



REFRIGERATOR

SBS TYPE

BASIC : RSH1DTMH

MODEL NAME (MODEL CODE) :

RSJ1Z/K***

RS21H*L**

RSJ1Y/J***

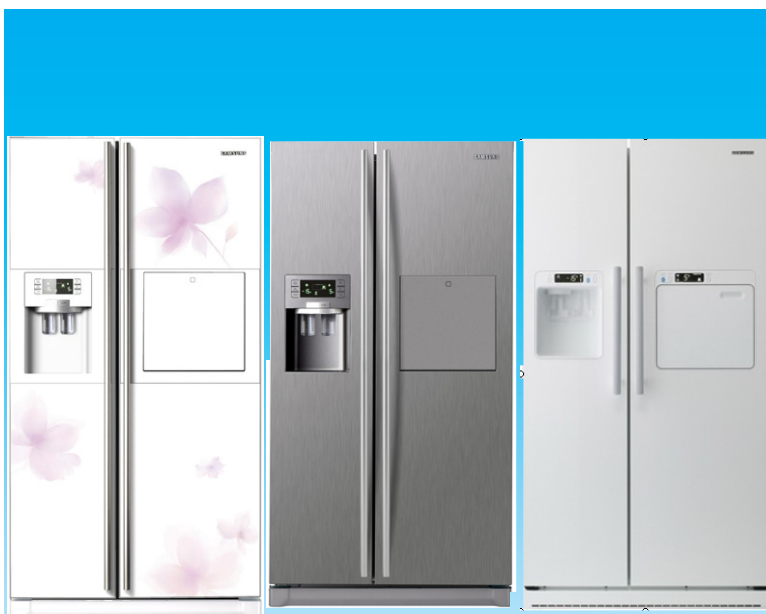
RS21H****

RSJ1P/F***

RS23H****

SERVICE *Manual*

REFRIGERATOR



RS21H*L**

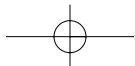
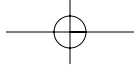
RS21/23H****

RSJ1****

CONTENTS

PRECAUTIONS(SAFETY WARNINGS)	5
PRODUCT SPECIFICATIONS	8
DISASSEMBLY & REASSEMBLY	21
TROUBLE SHOOTING	48
PCB DIAGRAM	78
WIRING DIAGRAM	82
SCHEMATIC DIAGRAM	94
REFERENCE INFORMATION	100

- For the latest parts information, Please access to our service web site
 (• North America : <http://service.samsungportal.com> • Latin America : <http://latin.samsungportal.com>
 • CIS : <http://cis.samsungportal.com> • Europe : <http://europe.samsungportal.com>
 • China : <http://china.samsungportal.com> • Asia : <http://asia.samsungportal.com>
 • Mideast & Africa : <http://mea.samsungportal.com>)





WARNING

IMPORTANT SAFETY NOTICE

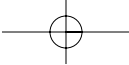
The service guide is for service men with adequate backgrounds of electrical, electronic, and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or dealer cannot be responsible for the interpretation of this information.

SAMSUNG ELECTRONICS AMERICA, INC.

Technical Service Guide

Copyright ©2009

All rights reserved. This service guide may not be reproduced in whole or in part in any form without written permission from the SAMSUNG ELECTRONICS Company.



Contents

1. PRECAUTIONS(SAFETY WARNINGS) 5

2. PRODUCT SPECIFICATIONS 8

3. DISASSEMBLY & REASSEMBLY 20

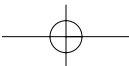
4. TROUBLE SHOOTING 46

5. PCB DIAGRAM 78

6. WIRING DIAGRAM 82

7. SCHEMATIC DIAGRAM 94

8. REFERENCE INFORMATION 100



1. PRECAUTIONS(SAFETY WARNINGS)

- Upon electronic Control system repair/change, make sure the set unplugged.
⇒ Be ware of electric shock.
- Use rated electronic Control equipment.
⇒ Make sure to check out Model name, Rated voltage, Rated current, Operation Temp, etc.
- Upon repair, make sure that harnesses are not to be water-penetrated and are bundled tight.
⇒ Should not be detached by a certain amount of external force.
- Upon repair, completely remove dust or other foreign substances from housing, harness, connector, etc.
⇒ To prevent fire by tracking, short, etc.
- Check out whether water has penetrated into the electronic Control system.
⇒ If there is any kind of trace, take necessary measures such as related component change, insulation tapping, etc.
- After repair, check out the assembled state of parts.
⇒ It should be the same as the previous state.
- Check out the surrounding conditions.
⇒ Change the location, if the fridge is located at humid, wet places or the installed state is unstable.
- If needed, ground the fridge.
⇒ Especially, if there is a possibility of electric leakage, ground is indispensable.
- Do not allow consumers to overload a certain outlet.
- Check out whether the power cord or the outlet is broken, squeezed, chopped off or heat-deformed.
⇒ Repair or replace the defective power cord/outlet immediately.
⇒ Make sure the power cord is not punctuated or stomped down.
- Do not allow consumers to keep food unstable or place bottles in the Freezer Room.
- Do not allow consumers to repair the fridge for themselves.
- Do not allow consumers to keep things except for food.
⇒ Pharmaceutical, Chemical substances : These are not possible to be fine-Controlled with a consumer fridge.
⇒ Flammable material (alcohol, benzene, ether, LPG, etc) : possibility of explosion.

SAFETY WARNINGS

Read all instructions before repairing the product and keep to the instructions in order to prevent danger or property damage.

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.

