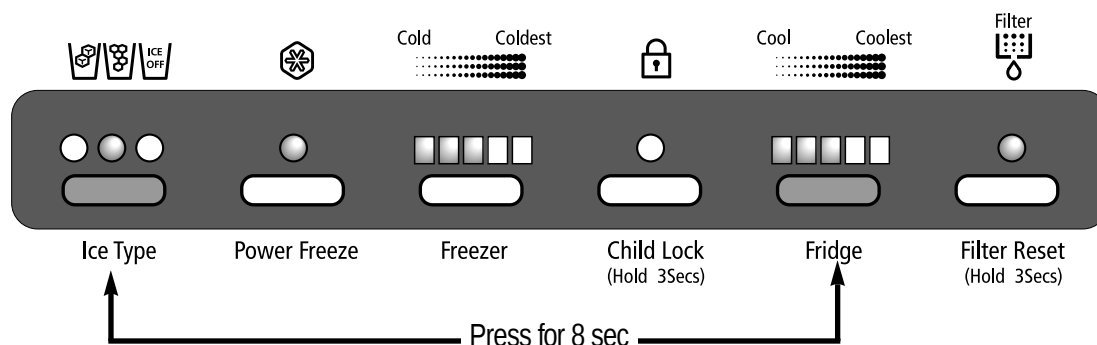
3) With initial POWER ON, it judges the temp of Freezer and if it is above (+41°F/+5°C), it is judged as extended power failure and PANEL DISPLAY will be initialized (Automatic setting at (-4°F/-20°C) for Freezer and (37.4°F/3°C) for Refrigerator).

### 7-11) TEST (FORCED OPERATION / FORCED DEFROST)

● When pressing Refrigerator temp set KEY and ICE TYPE KEY in PANEL PCB simultaneously for more than 8 sec. PANEL DISPLAY will go off and it moves onto TEST MODE. At this point, although Freezer/Refrigerator temp set KEY, Power freezing KEY, and ICE TYPE KEY are pressed, it operates by TEST KEY.

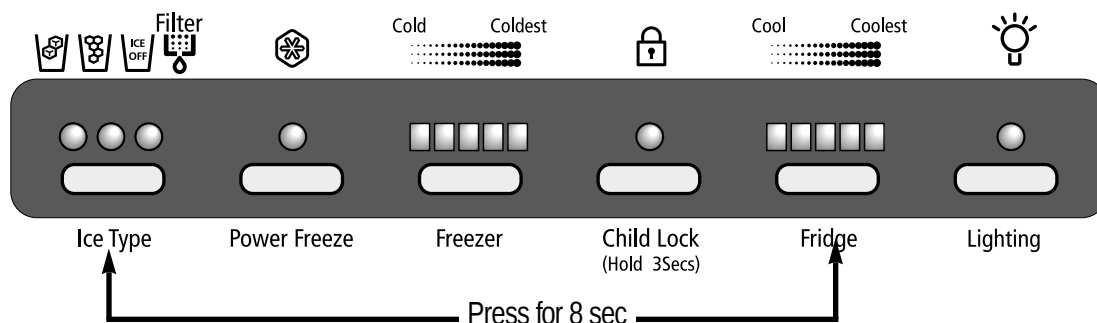
● When pressing TEST KEY, Test function shall be changed in the order as Forced Operation ---> Forced Freezer Defrost---> Cancellation(normal operation)---> Forced Operation. If functions are canceled during the operation of TEST function, it is most desirable to turn off the power and turn it on again.

RS2630SW/XAA (for Best Buy)

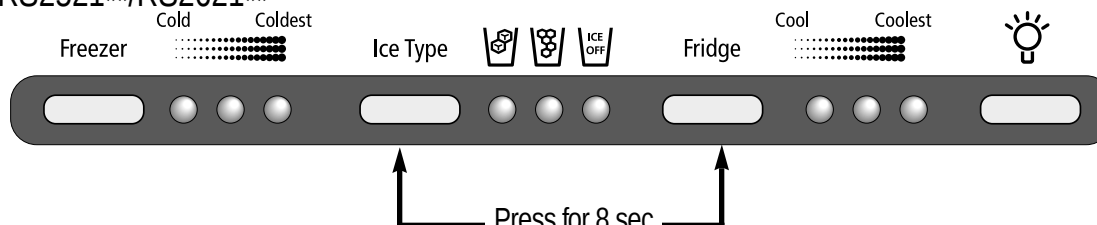


## Function & How- to-use By Products

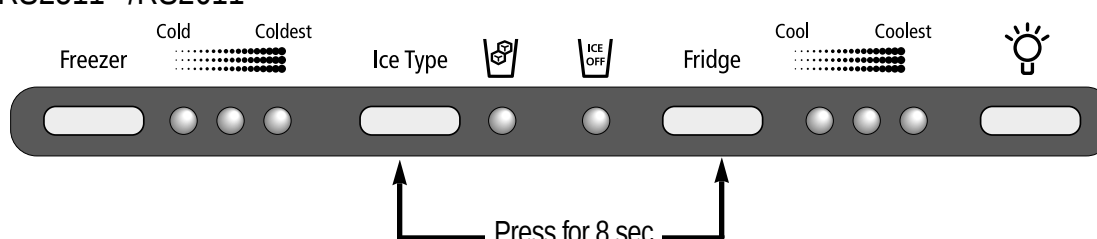
RS2531\*\*/RS2631\*\*



RS2521\*\*/RS2621\*\*



RS2511\*\*/RS2611\*\*



### 1) Forced Operation

- 1-1) When pressing TEST KEY once in TEST MODE, Forced Operation shall be selected and with BEEP sound, alarm will be operated.
- 1-2) If Forced Operation is selected, COMP. operates instantly without 5 min. delay in any Operation MODE. At this point, if it is in Defrost, Defrost will be stopped instantly.
- 1-3) With the selection of Forced Operation, COMP. and Freezer FAN operate for 24 hr. continuously and Refrigerator shall be regulated by set temp while Forced Operation continues until the completion of forced operation or the conversion to other MODE (forced Freezer Defrost) or cancellation.
- 1-4) With the selection of Forced Operation, Freezer will be selected at " MAX(-13 °F/ -25 °C) "and Refrigerator will be set at " MID (35.6 °F/ 2 °C) "automatically. However, although forced defrost or test cancellation are selected after a minute while selecting forced operation, set temp will not change. (Maintaining " MAX (-13 °F/ -25 °C) " and " MID(35.6 °F/ 2 °C) ") If forced defrost or test cancellation are selected in a minute while selecting forced operation, set temp will go back to the previous set temp before " MAX (-13 °F/ -25 °C) " and " MID (35.6 °F/ 2 °C) " .
- 1-5) On the completion of Forced Operation (24 hr.), Freezer defrost will operate regardless of the previous state.
- 1-6) After the above items, it operates under the conditions of normal defrost by judging case by case.
- 1-7) If it is cancelled randomly during Forced Operation, (On changing into cancellation Mode), the time for COMP. ON during forced operation shall be calculated in total and reflected in defrost cycle.
- 1-8) During Forced Operation, Power freezing doesn't function and with the selection of function, LED indication for the selected POWER function will be off after 10 sec.

## Function & How- to-use By Products

### 2) Forced Defrost

- 2-1) When pressing TEST KEY twice in TEST MODE, Freezer defrost will operate and BEEP sound alarm shall be heard.
- 2-2) BEEP sound alarm shall operate until the completion of HEATING and pause.
- 2-3) With the selection of forced Freezer defrost, it will operate regardless of the point of normal Heater On and complete defrost while comparing the temp of the point of HEATER OFF.

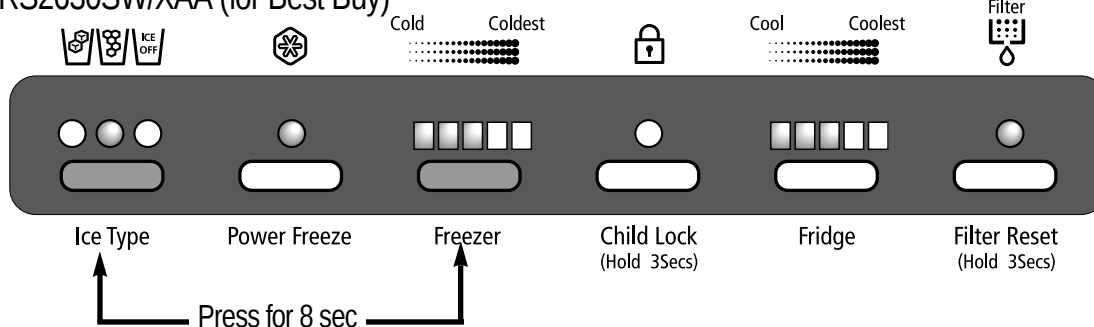
### 3) TEST Cancellation MODE

- 3-1) When converting DISPLAY PANEL into TEST MODE and pressing TEST button one more time during Freezer Defrost, Freezer Defrost will be cancelled and restored to normal operation. Also, if MAIN POWER is turned on again after being turned off, all the TEST functions will be canceled.

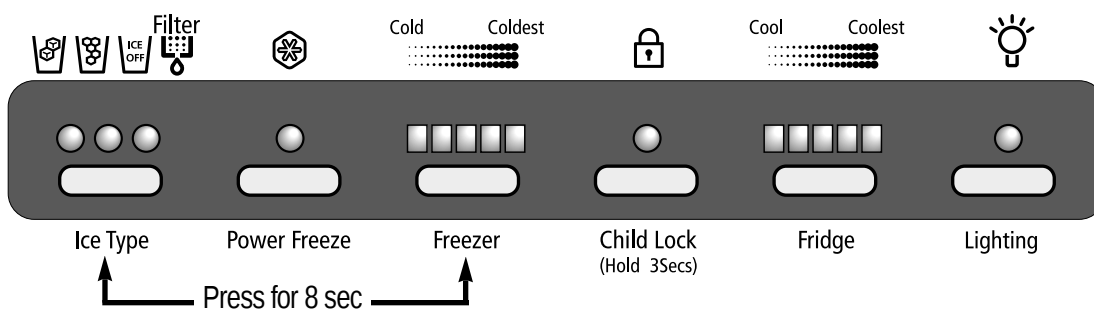
## 7-12) EXHIBITION MODE

- When pressing Freezer KEY and ICE TYPE KEY on the front Display PANEL simultaneously for 8 sec. It will operate as Exhibition Mode with Ding Dong sound.

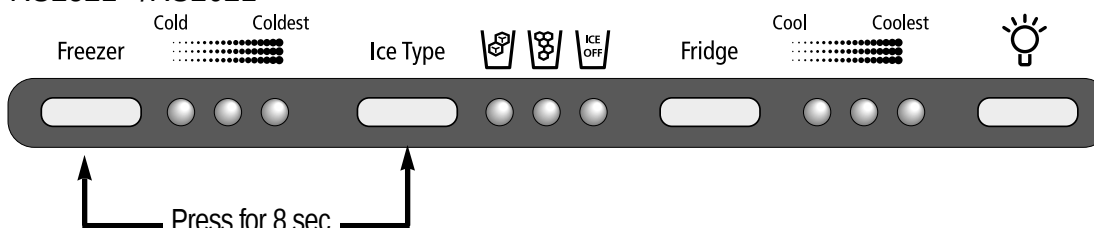
### RS2630SW/XAA (for Best Buy)



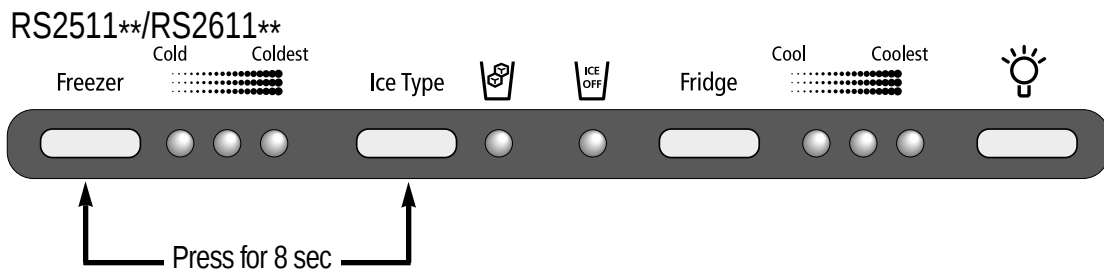
### RS2531\*\*/RS2631\*\*



### RS2521\*\*/RS2621\*\*



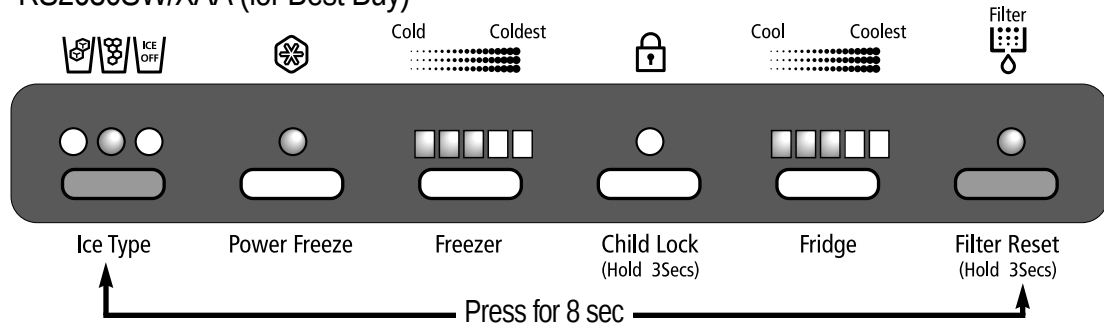
## Function & How- to-use By Products



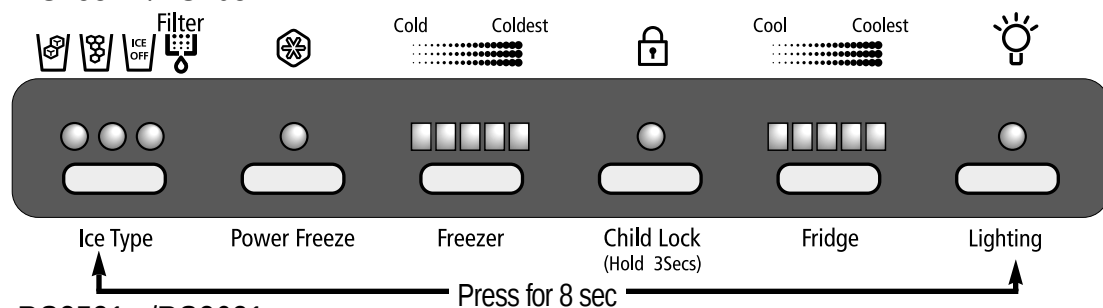
- If the temp of Freezer/Refrigerator increases more than (149 °F/ 65 °C) in Exhibition Mode, it will restore to normal operation mode.
- Contents of operation in Exhibition Mode DISPLAY, FAN MOTOR, and DISPENSER will operate normally except for Comp. and C-FAN.

