dacor

REFRIGERATOR

FRENCH DOOR REFRIGERATOR

MODEL NAME : DRF36C500**

MODEL CODE : DRF36C500SR/DA

SERVICE Manual

REFRIGERATOR

CONTENTS

WARNING

IMPORTANT SAFETY NOTICE

The service guide is for service persons 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.

Dacor
Technical Service Guide

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1. PRECAUTIONS(SAFETY WARNINGS)

Read all instructions before repairing the product and follow the instructionsin order to prevent danger or property damage.
Unplug and remove all the items in refrigerator prior to repair.

CAUTION/WARNING SYMBOLS DISPLAYED

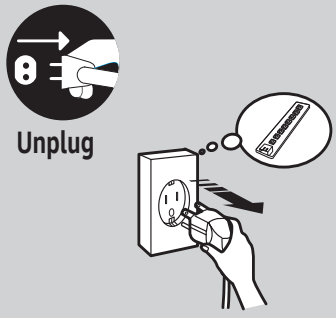
Warning	Indicates that a danger of death or serious injury exists.
Caution	Indicates that a risk of personal injury or material damage exists.

means “Prohibited”.
means “Do not disassemble”.
means “No contact”.
means ”Warning or Caution”.
means "Unplug the unit before preforming service"
means “Earth or Ground”.

Warning & Caution

Unplug the product before changing the interior lamp.

- To prevent electric shock.



Use only correctly rated replacement components and parts.

- Check the correct model, rated voltage, rated current, operating temperature etc.

Upon repair, make sure that all harnesses are watertight and are secured.

- Secure harnesses tightly in positon to prevent damage and the ingress of moisture or water.

Upon repair, completely remove any dust or other foreign substances from housing, harness, connector, etc.

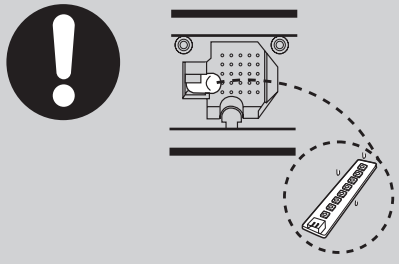
- Cleaning will prevent possible risk of fire or malfunction.

After repair, Ensure the product is fully reassembled.

- It should be returned to the the previous state, with all parts and covers correctly secured in position.

Check for any water ingress or moisture.

- If there is any water or moisture present, take necessary measures such as replacing components, insulation, seals, etc.



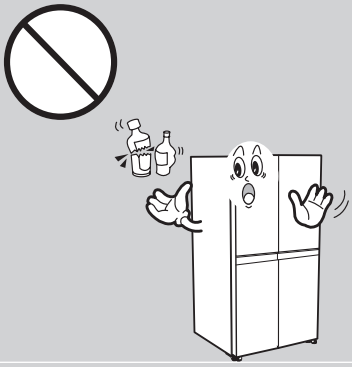
PRECAUTIONS(SAFETY WARNINGS)

❊ Please let users know about the following warnings & cautions in detail.

⚠ Warning & Caution

Advise users not to put bottles or glass in the freezer.

- Freezing of the contents may cause the item to explode.

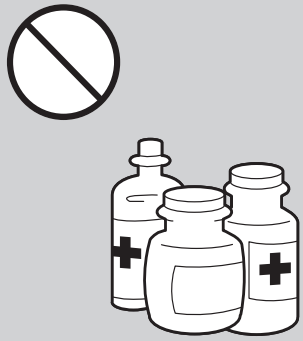


Advise users not to store tall and narrow bottles or food itmes in the door shelves.

- Items may fall out when opening the door causing injury.

Do not allow users to store pharmaceutical products, scientific materials, etc., in the refrigerator.

- The products which need precise temperature control should not be stored in the refrigerator.



Advise users not to plug several appliances into the same socket outlet and not to use extension cables.

- To avoid the risk of fire or product malfunction.

Advise users not to attempt to disassemble, repair or alter the product.

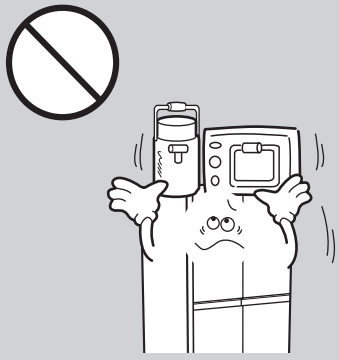
- To avoid the risk of fire or product malfunction.

Advise users not to bend the power cord with excessive force and ensure it is not restricted or trapped by heavy items.

- To avoid the risk of fire.

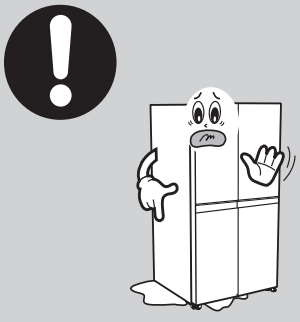
Advise users not to store items on top of the product.

- Opening or closing the door may cause items to fall down causing injury.

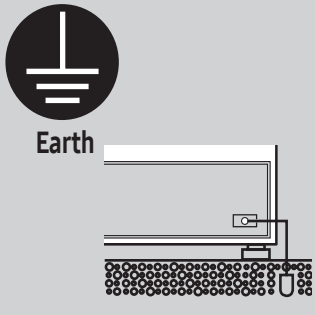


Advise users not to install the refrigerator in the wet place or damp areas.

- To avoid the risk of fire and electric shock



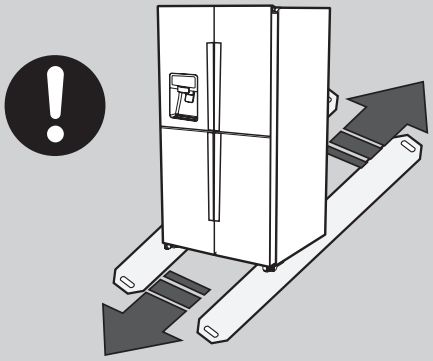
In order to reduce the risk of electric shock the appliance must be properly grounded.



PRECAUTIONS(SAFETY WARNINGS)

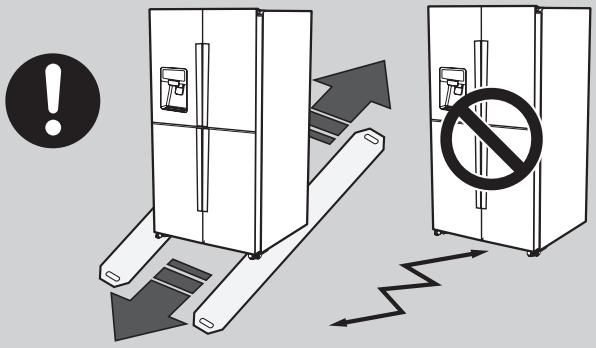
FLOORING

To ensure that the product is properly installed, the refrigerator must be installed on a level, solid surface that is the same height as the rest of the flooring. The surface should be strong enough to support a fully loaded refrigerator.



MOVING

Protect the finish of the flooring. Cut a large section of cardboard carton and place it under the refrigerator where you are working.
When moving the product, make sure that you pull the unit straight out and push it back straight in.



2. PRODUCT SPECIFICATIONS

2-1. Introduction of Main Function

■ A newly developed DACOR T-type refrigerator in 2022 has the following characteristics.

Image	Feature
	**Beverage Center** **- Autofill Pitcher / Water Dispenser** **- (+) Washable Nozzle + Water filter** • Enjoy quick and easy access to refreshingly cold and naturally flavored water. The Beverage Center is inside the fridge and less exposed to air, reducing the risk of contamination. It includes an Autofill Pitcher that is automatically filled with purified water, which can be infused with fruits and herbs, so it's ready to serve instantly. And it has a stainless nozzle that is easy to detach and wash.
	**Dual Auto Ice Maker** • Make sure you are always prepared for any occasion with two different types of ice. The Dual Auto Ice Maker has two separate ice makers that make regular Cubed Ice and Ice Bites. The Ice Bites are smaller and chill drinks much faster, so they are especially good for families with children. It can make 5.3 lbs of ice a day and store up to 7.7 lbs*. And because it is in the freezer instead of the door it frees-up storage space in the fridge.
	**Built-in Looking Flat Door** • Elevate your kitchen with clean and clutter-free styling. Its timelessly minimalist exterior, has beautiful flat doors, no external water dispenser and recessed handles.
	**Simple UX LED Display** • Enjoy a stylish and easy way to access the controls. The simple LED display enhances the minimalist design as it's discretely hidden inside.

PRODUCT SPECIFICATIONS

■ A newly developed DACOR T-type refrigerator in 2022 has the following characteristics.

Image	Feature
DIGITAL INVERTER	**High Energy Efficiency (Digital Inverter Compressor)** • Samsung Digital Inverter Compressor smartly controls its speed to deliver only as much cooling as needed whereas the conventional compressor always runs at its maximum level. This variable speed control can significantly enhance the compressor lifetime with perfect performance and that is how Samsung can proudly guarantee 10 year warranty on our compressor.
	**BPA Free Autofill Water Pitcher** BPA FREE • Eco-friendly Autofill Water Pitcher without detection of environmental hormone Bisphenol A.

PRODUCT SPECIFICATIONS

2-2. Product Specifications

Models		DRF36C500*
Net Capacity	Total (Cu.ft)	22.8Cu.ft
	Freezer (Cu.ft)	9.1Cu.ft
	Refrigerator (Cu.ft)	13.7Cu.ft
Dimensions (Width * Depth * Height)		35 7/8” * 28 ½” * 70”
Dimensions of Package (Width * Depth * Height)		38 ¼” * 30 ½” * 75 ¾”
Rated Voltage (V) / Rated Frequency (Hz)		AC 115V / 60 Hz
Refrigerant		R-600a
Refrigerant Charging Volume		85g
Product Weight (kg)		132kg
Weight of Packaged Product (kg)		141kg

2-3. Comparison of Specifications

Model			DRF36C500*
Cooling system			MONO Cooling
Energy Grade			E-Star
Components for Freezer	Compressor	Model	NF94R9151ATE01
		Starting type	BLDC
		Oil Charge	200 ± 10cc
	Evaporator	Freezer	Split Fin Type
		Refrigerator	-
	Condenser		Forced Convection Type
	Dryer		Molecular sieve, XH-9, 6g
	Capillary tube (D × L)		ID0.75, 3500mm ID0.85, 3500mm
	Refrigerant		R-600a
	Refrigerant Input Amount		85g

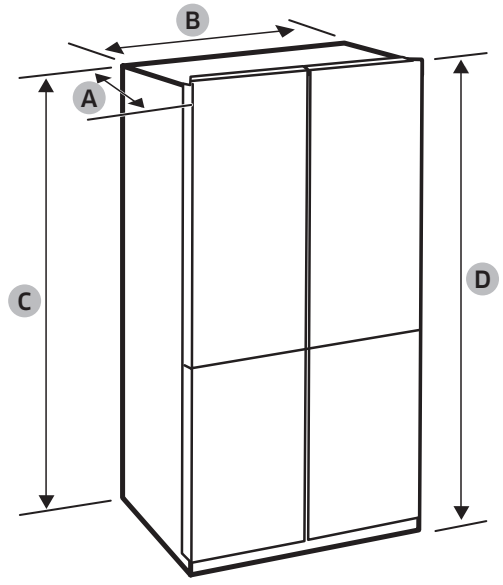
Model				DRF36C500*
Freezer performance				★★★★ (4 stars)
Defrost Related Components	Defrosting interval	First Defrost Cycle (Concurrent defrost of F and R)		6hr ± 10 min
		Defrost Cycle (FRE)		12 ~ 48hr (depending on the operating conditions)
		Defrost Cycle (REF)		-
		Pause time		1min ~ 10min ± 1 min
	Defrosting sensor	F defrosting - sensor	Model no.	THERMISTOR (DTN-C502)
			Specifications	5.0 kΩ at 77 °F (25 °C)
		R defrosting - sensor	Model no.	-
			Specifications	-
	Bimetal (FRE)		Model no.	BIMETAL THERMOSTAT
			Operating temperature	Off : 140 °F (60 °C) / On: 104 °F (40 °C)
	Bimetal (CV)		Model no.	-
			Operating temperature	-
	THERMO-FUSE(FRE)		Model no.	THERMO-FUSE
			Operating temperature	109(110) °C OFF
	THERMO-FUSE(CV)		Model no.	-
			Operating temperature	-

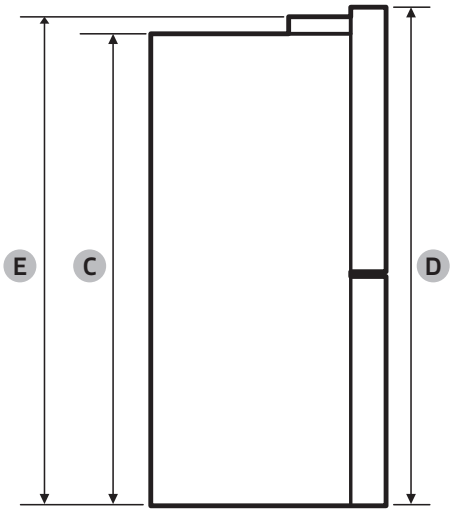
PRODUCT SPECIFICATIONS

Model			DRF36C500*
Electric Components	Heater	FRE	AC 120V 230W
		REF	-
		French	AC 120V 10W
		Water tank	DC12V 2.3W
		Dispenser	-
		Ice water supply pipe	-
		Ice water drain pipe #1	DC12V 2.3W
		Ice water drain pipe #2	DC12V 2.3W
		ICE Room	-
		Damper	-
		LEFT DOOR(OPTION)	AC 120V 11W
		RIGHT DOOR(OPTION)	-
	Motor	FRE	BLDC(12035GE-12M-YT-F1), ϕ120 10Wing.
			CW 12VDC 2.28W, 1775rpm
		REF	-
		Machine Compartment	BLDC(Z19W12MS1A5-52K09), ₡160 5Wing, CCW 12VDC 1.32W, 1080rpm
		Damper	DC Step, 12VDC, Heater 3W
	Lamp LED	FRE(L,R)	Top: 3 Lamps * 1ea
		REF	Top: 5 Flat Lamps * 2ea
	Door Switch	FRE	Reed switch (DC 200V, 0.5A, MDCG-4)
		REF	Reed switch (DC 200V, 0.5A, MDCG-4)
	Rated Voltage		AC 115V, 60Hz
	Power Cord		AC 125V, 10A
	Earth Screw		BSBN (BRASS SCREW)

PRODUCT SPECIFICATIONS

2-4. Dimensions

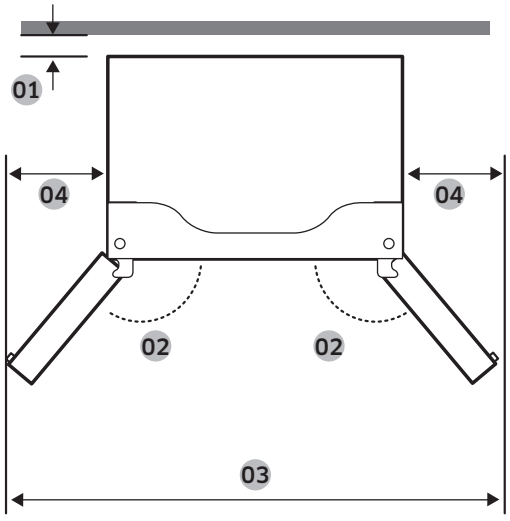


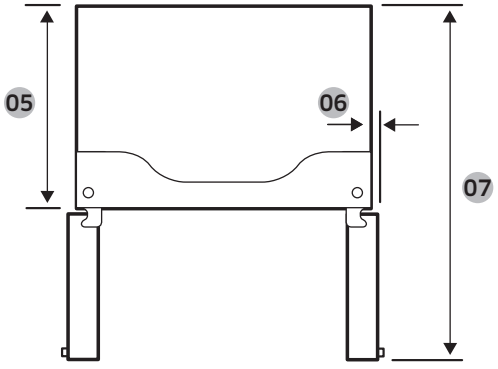


A. Depth
B. Width
C. Height (without hinge)
D. Overall Height
E. Height (With hinge)

Model	DRF36C**
A	28 ½" (723 ㎜)
B	35 7/8" (912 ㎜)
C	68 7/8" (1748 ㎜)
D	70" (1779 ㎜)
E	70" (1778 ㎜)

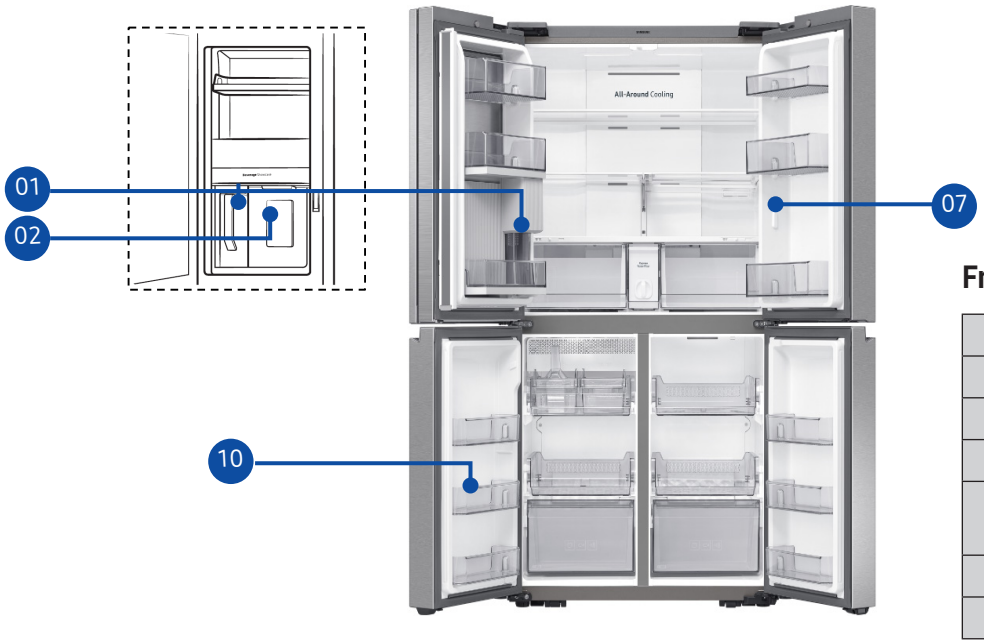
PRODUCT SPECIFICATIONS





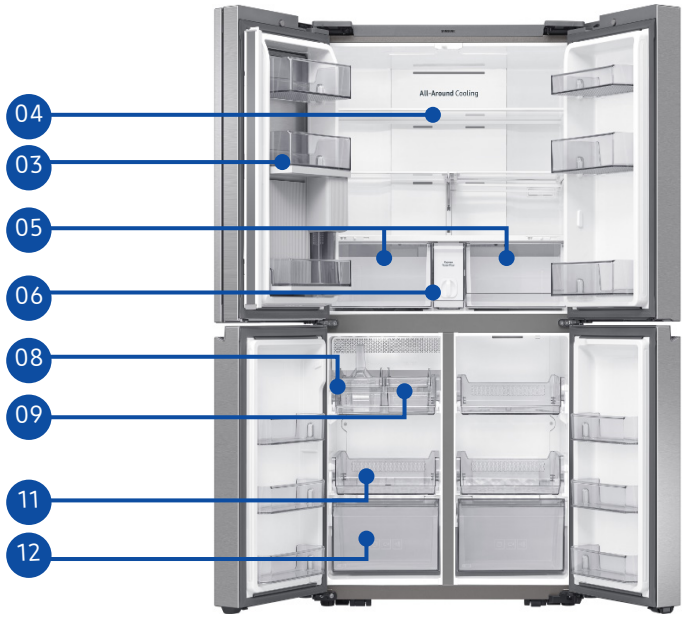
Model	DRF36C**
01	2” (50 ㎜)
02	125º
03	58” (1472 ㎜)
04	11 1/8” (282 ㎜)
05	24” (610 ㎜)
06	1 7/8” (47 ㎜)
07	43” (1093 ㎜)

2-5. Product Views



Fridge Compartment

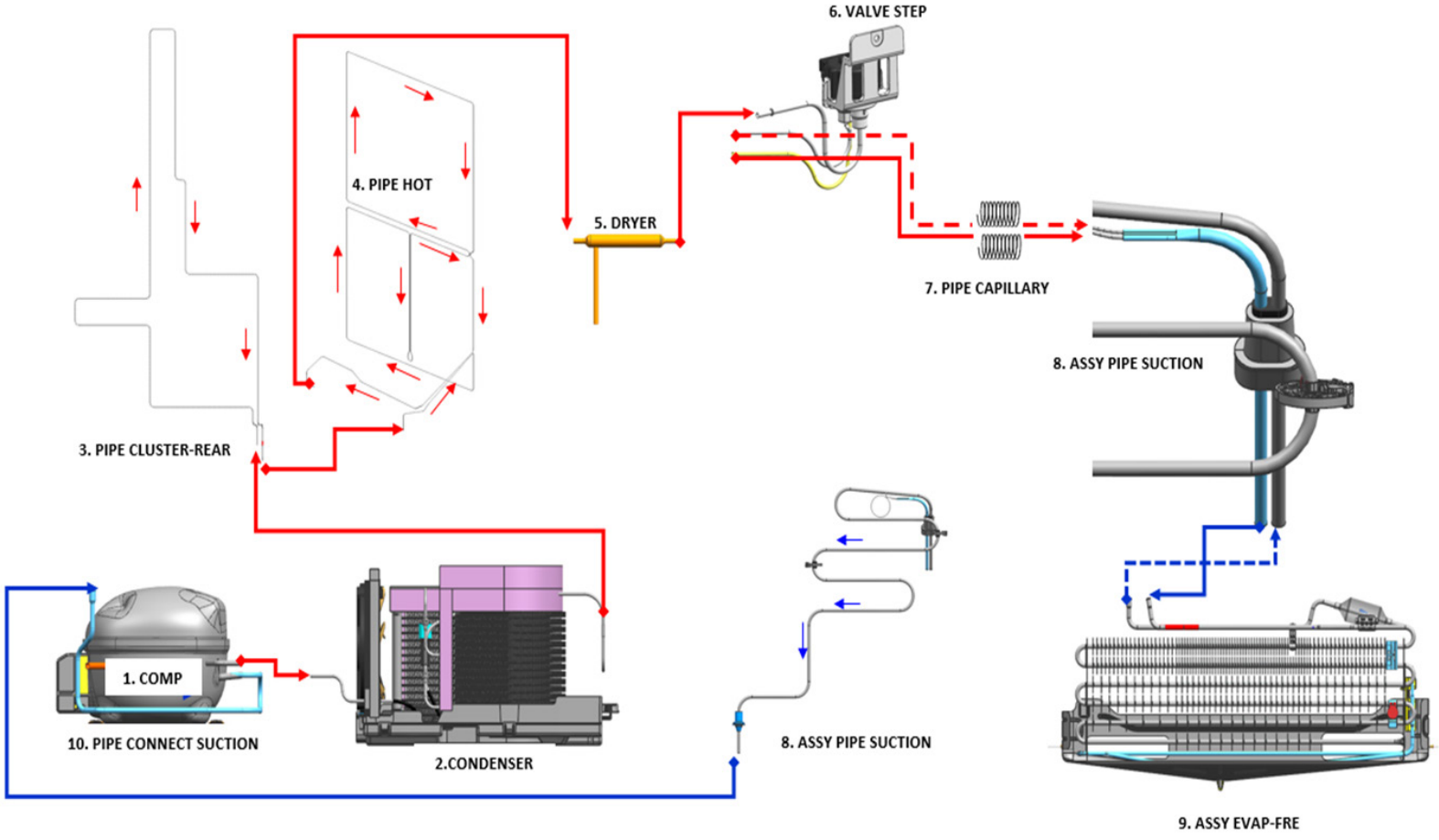
01	AutoFill pitcher
02	Water dispenser
03	Fridge door bin
04	Fridge shelf
05	Fruits and vegetables drawer
06	Water filter
07	Control panel



Freezer Compartment

08	Auto ice maker - Cubed Ice
09	Auto ice maker - Ice Bites
10	Freezer door bin
11	Freezer shelf
12	Freezer drawer

2-6. Refrigerant Route in Refrigeration cycle



2-7. Operation theory of refrigeration cycle components

■ Condenser

1) Role: A device which radiates heat to the outside (water/air) to make liquid state for the high temperature / high pressure gas refrigerant discharged from compressor

2) Types

A. Air-cooling Type : Condense air by circulating naturally or manually.

1) Natural Convection Type : Used for the household refrigerator which has small condensing capacity.