SYMBOLS

	means "Prohibition".
	means "Do not disassemble".
	means "No contact".
	means "The things to be followed".
	means "Power cord should be unplugged from the consent".
	means "Earth to prevent Electric shock".



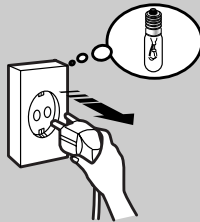
Warning & Caution

Pull the power plug out to exchange the interior lamp of the refrigerator.

- It may cause electric shock.



Unplug



Use the rated components on the replacement.

- Check the correct model, rated voltage, rated current, operating temperature and so on.



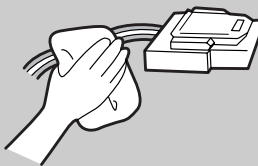
On repair, make sure that the wires such as harness are bundled tightly.

- Bundle tightly wires in order not to be detached by the external force and then not to be wetted.



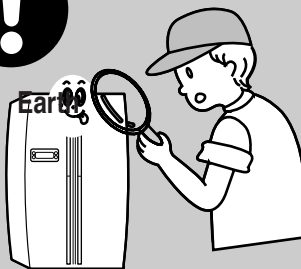
On repair, remove completely dust or other things of housing parts, harness parts, and check parts.

- Cleaning may prevent the possible fire by tracking or short.



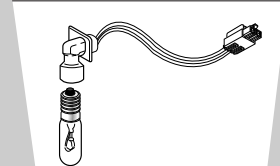
After repair, check the assembled state of components.

- It must be in the same assembled state when compared with the state before disassembly.



Check if there is any trace indicating the permeation of water.

- If there is that kind of trace, change the related components or do the necessary treatment such as taping using the insulating tape.



SAFETY WARNINGS

* Please let users know following warnings & cautions in detail.



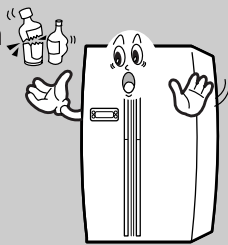
Warning & Caution

Do not allow users to put bottles or kinds of glass in the freezer.

- Freezing of the contents may inflict a wound.



Prohibition



Do not allow users to store narrow and lengthy bottles or foods in a small multi-purpose room.

- It may hurt you when refrigerator door is opened and closed resulting in falling stuff down.

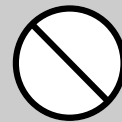


Prohibition



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

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



Prohibition

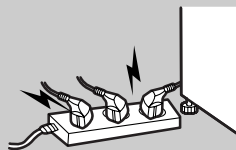


Do not allow users to insert the power plugs for many products at the same time.

- May cause abnormal generation of heat or fire.



Prohibition

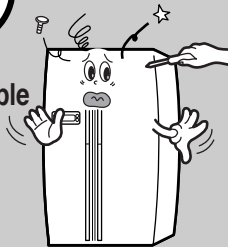


Do not allow users to disassemble, repair or alter.

- It may cause fire or abnormal operation which leads to injury.

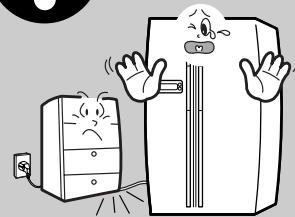


Do not disassemble



Do not allow users to bend the power cord with excessive force or do not have the power cord pressed by heavy article.

- May cause fire.

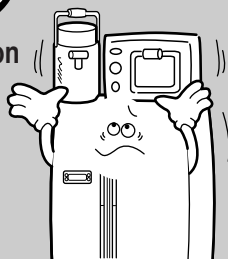


Do not allow users to store articles on the product.

- Opening or closing the door may cause things to fall down, with may inflict a wound.

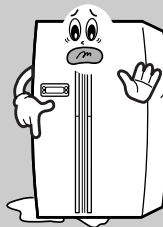


Prohibition



Do not allow users to install the refrigerator in the wet place or the place which water splashes.

- Deterioration of insulation of electric parts may cause electric shock or fire.

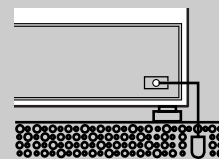


Make sure of the earth.

- If earthing is not done, it will cause breakdown and electric shock.



Earth



2. PRODUCT SPECIFICATIONS

2-1) Characteristics	9
2-2) Model Specification	10
2-3-1) Electric Parts Specification(RS21/23H/RSJ1 Series)	12
2-3-2) Electric Parts Specification(RS21H** CHINA Inverter Model)	13
2-3-3) Electric Parts Specification(RS21/23H/RSJ1 Series - Inverter Model)	14
2-3-4) Electric Parts Specification(RS21/23H/RSJ1 - R600a Model)	15
2-3-5) Electric Parts Specification(RS21/23H/RSJ1 - R134a Model)	16
2-3-6) Electric Parts Specification(RS21/23H/RSJ1 Series)	17
2-4) Dimensions (mm)	18
2-5) Optional Material Specification	19

PRODUCT SPECIFICATIONS

2-1) Characteristics

• Comparison with basic

Changed Part		Description	Basic	Current
Door	HomeBar	New design Soft touch type Home Bar		
Door	Display	New design Display		
Insert	Convertible	New design Convertible		

• New Option

Adapted Part		Description	Image
Door	Display	Ice&Water Type Touch Button	
Door	Moving Tray	Easily Movable Tray	

PRODUCT SPECIFICATIONS

2-2) Model Specification



NOTE

This operation instruction covers various models.

The characteristics of your appliance may differ slightly from those described in this manual.

- Key features of your new refrigerator

Your Samsung Side-By-Side Refrigerator comes equipped with many space-saving, innovative storage and energy-efficient features.