### 7-13) SELF-DIAGNOSIS

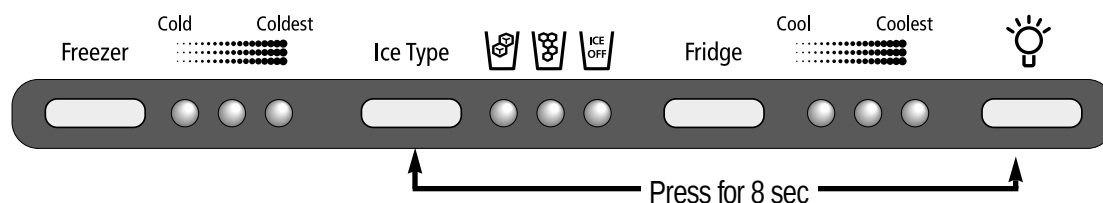
RS2630SW/XAA (for Best Buy)



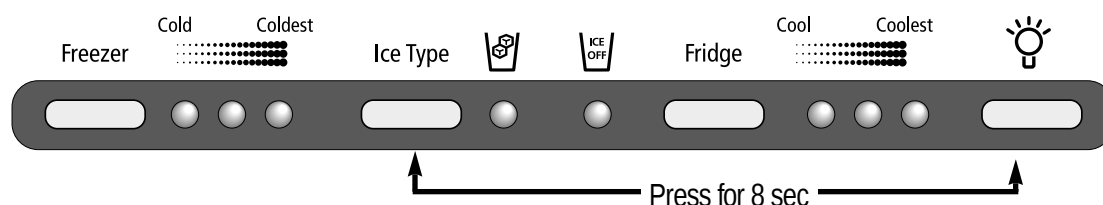
RS2531\*\*/RS2631\*\*



RS2521\*\*/RS2621\*\*



RS2511\*\*/RS2611\*\*



## Function & How- to-use By Products

### 1) Self-diagnosis with initial POWER ON

- 1-1) With POWER ON, it shall diagnose the status of temp SENSOR in a minute in MICOM internally for itself.
- 1-2) If inferior sensor is found after self-diagnosis, corresponding DISPLAY LED will be all off at the interval of 0.5 sec. and there will be no sound with LED ON.
- 1-3) In the state that inferior sensor is found and DISPLAY ICON is off, it only recognizes self-diagnosis KEY (Press Ice Type KEY + FILTER RESET KEY(LIGHT KEY) for 8 sec.) and normal temp control will be on hold.
- 1-4) On self-diagnosis ERROR, if inferior sensor is fixed or if you press ICE TYPE KEY + FILTER RESET KEY(LIGHT KEY) for 8 sec., it will be canceled automatically.

### 2) Self-diagnosis during normal operation

- 2-1) When pressing "ICE TYPE" and "FILTER RESET(LIGHT)" KEYS simultaneously for 6 sec. in normal operation of the fridge, temp set DISPLAY will be All ON/OFF for 2 sec. at the interval of 0.5 sec. and when pressing "ICE TYPE" and "FILTER RESET(LIGHT)" KEYS simultaneously for 8 sec. including TOGGLE for 2 sec., self-diagnosis will be selected.
- 2-2) At this point, "SOUND" shall be heard and it operates self-diagnosis.
- 2-3) When self-diagnosis operates, entire LED will be OFF and only relevant LED with malfunction will be ON / OFF repeatedly signifying defects. (Refer to the below self-diagnosis CHECK LIST)
- 2-4) When an ERROR occurs, it will be indicated for 30 sec. and restored to the normal status regardless of maintenance.
- 2-5) During self-diagnosis KEY input will not be recognized.

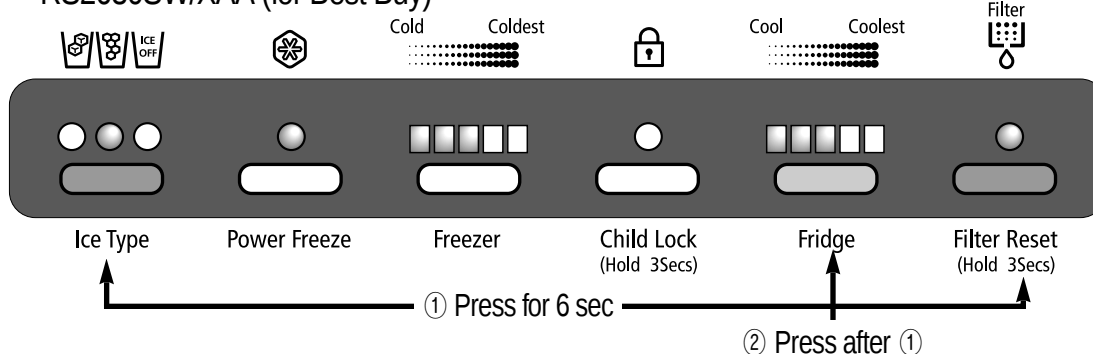
\* Details of self-diagnosis lighting by

| NO | Item                   | DISPLAY LED        | Trouble Shooting                                                                                                                                   | Remark                                                                                                                |
|----|------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 01 | Refrigerator SENSOR    | Refrigerator "MID" | Fall out SENSOR HOUSING in Refrigerator contact failure, breakage of wire, short-circuit, inferior Refrigerator SENSOR and others.                 | Indicating a defect when the temp sensing of Refrigerator SENOSR is above (149 °F/65 °C) and below (-58°F/-50 °C).    |
| 02 | Peripheral temp SENSOR | Refrigerator "MIN" | Fall out peripheral temp SENSOR HOUSING , contact failure, breakage of wire, short-circuit, inferior peripheral sensor and others.                 | Indicating a defect when the temp sensing of peripheral temp SENOSR is above (149 °F/65 °C) and below (-58°F/-50 °C). |
| 03 | Freezer SENSOR         | Freezer "MAX"      | Fall out SENSOR HOUSING in Freezer, contact failure, breakage of wire, short-circuit, inferior Freezer SENSOR and others.                          | Indicating a defect when the temp sensing of Freezer SENOSR is above (149 °F/65 °C) and below (-58°F/-50 °C).         |
| 04 | Freezer Defrost SENSOR | Freezer "MID"      | Fall out Defrost -SENSOR HOUSING in the evaporator of Freezer, contact failure, breakage of wire, short-circuit, inferior sensor and others.       | indicating a defect when the temp sensing of Freezer Defrost SENOSR is above (149 °F/65 °C) and below (-58°F/-50 °C). |
| 05 | Freezer Defrost ERROR  | Freezer "MIN"      | Fall out Freezer Heater Housing, contact failure, breakage of wire, short circuit, inferior Freezer Heater, or inferior Defrost temp fuse and etc. | On Freezer Defrost 90 min. automatic completion                                                                       |
| 06 | I/M Function ERROR     | ICE OFF            | Ejection restoration failure more than 3 times.                                                                                                    |                                                                                                                       |
| 07 | I/M SENSOR ERROR       | Cubed LED          | Fall out I/M SENSOR HOUSING, contact failure, breakage of wire, short-circuit, inferior I/M-SENSOR and etc.                                        |                                                                                                                       |

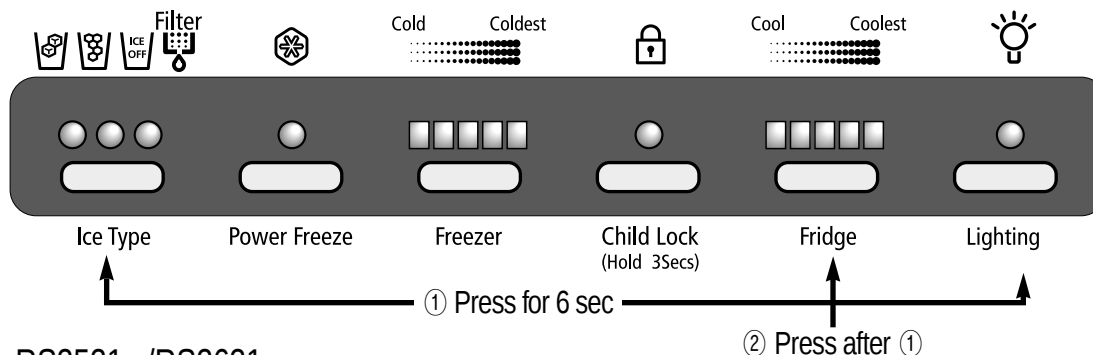
## 7-14) LOAD STATUS DISPLAY

- 1) When pressing "ICE TYPE" and "FILTER RESET(LIGHT)" KEYS simultaneously for 6 sec. in normal operation, the indicators of temp set in Freezer/Refrigerator will all ON/OFF for 2 sec. at the interval of 0.5 sec. At this point, when pressing Temp Set Key in Refrigerator while canceling "ICE TYPE" and "FILTER RESET(LIGHT)" KEYS, it operates load status display.
- 2) Load status display will show the load in operation REAL TIME.  
However, it is not related to real status of operation of load and it only shows the directed status of the load operation command from MICOM.
- 3) Only corresponding ICON for the load in operation will be ON/OFF repeatedly and turned off.
- 4) Load status display will continue for 30 sec. and it will restore to the normal state.

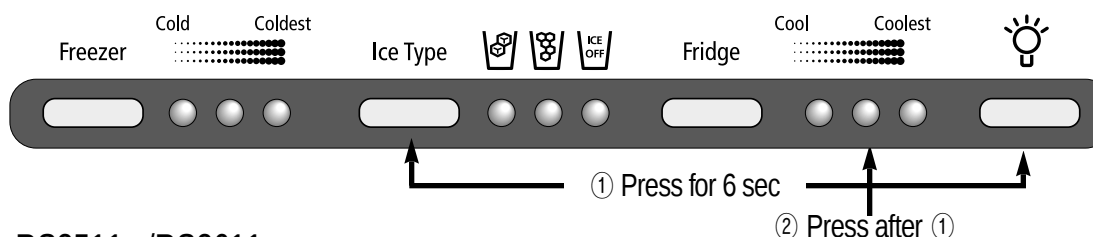
### RS2630SW/XAA (for Best Buy)



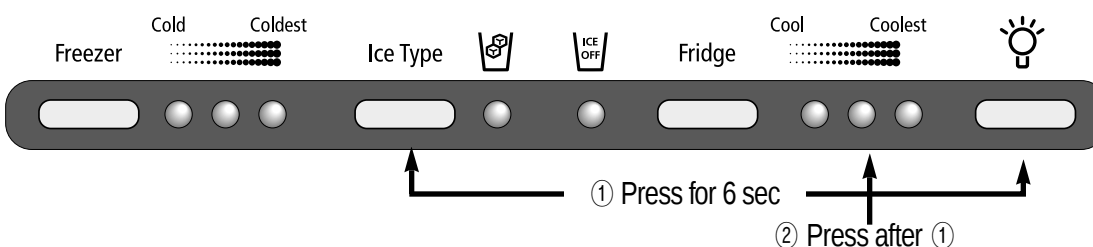
### RS2531\*\*/RS2631\*\*



### RS2521\*\*/RS2621\*\*



### RS2511\*\*/RS2611\*\*



## Function & How- to-use By Products

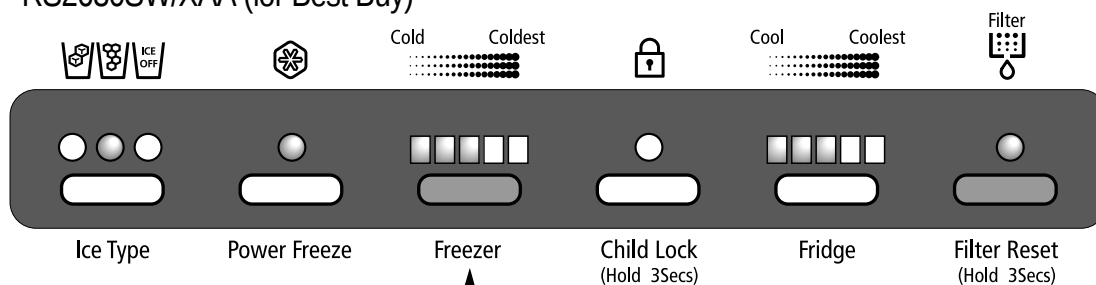
\* Details by LED ON locations indicating load status

| NO | ITEMS                   | DISPLAY LED               | PROBLEM                                                |
|----|-------------------------|---------------------------|--------------------------------------------------------|
| 01 | Damper                  | Refrigerator "MIN" (1'st) | LED ON when Damper is open                             |
| 02 | Condition for over load | Refrigerator "MID" (3'rd) | LED ON when Ambient temp is over (95°F/35 °C)          |
| 03 | Condition for low temp  | Refrigerator "MAX" (5'th) | LED ON when ambient temp is lower than (62.6 °F/17 °C) |
| 04 | COMP                    | Freezer "MIN" (1'st)      | Relevant LED ON when COMP operates                     |
| 05 | Freezer Defrost Heater  | Freezer "MID" (3'rd)      | LED ON when Freezer Defrost Heater operates            |
| 06 | Freezer FAN             | Freezer "MAX" (5'th)      | Relevant LED ON when Freezer-FAN HIGH operates         |
| 07 | Exhibition Mode         | ICE OFF                   | LED ON in Display mode                                 |
| 08 | Dispenser Heater        | CUBE LED                  | Relevant LED ON when Dispenser Heater gets ON          |
| 09 | Damper Heater           | CRUSH LED                 | Relevant LED ON when Damper Heater gets ON             |

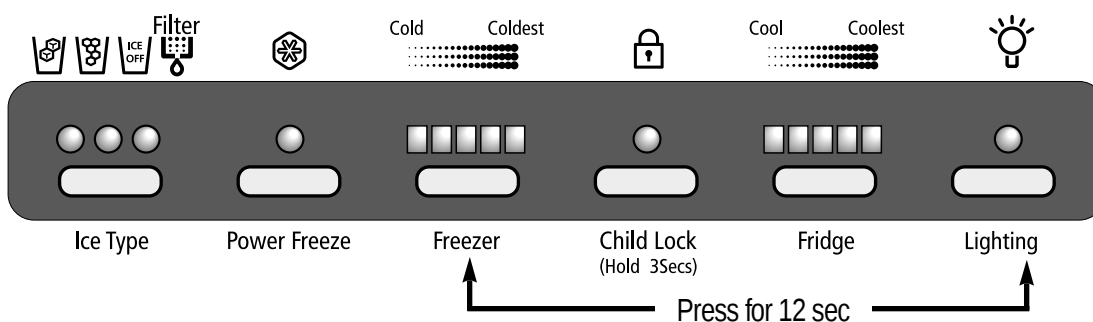
### 7-15) OPTION SETTING

- When the F-Room Temp Setting button and the Filter Reset button or the Lighting button are pressed for 12 seconds continuously, the display will be converted to the option setting mode.