2) Manual Convection Type : Circulate air manually by FAN-Motor (Large capacity)

B. Water-cooling Type : Make cooling water pass through the pipe in the condenser (Large capacity)

※ Location

① CLUSTER heat-radiating type : All Pipes effective for radiating heat are formed in the right/left, and front side of refrigerator with hard urethanes and radiate heat through the whole surfaces of cabinet to ambient air.

② Install the condenser on the outside of the product. (An old model)

③ Make them cluster at the lower part of product and radiate heat manually by fan.

※ Radiate condensed potential heat up to liquefy completely and make change the state without changing the gas temperature itself.

※ Pipe thickness

① Micro-channel tube : 0.34mm ② Steel Pipe : 0.5, 0.7mm ③ Capillary : About 0.4~0.8mm

※ Condenser length

① CONDENSER : 0.52m × 14Pcs (Parallel) ② HOT-PIPE : 10.5m ② PIPE CLUSTER-REAR : 4.38m

■ Capillary

1) Role: A device which makes low temperature and pressure refrigerant by reducing the pressure the normal temperature / high pressure liquid refrigerant condensed from condenser, and supply it to the evaporator.

A. To evaporate more lower temperature in case of evaporation.

B. It flows to the evaporator without back flowing to condenser, if compressor stops, and the difference of pressure between high pressure and low pressure is small so it is easy to operate the compressor again.

2) Outline

A. Thickness : About 0.4~0.8mm

B. Length : It is changeable to low temperature and pressure (10->5ßΠ/ß≤) depends on the 2M of thin and long copper pipe wall resistance.

■ Evaporator

1) Role: As the low pressure liquid refrigerant flowed from capillary absorbs heat inside of the refrigerator, it becomes low pressure gas and refrigerate the foods.

2) Theory: The low pressure refrigerant flowed to evaporator operates cooling which takes ambient evaporated potential heat with maintaining the evaporation up to evaporate completely.

3) Types:

A. ROLL-BOND Evaporator → Direct Cooling

☞ Rolled and adhere the 2 aluminum plate and then make refrigerant passage.

B. FIN-PIPE Evaporator → Indirect cooling

☞ A small aluminum plate on the aluminum pipe to increase the cooling effect.

PRODUCT SPECIFICATIONS

■ Compressor

1) Role: It operates same as pump which pull out the subterranean water. It inhales the low temperature and pressure refrigerant gas (flowed out) from evaporator and make high temperature and pressure refrigerant liquid in the compressor and send it to the condenser.

2) Type

A. Back-and-forth motion type: A method that pistol makes back-and-forth motion through shaft and cylinder of motor rotation and compresses. ※ Used for household refrigerant.

B. Rotary Type: A method that inhales the refrigerant gas through the gap between the outside of rotor electric attached on the shaft (rotation axis) and the inside of cylinder and compresses.

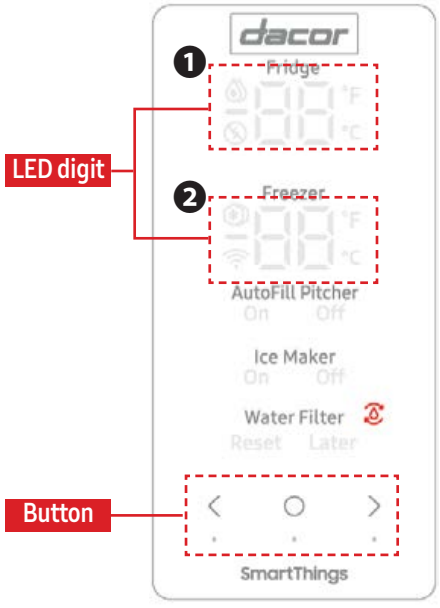
C. Centrifugal Type

■ Dryer

1) Role : Absorb the moisture from the refrigerant that refrigeration cycle circulates and eliminate the foreign substance.

2) Structure : If even some moisture is included refrigerant is impossible to circulate by freezing the small capillary outlet, so silica gel or molecular sieve is (included and) sealed to absorb the internal moisture, and install a minute net to eliminate the foreign substance.

2-8. Control Display



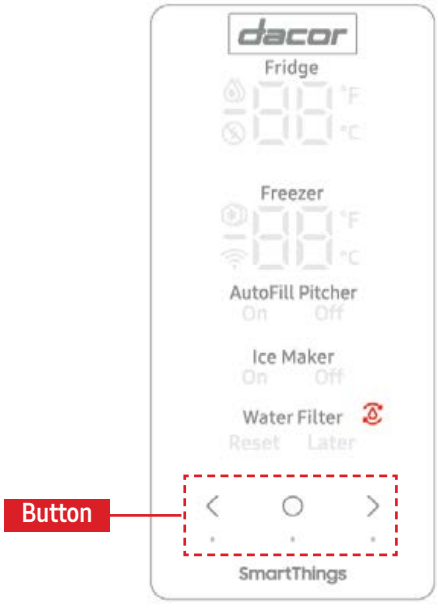
❶ Explanation of Button operation

1. Tap any button (<, O, or >) to wake up the display. This step may not apply to some models.
2. Tap O to select the fridge, freezer or any other functions.
   The selected compartment's indicator or function's indicator blinks.
3. Tap < or > to select the desired temperature or function configuration.
   Refer to the table for available selection for each compartment and function.
4. Wait for 5 seconds or Tap 'O' to confirm your selection.
   The selected compartment's indicator or function's indicator stops blinking.
5. After confirm your selection, If you tap O again within 5 seconds, you can change the setting again from the previously changed item.
6. After confirm your selection, If you tap O after 5 seconds, you can change the function from the first item, Fridge Settings.

NOTE

1. The control panel is designed to stay off when the refrigerator is not in use. It only becomes active and lights up when you open the door or tap the buttons.
2. If the door is left open for 5 minutes, internal light will blink for 5 minutes and turn off. This is to alert hearing-impaired users that a door is open. Note: that this function is normal.
3. Each time you press a button on the control panel, you will hear a short beep.

PRODUCT SPECIFICATIONS



❷ Menu Function

Fridge indicator	· Displays the current or desired temperature of the fridge. · indicates that the Power Cool function is on. · indicates that the Peak Demand Off function is on. (Optional) · indicates that the Vacation functio is on. (Optional) · °F indicates that the Fahrenheit temperature scale function is on. · °C indicates that the Celsius temperature scale function is on.
Freezer indicator	· Displays the current or desired temperature of the freezer. · indicates that the Power Freeze function is on. · indicates that the Network is connected. · °F indicates that the Fahrenheit temperature scale function is on. · °C indicates that the Celsius temperature scale function is on.
AutoFill Pitcher	The AutoFill Pitcher has 2 indicators (AutoFill Pitcher On / Off) to indicate its operating status. · When the AutoFill Pitcher operates, the corresponding indicator (AutoFill Pitcher On) turns on. · When the AutoFill Pitcher is turned off, the corresponding indicator (AutoFill Pitcher Off) turns on. To enable AutoFill Pitcher, you must turn the AutoFill Pitcher on.
Ice Maker (Optional)	The ice maker has 2 indicators (Ice Maker On / Off) to indicate its operating status. · When the ice maker operates, the corresponding indicator (Ice Maker On) turns on. · When the ice maker is turned off, the corresponding indicator (Ice Maker Off) turns on. To enable ice making, you must turn the ice maker on.
Peak Demand (Optional)	The Peak Demand has 2 indicators (Peak Demand On / Off) to indicate its operating status. · When the Peak Demand operates, the corresponding indicator (Peak Demand On) turns on. · When the Peak Demand is turned off, the corresponding indicator (Peak Demand Off) turns on. To enable Peak Demand, you must turn the Peak Demand on.
Water Filter (Optional)	turns red to indicate that the water filter needs to be replaced.
Buttons	· When the display is off, tap any button to wake up the display. · Use O to select the fridge or freezer and ‹ or › to select the desired temperature or function for the selected compartment.

PRODUCT SPECIFICATIONS

❸ Setting the desired temperature or function

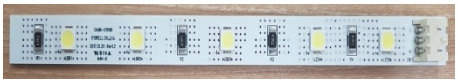
Fridge	· When the Fridge temperature indicator blinks, press the '‹' key to set it as follows 7 °C → 6 °C → 5 °C → 4 °C → 3 °C → 2 °C → 1 °C → (Power Cool) 44°F→43°F→42°F→41°F→40°F→39°F→38°F→37°F →36°F→35°F→34°F→ (Power Cool) · When the Fridge temperature indicator blinks, press the '›' key to set it as follows (Power Cool) → 1 °C → 2 °C → 3 °C → 4 °C → 5 °C → 6 °C → 7 °C (Power Cool) → 34°F →35°F →36°F →37°F →38°F →39°F →40°F →41°F →42°F →43°F →44°F · Power Cool speeds up the cooling process at maximum fan speed. The fridge keeps running at full speed for two and a half hours and then returns to the previous temperature.
Freezer	· When the Freezer temperature indicator blinks, press the '‹' key to set it as follows. -15 °C → -16 °C → -17 °C → -18 °C → -19 °C → -20 °C → -21 °C → -22 °C → -23 °C → (Power Freeze) 5°F→ 4°F→ 3°F→ 2°F→ 1°F→ 0°F → -1°F→ -2°F→ -3°F→ -4°F→ -5°F→ -6°F→ -7°F→ -8°F→ (Power Freeze) · When the Freezer temperature indicator blinks, press the '›' key to set it as follows. (Power Freeze) → -23 °C → -22 °C → -21 °C → -20 °C → -19 °C → -18 °C → -17 °C → -16 °C → -15 °C (Power Freeze) → -8°F→ -7°F→ -6°F→ -5°F→ -4°F→ -3°F → -2°F→ -1°F→ 0°F→ 1°F→ 2°F→ 3°F→ 4°F→ 5°F . Power Freeze speeds up the freezing process at maximum fan speed. The freezer keeps running at full speed for 50 hours and then returns to the previous temperature. To freeze large amounts of food, activate Power Freeze for at least 20 hours before putting food in the freezer. · When you use Power Freeze function the energy consumption of the refrigerator will increase. Remember to turn it off when you don't need it and return the freezer to your original temperature setting.
°F ↔ °C	· Available selection: °F ↔ °C · You can switch the temperature scale between Fahrenheit and Celsius. To switch the temperature scale, Tap O until °F / °C indicator blinks. When °F / °C indicator blinks, Tap ‹ to change the current temperature scale to Fahrenheit. When °F / °C indicator blinks, Tap › to change the current temperature scale to Celsius.
Peak Demand	· The Peak Demand On/Off function activates/deactivates Smart Grid. · Available selection: Peak Demand On ↔ Off · You can turn on or off Peak Demand. To change the setting of Peak Demand Off, Press the ‹ key for 3 seconds, while not changing other display settings. When the Peak Demand Off function is deactivated, if you press ‹ key for 3 seconds the Peak Demand Off function will be activated.( ) When the Peak Demand Off function is activated, if you press ‹ key for 3 seconds the Peak Demand Off function will be deactivated.

PRODUCT SPECIFICATIONS

❸ Setting the desired temperature or function

AutoFill Pitche	· Available selection: AutoFill Pitcher On ↔ Off · You can turn on or off the AutoFill Pitcher. To change the settings of the AutoFill Pitcher, press O until the On / Off indicator on the AutoFill Pitcher blinks. When the On / Off indicator on the AutoFill Pitcher blinks, click ‹ to set to AutoFill Pitcher On. When the On / Off indicator on the AutoFill Pitcher blinks, click › to set to AutoFill Pitcher Off.
Ice Maker	· Available selection: Ice Maker On ↔ Off · You can turn on or off the Ice Maker. To change the settings of the Ice Maker, press O until the On / Off indicator on the Ice Maker blinks. When the On / Off indicator on the Ice Maker blinks, click ‹ to set to Ice Maker On. When the On / Off indicator on the Ice Maker blinks, click › to set to Ice Maker Off.
Water Filter	The water filter replacement icon( ) blinks to alert the user that it is time to replace the water filter. You can replace the water filter immediately and reset the water filter replacement alarm, or dismiss the alarm if you want to change the water filter later. 1. Tap any buttons (‹, ○, or ›) to wake up the display. - This step may not apply to some models. 2. Tap ○ until the Water Filter indicator blinks. 3. Tap ‹ or › to select Reset or Later. - If you have changed the water filter, tap ‹ to reset the water filter replacement alarm. - If you want to change the water filter later and dismiss the alarm, tap ›. 4. Wait for 5 seconds or tap O to confirm your selection. - The Water Filter indicator stops blinking.
Door Alarm	· There is no Door Alarm Icon. But If the door is left open for more than 2 minutes, the alarm will sound. If the door is left open for 5 minutes, internal light will blink for 5 minutes and turn off.

2-9. Optional Material Specification

Photograph	Part Name	Part Code	Amount
	FILTER WATER-ASSY	DA63-08839C	1
	ASSY LAMP LED(REF)	DA96-01119B	2
	ASSY LAMP LED (FRE-L, FRE-R)	DA41-00519R	2

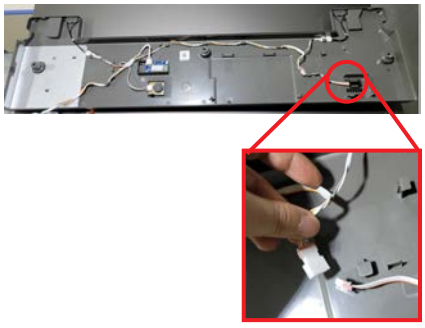
3. DISASSEMBLY AND REASSEMBLY

3-1. Precautions

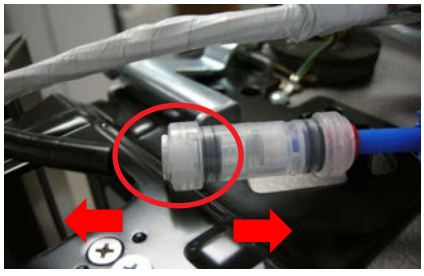
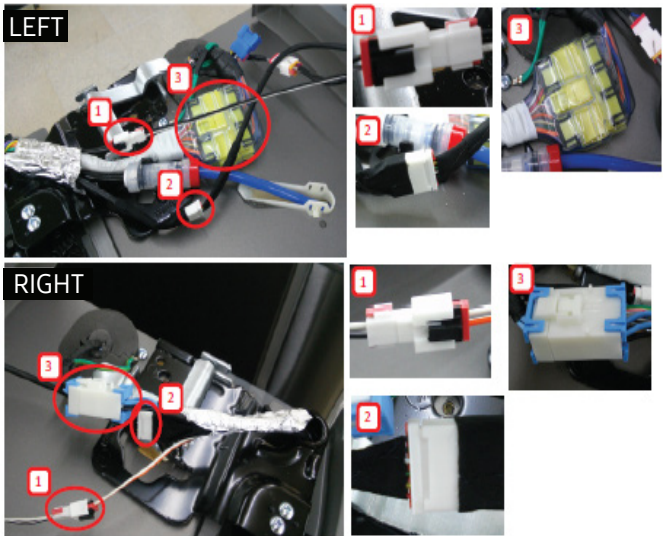
■ **Required Tools**

Image	Item
	(+) screw driver
	(-) screw driver
	Hexagon wrench (2 mm diameter)
	Long nose pliers
	Box wrench (12 mm) - To disassemble the compressor
	Box wrench (10 mm) - To disassemble the hinge Lower

3-2. Assy Top Table

Part name	How To Do	Descriptive Picture
Assy Top Table (Sensor-Temp)	1. Remove 3 screw fixing Top Table Cover with the (+) screw driver and open.	
	2. Disconnect the housing connectors from the Assy Top Table. ※ The number of housing connector may differ depending on the model. CAUTION Be sure to unplug the power cord before performing the operation above.	
	[Sensor-Temp] 3. Unsnap connectors of HUM-TEMP Sensor.	

3-3. Fridge Door

Part name	How To Do	Descriptive Picture
Fridge Door (Ref)	1. Remove the 3 screws fixing the Top Table and separate the Top Table. ※ Refer to the previous explanation "Disassembly and Reassembly way for 3-2."	
	2. As shown in the picture, Remove water tube from hinge by holding at the both sides of the Tube Fitting and pulling it out.	
	3. Remove the Tube Fitting by pulling the water hose after pushing in the locking ring tab at the end of the Tube Fitting.	
	4. Remove the three housing connectors of the upper left hinge of the refrigerator door. Also, remove the three housing connectors of the upper right hinge of the refrigerator door. To remove the housing connector more easily, press the fixed HOOK and pull the connector. NOTE The housing quantity depends on the model. CAUTION Be sure to unplug the power cord before doing the above task.	

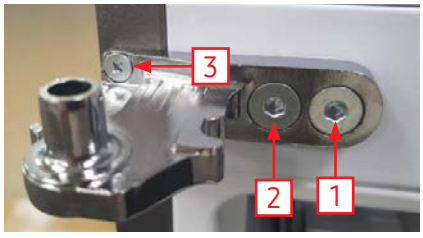
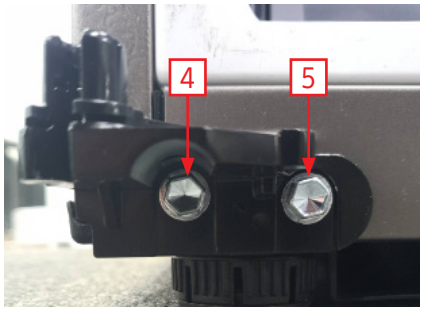
DISASSEMBLY AND REASSEMBLY

Part name	How To Do	Descriptive Picture
Fridge Door (Ref)	5. Lift up the FIXER LEVER on left/right side and remove it. CAUTION Recommend 2 persons to remove door panel to prevent damage from falling.	 
	6. Remove the upper Hinge and then lift up the Door and disassemble it. ※ Disassembly process of the left door is the same as the right.	 

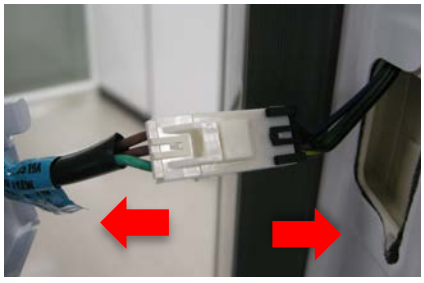
3-4. Freezer Door

Part name	How To Do	Descriptive Picture
Freezer Door (Fre)	1. Open the freezer compartment door and remove the screw fixing the hinge cover at the bottom with the (+) screw driver. CAUTION Disassemble the freezer door only after disassembling the fridge door.	
	2. Unsnap connectors of housing connectors at the bottom. CAUTION Be sure to unplug the power cord before performing the operation above.	
	3. Remove the Grommet surrounding the Hinge Mid.	
	4. Check the position of the freezer compartment door hinge shaft through the hinge hole, put in a hexagonal wrench in the opposite angle direction, and press the freezer compartment hinge shaft to separate. CAUTION Must working more than 2 people. One person grab the door to prevent falling door.	 
	5. Tilt the freezer compartment door forward so that it does not interfere with the middle hinge and then lift the door up to separate it completely.	

3-5. Hinge Mid/ Low

Part name	How To Do	Descriptive Picture
Hinge Mid	1. Remove the 1 screw (③) with a (+) screw driver and remove the 2 bolts (①, ②) with a 4.95mm hexagonal wrench to separate the middle hinge. ※ When reassembling the hinge, be sure to fix it in the following order to prevent the hinge from moving. : Bolt (①) → Bolt (②) → Screw (③)	
Hinge Low	1. Remove the 2 bolts (④, ⑤) with a 10 mm socket wrench and then separate the lower hinge. ※ When reassembling the hinge, be sure to fix it in the following order to prevent the hinge from moving. : Bolt (④) → Bolt (⑤)	

3-6. French

Part name	How To Do	Descriptive Picture
French	1. Remove 2 screws fixing French with the (+) screw driver.	
	2. Lift the French upward perpendicularly to separate it. (Refer to the figure)	
	3. Separate the housing connector inside the French. CAUTION Be sure to unplug the power cord before performing the operation above.	