• TWIN Cooling TDM

By monitoring the states of the freezer and the fridge compartments on a real time basis, it runs both of the evaporators in optimal conditions and makes it possible to maintain world best 71% of humidity in the fridge compartment and extend storage life with much freshness.

• CoolSelect Zone™ Drawer (RSJ1Z/K/J, RS21/23HZ/J/K/Y*)

With this state of the art feature, you can select Quick Cool, Thaw or Select buttons to quickly chill, thaw and cool items just in the CoolSelect drawer. Select Soft Freeze, Cool or 0 Zone to control the temperature of drawer.

• EASY OPENING (RSJ1*E, RS21H*E**)

Doors can be opened easily and smoothly with this “Easy Handle” for the customer satisfaction.

• DUAL DISPLAY (RSJ1)

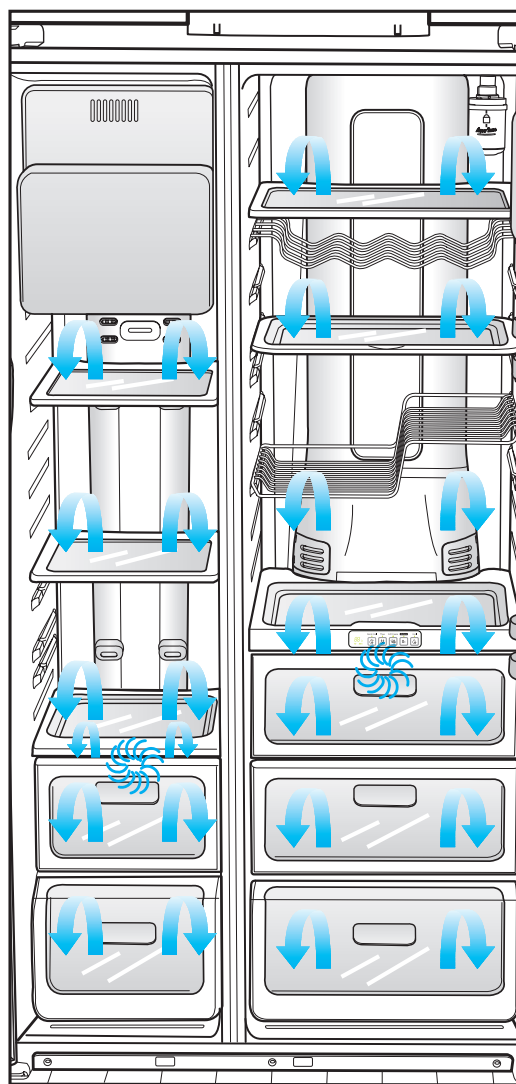
More readable & visible futuristic design dual display shows twin cooling system directly for convenience & satisfaction of customer.

• DELICATESSEN BOX

New concept box design on Fridge door for efficiency of storage space & convenient separation of all kinds of food.

• EASILY MOVABLE TRAY

New concept tray to increase the movability with food simultaneously. Useful for storage of dessert and cake etc.



PRODUCT SPECIFICATIONS

- Comparison with competitor

Brand	HERMES	LG	whirlpool	Samsung	REMARK
Model	RS21H****	GRL227SUJA	S20ER WW2V	RS60K	
Design					
Price (euro)	1.199	1.199	1.199	1.323	Superiority
Capacity	506L/524L/554L	551L	490L	520L	Superiority
Door design	Flat (Flushed/Hidden Hinges)	Contour (Hidden Hinges)	Contour (Hidden Hinges)	Flat (Hidden Hinges)	Superiority
Door Flushing	meet	un meet	meet	un meet	Equality
Dimension (H/D/W)	1789/734/912 (Counter-Depth)	1753/790/890 (No Counter-Depth)	1780/767/902	1760/724/908 (Counter-Depth)	Equality
Energy	A	A	A	A	Equality
Noise	41	41	45	43	Equality
Dispenser & Ice-maker	Tall Dispenser Blue Lighting	Tall Dispenser in Door Ice maker	Normal Dispenser in Door Ice System	Normal Dispenser	Superiority Inferiority
USP	Control	Clear Black Wide Display	LED Touch Display	Blue LCD Display	Superiority
	Cooling Tech.	Twin Cooling New Multi Stream Flow	Mono Cooling Ice Bearn Door Cooling Multi-Air Flow	Twin Cooling Multi Flow	Superiority
	Fridge	- Tower Lighting(30W(4EA)) - Z shelf / Moving Tray / Big Drawer	- Lighting (40W(1), 30W(1)) - Moist Balance™ Crisper	- Lighting (30W(2), - Humidity Controlled Drawers x2 - Foldable Shelf - Big Drawers	Superiority
	Freezer	- Lighting (40W(1EA)) - Big Drawer	- Lighting (40W(1))	- Lighting (30W(1)) - Big Drawers	Superiority

PRODUCT SPECIFICATIONS

2-3-1) Electric Parts Specification(RS21/23H/RSJ1 Series)