RS2630SW/XAA (for Best Buy)

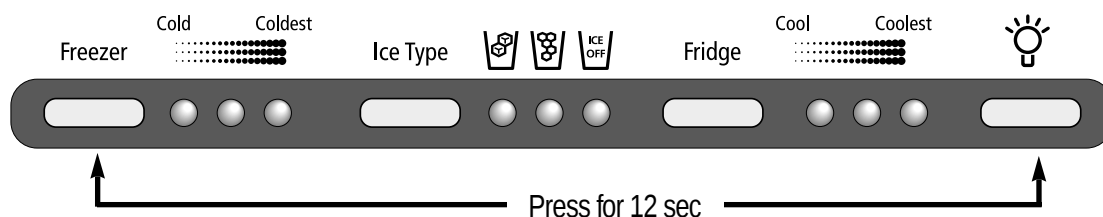


RS2531\*\*/RS2631\*\*

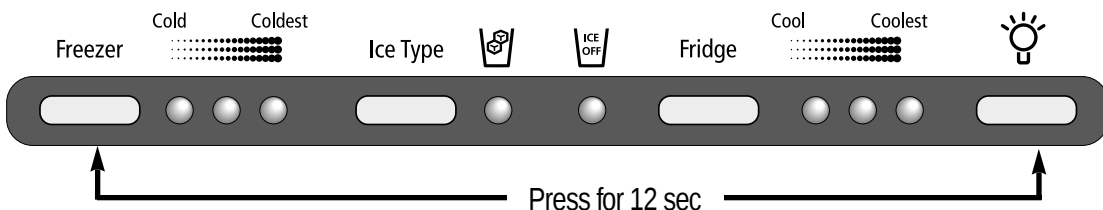


## Function & How- to-use By Products

RS2521\*\*/RS2621\*\*



RS2511\*\*/RS2611\*\*



1) For example,,if you want to shift the Refrigerator STD temp by (34.7°F/1.5 °C), proceed the following.  
It is to shift the standard temperature.The F-Room standard temp is 3 °C(MID).When it is shifted (34.7°F/1.5 °C) by using the option,the standard temp will be set to (40.1°F/4.5 °C) i.e.when the temp option is changed, it will be controlled to (40.1°F/4.5 °C) internally even though it is set to MID on the display panel..So, shifting the standard temperature by (34.7°F/1.5 °C) means that it is controlled by (34.7 °F/1.5 °C) increase than the temp set on the display panel.

1-1) As shown in the draft,press the Freezer button and the FILTER RESET BUTTON OR LIGHTING BUTTON for 12 seconds simultaneously.

- Except the Freezer &the Fridge LEDs,all LEDs will be turned off.

1-2) When it is changed to the option mode,all of the OPTION CATEGORY (I1~I5)and,the OPTION SETTING (V1~V4) will display "0"(ALL OFF).

(The option should be set °∞0 °±for shipment,but this standard set value could be changed and shipped for quality improvement during mass production.)

- The LED arrangements of the OPTION CATEGORY and the OPTION SETTING for different specs are as follows.

|    | RS2 *1 *             | RS2 *2 *             | RS2 *3 *        |
|----|----------------------|----------------------|-----------------|
| I1 | DIS PENSER LED       | CRUSHED(ICE)         | FRIDGE MIN      |
| I2 | NO ICE               | NO ICE               | FRIDGE MID-M IN |
| I3 | FRIDGE MIN (COLD)    | FRIDGE MIN (COLD)    | FRIDGE MID      |
| I4 | FRIDGE MID           | FRIDGE MID           | FRIDGE MID-M AX |
| I5 | FRIDGE MAX (COLDEST) | FRIDGE MAX (COLDEST) | FRIDGE MAX      |
| V1 | FREEZER MIN          | FREEZER MIN          | FREEZER MIN     |
| V2 | FREEZER MID          | FREEZER MID          | FREEZER MID-MIN |
| V3 | FREEZER MAX          | FREEZER MAX          | FREEZER MID     |
| V4 | CUBED (ICE)          | CUBED (ICE)          | FREEZER MID-MAX |

(For the Value Spec,the Dispenser LED is used due to the insufficient number of panel LEDs.)

## Function & How- to-use By Products

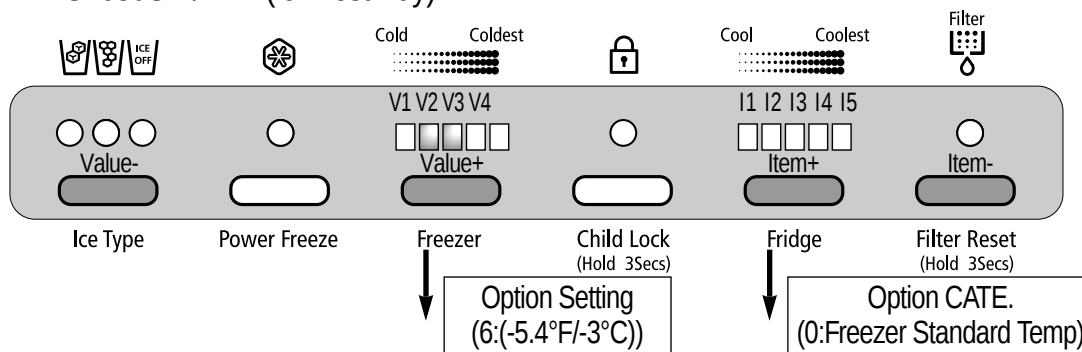
- 1-3) If you set "10" as shown in the Freezer option table below after setting "1" to the OPTION CATEGORY, the Refrigerator standard temp will be lowered by -5.4°F (Refer to the Refrigerator Temp Option Table). In 20 seconds after completion of adjustment, the MICOM will store the set value to the EEPROM and it will revert to the normal display and the option setting mode will be cancelled.
- 1-4) To increase/decrease the OPTION CATE., press the Fridge button and the Filter Reset (or Lighting button) respectively and to increase/decrease the OPTION SET VALUE, press the Freezer button and the Ice Type button respectively.
- 1-5) The option function will be set in the EEPROM before shipment, so do not change the setting except special cases. For the option function, the setting will be completed when it is reverted to the normal display in 20 seconds. So, do not turn off the power before it is reverted to the normal display.
- 1-6) Make sure to set the OPTION CATE. (I1~I5) first and then set the OPTION SETTING (V1~V4).

Note) Basically, refrigerators are shipped with option data cleared.

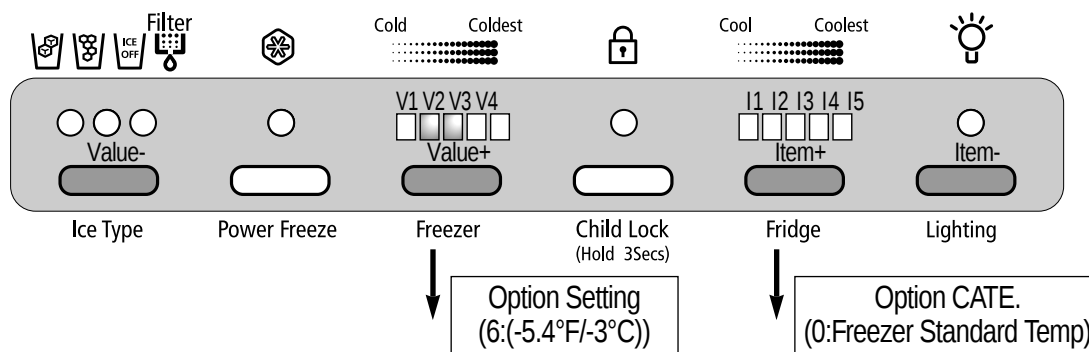
i.e. products are shipped with set values all "0". But, for quality improvements during MP, refrigerators could be produced with set values changed. So, make sure to check the Quality Information.

APP .EX) TO DECREASE FREEZER STANDARD TEMP BY (-5.4°F/-3°C).

### RS2630SW/XAA (for Best Buy)



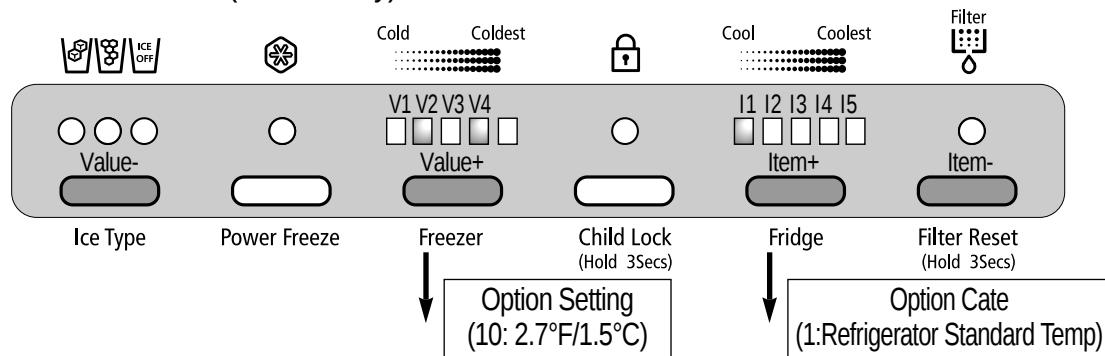
### RS2531\*\*/RS2631\*\*



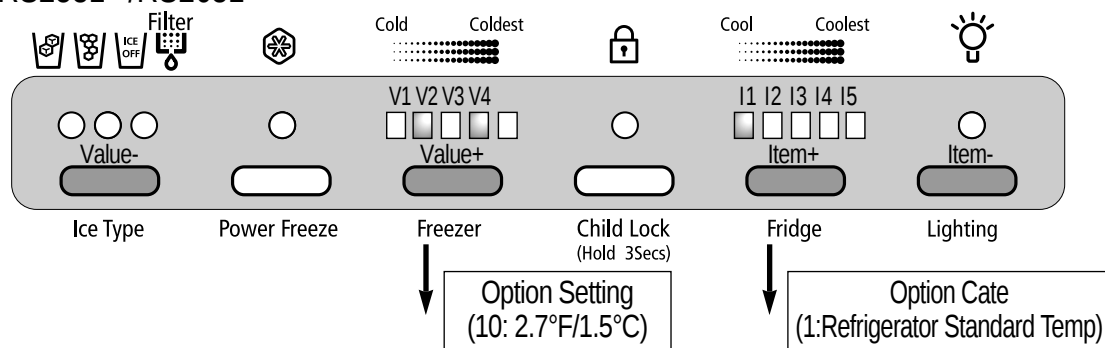
## Function & How- to-use By Products

APP .EX) TO INCREASE REFRIGERATOR STANDARD TEMP BY (2.7°F/1.5°C)

RS2630SW/XAA (for Best Buy)

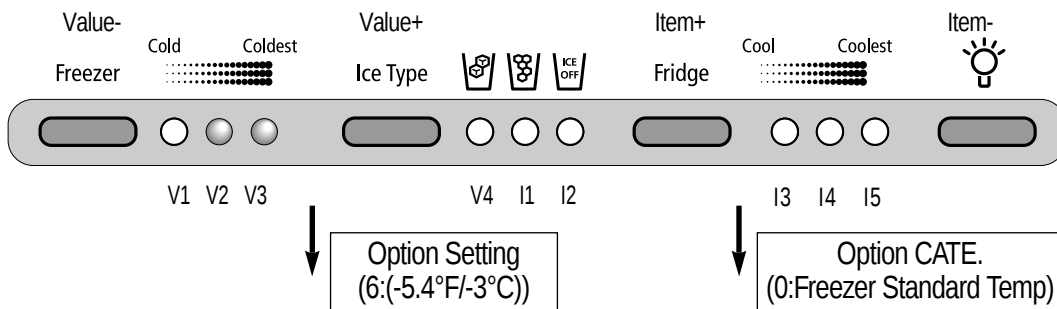


RS2531\*\*/RS2631\*\*



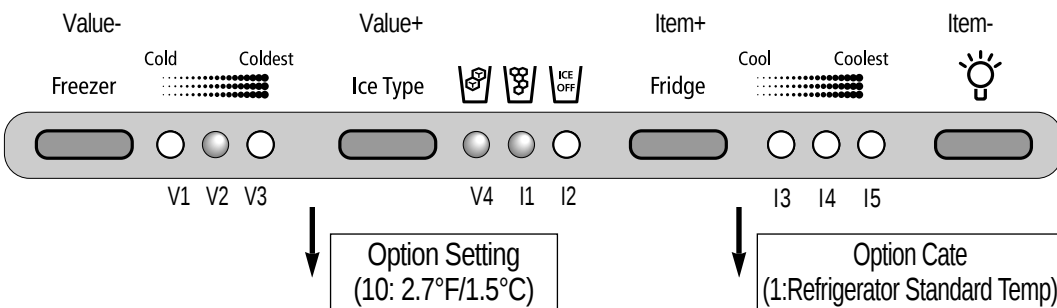
APP .EX)TO LOWER FREEZER STANDARD TEMP BY (-5.4°F/-3°C).