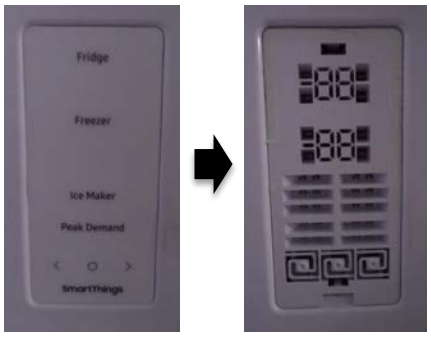
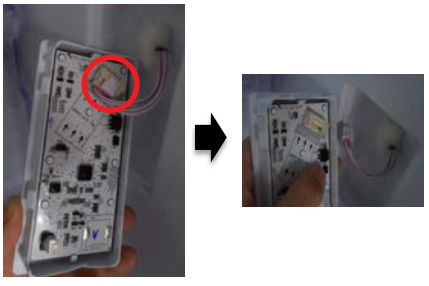
NOTE

The French here refers to the part that looks like a long stick between the left and right fridge doors.
(It prevents cold air from escaping through the gap between the left and right doors.)

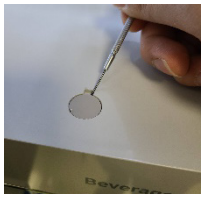
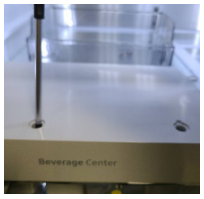
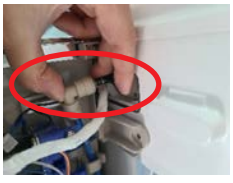
3-7. Gasket door

Part name	How To Do	Descriptive Picture
Gasket door	1. Remove the 'French' before removing the 'Gasket Door' on the left side of the fridge. ※ Refer to the previous explanation "Disassembly and Reassembly way for 3-8."	
	2. Pull the corners of gasket.	 
	3. Pull the rest of gasket.	

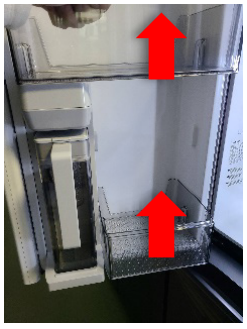
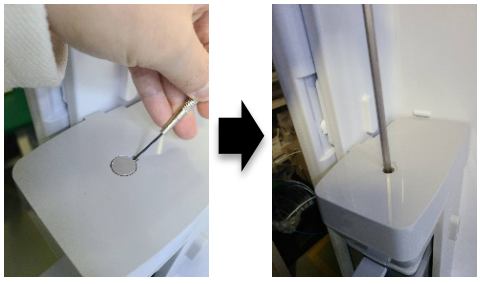
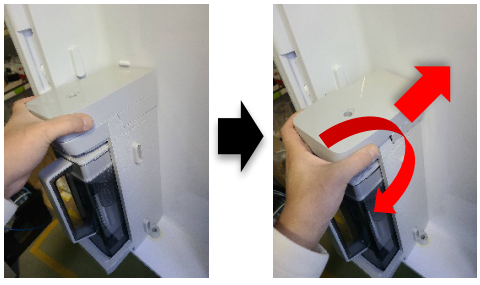
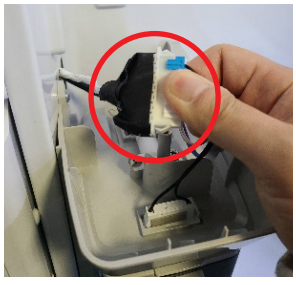
3-8. Cover-Display

Part name	How To Do	Descriptive Picture
Cover-Display	1. Remove the Inlay. CAUTION Do not remove the Inlay randomly. CAUTION Please disassemble Display when it needs to replace Panel PCB during the order "Self Diagnosis & Trouble Shooting".	
	2. Push between RELECTOR and LINER with the (-) screw driver. ※ Insert the screwdriver vertically to the end.	 Push Point
	3. Tilt the screw driver down and pull the display.	 Tilt Down
	4. Disconnect Housing.	
	5. If you want Assemble, do reverse this process.	

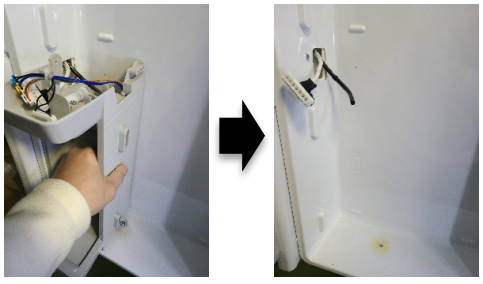
3-9. Dispenser (BSC) - Optional

Part name	How To Do	Descriptive Picture
Dispenser (BSC)	1. Lift and remove the Guard at the top of the Dispenser. (BSC)	
	2. Remove the 3 screws fixing the Dispenser cover.	 
	3. Lift the Dispenser cover upward perpendicularly to separate it. (Refer to the figure)	 
	4. Remove the left/right side 2 screw and lift the STS cover.	 
	5. Remove the Tube Fitting by pulling the water hose after pushing in the locking ring tab at the end of the Tube Fitting.	
	6. Unsnap connectors of housing connectors at the top	
	7. Remove left/right side 2 screw and lift dispenser up to remove ※ Slide back from the front to remove.	  

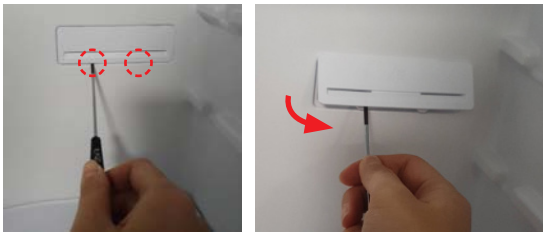
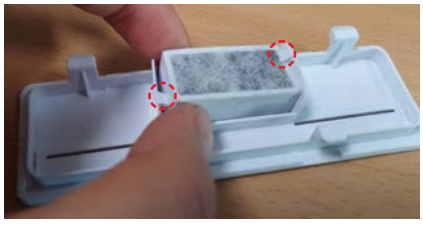
3-10. Auto fill - Optional

Part name	How To Do	Descriptive Picture
Auto fill	1. Lift and remove Guards at the top and right of the AUTO FILL.	
	2. Remove the 1 screw fixing the COVER.	
	3. Lift the AUTO FILL cover upward perpendicularly to separate it (Refer to the figure)	
	4. Remove the Tube Fitting by pulling the water hose after pushing in the locking ring tab at the end of the Tube Fitting.	
	5. Unsnap connectors of housing connectors at the top.	

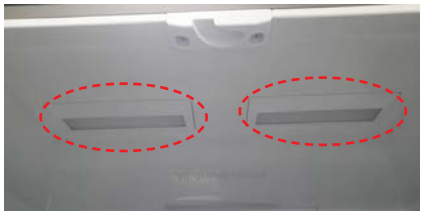
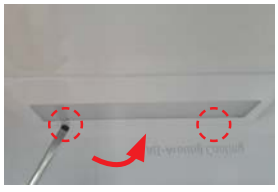
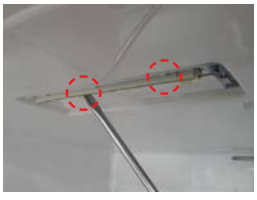
DISASSEMBLY AND REASSEMBLY

Part name	How To Do	Descriptive Picture
Auto fill	6. Remove right side and bottom side screws.	
	7. Lift and remove THE CASE.	

3-11. Cover Deodorizer

Part name	How To Do	Descriptive Picture
Cover Deodorizer	1. Insert a flat head screwdriver following the arrow symbol(▽) on the back side of COVER DEODORIZER and pull back the hook	
	2. Remove the Deodorizer from COVER DEODORIZER (2-hooks)	

3-12. Fridge Internal Lamp

Part name	How To Do	Descriptive Picture
Fridge Internal Lamp (upper side)	※ The decomposition assembly structure of the 2 Case Lamp is the same.	
	1. Insert a flat head screwdriver following the arrow symbol on the back side of COVER LAMP and pull back the hook. (2 points)	 
	2. Separate it from the opposite side by pulling it manually.	 
	3. Insert a flat head screwdriver on the hooks of LED LAMP and unfasten them. Then separate LED LAMP from hook (2 points)	 
	4. Press the back side of hook and Remove the connector from the LED LAMP. ※ After change LED LAMP, assemble it in reverse order	 

3-13. Freezer Internal Lamp

Part name	How To Do	Descriptive Picture
Freezer Internal Lamp (lower side)	1. Insert the (-) screw driver into the hook at the back and pull the internal lamp cover forward to separate it. (2 points) CAUTION Take care not to scratch the cabinet or damage the hook CAUTION Be sure to unplug the power cord before performing the operation above.	
	2. Remove the connector from the LED by lifting and then pulling it to the direction of the arrow on the right.	
	3. Press the back side of hook and Remove the connector from the LED LAMP. ※ After change LED LAMP, assemble it in reverse order	

3-14. Shelf Fridge

Part name	How To Do	Descriptive Picture
Shelf Ref Up	1. Lift the shelf up slightly and pull it	
Shelf Ref / Quick Shelf	1. SHELF REF / QUICK SHELF Press in different directions to unlock fixer tab	 
	2. Lift the shelf up slightly and pull it	 

3-15. Vegetable Shelf

Part name	How To Do	Descriptive Picture
Vegetable Shelf	1. Lift the shelf up slightly and pull it.	
	2. Pick up the front of the shelf.	
	3. Turn clockwise from the right to disassemble.	

3-16. Assy Case Veg - Low

Part name	How To Do	Descriptive Picture
Assy Case Veg-Low	1. Grab the bottom handle of the ASSY CASE VEG-LOW	
	2. Pull it up and pull it out.	
	3. Lift it up and disassemble it.	

3-17. Assy Water Filter - Optional

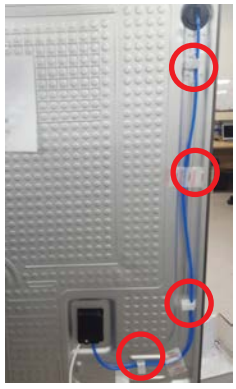
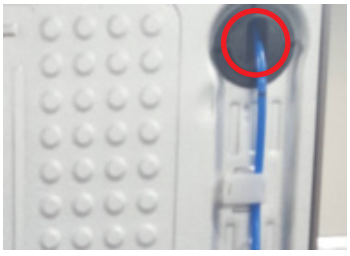
Part name	How To Do	Descriptive Picture
Assy Water Filter	1. Turn the water filter count-clockwise. (Refer to the picture)	
	2. Remove the water filter by pulling it. (Refer to the picture)	
	3. Push the water filter directly.	
	4. Turn the water filter clockwise until it locked.	

CAUTION Be sure to flush the dispenser thoroughly (approx. 6 to 7 minutes), otherwise water may drip from the dispenser. This means that there is still air in the line.

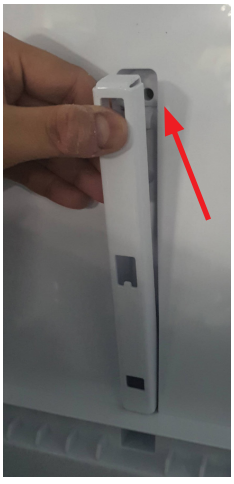
3-18. Case Water Filter - Optional

Part name	How To Do	Descriptive Picture
Case Water Filter	1. Remove the water filter and all drawers and shelves.	
	2. Remove the Tube Fitting by pulling the water hose after pushing in the locking ring tab at the end of the Tube Fitting.	
	3. Remove 1 screw with the (+) screwdriver.	
	4. Remove the left and right latches of the filter case.	
	5. Remove the housing of the Case water Filter.	

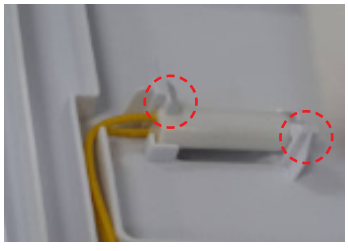
DISASSEMBLY AND REASSEMBLY

Part name	How To Do	Descriptive Picture
Case Water Filter	6. Pull out the water hose(blue) from the tube fitting by pushing in on the locking ring.	
	7. Remove three fixer securing the water tubes.	
	8. Pull the Water blue hose out.	
	9. Lift and pull the Case Water Filter out.	

3-19. Angle Shelf

Part name	How To Do	Descriptive Picture
Angle Shelf	1. First remove the filter or BOX.	
	2. Remove screw 2EA.	 
	3. Pull the ANGLE upward to remove it.	

3-20. REF-COVER MULTI

Part name	How To Do	Descriptive Picture
REF Multi Cover	1. Remove the 2 screws from both sides of the EVAP Cover.	
	2. Pull the cover out and down.	 
	3. Disconnect wire connector from cabinet housings (Sensor)	
	4. Disassemble the hook and lift the EPS → Replace the sensor.	 
	[Temp-Sensor] 5. Sensor must be fixed by sensor hooks.	

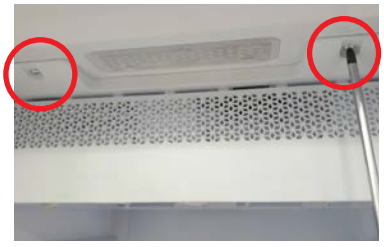
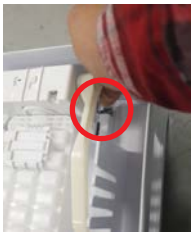
3-21. Ice Bucket - Optional

Part name	How To Do	Descriptive Picture
Ice Bucket	1. Open the left freezer door.	
	2. Pull the top slide shelf forward.	
	3. Lift the Ice bucket off the slide shelf and remove it.	

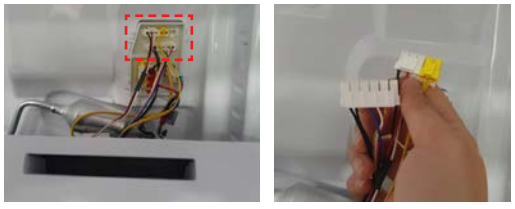
3-22. Assy Case Basket-Low

Part name	How To Do	Descriptive Picture
Assy Case Basket-Low	1. Grab the bottom handle of the ASSY CASE BASKET-LOW.	
	2. Pull it up and pull it out.	
	3. Lift it up and disassemble it.	

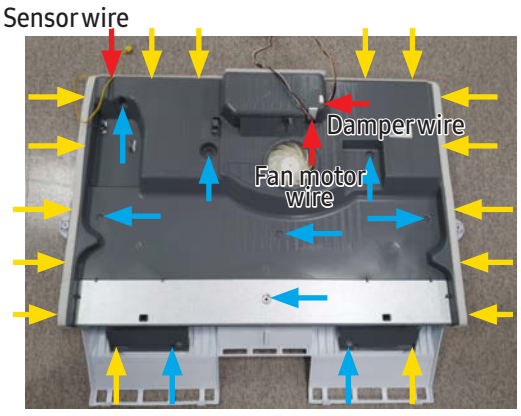
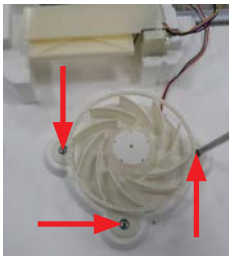
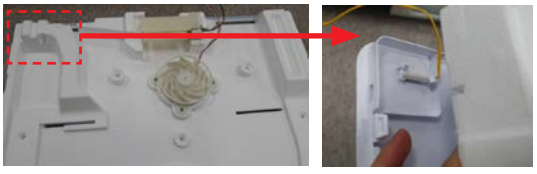
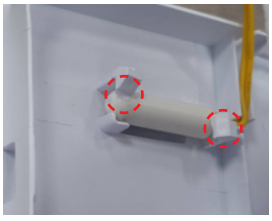
3-23. Assy Ice Maker - Optional

Part name	How To Do	Descriptive Picture
Assy Ice Maker	1. Release 2 fixed SCREW points.	
	2. Separate the HOUSING connected to the upper part.	 
	3. (When the CUBE ICE is replaced) Press the motor fixing RIB and push the motor out.	 
	4. When the glacier wire is removed, it is completely separated.	
	5. (When the NUGGET ICE is replaced) Press the motor fixing RIB and push the motor out.	 
	6. When the glacier wire is removed, it is completely separated.	

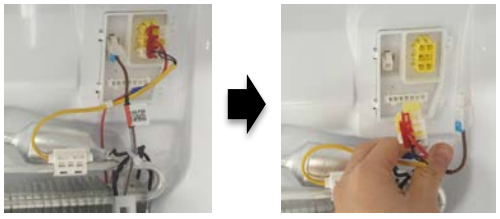
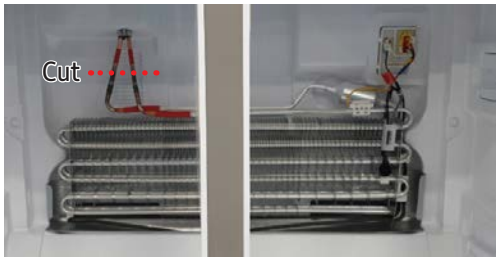
3-24. FRE EVAP Cover

Part name	How To Do	Descriptive Picture
FRE EVAP Cover	1. Remove the 2 screws from Partition and Pull out to the right	
	2. Remove the 2 screws from both sides of the EVAP Cover.	
	3. Pull the cover out and down.	
	4. Disconnect all wire connectors from cabinet housings.	
	5. Rotate the Evap Cover to the right and pull it out.	

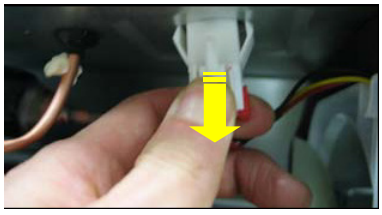
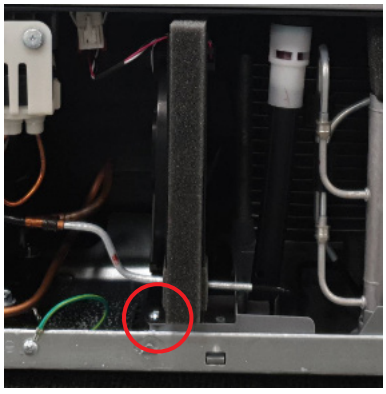
DISASSEMBLY AND REASSEMBLY

Part name	How To Do	Descriptive Picture
FRE Evap Cover	6. Remove the Rear Cover to replace F-Sensor or Fan Motor or Damper a) Disassemble all wires from each fixers. b) Remove 9 screws (Blue Arrow in picture) c) Disassemble 16 hooks from Front Cover (Yellow Arrow in picture)	
	7. Remove the Insulation Rear and Replace a Damper	
	8. Remove the 3 screws and Replace a Fan motor CAUTION Do not touch Fan blades	
	9. Lift the EPS and Replace the sensor.	
	[Temp-Sensor] 10. Sensor must be fixed by sensor hooks	

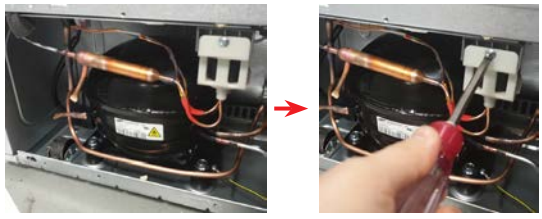
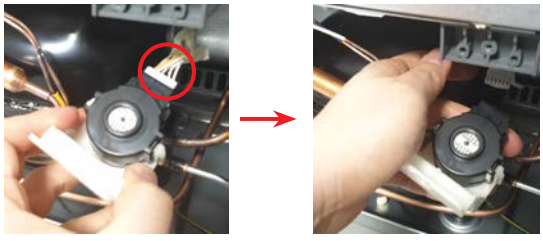
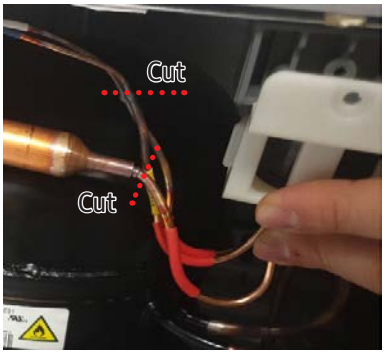
3-25. Evaporator

Part name	How To Do	Descriptive Picture
Evaporator	1. Remove all the shelves and drawers.	Refer Ref Evap Cover page
	2. Pull the bottom part of the EVAP Cover forward to separate it. Separate the housing connector.	Refer Ref Evap Cover page
	3. Separate the housing connector from the evaporator.	
	4. Separate the evaporator. ※ Leave it to Expert to pull out Evaporator by Cutting Pipe. CAUTION Refrigerant R-600A is explosive	

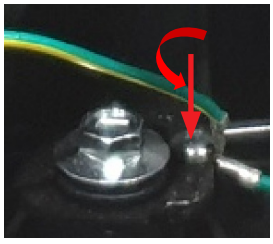
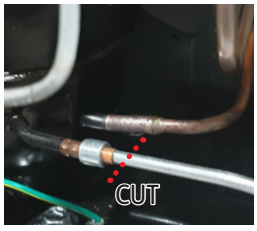
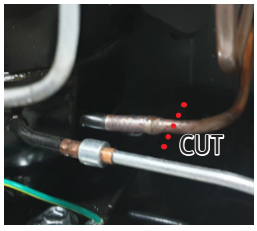
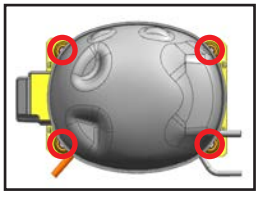
3-26. Condenser Fan Motor

Part name	How To Do	Descriptive Picture
Condenser Fan Motor	1. Remove the 5 screws from the COMP Cover.	
	2. Separate the housing connector.	
	3. Remove the screw from the bottom part of the Motor Support Circuit Assy and pull the assy forward to separate it.	

3-27. Step Valve

Part name	How To Do	Descriptive Picture
STEP VALVE	1. Remove the 5 screws from the COMP Cover.	
	2. Remove the 1 screw and pull the Step Valve forward to separate it.	
	3. Separate the housing connector from the Step Valve.	
	4. Remove the refrigerant and then separate the Step Valve from the connection pipe (3 point). CAUTION If you apply excessive force to form the pipe, the pipe may fold or break.	