Items			Specification					
Components for Freezer	Model		Z / K	Y / J	P / F	U / D	V / B	S / N
			Disp+H/B+ Cool select zone	Dispenser+ Cool select zone	Dispenser+ Home Bar	Dispenser	Home Bar	Basic
	Defrost- Heater(FRE)	Conducting at F Defrosting	Sheath Heater 230V 230W					
	Defrost-Heater(REF)	Conducting at R Defrosting	Sheath Heater 230V 140W					
	DISPENSER HEATER	Interlock with F-FAN	AC230V 5W	AC230V 5W	AC230V 5W	AC230V 5W	-	-
	HOME-BAR HEATER	Interlock with COMP	AC230V 14W	-	AC230V 14W	-	AC230V 14W	-
	WATER PIPE HEATER	-	AC230V 10W	AC230V 10W	AC230V 10W	AC230V 10W	-	-
	WATER TANK HEATER	-	AC230V 5W	AC230V 5W	AC230V 5W	AC230V 5W	-	-
	Bimetal for preventing overheating of Freezer Defrost-Heater		Bimetal thermostat(BT-121-M) On: 40°C Off: 60°C Thermo-Fuse (Cutoff : 110°C)					
	Bimetal for preventing overheating of Refrigerator Defrost-Heater							
	Condenser for COMPRESSOR (Package type)	Running	Inverter : NO R600a: 450VAC/5.0μF R134a: 450VAC/5.0μF					
		Starting	-					
	Starting-Relay	Model	Inverter : NO R600a: J531Q35E330M385-2 R134a: J531Q35E330M350-2					
		Operation	Inverter : NO R600a: 33 Ω ±20% R134a: 22 Ω ±20%					
	Over-Load Relay	Model	Inverter : 4TM319SFBYY-82 R600a: 4TM265RFY-53 R134a: 4TM317RHY220CF1					
		Temp. On	Inverter : 61±9°C R600a: 61±9°C R134a: 69±9°C					
		Temp. Off	Inverter : 135±5°C R600a: 130±5°C R134a: 130±5°C					
	Rated Voltage		220V ~ 240V / 50Hz ~ 60Hz					
	MOTOR-BLDC (FEF)		DC12V DREP5020LB					
	MOTOR-BLDC (RRE)		DC12V DREP5020LB					
	MOTOR-BLDC (Circuit)		DC12V DRCP5030LA					
	Lamp (FEF)		AC220~240V/40W x 1					
	Lamp (REE)		AC220~240V/30Wx4(JM,Z,Y,K,J-Option) AC220~240V/30Wx2(P,U,V,S,F,D,N,B-Option)					
	Door Switch		200V DC 0.5A 10W					
	Door Switch (HOME-BAR)		20V DC 0.5A 10W					
Power Cord		AC 250V 10A						
Earth Screw		BSBN(BRASS SCREW)						

PRODUCT SPECIFICATIONS

2-3-2) Electric Parts Specification(RS21H** CHINA Inverter Model)

Items			Specification					
Components for Freezer	Model		Z (T/K)	V (T/K)	S (T/K)	Z	V	S
			Disp+H/B+ Cool select zone	Home Bar	Basic	Disp+H/B+ Cool select zone	Home Bar	Basic
	Net Capacity	Total	506 ℓ	554 ℓ	554 ℓ	506 ℓ	554 ℓ	554 ℓ
		Refrigerator	327 ℓ	346 ℓ	346 ℓ	327 ℓ	346 ℓ	346 ℓ
		Refrigerator	179 ℓ	208 ℓ	208 ℓ	179 ℓ	208 ℓ	208 ℓ
	Net dimension (WxDxH)		912 x 736 x 1795			912 x 734 x 1795		
	Rated Voltage and Frequency		230V 50Hz					
	Motor Rated Consumption Power		160W	160W	160W	160W	160W	160W
	Electric Heater Rated Consumption Power		405W	389W	375W	405W	389W	375W
	Kind of Refrigerator		INDIRECT COOLING METHOD REFRIGERATOR					
	Refrigerant/Refrigerant Amount		R600a, 88g					
	Freezer Performance		 (4-STAR)					
	Product Weight		130kg	117kg	117kg	121kg	108kg	108kg

※ The product weight is average weight for all kinds of model. It could be a little different from the model.

PRODUCT SPECIFICATIONS

2-3-3) Electric Parts Specification(RS21/23H/RSJ1 Series - Inverter Model)

Items			Specification					
Components for Freezer	Model		Z	Y	P	U	V	S
			Disp+H/B+ Cool select zone	Dispenser+ Cool select zone	Dispenser+ Home Bar	Dispenser	Home Bar	Basic
	Net Capacity	Total	506 ℓ	506 ℓ	524 ℓ	524 ℓ	554 ℓ	554 ℓ
		Refrigerator	327 ℓ	327 ℓ	345 ℓ	345 ℓ	346 ℓ	346 ℓ
		Refrigerator	179 ℓ	179 ℓ	179 ℓ	179 ℓ	208 ℓ	208 ℓ
	Net dimension (WxDxH)		912 x 734 x 1795					
	Rated Voltage and Frequency		230V 50Hz					
	Motor Rated Consumption Power		160W	160W	160W	160W	160W	160W
	Electric Heater Rated Consumption Power		405W	391W	405W	391W	389W	375W
	Kind of Refrigerator		INDIRECT COOLING METHOD REFRIGERATOR					
	Refrigerant/Refrigerant Amount		R600a, 88g					
	Freezer Performance		* ** * (4-STAR)					
	Product Weight		121kg	117kg	116kg	113kg	108kg	108kg

※ The product weight is average weight for all kinds of model. It could be a little different from the model.