RS2521\*\*/RS2621\*\*



APP .EX) TO INCREASE REFRIGERATOR STANDARD TEMP BY (2.7°F/1.5°C)

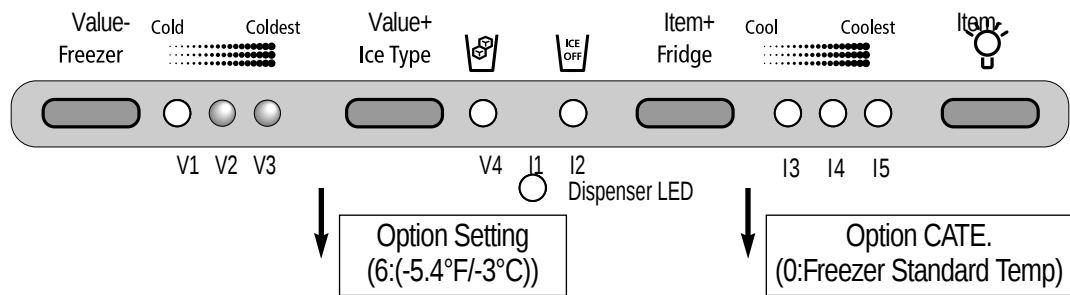
RS2521\*\*/RS2621\*\*



## Function & How- to-use By Products

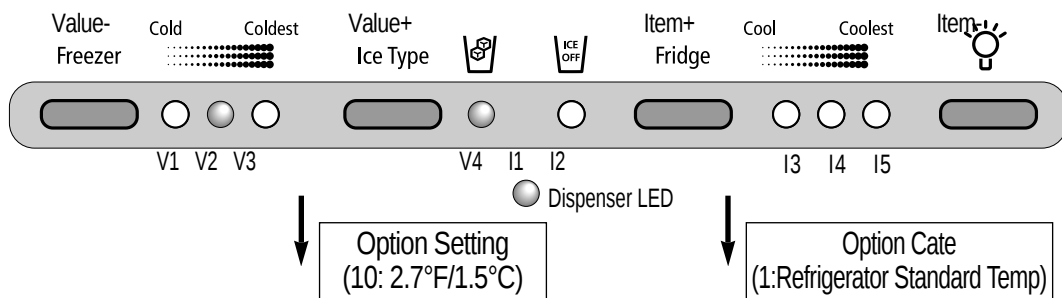
APP .EX) TO LOWER FREEZER STANDARD TEMP BY (-5.4°F/-3°C).

RS2511\*\*/RS2611\*\*



APP .EX) TO INCREASE REFRIGERATOR STANDARD TEMP BY (2.7°F/1.5°C)

RS2511\*\*/RS2611\*\*



## 7-16) OPTION TABLE

Note) With the Freezer button and the Lighting button, additional options can be set.  
But, those are relevant not to the A/S but to the ref.control function. So, those options are skipped.  
(Do not change any other options except the above options.)

### 1) FREEZER TEMP SHIFT TABLE(○: RELEVANT LED OFF, ●: RELEVANT LED ON)

| SET ITEM               |    |    |    |    | Freezer TEMP SHIFT |              |    |    |    |    |             |
|------------------------|----|----|----|----|--------------------|--------------|----|----|----|----|-------------|
| MODEL                  |    |    |    |    | AD -PJT            |              |    |    |    |    |             |
| DISPLAY<br>Option Item |    |    |    |    | VALUE              | I1           | I2 | I3 | I4 | I5 |             |
|                        |    |    |    |    | 0                  | ○            | ○  | ○  | ○  | ○  |             |
| SET VALUE              |    |    |    |    | COMMON             | SET VALUE    |    |    |    |    | COMMON      |
| Option Value           |    |    |    |    |                    | Option Value |    |    |    |    |             |
| VALUE                  | V1 | V2 | V3 | V4 |                    | VALUE        | V1 | V2 | V3 | V4 |             |
| 0                      | ○  | ○  | ○  | ○  | 0°F/0℃             | 8            | ○  | ○  | ○  | ●  | 0.9°F/+0.5℃ |
| 1                      | ●  | ○  | ○  | ○  | -0.9°F/+0.5℃       | 9            | ●  | ○  | ○  | ●  | 1.8°F/+1.0℃ |
| 2                      | ○  | ●  | ○  | ○  | -1.8°F/+1.0℃       | 10           | ○  | ●  | ○  | ●  | 2.7°F/+1.5℃ |
| 3                      | ●  | ●  | ○  | ○  | -2.7°F/+1.5℃       | 11           | ●  | ●  | ○  | ●  | 3.6°F/+2.0℃ |
| 4                      | ○  | ○  | ●  | ○  | -3.6°F/+2.0℃       | 12           | ○  | ○  | ●  | ●  | 4.5°F/+2.5℃ |
| 5                      | ●  | ○  | ●  | ○  | -4.5°F/+2.5℃       | 13           | ●  | ○  | ●  | ●  | 5.4°F/+3.0℃ |
| 6                      | ○  | ●  | ●  | ○  | -5.4°F/+3.0℃       | 14           | ○  | ●  | ●  | ●  | 6.3°F/+3.5℃ |
| 7                      | ●  | ●  | ●  | ○  | -6.3°F/+3.5℃       | 15           | ●  | ●  | ●  | ●  | 7.2°F/+4.0℃ |

### 2) REFRIGERATOR TEMP SHIFT TABLE(○: RELEVANT LED OFF, ●: RELEVANT LED ON)

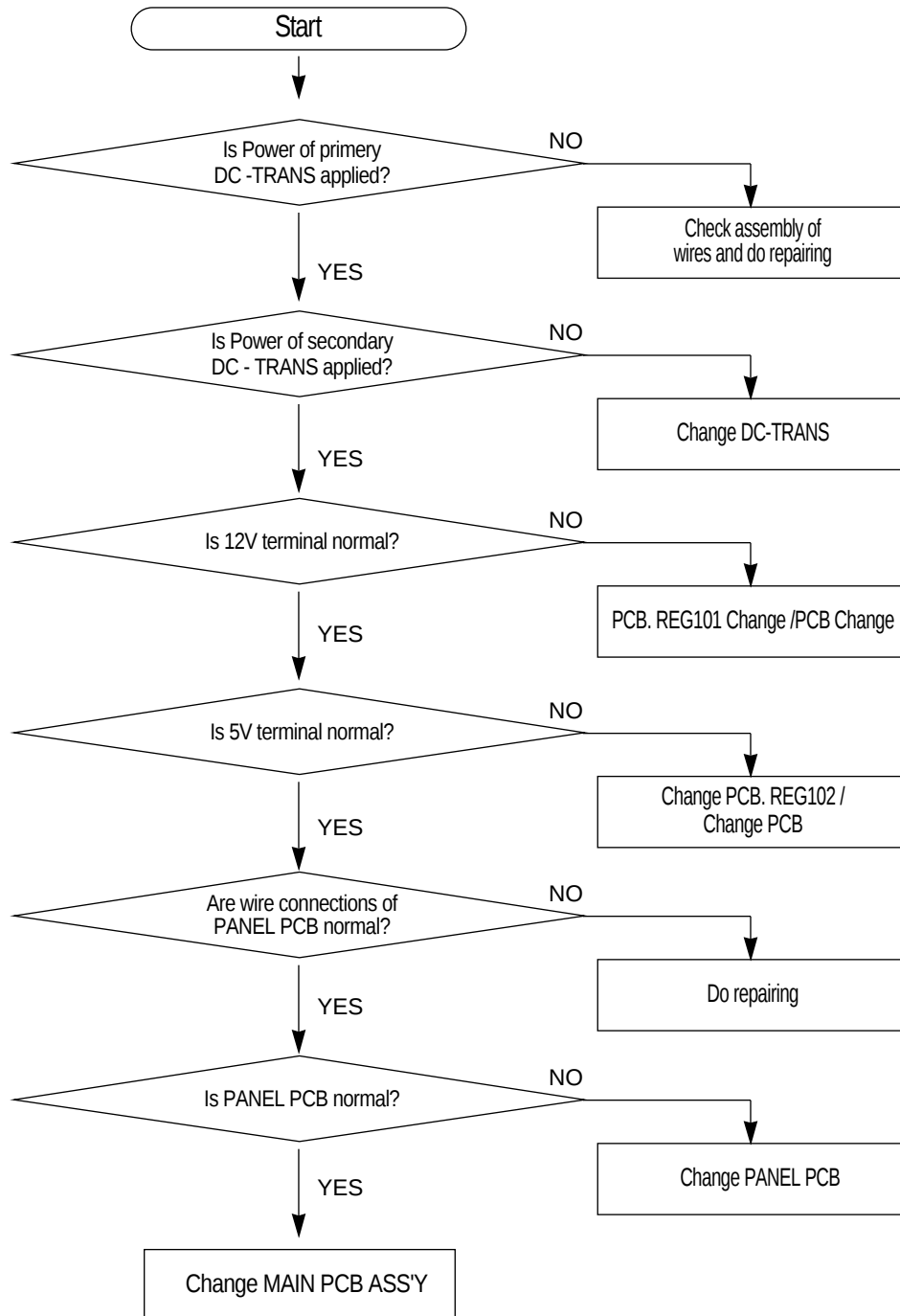
| SET ITEM               |    |    |    |    | Refrigerator TEMP SHIFT |              |    |    |    |    |             |
|------------------------|----|----|----|----|-------------------------|--------------|----|----|----|----|-------------|
| MODEL                  |    |    |    |    | AD -PJT                 |              |    |    |    |    |             |
| DISPLAY<br>Option Item |    |    |    |    | VALUE                   | I1           | I2 | I3 | I4 | I5 |             |
|                        |    |    |    |    | 1                       | ●            | ○  | ○  | ○  | ○  |             |
| SET VALUE              |    |    |    |    | COMMON                  | SET VALUE    |    |    |    |    | COMMON      |
| Option Value           |    |    |    |    |                         | Option Value |    |    |    |    |             |
| VALUE                  | V1 | V2 | V3 | V4 |                         | VALUE        | V1 | V2 | V3 | V4 |             |
| 0                      | ○  | ○  | ○  | ○  | 0°F/0℃                  | 8            | ○  | ○  | ○  | ●  | 0.9°F/+0.5℃ |
| 1                      | ●  | ○  | ○  | ○  | -0.9°F/+0.5℃            | 9            | ●  | ○  | ○  | ●  | 1.8°F/+1.0℃ |
| 2                      | ○  | ●  | ○  | ○  | -1.8°F/+1.0℃            | 10           | ○  | ●  | ○  | ●  | 2.7°F/+1.5℃ |
| 3                      | ●  | ●  | ○  | ○  | -2.7°F/+1.5℃            | 11           | ●  | ●  | ○  | ●  | 3.6°F/+2.0℃ |
| 4                      | ○  | ○  | ●  | ○  | -3.6°F/+2.0℃            | 12           | ○  | ○  | ●  | ●  | 4.5°F/+2.5℃ |
| 5                      | ●  | ○  | ●  | ○  | -4.5°F/+2.5℃            | 13           | ●  | ○  | ●  | ●  | 5.4°F/+3.0℃ |
| 6                      | ○  | ●  | ●  | ○  | -5.4°F/+3.0℃            | 14           | ○  | ●  | ●  | ●  | 6.3°F/+3.5℃ |
| 7                      | ●  | ●  | ●  | ○  | -6.3°F/+3.5℃            | 15           | ●  | ●  | ●  | ●  | 7.2°F/+4.0℃ |

## 8. Diagnostics

### 8-1) When power is not supplied

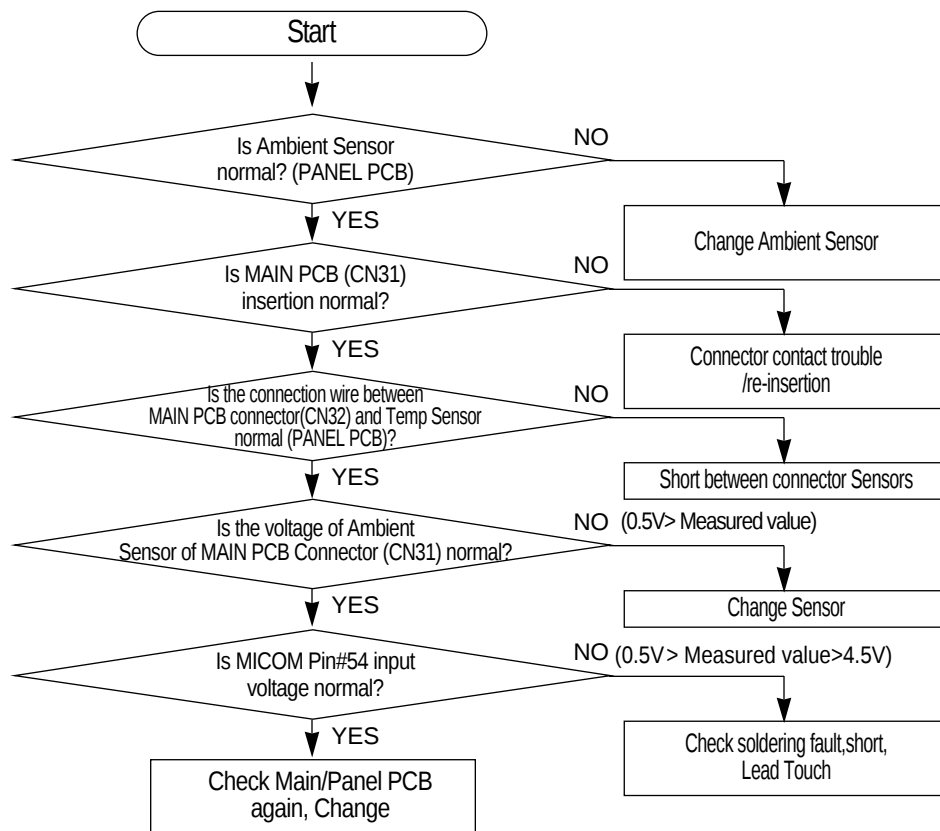
#### Pre-Check

1. Check if power is supplied at Concent and Power Cord is connected properly before repair
2. Check by referring to the followings.