3-28. COMPRESSOR

Part name	How To Do	Descriptive Picture
COMP RESSOR	1. Remove Step valve.	Check Details on Step Valve page STEP1~3.
	2. Arrange Pipe and Pipe capillary to take out Compressor. CAUTION Do not damage Pipes.	
	3. Unscrew bolt to Take off earth wire from comp.	
	4. Cut Pipe immerging(steel), Cut Pipe connect suction(CU). CAUTION Be careful when servicing R600a refrigerant.	 
	5. Unscrew 4 bolt and Disassemble Compressor.	 

3-29. Main PCB and Inverter PCB

Part name	How To Do	Descriptive Picture
MAIN PCB and Inverter PCB	1. Pull the refrigerator forward to secure sufficient work space behind the refrigerator.	
	2. Remove the 5 screws.	
	3. Separate the 10 housing connectors. ※ However, the number of housing connectors may differ depending on the model and functions.	

4. CHECK THE INSTALLATION STATUS

4-1. Function for failure diagnosis

4-1-1. Test mode (manual operation / manual defrost function)

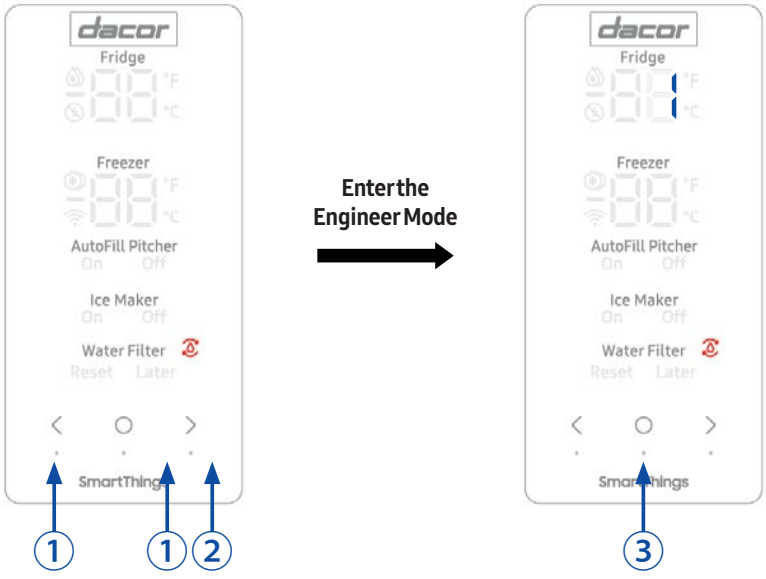
- Press the '<' and '>' buttons at the same time for at least 6 seconds. The Control Display will blink with an interval of 0.5 seconds. In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode. After entering Engineer Mode, press the '<' or '>' key to make the number '1' blinks. Then, press the 'O' button to enter the Test Mode.

Engineer Mode	
No.	Name
1	Test Mode
3	Self-diagnostic Function
6	MAC Address Display Mode (Wi-Fi Only)
7	Load Condition Display Mode
9	Option Setting Mode

[Mode list selectable in Engineer Mode]

- If any key on the front of panel is pressed within 15 seconds after the test mode, it will be operated as below sequence : Manual operation (FF 1) → manual operation (FF 2) → manual operation (FF A) → Manual Defrost of fridge compartments (Fd) → Cancellation (normal operation, Display all off) → Manual Operation1(FF 1)
- If any key on the front of panel is not pressed within 15 seconds after the test mode, the test mode will be canceled and it will be returned to previous mode.

1) TEST Modea Entering



'<'+ '>' Key are pressed simultaneously for 6 seconds. And the Control Display will blink with an interval of 0.5 seconds. In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode.
After entering Engineer Mode, press the '<' or '>' key to make the number '1' blinks.
Then, press the 'O' button to enter the Test Mode.

2) Forced Operating Function

2-1) If manual operation is selected, compressor will run at once without 7 minutes delay in any mode. If the refrigerator is on the defrost cycle at the moment, defrost will be finished and manual operation will begin.(Be careful if manual operation get started at the moment of compressor off, over load could be occurred)

DISPLAY		Operating Time	Comp.	Fan		Damper	Valve	
Freezer	Fridge			F	C	R	F-Valve	F2-Valve
FF	1	24Hr	ON	ON	ON	Temperature Control	ON	OFF
FF	2	24Hr	ON	ON	ON	Temperature Control	OFF	ON
FF	A	24Hr	ON	ON	ON	Temperature Control	ON	ON

2-2) If manual operation works, compressor & f-fan operate continuously for 24 hours and fresh food compartment will be controlled by the setting temperature.

2-3) When the manual operation runs, setting temperature will be selected automatically as below: freezer temperature -8°F(-23°C), fridge temperature 34°F(1°C).

2-4) During manual operation, Power Freezer & Power Cool function will not be work.If a function is selected, the power function icon of the selected function will be off automatically after 10 seconds.

2-5) Manual operation can be canceled by removing power from the unit, then resupplying power.

2-6) Alarm(0.25 sec ON/ 0.75 sec OFF) will beep continuously until manual operation is completed and there is no function to make the sound stop.

3) Forced Defrost

3-1) Fd : Forced Freezing Compartment defrosting (Fd) begins, a beeping sound will be heard for 2 seconds and then the sound will be turned on for 0.5 seconds and then off for 0.5 seconds repeatedly while the Forced defrosting function runs.

4) Test cancel mode

4-1) During the simultaneous defrosting of fresh food and freezer compartments, If the display panel change to the test mode and test button is pressed one more time, Defrosting of fresh food and freezer compartments will be canceled and the unit will return to the Normal operation.
Or, all test functions will be canceled by turning main power OFF and ON.

4-1-2. Self-diagnostic function

1) Self-diagnostic function in the Initial power ON

1-1) Micom operates self-diagnostic function to check the temperature sensor condition within 1 second when the refrigerator turned On initially.

1-2) If bad sensor is detected by the self-diagnostic function, the applicable display LED will blink for 0.5 sec. At this moment, there is no beep sound.(Refer to self-diagnostic CHECK LIST)

1-3) Self-diagnostic button is recognized only when the error is displayed by the bad sensor.Display does not operate normally but temperature control will be controlled by the emergency operation.

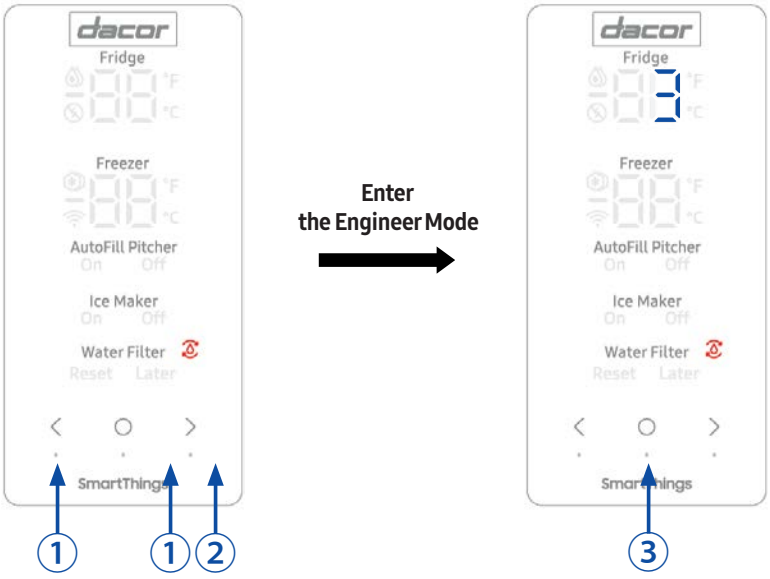
1-4) When the error is detected by self-diagnosis, the error can be canceled automatically if all troubled sensors are corrected or Self-diagnostic function key ('<' + '>') are pressed simultaneously for 12 seconds.

(Return to normal display mode)

① If '<' Key + '>' Key are pressed simultaneously for 12 seconds, the error mode by self-diagnosis will be canceled.

CHECK THE INSTALLATION STATUS

2) Self-diagnostic function during normal operation



② '<'+ '>' Key are pressed simultaneously for 6 seconds. And the Control Display will blink with 0.5 second interval for 4 seconds.
In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode.
After entering Engineer Mode, press the '<' or '>' key to make the number '3' blinks.
Then, press the 'O' button to enter the self-diagnosis function.

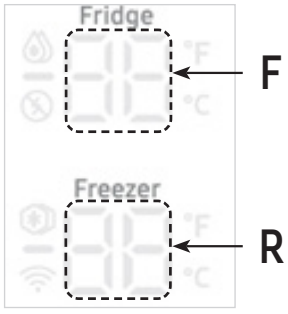
2-1) If '<' + '>' Key are pressed simultaneously for 6 seconds during normal operation, the temperature setting display will operate for 4 seconds (ON/OFF 0.5sec each). In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode. After entering Engineer Mode, press the '<' or '>' key to make the number '3' blinks. Then, press the 'O' button to enter the self-diagnosis function.

2-2) At this moment, self-diagnostic function will be returned with buzzer sound 'ding-dong'.If there is an error, display of error will be operated for 60 seconds and then return to normal condition whether problem is corrected or not. (Refer to self-diagnosis CHECK LIST)

2-3) Input by button is not accepted during self-diagnostic function.

CHECK THE INSTALLATION STATUS

■ Self-diagnosis checklist

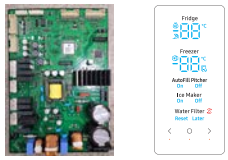


LED		Item	Trouble contents	Diagnostic method	Image
F	R				
01	C	F-Sensor Error	Display error : separation of sensor housing part, contact error, disconnection, short circuit. Display error of detecting temperature of sensor:more than 65°C or less than- 50°C	When measuring the voltage between the Main PCB CN20 10PIN - 12PIN, it should read between 4.5V~1.0V	
02		R-Sensor Error		When measuring the voltage between the Main PCB CN20 9PIN - 11PIN, it should read between 4.5V~1.0V	
04		F-DEF-Sensor Error		The voltage of MAIN PCB CN20 6PIN - 8PIN shall be between 4.5V~1.0V	
06		Ambient-Sensor Error		The voltage of MAIN PCB CN40 18PIN-20PIN shall be between 4.5V~1.0V	
08		Ice Maker Sensor Error (Cubed Ice)		The Voltage of MAIN PCB CN90 11PIN - 13PIN Shall be between 4.5V ~ 1.0V	
19		Humidity-Sensor Error	Separation of sensor housing part, contact error, disconnection, short circuit.	The voltage of MAIN PCB CN40 14PIN - 16PIN shall be between 4.5V~1.0V	

CHECK THE INSTALLATION STATUS

LED		Item	Trouble contents	Diagnostic method	Image
F	R				
28	C	F-FAN Error	Display error during operation of applicable fan motor :Feed back signal line contact error, motor wire separation, motor error	The voltage of MAIN PCB CN20 16PIN - 18PIN shall be between 7V~12V	
29		C-FAN Error	Display error during operation of applicable fan motor :Feed back signal line contact error, motor wire separation, motor error	The voltage of MAIN PCB CN20 22PIN - 24PIN shall be between 7V~12V	
2A		F-DEF Error	Separation of freezer compartment defrost heater housing part, contact error, disconnection, short circuit or temperature fuse error. Display error :the defrosting does not finish though freezer compartment defrost is heating continuously for more than 100 minutes.	After separating Main PCB CN70& CN81 wire from PCB, Resistance value between CN70 5PIN - CN81 1PIN Shall be 63(230) ohm ± 7%(Resistance value is varied by input power) 0 ohm : heater short, ∞ ohm : wire/bimetal open (Must power off)	
2B		Ice Maker Function Error (Cubed Ice)	When the Freezer Ice Maker error occurs more than 3 times, the error will be displayed.	After replacing the Ice Maker, check if it operates normal.	
2C		Damper Heater Error	Display error when open error is detected by Damper heater :separation of Damper Heater housing part, contact error, disconnection, short circuit.	After separating Main PCB CN40 wire from PCB, Resistance value between CN40 25PIN - 27PIN Shall be 24 ohm ± 7% 0 ohm : heater short, ∞ ohm : wire/bimetal open (Must power off)	
33		Ice Pipe Heater Error (Cubed Ice)	Display error when open error is detected by Ice Pipe heater :separation of Ice Pipe Heater housing part, contact error, disconnection, short circuit.	After separating Main PCB CN20 wire from PCB, Resistance value between CN20 19PIN - 23PIN Shall be 24 ohm ± 7% 0 ohm : heater short, ∞ ohm : wire/bimetal open (Must power off)	
34		Water Tank Heater Error	Display error when open error is detected by Water Tank heater :separation of Water Tank Heater housing part, contact error, disconnection, short circuit.	After separating Main PCB CN90 wire from PCB, Resistance value between CN90 1PIN - 5PIN Shall be 24 ohm ± 7% 0 ohm : heater short, ∞ ohm : wire/bimetal open (Must power off)	

CHECK THE INSTALLATION STATUS

LED		Item	Trouble contents	Diagnostic method	Image
F	R				
41	C	Panel ↔ Main Communication Error	Display pc - Er in the panel with alarm : MICOM MAIN PANEL communication error.	Actually, If there is not a problem, it is desirable to replace Main and Panel PCB With the oscilloscope after a cable problem confirming.	
44		Main - Inverter Communication Error	Display 44Er in the panel : Inverter MICOM Main MICOM communication error.	Actually, If there is not a problem, it is desirable to replace Main and Inverter PCB With the oscilloscope after a cable problem confirming.	
46		I/O Expander Communication Error	Display 46Er in the panel : I/O Expander ↔ Main MICOM communication error.	It is desirable to replace Main PCB.	
52		Main ↔ Wifi module Communication Error	Display 52Er in the panel :Wifi module ↔ Main MICOM communication error.	Actually, If there is not a problem, it is desirable to replace Main and WiFi PCB With the oscilloscope after a cable problem confirming.	
91		The F Compartment Abnormal High temperature indicator blinks	When the freezer temperature is abnormally high or the freezer door is open for a certain period of time and the freezer temperature increases, the freezer display blinks.	The temperature has been abnormally increased. Check if the door has been open for a long time or if hot food has been stored in the compartment. If the reason for the error is removed, the error code disappears after a predetermined period of time.	
92		The R Compartment Abnormal High temperature indcator blinks	When the fridge temperature is abnormally high or the fridge door is open for a certain period of time and the fridge temperature increases, the fridge display blinks.	Check if door has been open for a long time or if hot food has been stored in the compartment. If the reason for the error is removed, the error code disappears after a predetermined period of time.	
86		AUTO FILL Infuser Overflow Error	When water is overflowing in a AutoFill Infuser bottle.	Check voltage of MAIN PCB CN60-"3" ↔ "7" 0V ~ 4.5V : Water overflow 4.5V ~ 5V : No problem	

CHECK THE INSTALLATION STATUS

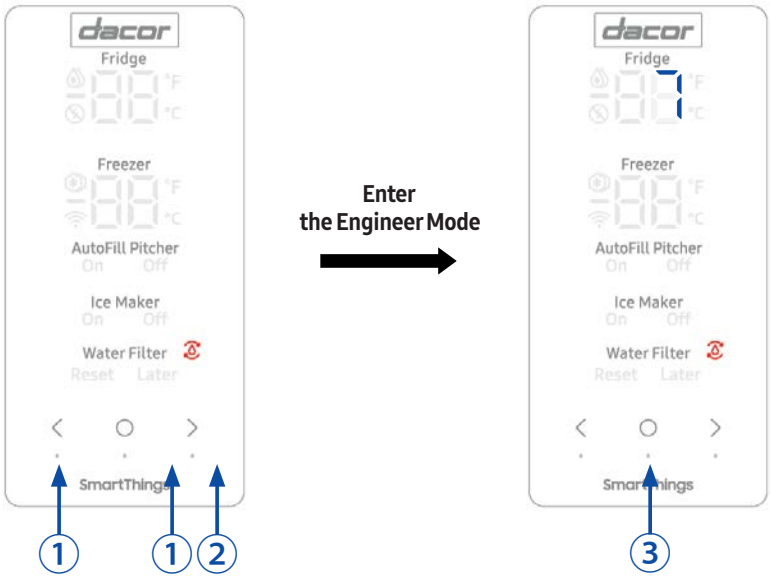
LED		Item	Trouble contents	Diagnostic method	Image
F	R				
81	C	Comp starting Failure Error	When the Compressor fails starting	Check if there is a short between compressor terminals. Check if there is a short between IPM Pins[#1~23] Check the compressor and the Cycle.	 
82		IPM Fault Error	When there is a IPM Fault error		
83		Comp Abnormal current Detection Error	When there is abnormal current detected at the Compressor	Check the compressor connections. Check the Inverter-PBA solder defect.	
84		Motor Locked Over RPM error	When there is a Compressor restriction error	Check the compressor (Comp lock) Check the Cycle	 
85		Comp low voltage Error	When there is a low voltage error	Check the input voltage. (This error occurs when the input voltage is AC 106 V or lower.)	
86		Comp over voltage Error	When there is a over voltage error	Check the input voltage. (This error occurs when the input voltage is AC 310V or higher.)	
88		Comp over voltage Error	When there is a IPM temperature error	Check the IPM temperature(over 12) status of the inverter PCB. Check the heat-sink assembly status of the IPM.	
bb		Ice Maker Sensor Error (Ice Bites)	Display error :separation of sensor housing part, contact error, disconnection, short circuit. Display error of detecting temperature of sensor : more than 65°C or less than- 50°C	The Voltage of MAIN PCB CN90 14PIN - 26PIN Shall be between 4.5V ~ 1.0V	

CHECK THE INSTALLATION STATUS

LED		Item	Trouble contents	Diagnostic method	Image
F	R				
b7	C	Ice Maker Function Error (Ice Bites)	When the Freezer Ice Maker error occurs more than 3 times, the error will be displayed.	After replacing the Ice Maker, check if it operates normal.	
bB		Ice Pipe Heater Error (Ice Bites)	Display error when open error is detected by Ice Pipe heater : separation of Ice Pipe Heater housing part, contact error, disconnection, short circuit.	After separating Main PCB CN20 wire from PCB, Resistance value between CN20 21PIN - 23PIN Shall be 24 ohm ± 7% 0 ohm : heater short, ∞ ohm : wire/bimetal open (Must power off)	

4-2. Function for failure diagnosis

4-2-1. Display function of Load condition



① '<'+ '>' Key are pressed simultaneously for 6 seconds. And the Control Display will blink with 0.5 second interval for 4 seconds.
② In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode.
③ After entering Engineer Mode, press the '<' or '>' key to make the number '7' blinks.
④ Then, press the 'O' button to enter the Load Condition Display Mode.

1) If the '<' and '>' button are pressed simultaneously for 6 seconds during normal operation, the temperature setting display of Fridge and freezer compartments will blink ALL ON/OFF with 0.5 for 4 seconds. In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode

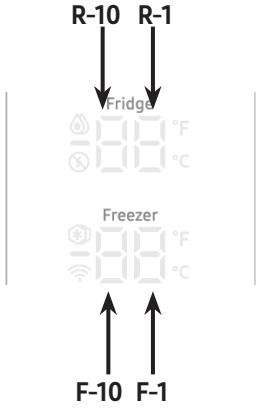
2) After entering Engineer Mode, press the '<' or '>' key to make the number '7' blinks. Then, press the 'O' button to enter the Load Condition Display Mode. At LED all on state, only load condition display will blink ON/OFF with 0.5 seconds interval.

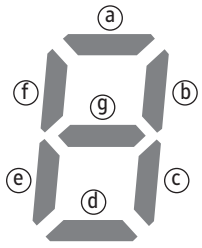
3) Load condition display mode shows the load that micom signal is outputting.
However, It means that micom signal is outputting, it does not mean whether load is operating or not. That is to say that though load operation is displayed, load could not be operated by actual load error or PCB relay error etc. (This function would be applied at A/S.)

4) Load condition display function will maintain for 30 seconds and then normal condition will be returned automatically.

5) Load condition display is as below. Only the load control LED will blink with 0.5interval in "Display LED"

CHECK THE INSTALLATION STATUS

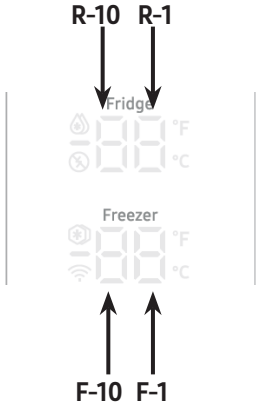


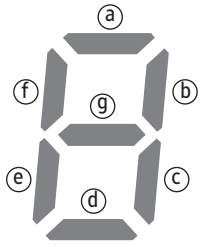


※ Self-diagnosis checklist

No.	Part	Display (LED)	Description
1	Showcase Door heater	R-1 "d"	In the case of the Showcase Door heater operation, the corresponding LED is blinked
2	High Temperature	R-1 "e"	If the external air temperature is 34°C or higher, the corresponding LED is blinked
3	Low Temperature	R-1 "f"	If the external air temperature is 21°C or less, the corresponding LED is blinked
4	Normal Temperature	R-1 "e","f"	If the external air temperature is within the range of 22°C ~ 33°C, the corresponding LED is blinked
5	Demo Mode	R-1 "g"	In the case of the Demo mode operation, the corresponding LED is blinked
6	Damper Open	R-10 "a"	In the case of the CoolSelect-Zone damper opened, the corresponding LED is blinked
7	Full Ice (Ice Bites)	R-10 “d”	In the case of the Ice maker's bucket is full,, the corresponding LED is blinked
8	Full Ice (Cubed Ice)	R-10 “e”	In the case of the Ice maker's bucket is full,, the corresponding LED is blinked
9	Ice Pipe Heater (Cubed Ice)	R-10 “f”	In the case of the Ice maker's Pipe heater operation,, the corresponding LED is blinked
10	AUTO FILL BOTTLE SENSOR	R-10 “g”	In the case of the "Auto Fill Infuser" bottle sensor detected bottle, the corresponding LED is blinked
11	Comp.	F-1 "a"	In the case of the Comp. operation, the corresponding LED is blinked
12	F-FAN HIGHEST	F-1 "b","c"	In the case of the F-FAN HIGHEST operation, the corresponding LED is blinked
13	F-FAN HIGH	F-1 "b"	In the case of the F-FAN HIGH operation, the corresponding LED is blinked
14	F-FAN LOW	F-1 "c"	In the case of the F-FAN LOW operation, the corresponding LED is blinked
15	F compartment defrost heater	F-1 "d"	In the case of the F compartment defrost heater operation, the corresponding LED is blinked
16	C-FAN HIGHEST	F-1 "e","f"	In the case of the C-FAN HIGHEST operation, the corresponding LED is blinked
17	C-FAN HIGH	F-1 "e"	In the case of the C-FAN HIGH operation, the corresponding LED is blinked

CHECK THE INSTALLATION STATUS





※ Self-diagnosis checklist

No.	Part	Display (LED)	Description
18	C-FAN LOW	F-1 "f"	In the case of the C-FAN LOW operation, the corresponding LED is blinked
19	Water Tank heater	F-1 “g"	In the case of the Water Tank heater operation, the corresponding LED is blinked
20	AUTO FILL FULL WATER SENSOR	F-10 "a"	In the case of the "Auto Fill Infuser" water sensor detected water, the corresponding LED is blinked
21	F Valve	F-10 "b"	In the case of the F-Valve Opend, the corresponding LED is blinked
22	F2 Valve	F-10 “c"	In the case of the F2-Valve Opend, the corresponding LED is blinked
23	Ice Pipe Heater (Ice Bites)	F-10 “f”	In the case of the Ice maker's Pipe heater operation,, the corresponding LED is blinked
24	French Heater	F-10 "g"	In the case of the French heater operation, the corresponding LED is blinked

4-2-2. DEMO MODE : Cooling OFF Mode setting function

① Press the '<' and '>' buttons at the same time for at least 6 seconds. The Control Display will blink with an interval of 0.5 seconds. In that case, you may take your fingers off both buttons and press the 'O' button to enter the Cooling OFF Mode.