PRODUCT SPECIFICATIONS

2-3-4) Electric Parts Specification(RS21/23H/RSJ1 - R600a Model)

Items			Specification					
Components for Freezer	Model		K	J	F	D	B	N
			Disp+H/B+ Cool select zone	Dispenser+ Cool select zone	Dispenser+ Home Bar	Dispenser	Home Bar	Basic
	Net Capacity	Total	506 ℓ	506 ℓ	524 ℓ	524 ℓ	554 ℓ	554 ℓ
		Refrigerator	327 ℓ	327 ℓ	345 ℓ	345 ℓ	346 ℓ	346 ℓ
		Refrigerator	179 ℓ	179 ℓ	179 ℓ	179 ℓ	208 ℓ	208 ℓ
	Net dimension (WxDxH)		912 x 734 x 1795					
	Rated Voltage and Frequency		230V 50Hz					
	Motor Rated Consumption Power		140W	140W	140W	140W	140W	140W
	Electric Heater Rated Consumption Power		405W	391W	405W	391W	375W	389W
	Kind of Refrigerator		INDIRECT COOLING METHOD REFRIGERATOR					
	Refrigerant/Refrigerant Amount		R600a, 88g					
	Freezer Performance		* ** * (4-STAR)					
	Product Weight		121kg	117kg	116kg	113kg	108kg	108kg

※ The product weight is average weight for all kinds of model. It could be a little different from the model.

PRODUCT SPECIFICATIONS

2-3-5) Electric Parts Specification(RS21/23H/RSJ1 - R134a Model)

Items			Specification					
Components for Freezer	Model		K	J	F	D	B	N
			Disp+H/B+ Cool select zone	Dispenser+ Cool select zone	Dispenser+ Home Bar	Dispenser	Home Bar	Basic
	Net Capacity	Total	506 ℓ	506 ℓ	524 ℓ	524 ℓ	554 ℓ	554 ℓ
		Refrigerator	327 ℓ	327 ℓ	345 ℓ	345 ℓ	346 ℓ	346 ℓ
		Refrigerator	179 ℓ	179 ℓ	179 ℓ	179 ℓ	208 ℓ	208 ℓ
	Net dimension (WxDxH)		912 x 734 x 1795					
	Rated Voltage and Frequency		230V 50Hz					
	Motor Rated Consumption Power		170W	170W	170W	170W	145W	145W
	Electric Heater Rated Consumption Power		405W	391W	405W	391W	375W	389W
	Kind of Refrigerator		INDIRECT COOLING METHOD REFRIGERATOR					
	Refrigerant/Refrigerant Amount		R134a, 190g					
	Freezer Performance		* ** * (4-STAR)					
	Product Weight		121kg	117kg	116kg	113kg	108kg	108kg

※ The product weight is average weight for all kinds of model. It could be a little different from the model.

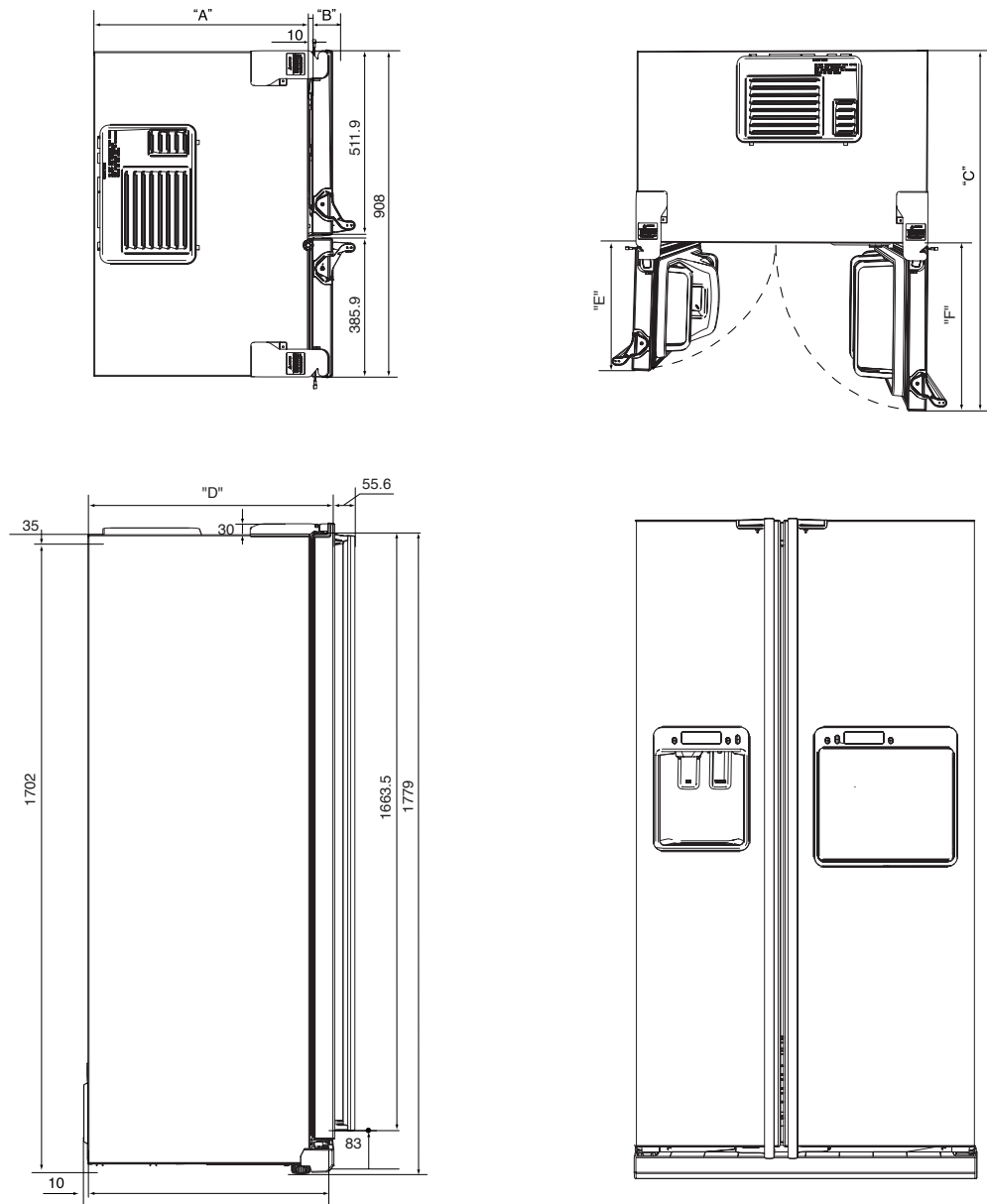
PRODUCT SPECIFICATIONS

2-3-6) Electric Parts Specification(RS21/23H/RSJ1 Series)