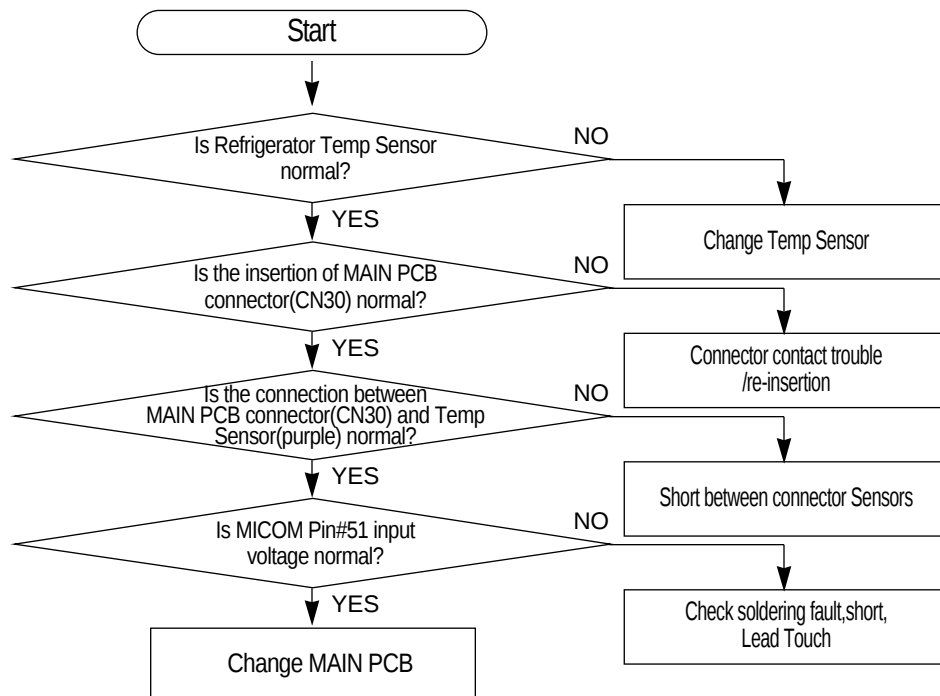


## 8-2) When there is a trouble with Self Diagnosis

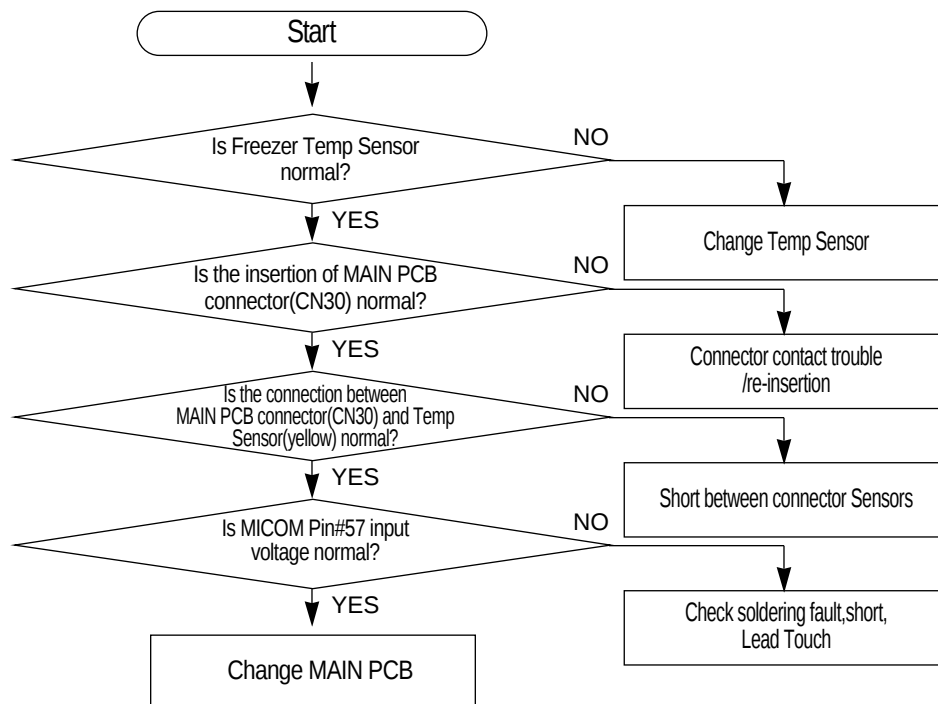
### 1) Ambient Sensor trouble => (applied to Ambient Sensor Temp type)



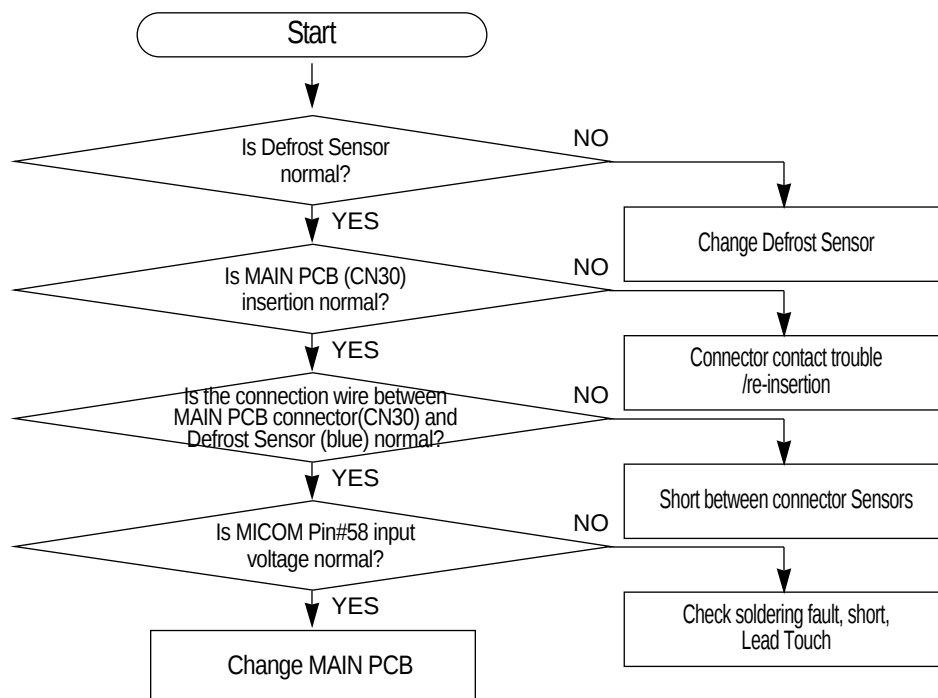
### 2) Refrigerator Temp Sensor trouble



## 3) Freezer Temp Sensor trouble



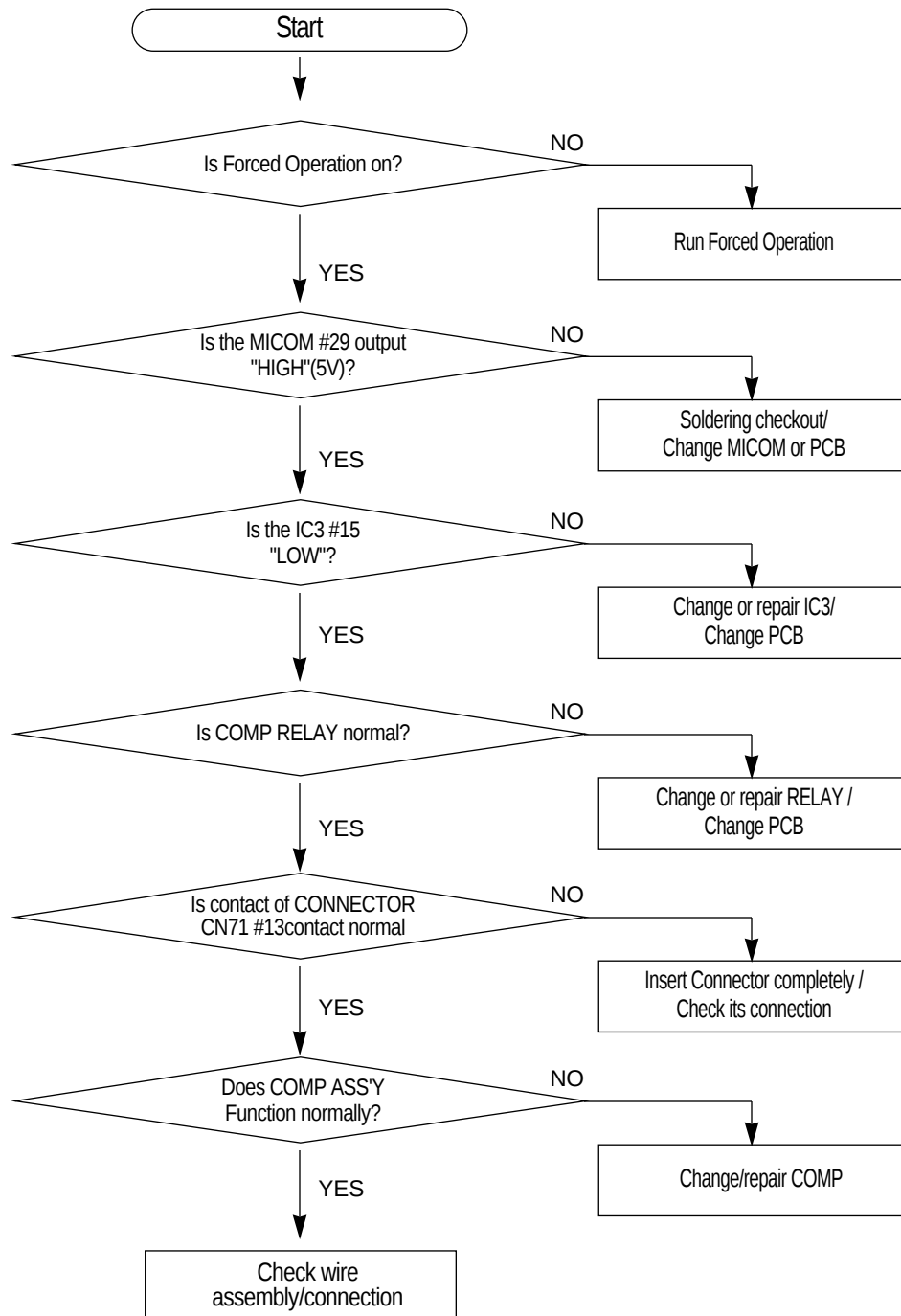
## 4) Defrost Sensor trouble



## 8-3) When COMP does not operate

### Pre-Check

1. If it does not pass 5 min after a desired Temp reached, COMP does not operate.
2. During Defrost, COMP does not operate.
3. With the disconnected Freezer Sensor or Refrigerator Sensor, COMP does not operate because MAIN PCB picks up the Temp as a desired level.