1) Cooling OFF Mode setting function

1) Cooling Off mode will be started with buzzer sound(ding-dong).

2) If the cooling off mode key is pressed once more time during the cooling off operation, Cooling Off mode will be canceled.

3) If Cooling Off mode is selected, blinks "O-FF" on the temperature setting display of the panel and it indicates the refrigerator has entered the Cooling Off mode.

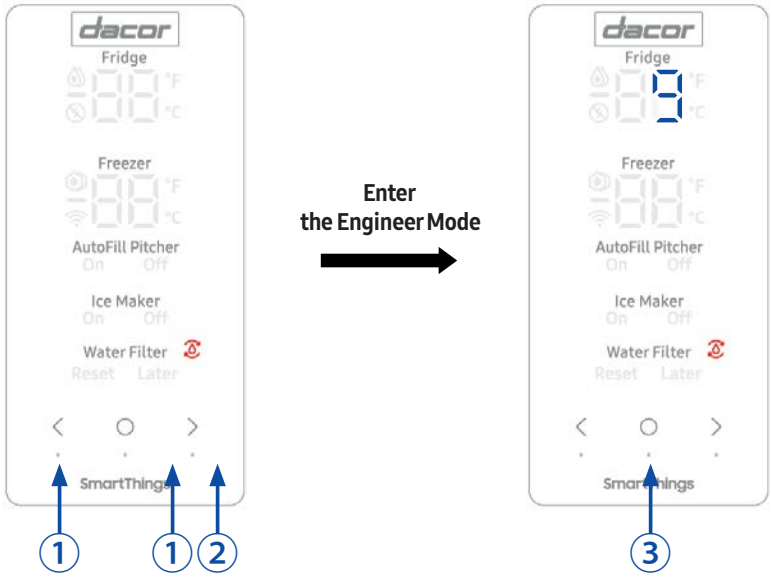
4) During Cooling Off mode, Fridge or Freezer compartments sensors are higher than 149°F (65°C) Cooling Off mode will be canceled automatically and freezing operation will be returned. (There is no buzzer sound when the Cooling Off mode is canceled by the temperature)

5) Operation contents of Cooling Off mode
- Display, Fan motor and etc operate normally, not to operate compressor only.
- Defrost is not operated. (including french heater)
- Display function of the initial real temperature is finished.
- Under the condition of Cooling Off mode, Cooling Off mode will be operated when Power On after Power OFF.

4-2-3. Option setting function

- Press the '<' and '>' buttons at the same time for at least 6 seconds.The Control Display will blink with an interval of 0.5 seconds for 4seconds. In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode. After entering Engineer Mode, press the '<' or '>' key to make the number '9' blinks. Then, press the 'O' button to enter the Option Setting Mode.

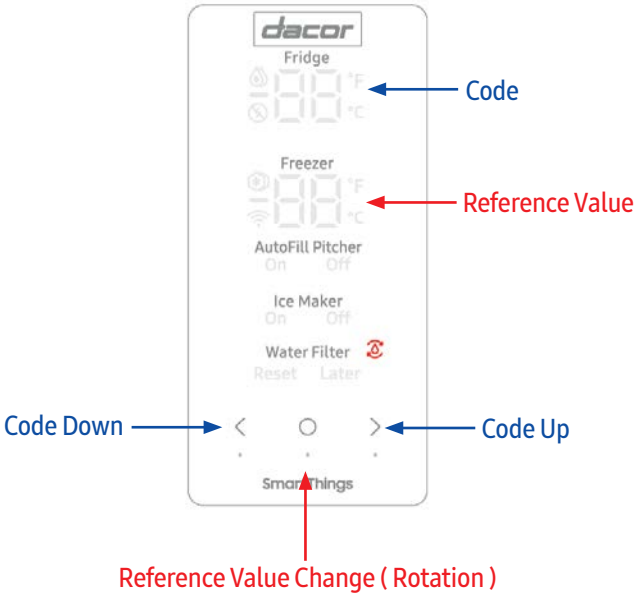
KEY operation method for changing to option mode



① '<'+ '>' Key are pressed simultaneously for 6 seconds. And the Control Display will blink with 0.5 second interval for 4 seconds.
② In that case, you may take your fingers off both buttons and press the '>' button to enter the Engineer Mode.
③ After entering Engineer Mode, press the '<' or '>' key to make the number '9' blinks.
④ Then, press the 'O' button to enter the Option Setting Mode.

CHECK THE INSTALLATION STATUS

KEY control method after converting to option mode

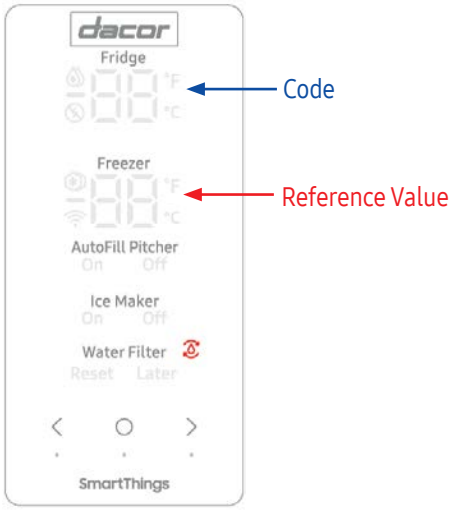


■ Key control in option mode

O	Reference Value Change Key(Rotation)
‹	Code down key
›	Code Up key

CHECK THE INSTALLATION STATUS

- If the display changes to option setting mode, all displays will be off except freezer and fridge compartments temperature display as below.
  (Fridge and freezer compartments case will be explained only because all options are operated with the same method according to the option table.)



1) For example, if you want to change freezer compartment standard temperature to -4°F(-2°C) by operating option, do as below. This function is for changing the standard temperature.
   In -2°F(-19°C) of current temperature of freezer compartment, if you make the temperature lower to -4°F (-2°C) by the option, the standard temperature would be controlled -6°F(-21°C).
   Therefore, if you change the setting of temperature option to -2°F(-19°C) on the panel, the appliance will be operated with -6°F(-21°C). It means that standard temperature is controlled -4°F(-2°C) less than setting temperature in the display.

Note

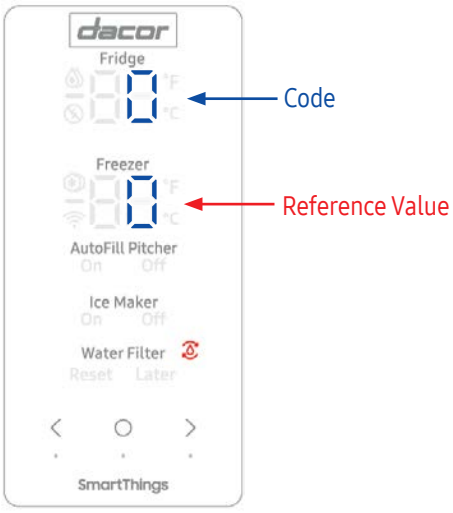
Basically, all the data in option has cleared from the factory.Therefore, almost all setting value are "0".But, some setting values could be changed for the purpose of improving performmance.
NOTE You need to check the product manual and/or specification.

2) After changing to the option mode, freezer compartment "0", fresh food compartment "0" will be displayed.
   (Basically freezer compartment "0", fresh food compartment "0" would be set at shipping process, but setting value could be changed for the purpose of improving product at mass producing process.)
   - If fresh food compartment "0" shows only, temperature reference value of freezer compartment will be set and current freezer compartment temperature code will be displayed on the freezer temperature display.

3) If freezer compartment "4" is set as below freezer compartment code after fresh food compartment "0" is set, standard temperature of freezer compartment will be lower than -4°F (-2°C).
   (Refer to the picture "changing the freezer compartment temperature")

: If you wait for 20 seconds after completing the setting, MICOM will save the setting value to the EEPROM and normal display will be returned and the option setting mode will be canceled.

CHECK THE INSTALLATION STATUS



: If you wait for 20 seconds after completing the setting, MICOM will save the setting value to the EEPROM and normal display will be returned and the option setting mode will be canceled.

4) By the same method as above, it is possible to control the fresh food compartment temperature, water supply, ice-maker harvest temperature/time, defrost return time, hysteresis by temperature, notch gap by temperature etc.

5) Option function is set in the EEPROM at shipping process in the factory.
You would better not to change the option of your own.
Completing the setting is that option function return to normal display after 20 seconds.
Do not turn off the appliance before returning to the normal display mode.

Note

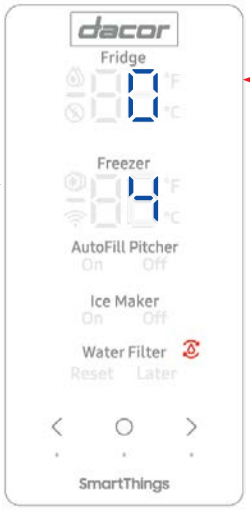
Option setting function exists in the other items.We will skip the explanation of the other functions by the option because it is associated with refrigerator control function and is not needed at SERVICE.
NOTE (Please do not set the other options except above SERVICE Manual.)

4-2-4. Option TABLE

1) Temperature changing table of freezer compartment (Freezer Mode)

Set item	Freezer Temp Shift
Reference Value	Fridge Room 7-SEG
	0

Setting value FZ compartment Code	Temp. compensation
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃

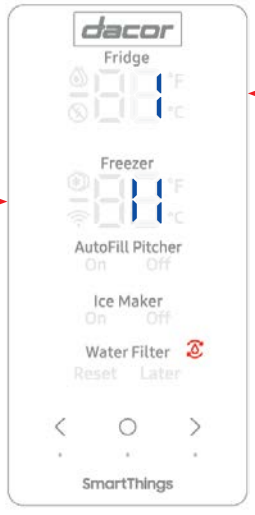


ex) If you want to change the freezer standard temperature to -2℃.

2) Temperature changing table of fresh food compartment

Set item	Fridge Temp Shift
Reference Value	Fridge Room 7-SEG
	1

Setting value FZ compartment Code	Temp. compensation
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃



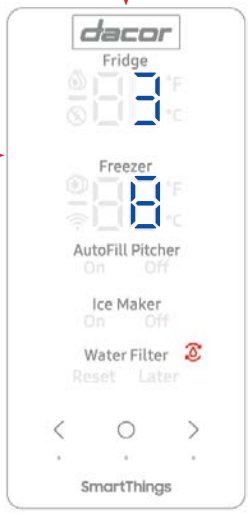
ex) If you want to change the Fridge compartment standard temperature to 2℃.

CHECK THE INSTALLATION STATUS

3) Time changing table of Freezer ice maker dropping standby time (Cubed Ice)

Set item	Ice Maker Dropping Standby Time
Reference Value	Fridge Room 7-Seg
	3

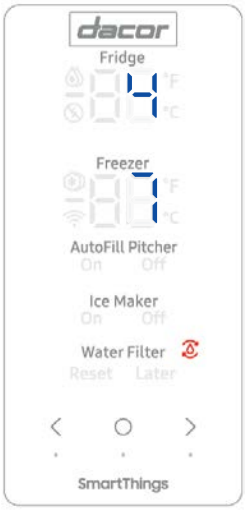
Setting value Freezer Room 7-Seg (Code)	Standby Time
0	80 min
1	81 min
2	82 min
3	83 min
4	84 min
5	85 min
6	86 min
7	87 min
8	88 min
9	89 min
10	90 min
11	91 min
12	92 min
13	79 min
14	78 min
15	77 min



4) Temperature changing table of Freezer Ice Maker dropping temperature (Cubed Ice)

Set item	Ice Maker Dropping Temperature
Reference Value	Fridge Room 7-Seg
	4

Setting value Freezer Room 7-Seg (Code)	Dropping Temperature
0	-17°C
1	-16°C
2	-15°C
3	-14°C
4	-13°C
5	-12°C
6	-18°C
7	-19°C



CHECK THE INSTALLATION STATUS

5) Operation rate changing table of dispenser heater. (In DISPENSER MODEL Only features)

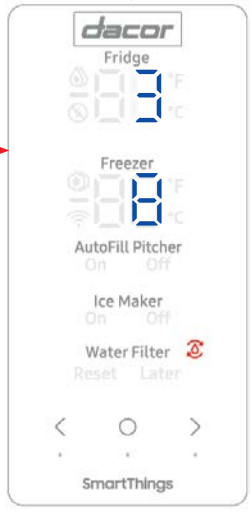
Set item	Minimum Comp RPM setting
Reference Value	Fridge Room 7-SEG
	19

Setting value FZ Compartment Code	Rate change
0	+ 0.0%
1	+ 20% operation (up to 100%)

6) Time changing table of Freezer ice maker dropping standby time (Ice Bites)

Set item	Ice Maker Dropping Standby Time
Reference Value	Fridge Room 7-Seg
	33

Setting value Freezer Room 7-Seg (Code)	Standby Time
0	66 min
1	68 min
2	70 min
3	72 min
4	74 min
5	76 min
6	78 min
7	80 min
8	64 min
9	62 min
10	60 min
11	58 min
12	56 min
13	54 min
14	52 min
15	50 min

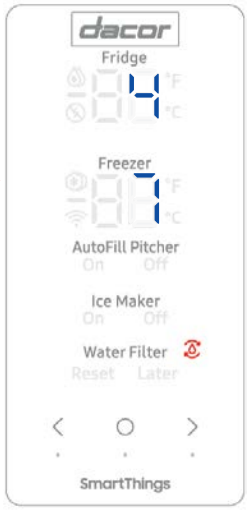


CHECK THE INSTALLATION STATUS

7) Temperature changing table of Freezer Ice Maker dropping temperature (Ice Bites)

Set item	Ice Maker Dropping Temperature
Reference Value	Fridge Room 7-Seg
	35

Setting value Freezer Room 7-Seg (Code)	Dropping Temperature
0	-15°C
1	-16°C
2	-17°C
3	-14°C
4	-13°C
5	-12°C
6	-11°C
7	-10°C



4-3. Diagnostic method according to the trouble symptom (Flow Chart)

DATA1. Temperature table

Resistance value and MICOM port voltage of sensor according to the temperature
SENSOR CHIP : based on PX41C, PX41C, 502AT/ 103**(ICE MAKER SENSOR(MOLD)/FULL UP, 20Kohm
(Actual measurement = value of the table below X 2)

℃	℉	Voltage	Resistance	℃	℉	Voltage	Resistance	℃	℉	Voltage	Resistance	℃	℉	Voltage	Resistance
-50	-58	4.694	153319	-16	3.2	3.64	26760	18	64.4	1.974	6521	52	125.6	0.846	2036
-49	-56.2	4.677	144794	-15	5	3.594	25562	19	66.2	1.929	6281	53	127.4	0.824	1973
-48	-54.4	4.659	136798	-14	6.8	3.548	24425	20	68	1.885	6052	54	129.2	0.803	1913
-47	-52.6	4.641	129294	-13	8.6	3.501	23345	21	69.8	1.842	5832	55	131	0.783	1855
-46	-50.8	4.622	122248	-12	10.4	3.453	22320	22	71.6	1.799	5621	56	132.8	0.762	1799
-45	-49	4.602	115631	-11	12.2	3.405	21345	23	73.4	1.757	5419	57	134.6	0.743	1745
-44	-47.2	4.581	109413	-10	14	3.356	20418	24	75.2	1.716	5225	58	136.4	0.724	1693
-43	-45.4	4.56	103569	-9	15.8	3.307	19537	25	77	1.675	5039	59	138.2	0.706	1642
-42	-43.6	4.537	98073	-8	17.6	3.258	18698	26	78.8	1.636	4861	60	140	0.688	1594
-41	-41.8	4.514	92903	-7	19.4	3.208	17901	27	80.6	1.596	4690	61	141.8	0.67	1547
-40	-40	4.49	88037	-6	21.2	3.158	17142	28	82.4	1.558	4526	62	143.6	0.653	1502
-39	-38.2	4.465	83456	-5	23	3.107	16419	29	84.2	1.52	4369	63	145.4	0.636	1458
-38	-36.4	4.439	79142	-4	24.8	3.057	15731	30	86	1.483	4218	64	147.2	0.62	1416
-37	-34.6	4.412	75077	-3	26.6	3.006	15076	31	87.8	1.447	4072	65	149	0.604	1375
-36	-32.8	4.385	71246	-2	28.4	2.955	14452	32	89.6	1.412	3933	66	150.8	0.598	1335
-35	-31	4.356	67634	-1	30.2	2.904	13857	33	91.4	1.377	3799	67	152.6	0.574	1297
-34	-29.2	4.326	64227	0	32	2.853	13290	34	93.2	1.343	3670	68	154.4	0.56	1260
-33	-27.4	4.296	61012	1	33.8	2.802	12749	35	95	1.309	3547	69	156.2	0.546	1225
-32	-25.6	4.264	57977	2	35.6	2.751	12233	36	96.8	1.277	3428	70	158	0.532	1190
-31	-23.8	4.232	55112	3	37.4	2.7	11741	37	98.6	1.253	3344	71	159.8	0.519	1157
-30	-22	4.199	52406	4	39.2	2.649	11271	38	100.4	1.213	3204	72	161.6	0.506	1125
-29	-20.2	4.165	49848	5	41	2.599	10823	39	102.2	1.183	3098	73	163.4	0.493	1093
-28	-18.4	4.129	47431	6	42.8	2.548	10395	40	104	1.153	2997	74	165.2	0.481	1063
-27	-16.6	4.093	45146	7	44.6	2.498	9986	41	105.8	1.124	2899	75	167	0.469	1034
-26	-14.8	4.056	42984	8	46.4	2.449	9596	42	107.6	1.095	2805	76	168.8	0.457	1006
-25	-13	4.018	40938	9	48.2	2.399	9223	43	109.4	1.068	2714	77	170.6	0.446	978
-24	-11.2	3.98	39002	10	50	2.35	8867	44	111.2	1.04	2627	78	172.4	0.435	952
-23	-9.4	3.94	37169	11	51.8	2.301	8526	45	113	1.014	2543	79	174.2	0.424	926
-22	-7.6	3.899	35433	12	53.6	2.253	8200	46	114.8	0.988	2462	80	176	0.414	902
-21	-5.8	3.858	33788	13	55.4	2.205	7888	47	116.6	0.963	2384	81	177.8	0.404	877
-20	-4	3.816	32230	14	57.2	2.158	7590	48	118.4	0.938	2309	82	179.6	0.394	854
-19	-2.2	3.773	30752	15	59	2.111	7305	49	120.2	0.914	2237	83	181.4	0.384	832
-18	-0.4	3.729	29350	16	60.8	2.064	7032	50	122	0.891	2167	84	183.2	0.375	810
-17	1.4	3.685	28021	17	62.6	2.019	6771	51	123.8	0.868	2100				

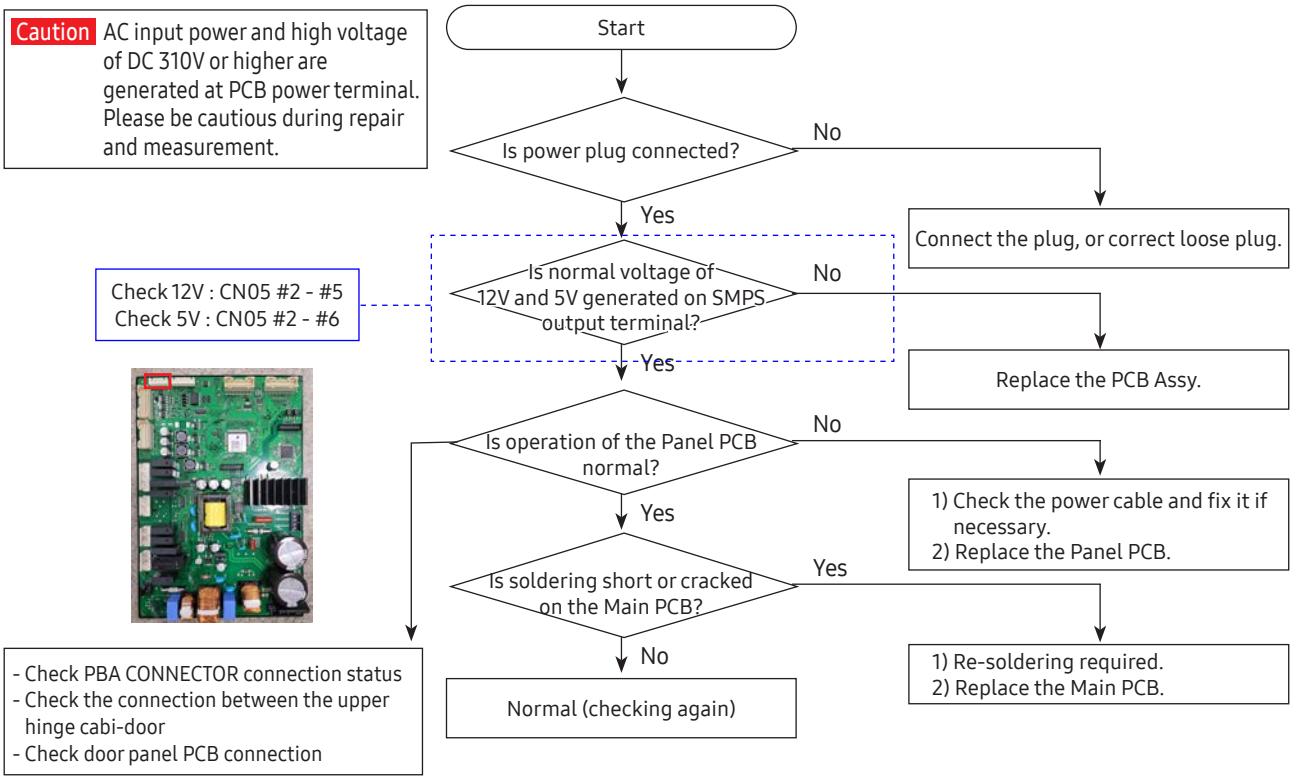
DATA2. Humidity Sensor table

- Voltage output table @23°..., 5Vdc --- HTG3515CH/HTG3535CH
  RH(Temperature compensate) = RH (Relative Humidity) + (Temp(°C) °© 23°C) x 0.05