Items				Specification	
Components for Freezer	Models			RS21/23H/RSJ1 Series	
	Freezing Capacity			❄ ❄❄❄ (4-STAR)	
	Compressor	Model		Inverter : EU4A5Q-L2XA R600a : MK190G-L2U R134a : MK4A5Q-R1U	
		Starting type		R.S.C.R	
		Oil Charge		FREOL α -15 (ESTER)	
	Compressor	Freezer		SPILIT FIN TYPE	
		Refrigerator		SPLIT FIN TYPE	
	Condenser			Forced and natural convection type	
	Dryer			Molecular sieve XH-9	
	Capillary tube			0.82 x 3000, 4.6 kg/cm²	
	Refrigerant			R600a / R134a	
Room Temperature Sensor Components	Freezer	Model	Temperature Selection	ON (°C)	OFF (°C)
		THERMISTOR (F-SENSOR) 502AT	-25 °C	-20	-26
			-20 °C	-16	-24
			-14 °C	-10	-18
	Refrigerator	Model	Temperature Selection	ON (°C)	OFF (°C)
		THERMISTOR (F-SENSOR) 502AT	1 °C	3.0	-1.0
			3 °C	5.0	1.0
			7 °C	9.0	5.0
Defrost Related Components	Defrost Cycle	First Defrost Cycle (Concurrent defrost of F and R)		6 hr ± 10 min	
		Defrost Cycle (FRE)		12 ~ 24 hr (vary according to the conditions used)	
		Defrost Cycle (REF)		6 ~ 12 hr (vary according to the conditions used)	
		Pause time		10 ± 1min	
	Defrost Sensor	F Defrost - Sensor	Model	THERMISTOR (502AT)	
			SPEC	5.0 kΩ at 25°C	
		R Defrost - Sensor	Model	THERMISTOR (502AT)	
			SPEC	5.0 kΩ at 25°C	
	Bimetal		Model	Bimetal thermostat (BT-121-M)	
			Operating temperature	On : 40°C , Off : 60°C	
	Thermo-Fuse		Cut off temperature	Cutoff : 110°C	

PRODUCT SPECIFICATIONS

2-4) Dimensions (mm)



PRODUCT SIZE

	A	B	C	D	E	F
RSJ1**** RS21H***	605	55	1145	672	414	540
RS23H***		85		702		
RS21H*L**		64.5	1152.5	681.5	422.5	547.5

PRODUCT SPECIFICATIONS

2-5) Optional Material Specification

Photograph	Part Name	Part Code	Quantity	Remark
	FILTER WATER-ASSY	DA29-00003B	1	RS21HK*** RS21HJ*** RS23HK***
	ASSY-INSTALL FILTER	DA97-05926A	1(5500mm)	RS21HK*** RS21HJ*** RS23HK***

3. DISASSEMBLY & REASSEMBLY

3-1) PRECAUTION.....21

3-2) Freezer Display (RS21/23H***).....22

3-2-1) Freezer Display (RS21*L**-TRIMKIT).....23

3-3) Freezer Micro Switch.....24

3-4) Freezer Door25

3-5) Freezer Compartments26

3-6) Fridge Door33

3-7) Fridge Compartments35

3-8) Main PBA & INVERTER PBA40

3-9-1) GLASSES on the Freezer door (RS21H*L**-TRIMKIT).....43

3-9-2) GLASSES on the Fridge door (RS21H*L**-TRIMKIT)44

DISASSEMBLY & REASSEMBLY

3-1) PRECAUTION

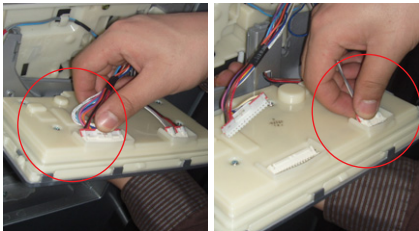
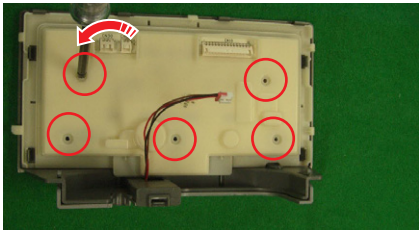
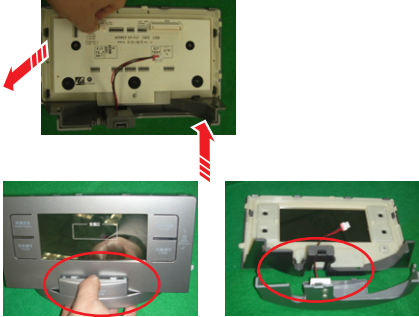
- Unplug the refrigerator before cleaning and making repairs.
- Do not disassemble or repair the refrigerator by yourself.
 - You run risk of causing a fire, malfunction and/or personal injury.
- Remove any foreign matter or dust from the power plug pins.
 - Otherwise there is a risk of fire.
- Do not use a cord that shows cracks or abrasion damage along its length or at either end.
- Do not plug several appliances into the same multiple power board. The refrigerator should always be plugged into its own individual electrical which has a voltage rating that matched the rating plate.
 - This provides the best performance and also prevents overloading house wiring circuits, which could cause a fire hazard from overheated wires.
- Do not install the refrigerator in a damp place or place where it may come in contact with water.
 - Deteriorated insulation of electrical parts may cause an electric shock or fire.
- The refrigerator must be grounded.
 - You must ground the refrigerator to prevent any power leakages or electric shocks caused by current leakage from the refrigerator.
- Do not put bottles or glass containers in the freezer.
 - When the contents freeze, the glass may break and cause personal injury.
- Do not store volatile or flammable substances in the refrigerator.
 - The storage of benzene, thinner, alcohol, ether, LP gas and other such products may cause explosions.