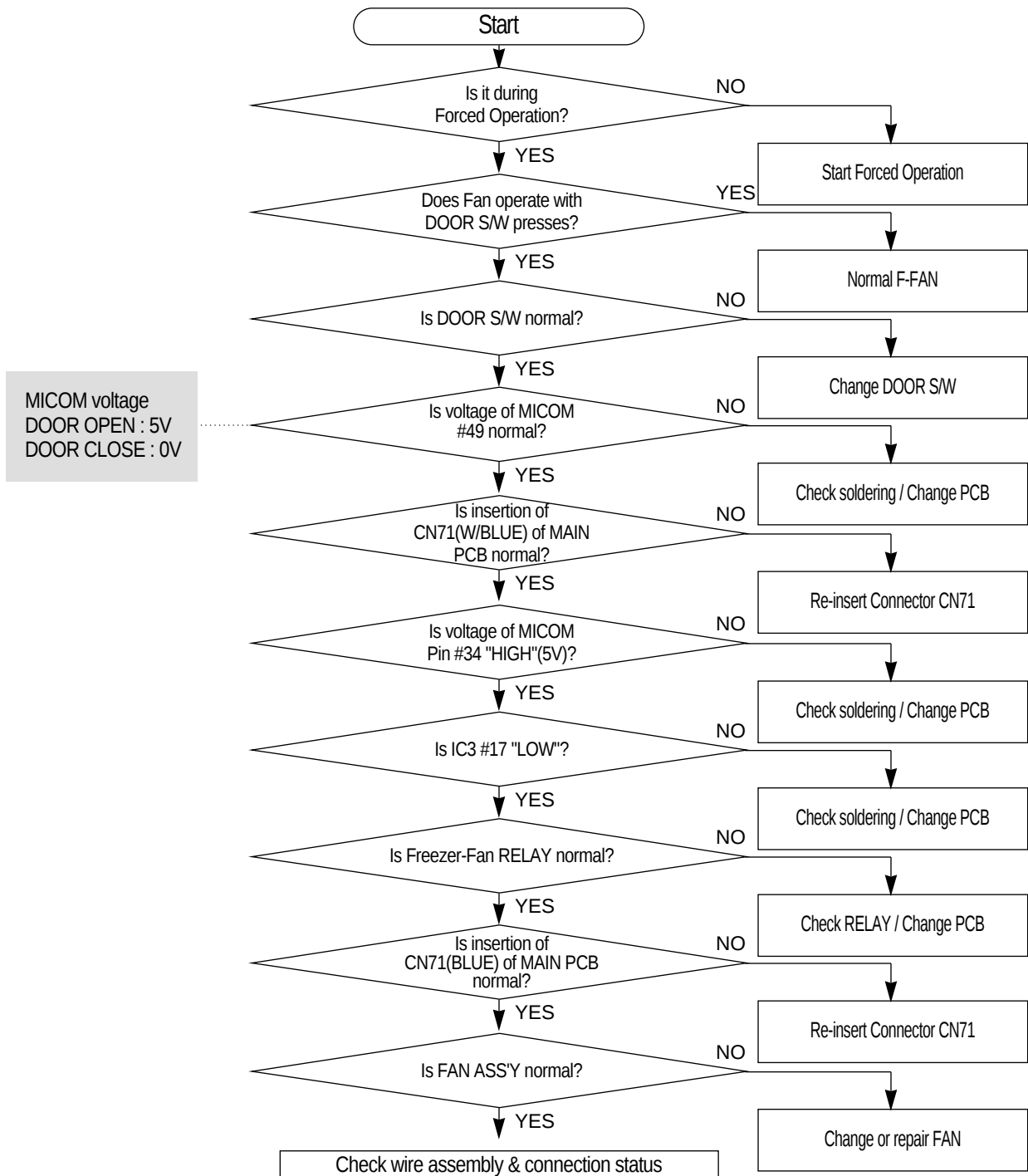
## 8-4) When FAN & DAMPER does not operate

### Note

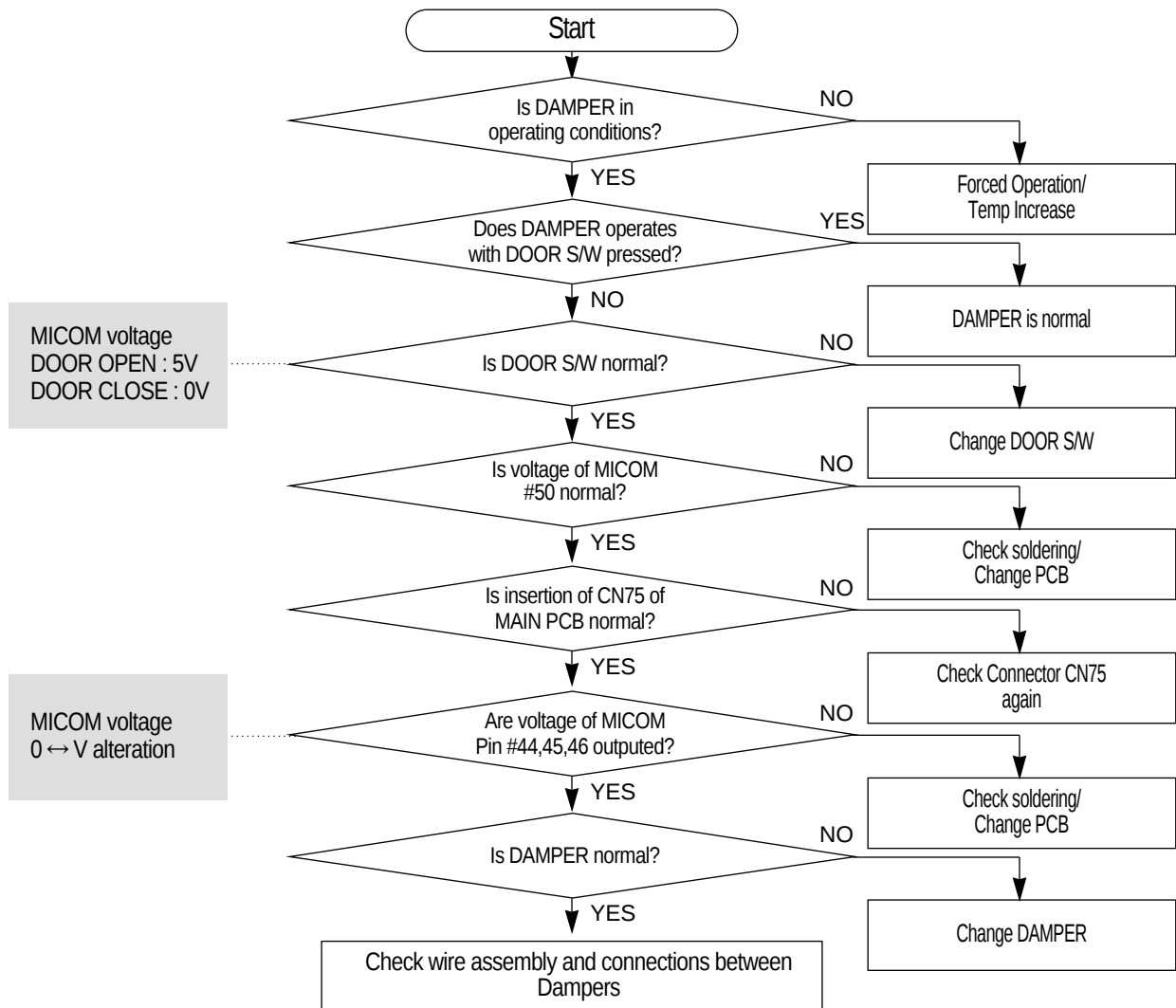
"Check out the F-FAN with the Forced Operation selected"

1. Freezer FAN, Refrigerator DAMPER and COMP COOLING FAN remains off while COMP is turned off.
2. When Comp is ON, Damper does not always remain ON (including Forced Operation) and when Refrigerator temp reaches to set temp, Damper remains OFF.
3. When R-Room & Freezer get closed after being opened, each Fan & Damper starts up immediately. (Comp ON condition)

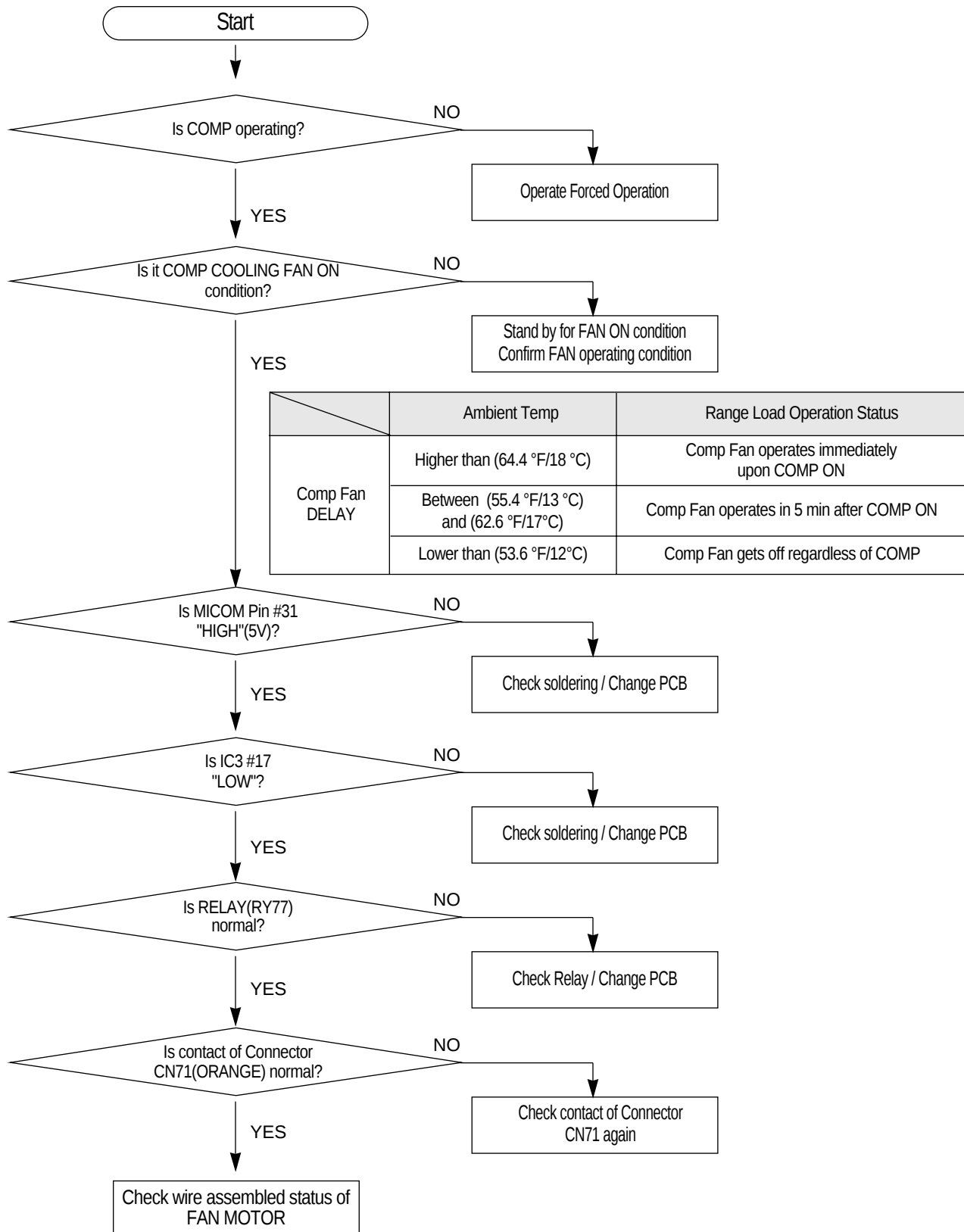
### 1) When Freezer FAN(F-FAN) does not operate



## 2) When Refrigerator DAMPER does not operate



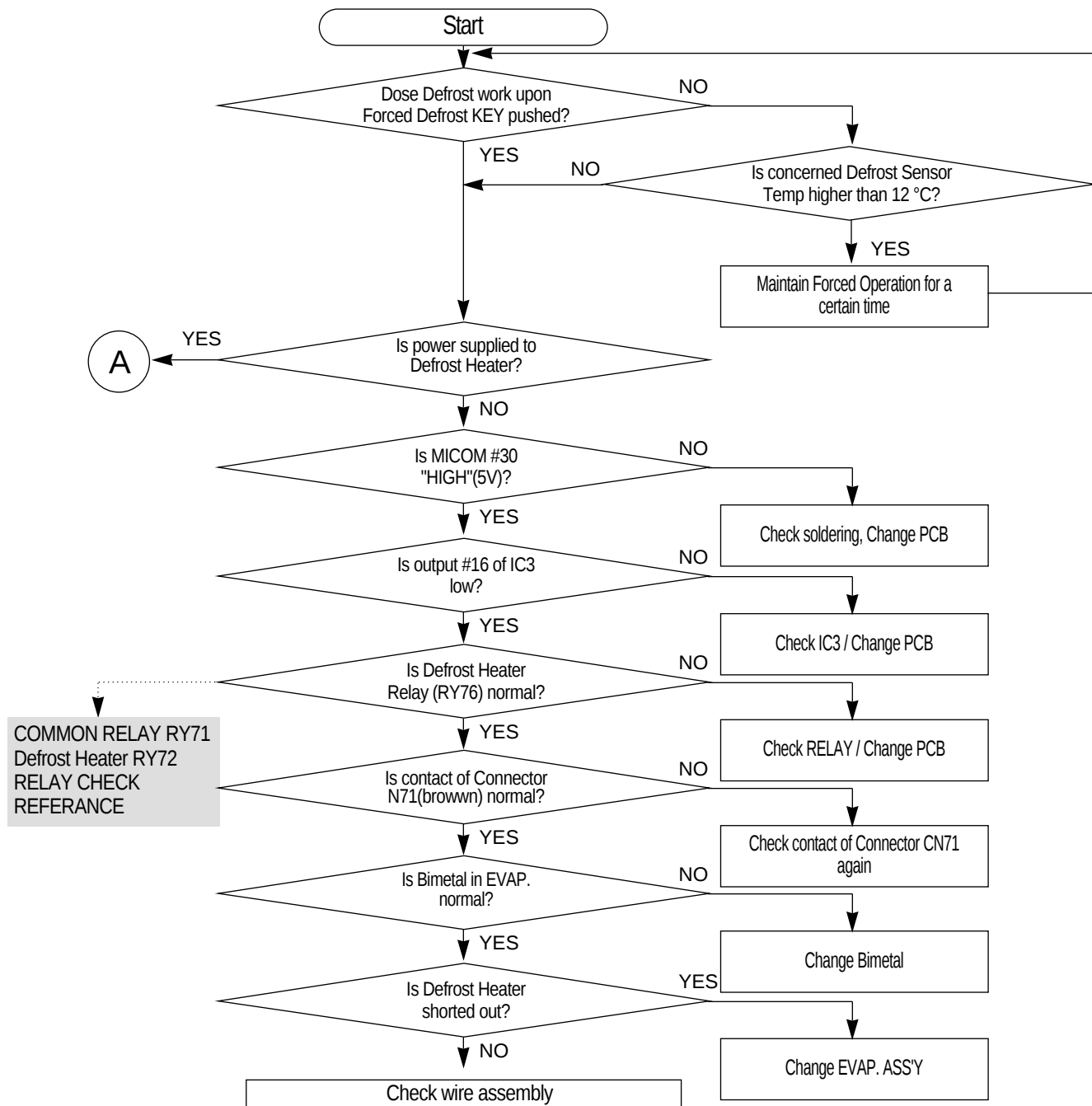
## 3) When Comp Cooling Fan does not operate