RH(%)	Output(mV)	A/D (10bit)	A/D (12bit)	RH(%)	Output(mV)	A/D (10bit)	A/D (12bit)	RH(%)	Output(mV)	A/D (10bit)	A/D (12bit)
0	909	186	744	40	2090	428	1712	80	3125	639	2559
1	943	193	772	41	2116	433	1733	81	3152	645	2581
2	977	200	800	42	2142	438	1754	82	3179	650	2604
3	1010	207	827	43	2168	444	1776	83	3206	656	2626
4	1043	213	854	44	2194	449	1797	84	3233	661	2648
5	1076	220	881	45	2220	454	1818	85	3260	667	2670
6	1109	227	908	46	2246	460	1839	86	3288	673	2693
7	1141	233	935	47	2272	465	1861	87	3316	678	2716
8	1173	240	961	48	2298	470	1882	88	3344	684	2739
9	1205	247	987	49	2324	475	1903	89	3372	690	2762
10	1235	253	1011	50	2350	481	1925	90	3400	696	2785
11	1266	259	1037	51	2376	486	1946	91	3426	701	2806
12	1297	265	1062	52	2402	491	1967	92	3452	706	2827
13	1328	272	1088	53	2428	497	1989	93	3478	712	2848
14	1359	278	1113	54	2454	502	2010	94	3504	717	2870
15	1390	284	1138	55	2480	507	2031	95	3530	722	2891
16	1420	291	1163	56	2505	513	2052	96	3566	730	2920
17	1450	297	1188	57	2530	518	2072	97	3595	735	2944
18	1480	303	1212	58	2555	523	2093	98	3624	741	2968
19	1510	309	1237	59	2580	528	2113	99	3653	747	2992
20	1540	315	1261	60	2605	533	2133	100	3683	754	3016
21	1569	321	1285	61	2630	538	2154				
22	1598	327	1309	62	2655	543	2174				
23	1627	333	1333	63	2680	548	2195				
24	1656	339	1356	64	2705	553	2215				
25	1685	345	1380	65	2730	559	2236				
26	1713	350	1403	66	2756	564	2257				
27	1741	356	1426	67	2782	569	2278				
28	1769	362	1449	68	2808	575	2300				
29	1797	368	1472	69	2834	580	2321				
30	1825	373	1495	70	2860	585	2342				
31	1852	379	1517	71	2886	590	2364				
32	1879	384	1539	72	2912	596	2385				
33	1906	390	1561	73	2938	601	2406				
34	1933	395	1583	74	2964	606	2428				
35	1960	401	1605	75	2990	612	2449				
36	1986	406	1627	76	3017	617	2471				
37	2012	412	1648	77	3044	623	2493				
38	2038	417	1669	78	3071	628	2515				
39	2064	422	1690	79	3098	634	2537				

5. SELF DIAGNOSIS & TROUBLE SHOOTING

5-1. Power Not Supplied



5-2. When the compressor does not work properly

Caution AC input power and high voltage of DC 310V or higher are generated at INVERTER PBA power terminal. Please be cautious during repair and measurement.

Note When the LED of the Inverter PBA is turned, it means that the compressor is working properly.

Start

At least 10 minutes have passed since the compressor is turned OFF.
- No → Check it again after 10 minutes.
- Yes

Does the COMP start working after running it in forced operation mode?
- Refer to the Test mode section.
- Yes → Does the buzzer beep for its forced operation? (Please check it after running it in forced operation mode)
- No

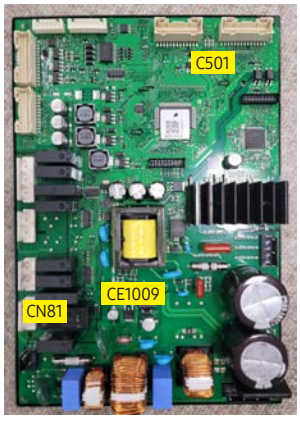
15 VDC applied to C501 (ZD501)
- No → 220VAC applied to CN81
  - No → Check the filter and the power cable.
  - Yes → Replace the Inverter PBA.
- Yes

5 VDC applied to CE1009
- No → 220VAC applied to CN81
- Yes

Does the thermistor work properly?
- No → Repair the defective contact of the sensor or replace the sensor if necessary.
- Yes

Does the thermistor (Main PBA) work properly?
- No → Repair the sensor or replace the Main PBA.
- Yes → Normal (checking again)

Note If not operating, the error status is determined according to the number of blinks in the LED of the Inverter.



Does the connector CN102 work properly?
- No → Make sure that it's properly inserted.
- Yes

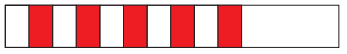
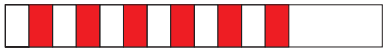
Is the operation of Comp Ass'y normal?
- No → Repair (replace) the Comp Ass'y.
- Yes

Does the compressor work properly?
- No → Repair (replace) the compressor.
- Yes → Normal (checking again)

5-3. LED blinking frequency depending on protecting functions

If the Failure Condition is detected while the compressor is operating, stop the Compressor operating immediately and wait for 5 minutes. During these 5 minutes, the RPM command signal is not available. Even if the RPM command that orders the compressor to run is sent, the compressor does not work and keep standing by.

The LED is tuned on for 1 second and then off for 2 seconds.

LED Blinking Frequency	Protecting Functions	Remarks
	Normal Operation	N/A
	Starting Failure	1. Short between COMP U, V, and W phase. 2. Short among IPM Pins. (No. #1~26) 3. Drop the IPM operating Voltage under DC 13.5V. 4. Other cases, check the COMP, cycle, etc.
	SPM Fault	
	Abnormal Current Detection	1. Open the COMP wire. (CN04). 2. Bad condition of R1. (ex. Bad soldering) 3. Other cases, check the COMP, cycle, etc.
	Motor Locked / Over RPM	1. Operation the locked rotor COMP within 5 second. 2. Operating the COMP under 1000 RPM more than 5 second. 3. Occur the huge change of input voltage in a moment. 4. Other cases, check the COMP, cycle, etc.
	Under Voltage	1. Check input voltate under / AC 53V.(Input Power AC 110~127V) or AC 106V(Input Power AC220~240V)
	Over Voltage	1. Check input voltate / AC 155V.(Input Power AC 110~127V) or AC 310V(Input Power AC220~240V)
	Communication error	1. Main - Inverter communication error.
	IPM Shut Down	1. Check IPM, PBA CASE, Compressor Temperature. 2. If IPM or Discrete IC Temperature 120°C over, blinking LED.

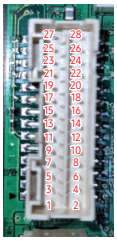
The LED blinking frequency depending on the protection functions If the blinking continues, after 5 minutes, please refer to the remarks in the table above.

5-4. When an error occurs in self diagnostic mode (in case of a sensor error)

- A sensor error is displayed on the front display panel of the refrigerator. If a sensor error is detected when the power is supplied to the refrigerator for the first time, the sensor error message is displayed on the display panel and the refrigerator operates in emergency operating mode.
- The refrigerator operates in emergency operating mode and the cooling operation may not be performed properly. Therefore, in this case, check the refrigerator referring to the self diagnostic section in this manual.

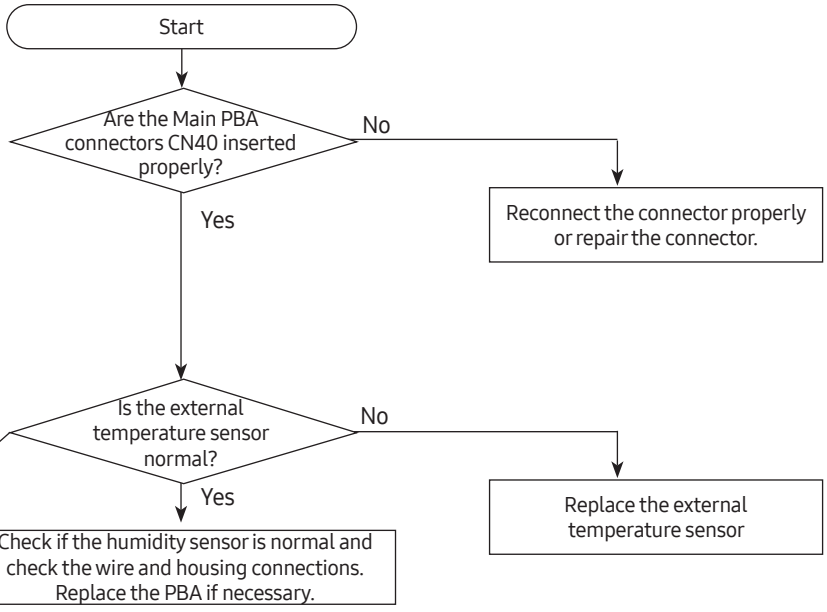
① When the “6C" (External Temperature sensor) error occurs

Checking External Temperature Sensor Resistance
- Comparison with the value of temperature table after measurement (Same method applied to other sensors)

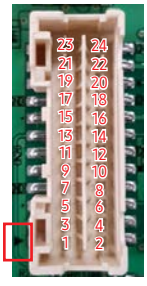


Check the resistance between CN40 #18 to #20

Refer to the circuit operation descriptions and temperature sensor inspection measures on the manual.



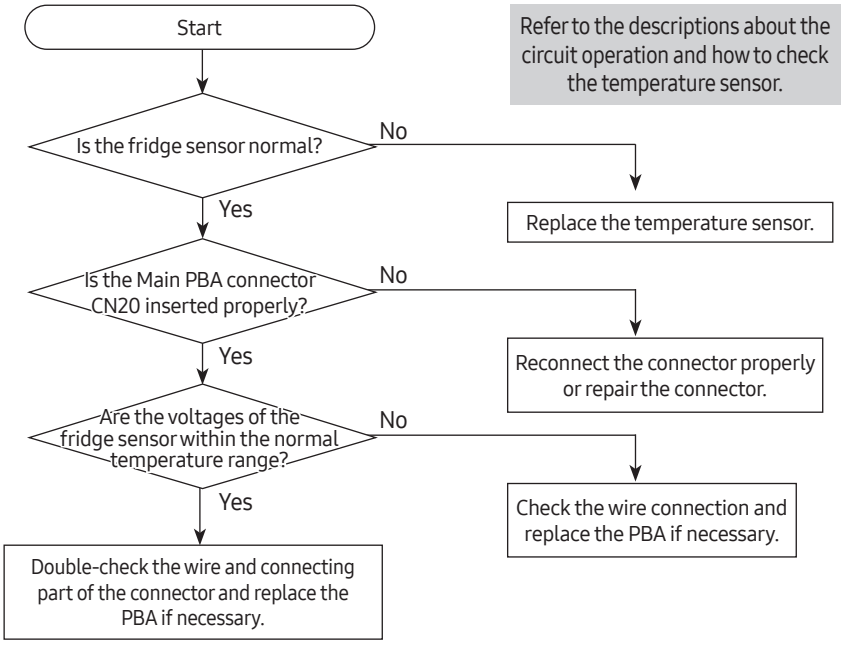
② When the "2C" (fridge temperature sensor) error occurs.
(Please also check the other sensors by applying these troubleshooting procedures.)



Checking Fridge Temperature Sensor Volate
- Comparison with the value of temperature table after measurement (Same method applied to other sensors)

- Measure voltage between CN20 #9 to #11 when power is applied.

Refer to the descriptions about the circuit operation and how to check the temperature sensor.



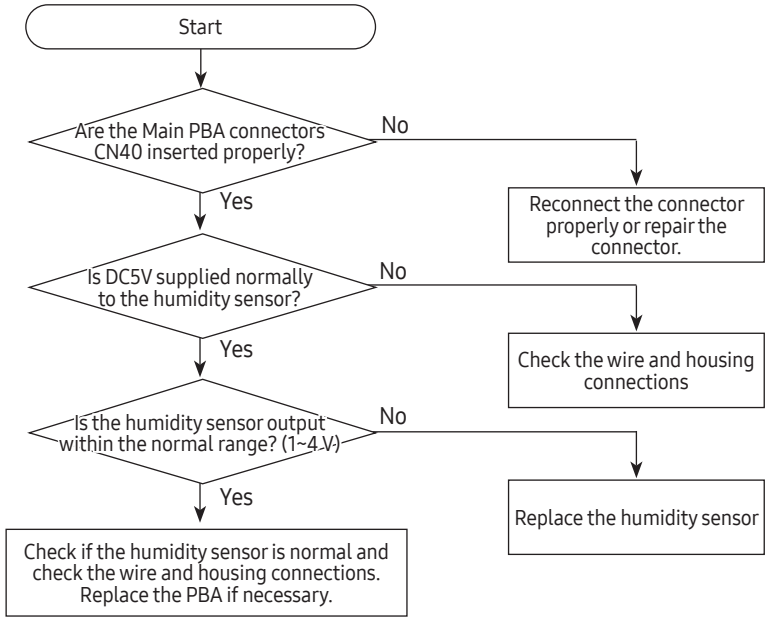
SELF DIAGNOSIS & TROUBLE SHOOTING

- A sensor error is displayed on the front display panel of the refrigerator. If a sensor error is detected when the power is supplied to the refrigerator for the first time, the sensor error message is displayed on the display panel.
- Even if a sensor error occurs during an operation, the refrigerator does not stop. However, the refrigerator operates in emergency operating mode and the cooling operation may not be performed properly. Therefore, in this case, check the refrigerator referring to the self iagnostic section in this manual.

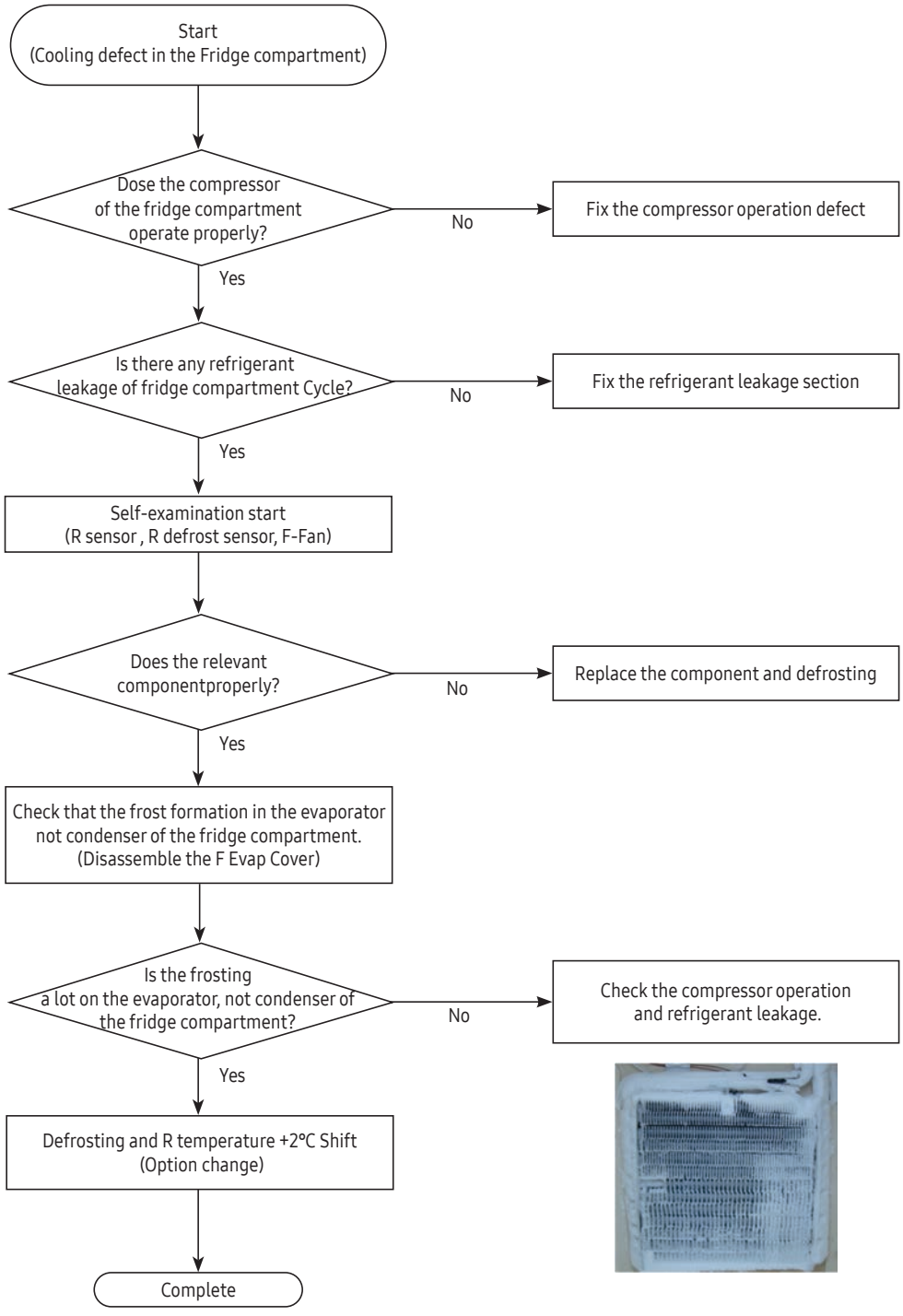
① When the "13C" (humidity sensor) error occurs

☞ Check the input voltage to the humidity sensorHumidity sensor operating voltage : 5 VCheck if 5 V is measured at the humidity sensor connectors #1-#2.

☞ Check the output voltage from the humidity sensor
Check the voltages of the humidity sensor connectors #2-#4 referring to the humidity sensor voltage table.



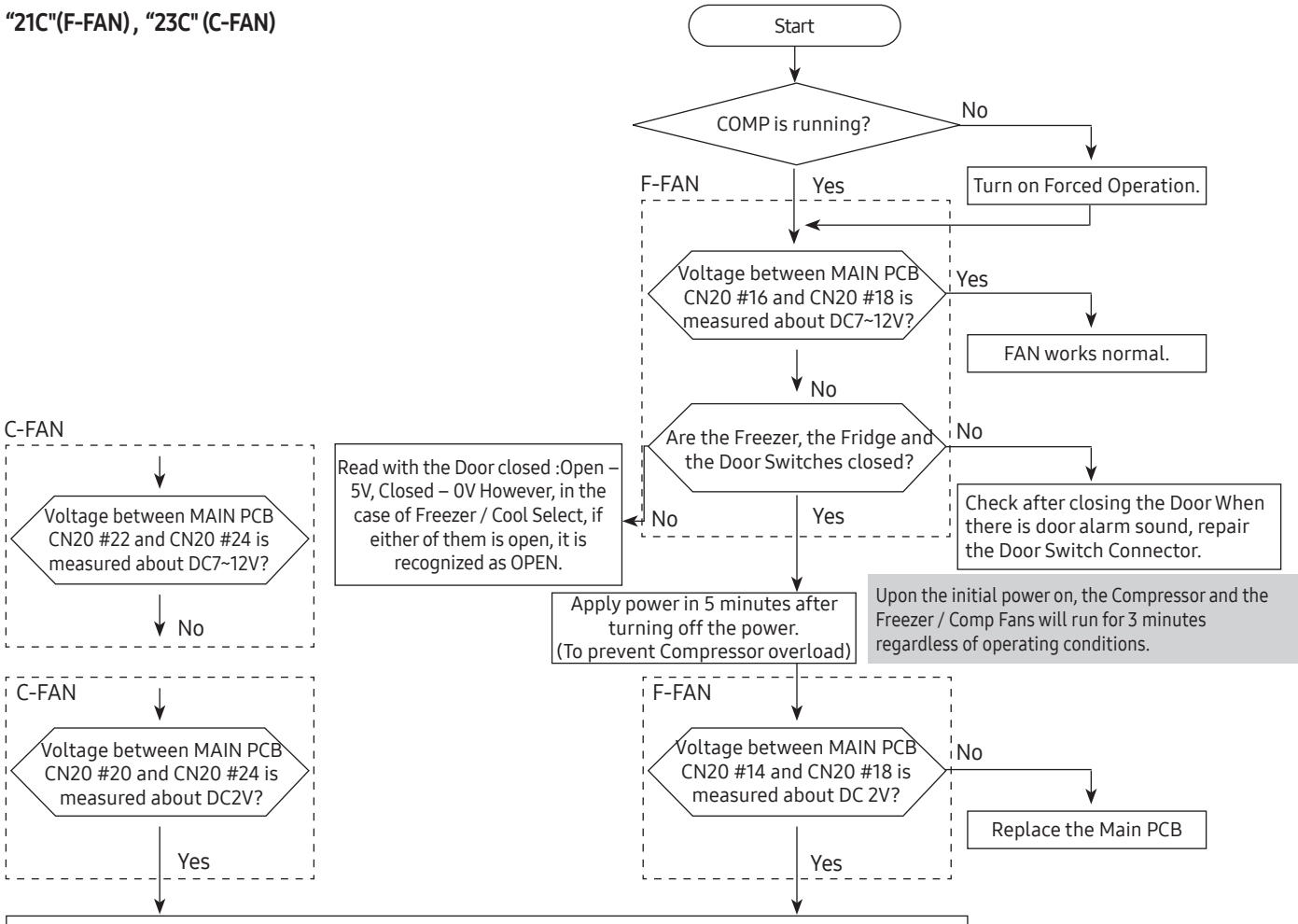
5-5. When occur the cooling defect by a lot of frosting on the Fridge compartment



5-6. When the Fan does not operate (F, C - FAN)

- This refrigerator uses the BLDC Fan Motor. The BLDC Motor operates with DC 7~12V.
- Under Comp On conditions, the F-Fan operates generally. But, when the ambient temperature is high or when you open and close the Door once, it operates after one-minute delay. So, don't get misled by it. It is normal.
- When there is defect, turn on the Self-Diagnosis function and confirm the defect before turning off the unit.