- NEED TOOL

ITEM	HOW TO USE	PICTURES
Phillips Head Driver	Use for assembling and disassembling of screw	
Flat Head Driver	Use for assembling and disassembling of Beverage Station, Dispenser, Display, Cover Lamp etc...	
Hex Wrench ø 2mm	Use for assembling and disassembling of Handle	
Socket Wrench ø 10m	Use for assembling and disassembling of Door Hinge	
Magnet	Use for checking of the F/R Fan	

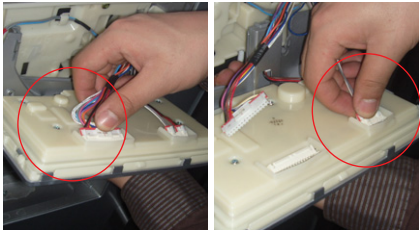
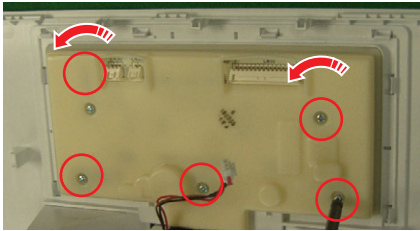
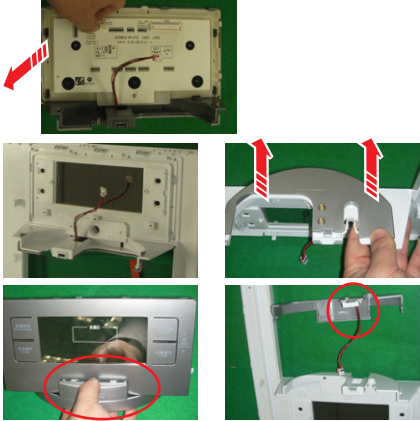
DISASSEMBLY & REASSEMBLY

3-2) Freezer Display (RS21/23H***)

PART NAME	FIGURE	DESCRIPTION
Freezer Display		1. With the Door closed, prepare (+) head screwdriver.
		2. Unscrew by turning 1 screw to counterclockwise at bottom.  Be careful not to scratch.
		3. Pull out Cover Dispenser Assembly.  Take care so that hand may not be injured
		4. Disconnect the connector on both side.  Be careful not to be damaged on the wire and the connector.
		5. Unscrew 5 screws as shown, and then disassembly Display Panel.
		6. Disassembly Display Lamp Assembly.  Be careful of injury.

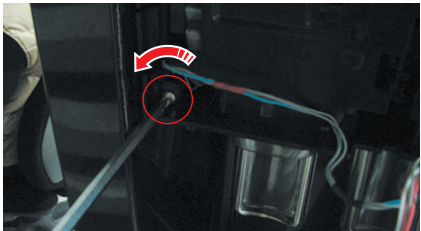
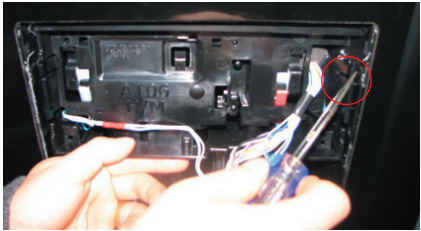
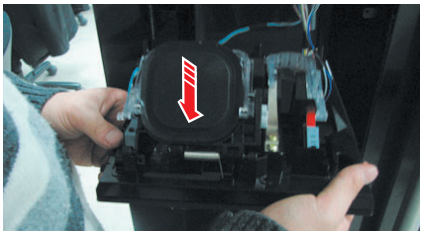
DISASSEMBLY & REASSEMBLY

3-2-1) Freezer Display (RS21*L**-TRIMKIT)

PART NAME	FIGURE	DESCRIPTION
Freezer Display		1. With the Door closed, prepare (+) head screwdriver.
		2. Unscrew by turning 1 screw to counterclockwise at bottom. ! Be careful not to scratch.
		3. Pull out Cover Dispenser Assembly. ! Take care so that hand may not be injured
		4. Disconnect the connector on both side. ! Be careful not to be damaged on the wire and the connector.
		5. Unscrew 5 screws as shown, and then disassembly Display Panel.
		6. Disassembly Display Lamp Assembly. ! Be careful of injury.