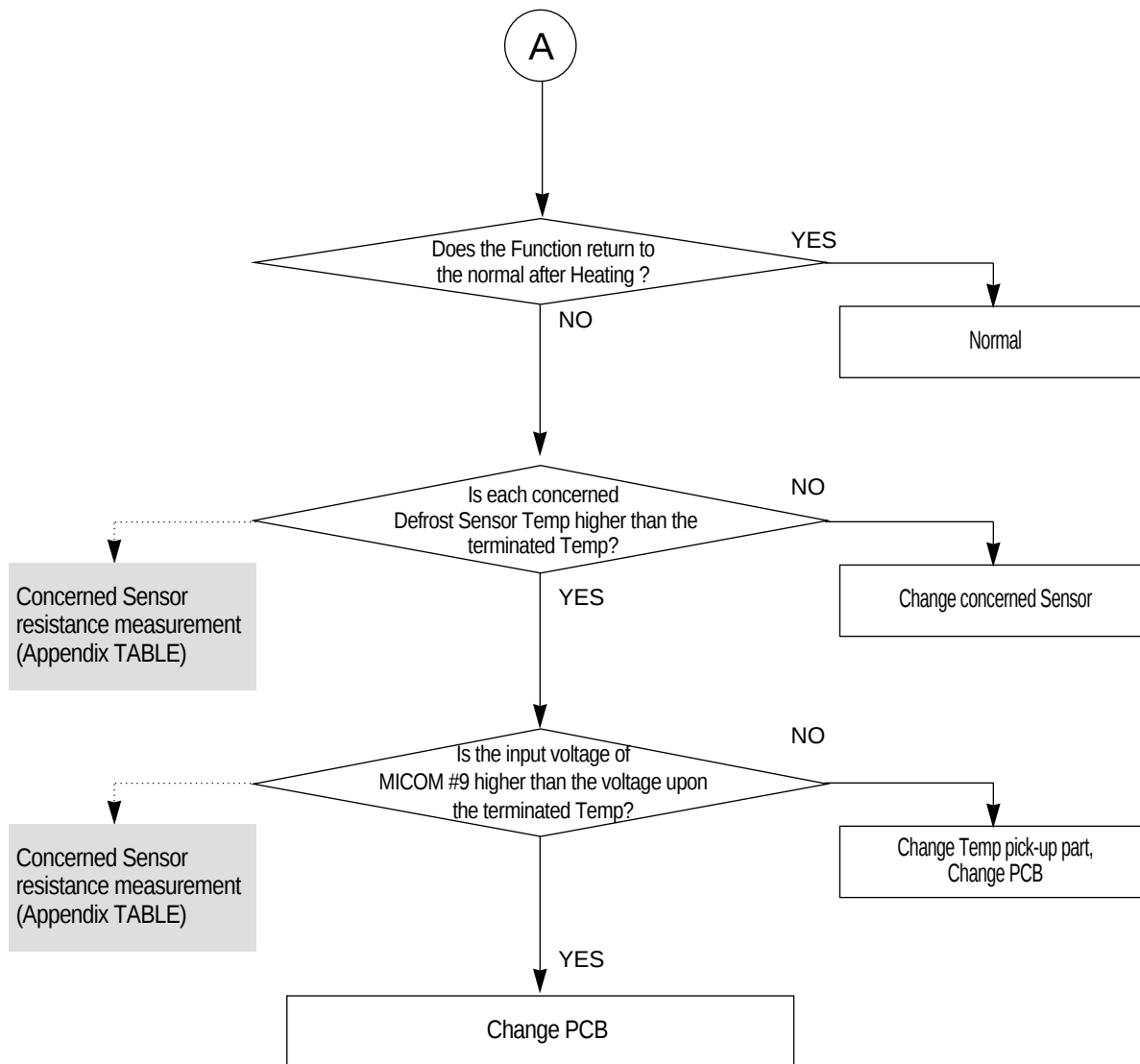


## 8-5) When Defrost does not operate

### Pre-Check

1. With a shorted-out Defrost Sensor, the fridge operates normally excepting Defrost(The fault can be picked up with self-diagnosis, POWER ON/OFF).
2. There will be Heating trouble with a shorted-out Temp FUSE, which contributes to Defrost by natural Temp increase resulting in a Temp Control problem stemmed from the increased COMP OFF time.
3. When Defrost Sensor is faulty as OPEN, Heating will not be terminated, and COMP will remain off following the Temp FUSE short-off.(The fault can be picked up with self-diagnosis, POWER ON/OFF)



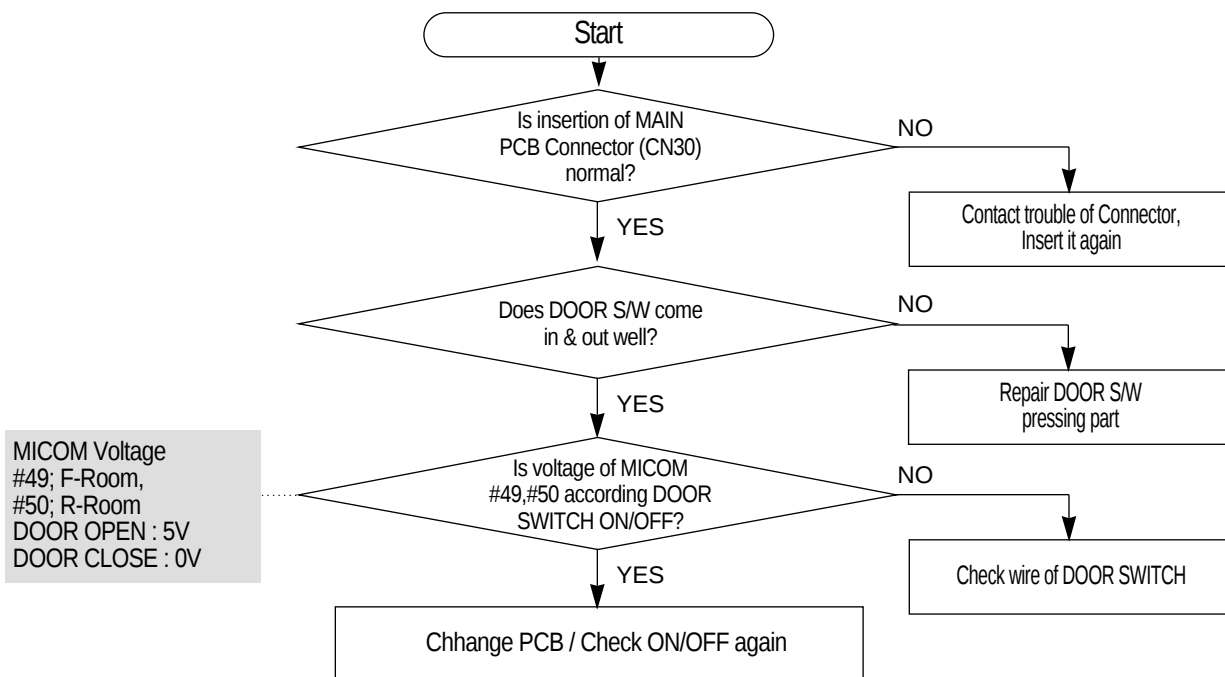


## 8-6) When Alarm Sound continues without stop

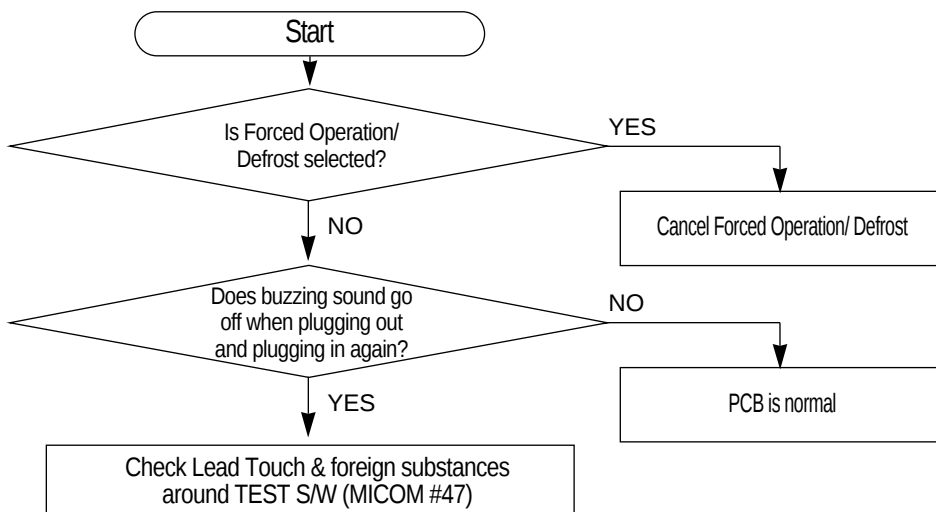
### Note

1. When Door gets open, Door Open alarm ("Ding Dong") goes off in 2 minutes with Door opened. When Door remains open after this, the alarm goes off every minute.
2. When Door Switch is not pressed well, MICOM considers it as opened and alarming sound goes off. Room Lamp becomes OFF in 10 minutes since it detects Door Open (based on R600a). In this case, even though Door gets opened, Room Lamp does not come ON.

### 1) When "Ding Dong" sound continues



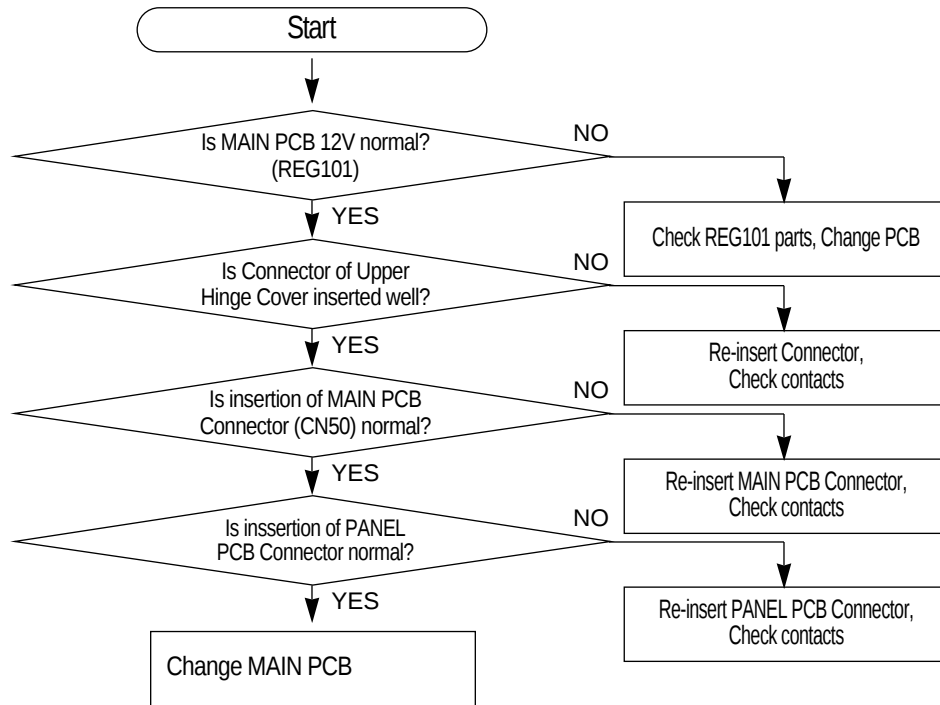
### 2) When "Beep Beep" sound continues



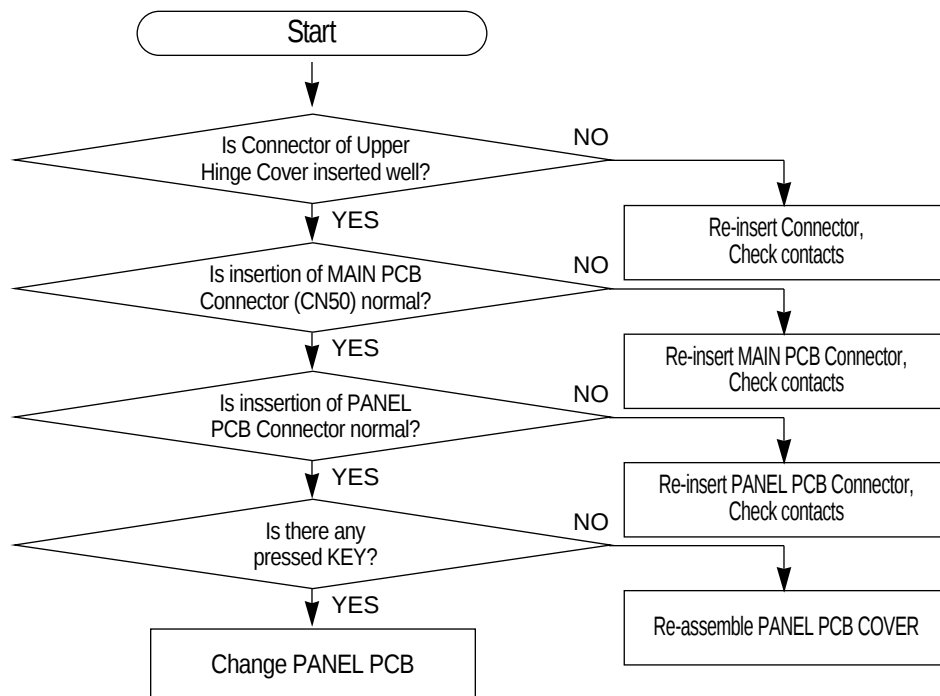
## Note

1. "Beep-Beep" sounds do not go off except Forced Operation & Forced Defrost.
2. It is checkable at Panel PCB when Forced Operation or Forced Defrost is selected, so when error occurs, check it and correct the error.