"21C"(F-FAN), "23C" (C-FAN)



◆ Expected Causes

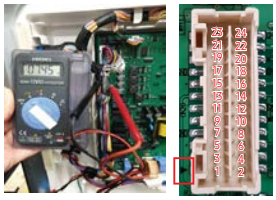
① Defective Fan-Motor
② Contact error at wire connection
③ When the Fan Motor operates, check the input of the Motor Spinning Pulse.

Note

- Pulse signal is generated at CN20 #14 (F), #20 (C) when the Motor spins. This signal enters to MICOM and if there is no signal entering when the Motor spins, the Fan goes off and works again in 10 seconds.
- If there is still no signal entering, it repeats the above operation 4 more times. If it keeps not sending the signal, the Motor operates in 10 minutes. This is a function to overcome the case that there is a restriction in the Motor due to foreign substances around the Motor.

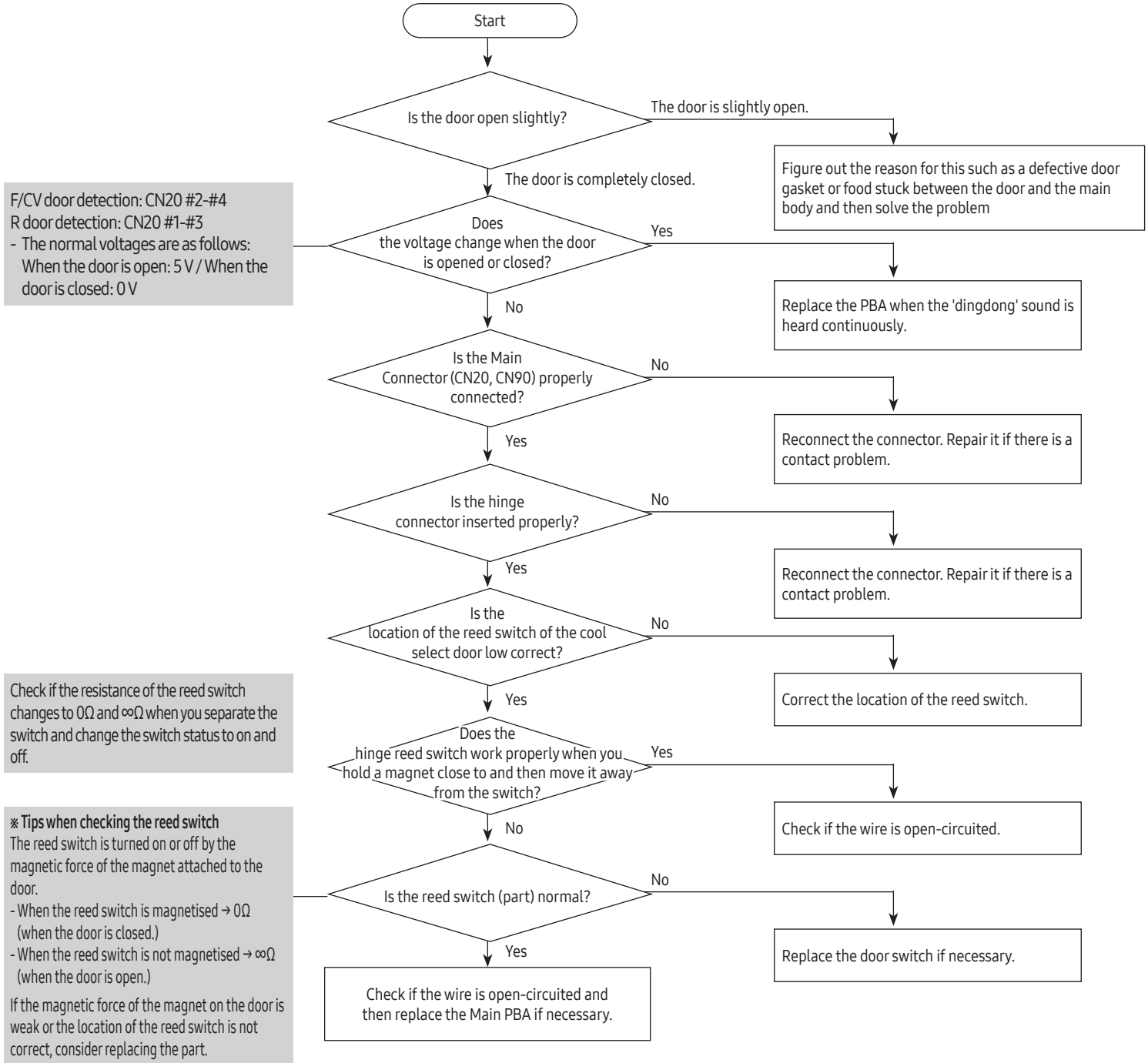
How to Check the Fan Voltage

- Measure voltage with power applied
- The PIN array starts with the arrow and the arrangement is the same regardless of the number of PIN (see the picture below)

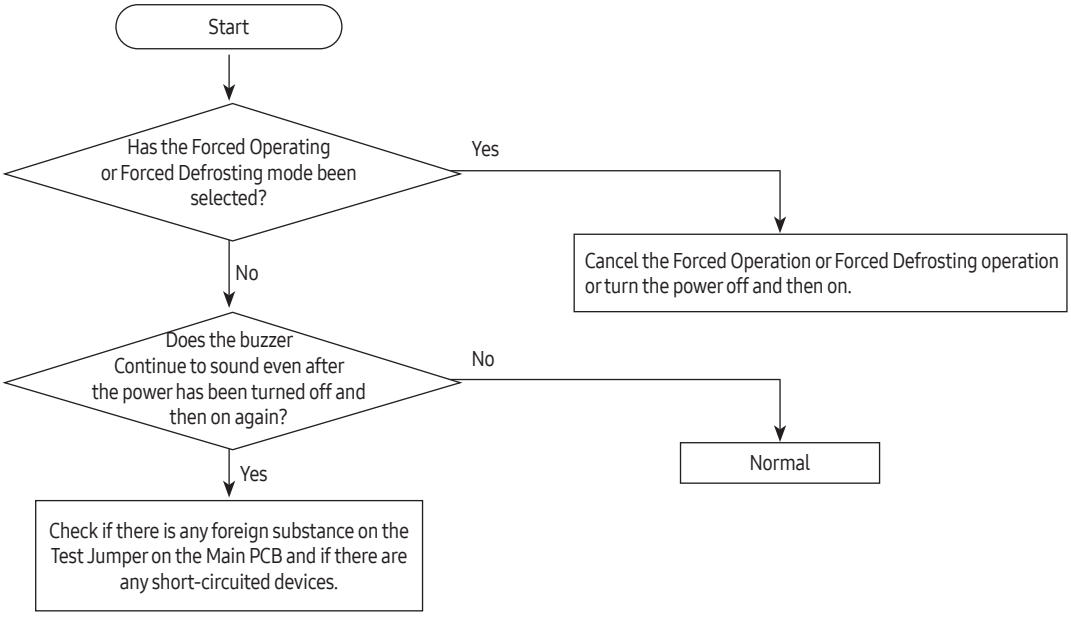


5-7. When the alarm is heard continuously (buzzer sound)

① If a 'dingdong' sound is heard continuously or the 'Refrigerator door is opened' message is displayed



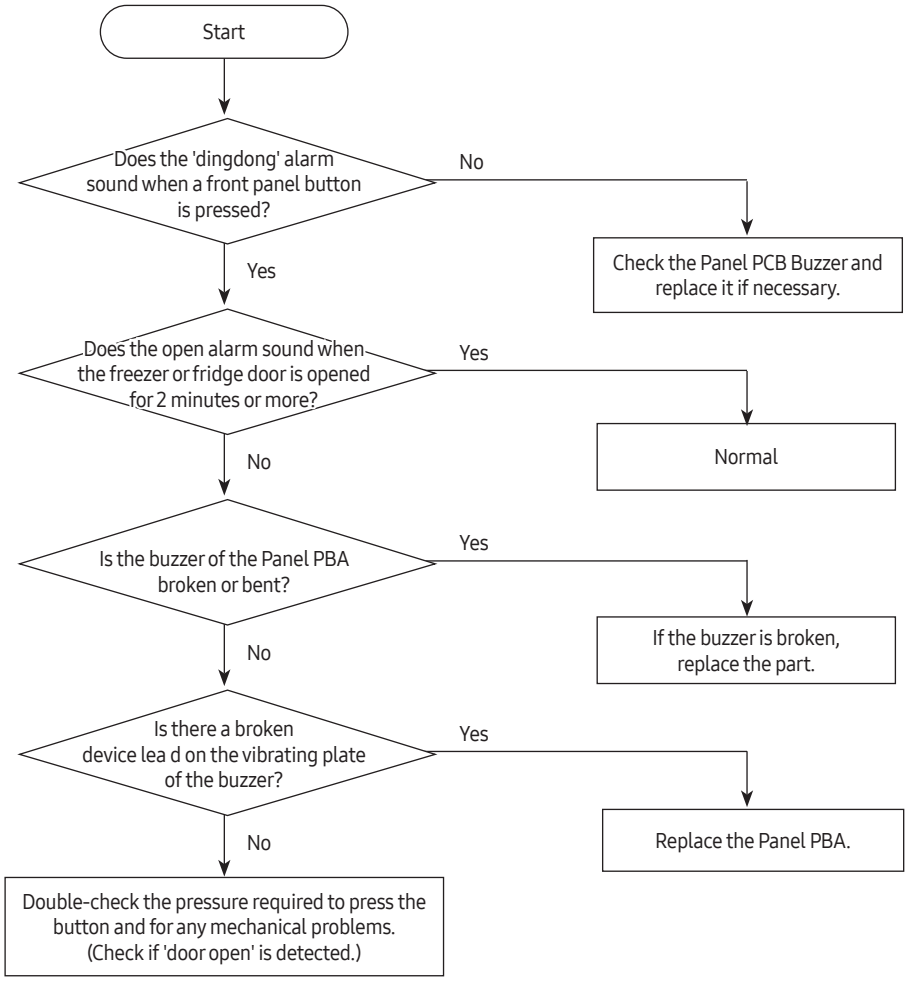
② If a 'beep-beep' sound is heard continuously, perform a Forced Operation. If a 'ddiriririring' sound is heard continuously, perform a Forced Defrosting operation. If the 'dding dding dding' sound is heard continuously, the buzzer sound is heard.



③ When there is no buzzer sound.

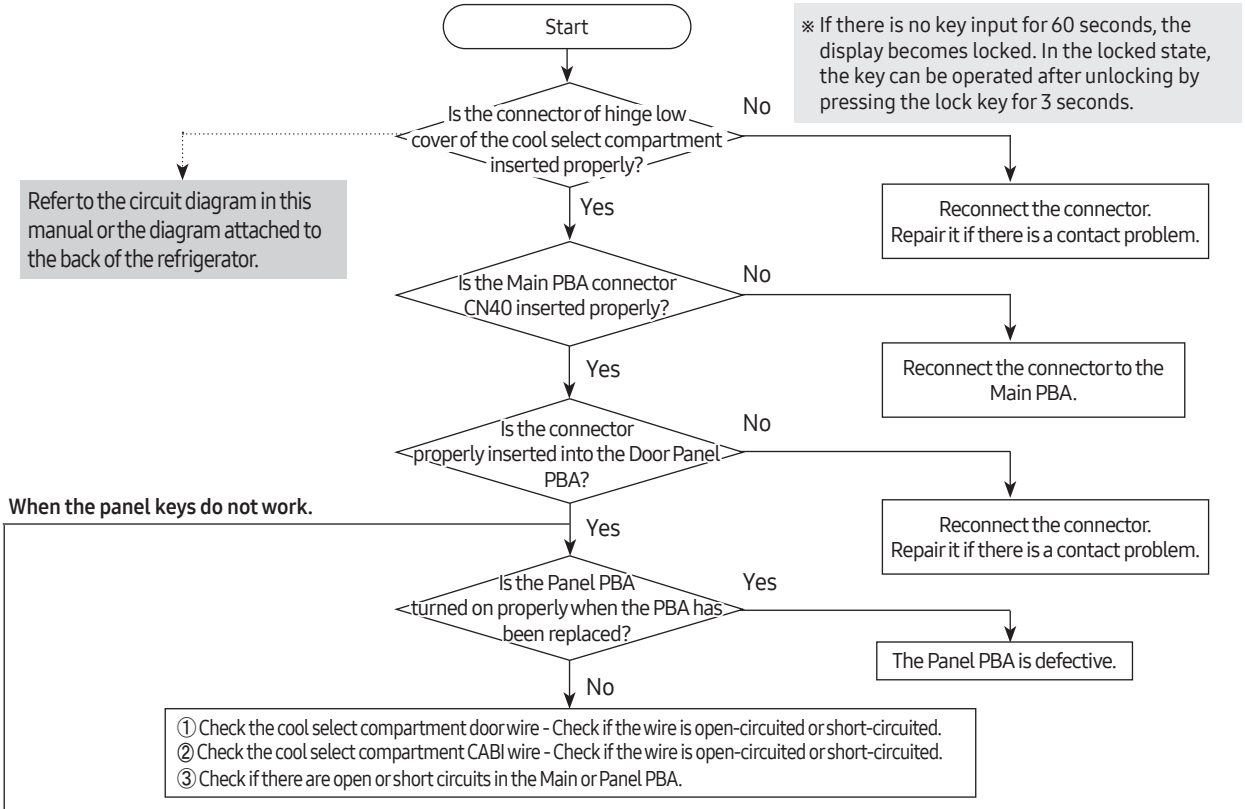
The buzzer is attached to the Panel PBA in this model.
If the buzzer does not sound when you press a key, run the Forced Operating operation or open the door, separate the Panel PBA and check if the buzzer is broken or improperly soldered.
(If the problem is not an improperly soldered part but a defective part, it is recommended replacing the Panel PBA because repairing the part is difficult.)

※ Note that the problem may not be identified when the refrigerator is a built-in appliance of the house or the installation location is very noisy.



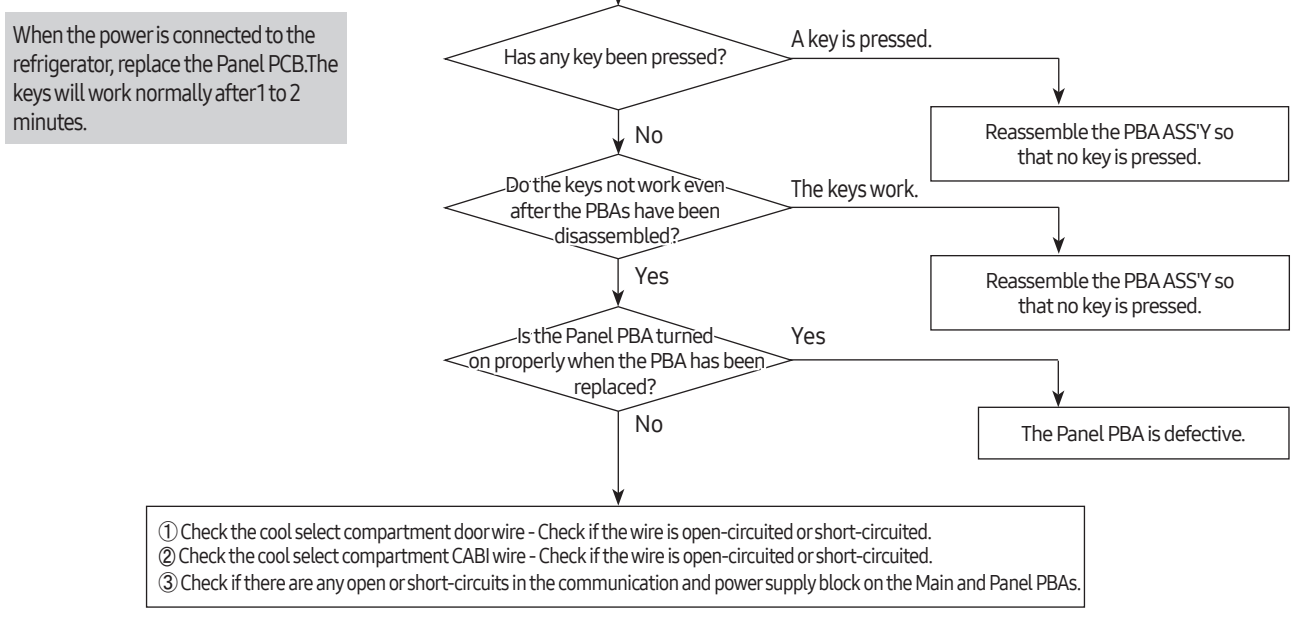
5-8. When the Panel PBA does not work properly

① When the Panel PBA is not turned on or only some of the lamps are turned on



② When the Panel PBA key cannot be selected

※ The basic troubleshooting follows the descriptions above. If the problem continues even after completing the steps above, complete the following procedures.



5-9. When the inside light is not on

Note

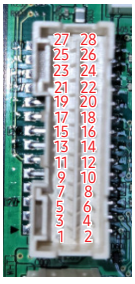
1. When the freezer door opens, the DOOR S/W contact is OPEN and the MICOM is applied 5V to detect OPEN. Then if 5V is detected for more than 2 minutes, the door open alarm occurs for 10 seconds every 1 minute. Therefore, if DOOR S/W is defective, it may occur every one minute in the refrigerator, so please refer to the service action.
2. Internal light ON/OFF control is interlocked with DOOR S/W.

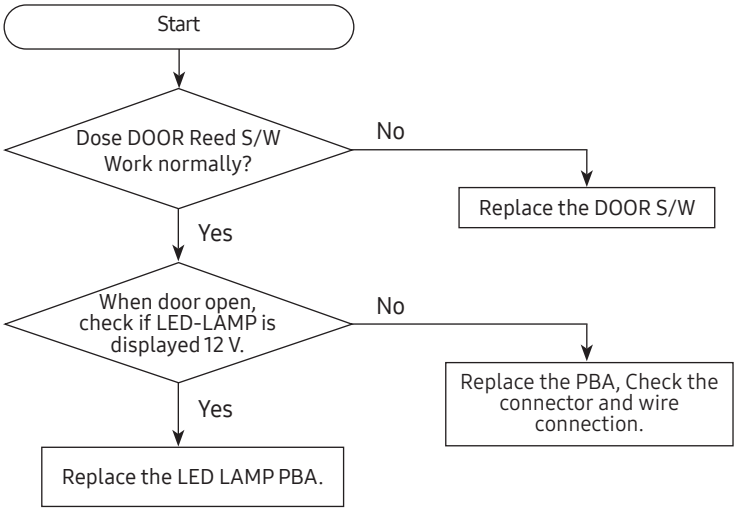
※ Tips when checking the reed switch

The reed switch is turned on or off by the magnetic force of the magnet attached to the door.

- When the reed switch is magnetised → 0Ω (when the door is closed.)
- When the reed switch is not magnetised → ∞Ω (when the door is open.)

If the magnetic force of the magnet on the door is weak or the location of the reed switch is not correct, consider replacing the part.