### 3) When PANEL PCB doesn't light up



### 4) When PANEL PCB KEY is not selected

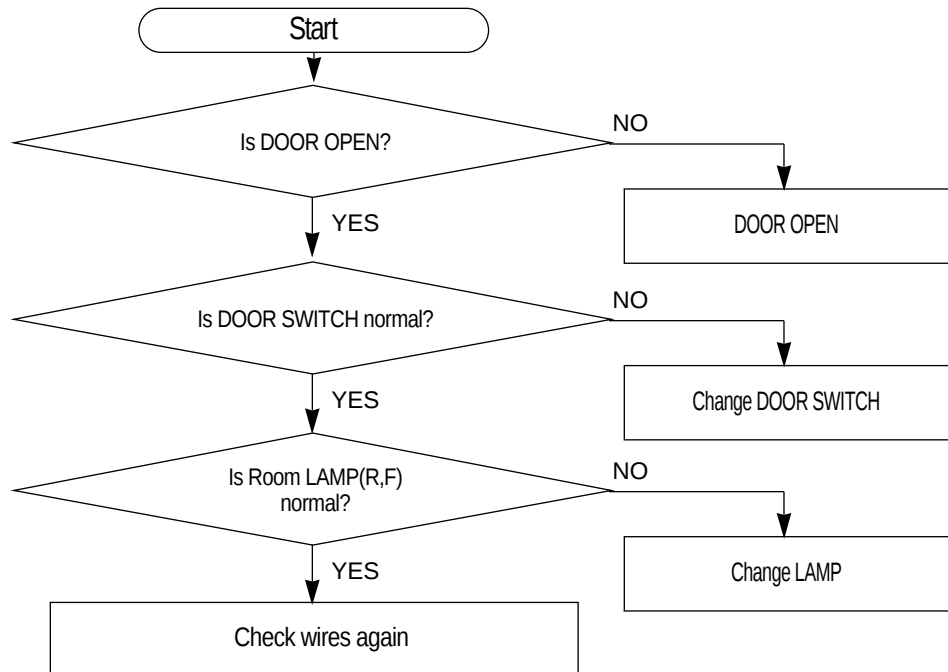


### 8-7) When Room Lamp does not light up

#### Note

1. Because Room Lamp is basically controled with Door Switch, PCB does not control it.

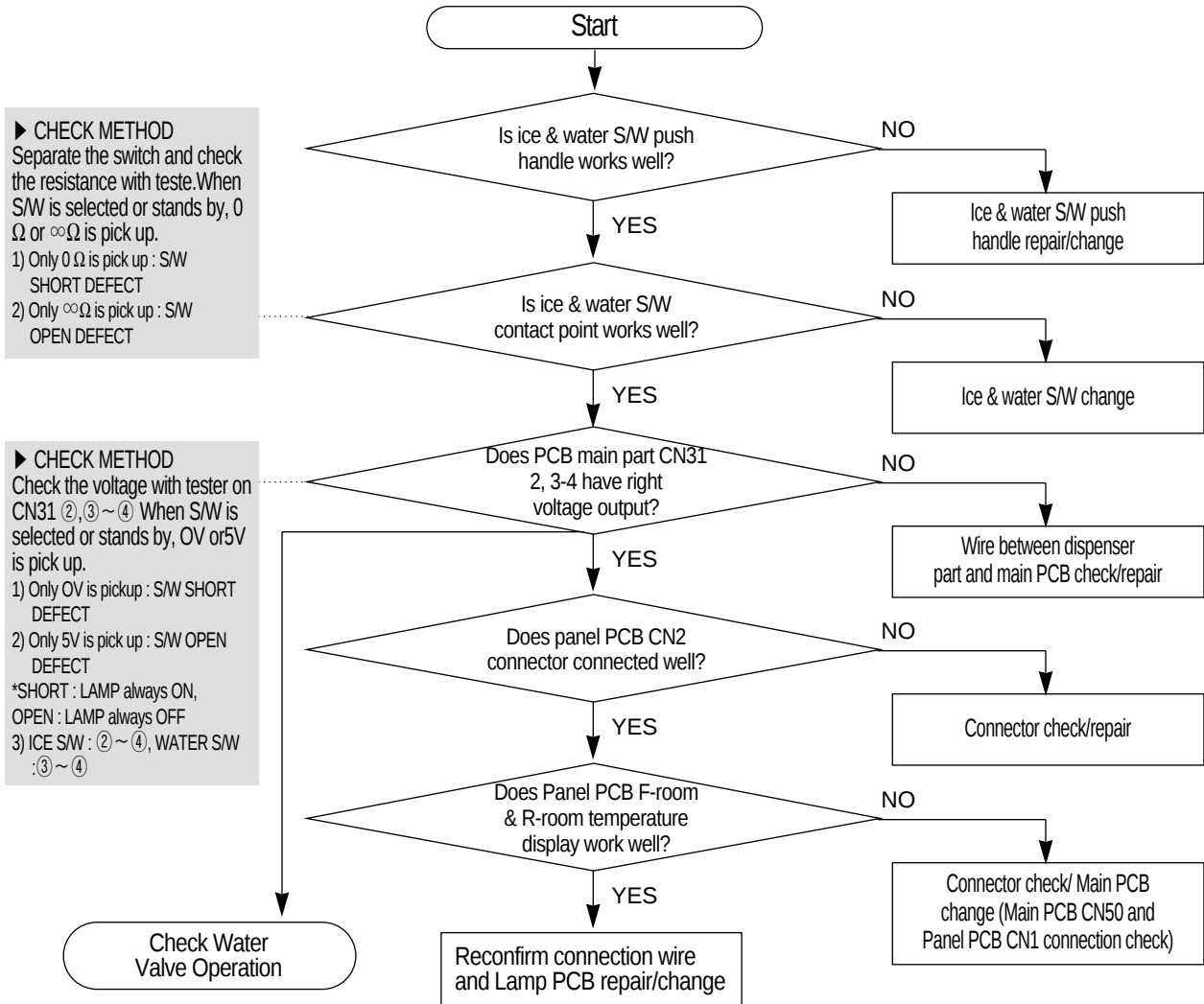
#### 1) When Freezer/Refrigerator Lamps do not light up



## 8-8) Dispenser Lamp Malfunction

### Note

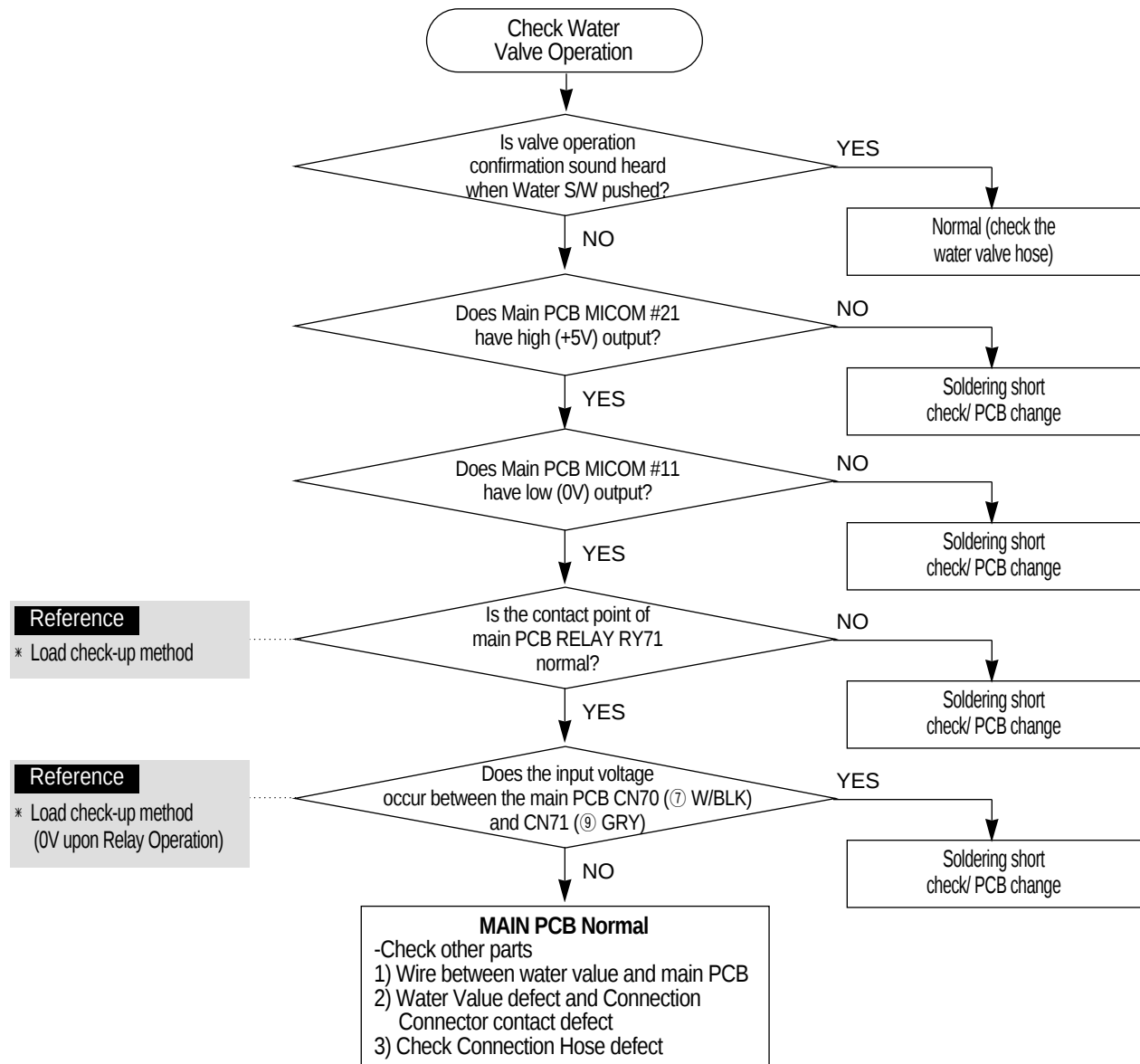
1. Long term LED Short when exchanging may result in the malfunction of PCB since Dispenser Lamp is high brightness LED.
2. When changing the PCB, the power must be turned off.



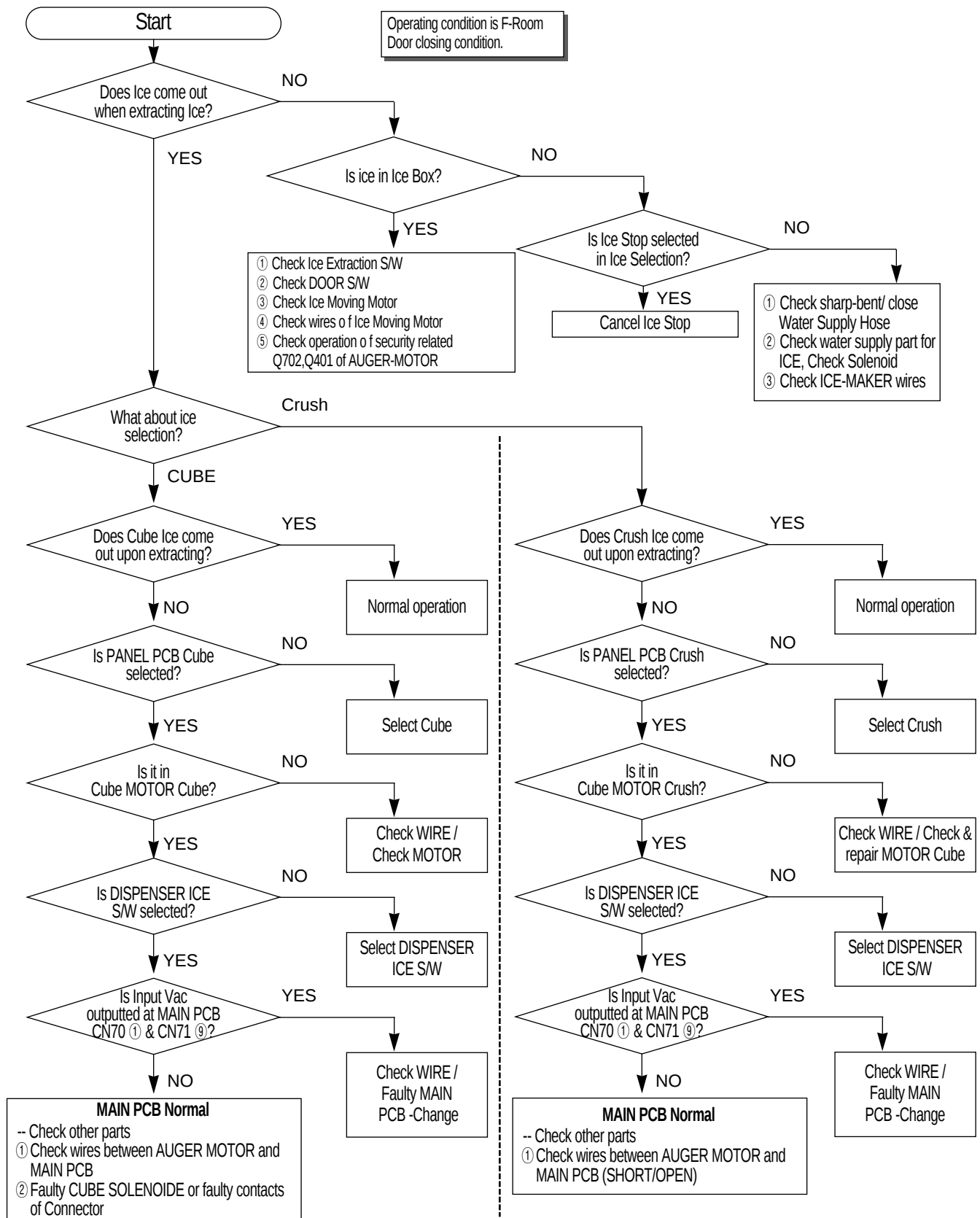
## 8-9) When Water Valve Does Not Operate

### Pre-Check

1. While disassembling, make sure to cut off water since the water valve is directly connected with water.
2. Make sure to avoid the electric shock while disassembling because one end of wire is applied with power.
3. Check operation of water valve only after the water switch is pressed



## 8-10) When Crush (Crushed Ice ) & Cube (Cubed Ice) does not operate well





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