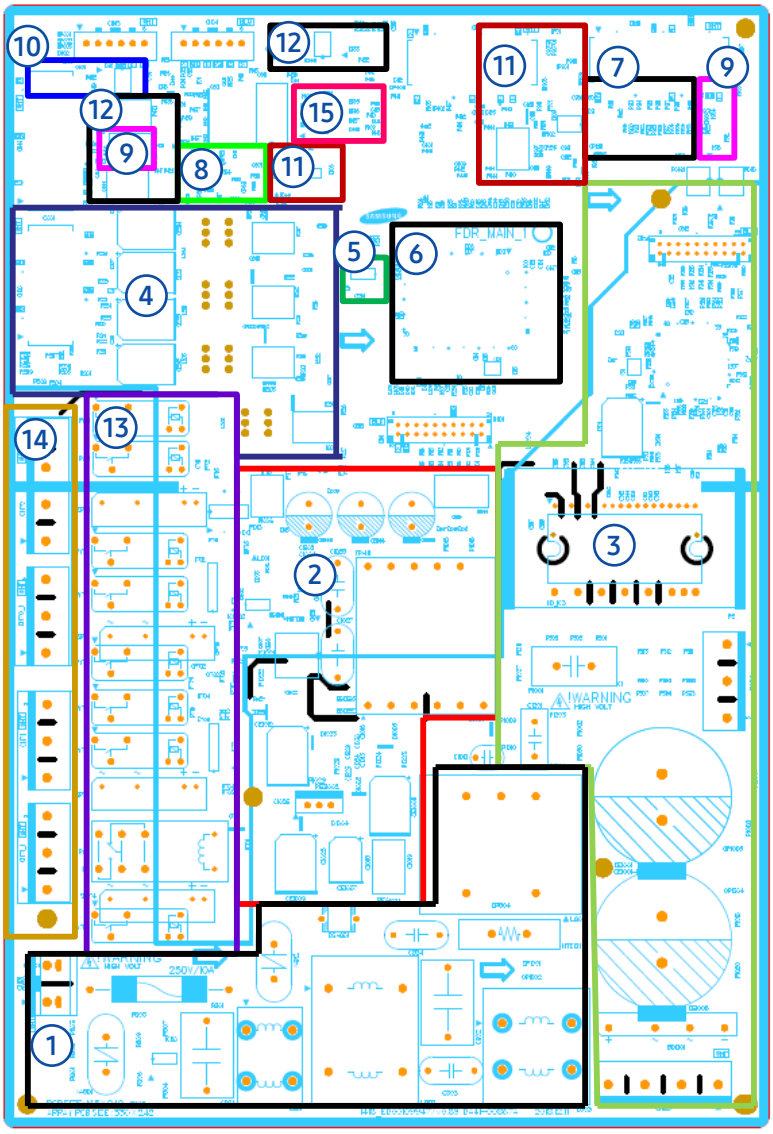


LED LAMP control

Freezer/Cool select internal lights	Fridge internal lights
Condition) Lights up when opening fridge door	Condition) Lights up when opening freezer or cool select door
CN40 #10-#12 LED LAMP	CN40 #26-#28 LED LAMP

6. PCB DIAGRAM

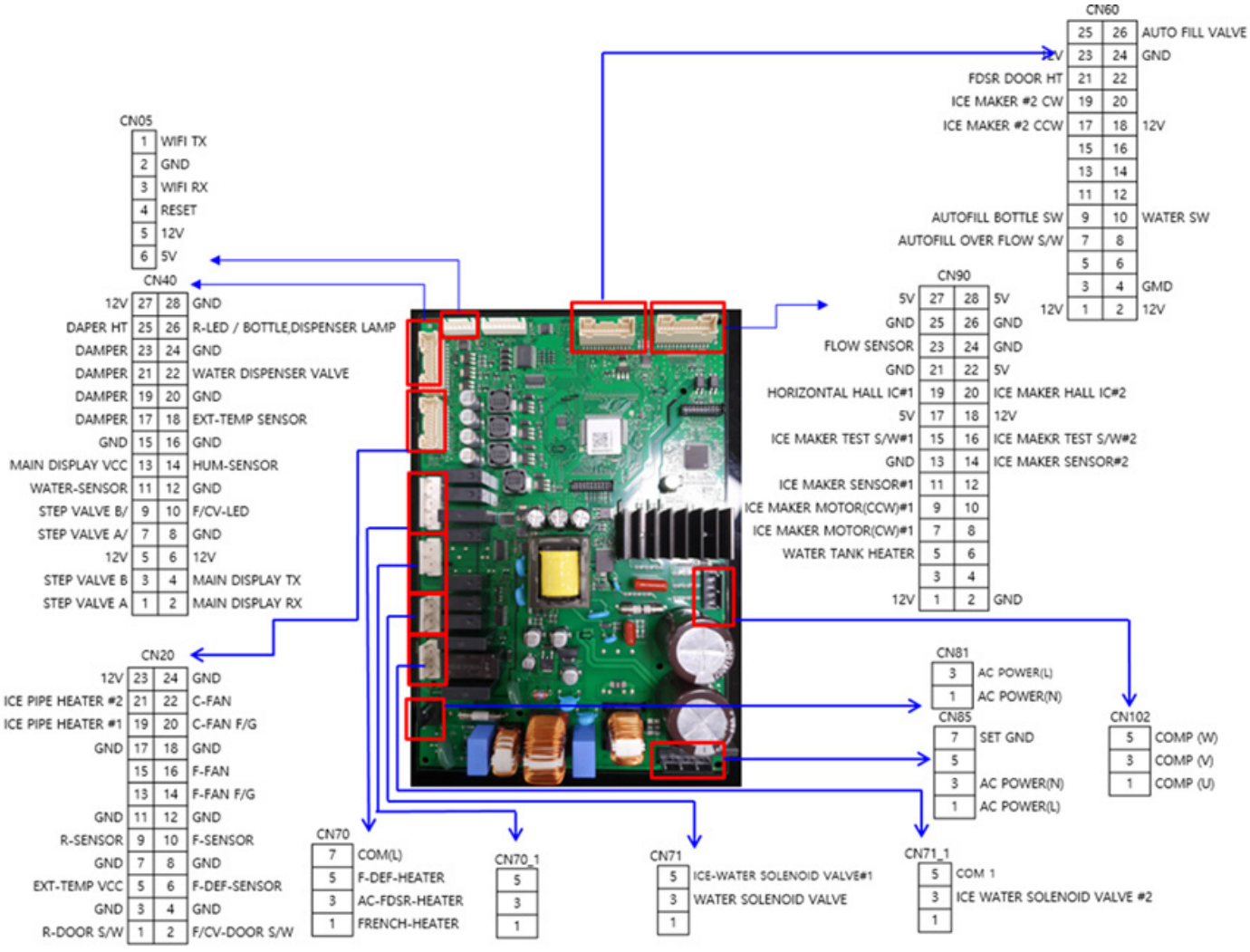
6-1. PCB Layout with part position



1. EMI FILTER part.
2. DC 15V, 12V, 5V, GND supplied from SMPS PCB.
3. Inverter circuit part.
   - COMP Driving / Feedback Circuit.
   - BOOTSTRAP Charger : It is an independent power circuit for the driving of the IMP High-Phase IGBT.
   - Current Pickup Circuit : It pickups the currents taken by the Shunt resistance and does the PWM DUTY control.
4. FAN MOTOR control part : To supply the power from 7V ~ 12V according to the motor types. (F,R,C,ICE)
5. EEPROM : Save and record every kinds of data.
6. Micom : control the regrigerator Ceramic resonator : generate the basic frequency of Micom operation.
   Reset IC : make Micom reset if input voltage of Micom is detected less than the specified voltage.
7. Operate ICE-MAKER, supply power to MOTOR, and sense the variation of switch.
8. Main Micom ↔ Panel Micom serial communication circuit - Dispenser option input part. (Water & Cover Ice route switch)
9. Auto Fill control part.
10. Control Mid drawer Room damper & Damper heater.
11. Water Tank Heater Controls. (also controls other options)
12. LED LAMP Control Circuit. (F,R, MID room Lamp)
13. Relay parts that controls AC load and receives Micom operating signal through Sink IC.
14. Connector with AC load.
15. Diode option setting area.

PCB DIAGRAM

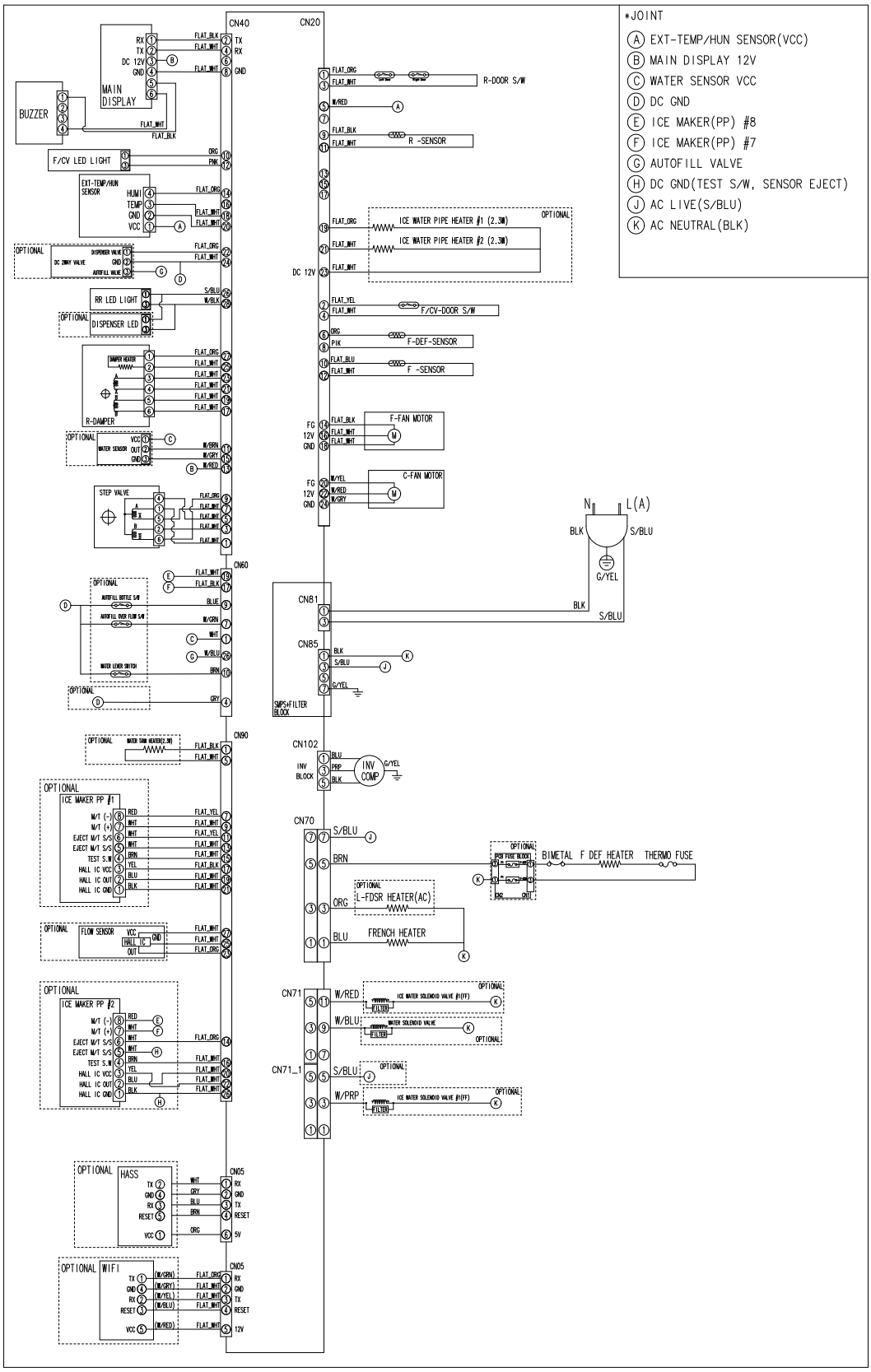
6-2. Connector Layout with part position



7. WIRING DIAGRAM

7-1. Wiring diagram

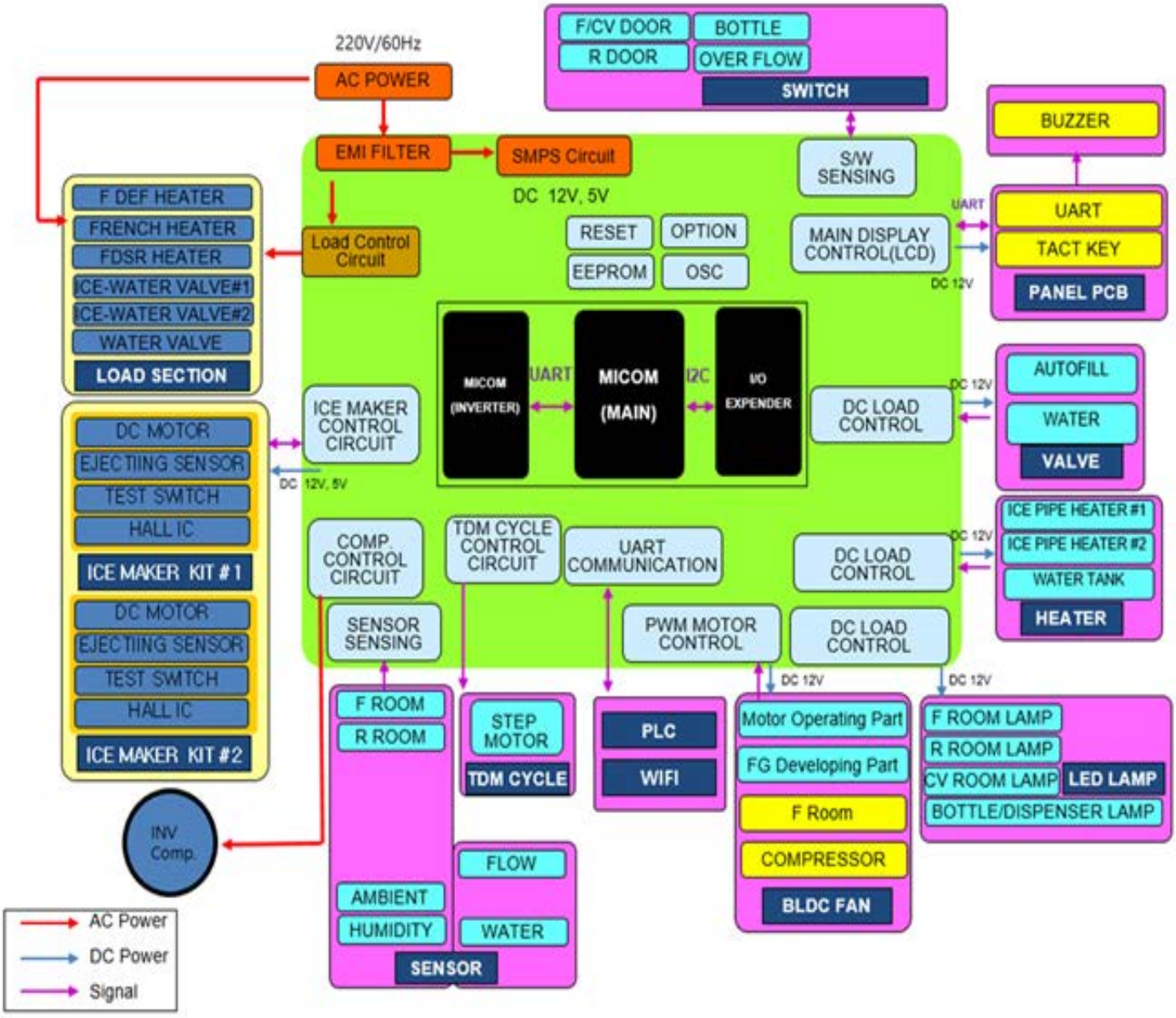
RF7000AC ELECTRIC DIAGRAM



8. BLOCK DIAGRAM

8-1. Whole block diagram

■ BSC+TWIN ICE MAKER



9. REFERENCE INFORMATION

9-1. Nomenclature

Digit	1		2		3		4/5		6		7		8		9		10/11	12	13/14
Model Code	Brand		Product		Type		Width		Depth		Configuration		Water & Ice		Energy		CMF	/	Buyer Code
	D		**R**		**F**		**36**		**C**		**7**		**0**		**0**		**SR**	**/**	**DA**
Option	D	Dacor	R	REF	F	FDR	36	36"	C	Counter Dep	7	T-Type (Triple Cooling, W/ Flex Zone)	0	Left Beverage Center W/FDSR	0	US Energy Star	SR	/	DA
											5	T-Type (Mono Cooling, wo/ Flex Zone)					MT		

9-2. Trouble Shooting

Problem	SOLUTION
The Refrigerator does not work at all or it does not chill sufficiently.	• Check that the power plug is properly connected.
	• Check the set temperature on the digital display is warmer than freezer or fridge inner temperature.
	• Try setting it to a lower temperature.
	• Is the Refrigerator in direct sunlight or located near a heat source?
	• Is the back of the Refrigerator too close to the wall and therefore keeping air from circulating?
The food in the Refrigerator is frozen.	• Check the set temperature on the digital display is too low.
	• Try setting it to a warmer temperature.
	• Is the temperature in the room too low? Try setting it to a warmer temperature.
	• Did you store the food which is juicy in the coldest part of the Refrigerator? Try moving those items on the other shelves in fridge instead of keeping them in the Cool Select Pantry™.
You hear unusual noise or sounds.	• Check that the Refrigerator is level and stable.
	• Is the back of the Refrigerator too close to the wall and therefore keeping air from circulating?
	• Try locate the refrigerator keep away from the wall over 2 inches.
	• Was anything dropped behind or under the Refrigerator?
	• A “ticking” sound is heard from inside the Refrigerator. It is normal and occurs because various accessories are contracting or expanding according to the temperature of the Refrigerator interior.
The front corners and vertical hinged section of the appliance are hot and condensation is occurring.	• Some heat is normal as anti-condensators are installed in the vertical hinged section of the Refrigerator to prevent condensation.
	• Is the Refrigerator door ajar? Condensation can occur when you leave the door open for a long time.
	• If a sound that hit something is heard from inside the refrigerator, it is normal and occurs because ice dropping make a sound by periods.
Ice Maker is not producing ice.	• Did you wait for 12 hours after installation of the water supply line before Maker ice?
	• Is the water line connected and the shut-off valve opened?
	• Did you manually stop the ice Maker function?
	• Is the Freezer temperature too warm? Try setting the Freezer temperature lower.
You can hear water bubbling in the Refrigerator.	• This is normal. The bubbling comes from the Refrigerator coolant liquid circulating through the Refrigerator.
There is a bad smell in the Refrigerator.	• Check for spoiled food.
	• Foods with strong odors(for example, fish) should be tightly covered.
	• Clean out your Freezer periodically and throw away any spoiled or suspicious food.
Frost forms on the walls of the Freezer	• Is the air vent blocked? Remove any obstructions so air can circulate freely.
	• Allow sufficient space between the foods stored for efficient air circulation.
	• Is the Freezer drawer closed properly?
Water dispenser is not functioning.	• Is the water line connected and the shut-off valve opened?
	• Has the water supply line tubing been crushed or kinked? Make sure the tubing is free and clear of any obstruction.
	• Is the water tank frozen because the Refrigerator temperature is too low? Try selecting a warmer setting on the Digital display.

9-3. Troubleshooting (Check the following before calling the service centre.)

Symptom	Troubleshooting
Spurting, spitting sound	- The sound may be heard when the refrigerant inside the refrigerator flows as a gas and a liquid. - In addition, the frost attached to the cooler may generate a sound like a 'chikchik' or 'bukbuk' and so on when the frost melts. Since this is normal and not a problem, please use the refrigerator without worries.
Tapping sound	- The sound may be generated when the parts inside of the refrigerator expand or shrink as the temperature inside the refrigerator changes. - When the frost covering the cooler melts, a similar sound may be heard.Since this is normal and is not a problem, please use the refrigerator without worries.
Whining or humming sound	- These sounds may be generated by the compressor or fan when the refrigerator starts or ends the operation. The sound may be louder or softer as the compressor or fan rotates faster or slower depending on the surrounding temperature or the status within the refrigerator.The reason for the sound is similar to the sound that is heard when you start or stop the engine of a vehicle or you accelerate a vehicle. Since this is normal and not a problem, please use the refrigerator without worries.
The refrigerator has just been installed but the noise is too loud!	- When the refrigerator starts for the first time or restarts after the power has been cut, the compressor and fan rotate faster to decrease the temperature inside the refrigerator. At this time, the sound may be loud but the noise will decrease as the temperature inside the refrigerator decreases. Since this is normal and not a problem, please use the refrigerator without concern.
vacuum sound	- If you open and close the door, the air captured by the refrigerator is rapidly cooled and this temporarily decreases the internal pressure and may generate the sound of air flowing from the back of the refrigerator such as 'shik~'. Alternatively, in this case, the internal structure of the refrigerator is temporarily distorted and this may generate a sound like 'ddudduk'. Since this is normal and not a problem, please use the refrigerator without concern.
There is a loud noise as well as a strange sound.	- Install the refrigerator on a flat, solid floor. - Please keep the back of the refrigerator away from the wall by at least 5cm. - Keep objects away from the back and sides of the refrigerator. - Do not place heavy objects on the refrigerator.
There is an odd smell coming from inside the refrigerator.	- Be sure to cover the cap or wrap side dishes such as foods with strong odor. In particular, be sure to wrap meat and dried-fish with plastic bags. Food that has been stored in the refrigerator for a long time can be the cause of the smell. - To clean the inside of the refrigerator, store the food in another location, unplug the power cord, wait 2~3 hours, clean the inside of the refrigerator with a dry cloth and then ventilate the inside of the refrigerator. - Put slices of bread, coffee beans, hardwood charcoal or a copper plate in the refrigerator to remove the smell.

Symptom	Troubleshooting
I can't easily open the refrigerator door.	- Since the separated freezer and fridge are bonded without a gap, it may difficult to open the door. - Check if the front of the refrigerator is higher than the back. If it is, adjust the level using the height adjustable legs of the refrigerator.
The fridge door is lower than the freezer door when I look at the refrigerator from the front. The upper and lower gaps between the freezer door and the fridge door are different	- Since the size and weight of the fridge compartment and the freezing compartment are not the same, this symptom may occur due to some hidden weight. - Due to the same reason, the upper and lower gaps between the doors may not be the same.
The freezer compartment is covered with frost! (The fridge compartment is wet with dew.)	- Frost or dew may appear when the surrounding temperature or humidity is high or the refrigerator door has been opened for a long time or food with plenty of moisture is stored without closing the cover for it.
The main body of the refrigerator and the internal lamp cover in the freezer compartment are wet with dew.	- Since the lamp in the freezer generates heat if the door is open for a long time, frost may appear due to the temperature difference between the external air and the freezer compartment. The frost will disappear if the door is closed. - When the surrounding humidity is too high, the moisture in the air can turn to dew when the air reaches the cold surface of the refrigerator.
The surface of the refrigerator is hot!	- This is because there are pipes around the front and sides of the refrigerator to cool the contents of the refrigerator quickly and save power. In particular, when the refrigerator is installed for the first time or during summer, it may be feel hot but this is not a problem.
The freezer and fridge do not work at all. (The cooling performance is low.)	- Check if the power cord is unplugged. - If the target temperature is high, press and hold the Lock button for 3 seconds until the Lock icon( ) disappears and then set the temperature to a lower temperature. - Check if the refrigerator is exposed to direct sunlight or if there is a heater near the refrigerator. - Be sure to keep a distance of at least 5cm between the back of the refrigerator and the wall.
Hot air blows from the bottom of the refrigerator.	- The heat is exhausted from the compressor that runs to decrease the temperature inside the refrigerator. The refrigerator is designed so that the heat is exhausted from the side of the refrigerator.If the side of the refrigerator is blocked by the wall or other object, customers may experience hot air from the front and this is not a problem of the refrigerator.

Symptom	Troubleshooting
The food in the fridge compartment is frozen.	- If the fridge compartment temperature is set too low, adjust the temperature to an adequate level. - When the surrounding temperature is 5°C or lower, the food stored in the fridge may freeze. - Keep food with plenty of moisture at the front of the shelf. Otherwise the food may freeze due to the direct contact with the cold air inside the compartment.
The refrigerator does not stop and runs continuously!	- Although the compressor that cools the temperature inside the refrigerator stops, the cooling fan inside the refrigerator continues to maintain the cold air flow and keep the temperature stable. Since this is normal and not a problem, please use the refrigerator without concern. (However, the operation will stop if the freezer or fridge door is opened.)
The temperature display is not turned on.	- To save energy, if no key is pressed, the temperature display is turned off after10 seconds.If you press a button or open or close the refrigerator door or home bar door, the temperature display is turned on.
The buttons on the control panel of the refrigerator do not work.	- Check if the Lock icon( ) is turned on. - If you touch a button wet hands or clean a button with a damp cloth, the button may not work. If you remove the moisture, you can use the buttons normally.

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