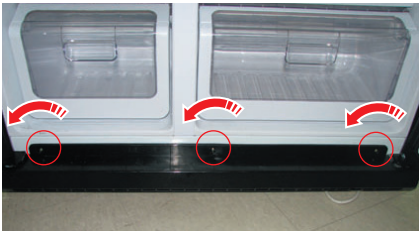
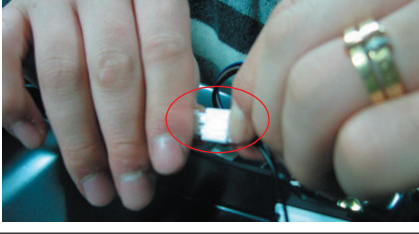
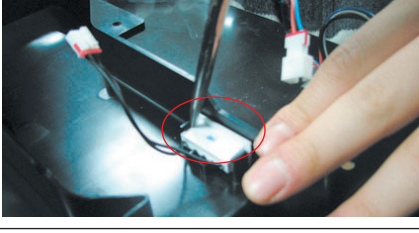
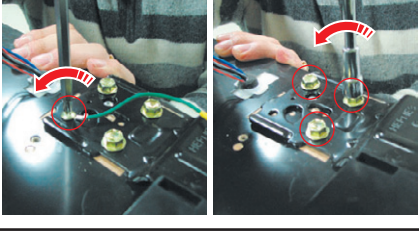
DISASSEMBLY & REASSEMBLY

3-3) Freezer Micro Switch

PART NAME	FIGURE	DESCRIPTION
Freezer Micro S/W		1. After disassembling Freezer Display, remove 1 screw.
		2. Unlock the hook using flat head screwdriver.
		3. Pull out Lever Assembly.
		4. Disconnect Micro S/W as shown.  Be careful of injury.
		

DISASSEMBLY & REASSEMBLY

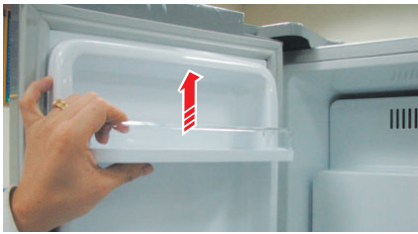
3-4) Freezer Door

PART NAME	FIGURE	DESCRIPTION
Freezer Door		1. With Door opened, remove 3 screws.
		2. Disconnect Valve Fitting with pushing Fixer Valves on both side.
		3. With door closed, remove 1 screw on fixing Hinge Cover on the top place.  Be careful not to scratch.
		4. Disconnect Micro S/W as shown.
		5. Remove Reed S/W using flat head screwdriver.  Be careful not to scratch.
		6. Remove Earth screw and 3 bolts as shown.  Be careful of injury.

DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Freezer Door		7. Remove Upper Hinge with handing Wires
		8. Lift up Fridge Door and take out.  Be careful of injury.

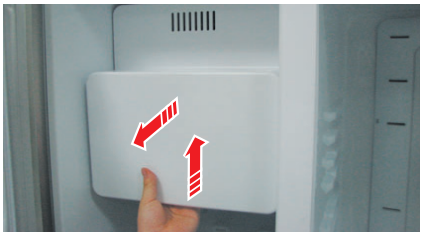
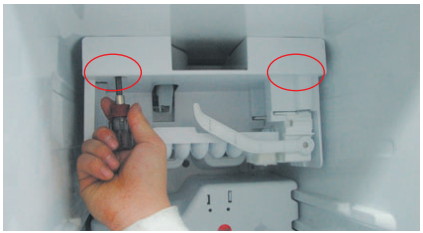
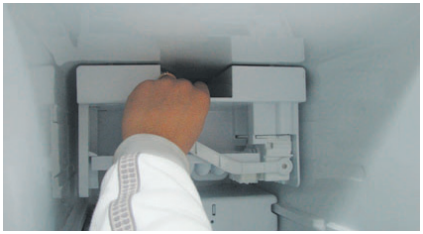
3-5) Freezer Compartments

PART NAME	FIGURE	DESCRIPTION
Tray Dispenser		1. Lift up Tray Dispenser with grabbing.  Be careful not to scratch.
Door Bins		1. The door bins allow storage of perishable items. 2. Lift the bin up and slide it out.  Be careful not to scratch.

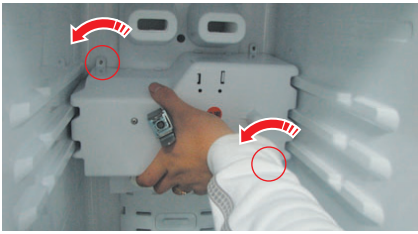
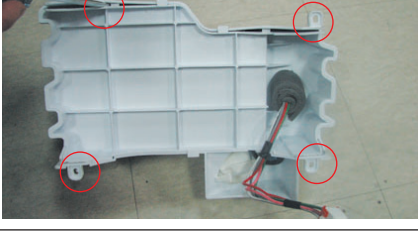
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Freezer Drawers		Drawers are designed for storage of fruits, vegetables, and deli items. The drawers are located in the lower portion of the refrigerator. 1. Pull out the drawer as far as it goes. 2. Tilt the drawer up and pull it out until it is removed.  Please be careful not to damage the product.

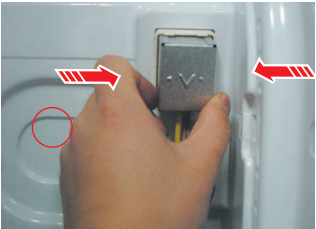
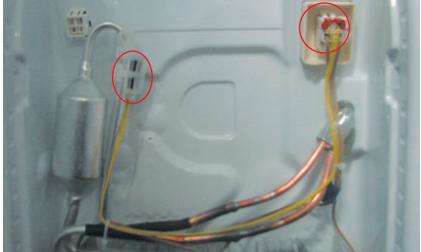
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Ice Maker		Lift Ice Bucket Assembly up and pull out.  Be careful not to scratch.
	 	Remove 2 screws and pull the Ice Maker Assembly out with grabbing.  Be careful not to scratch.
		Disconnect the connector and take out.  Be careful not to be damaged on the wire and the connector, Be careful of injury.
		Push down the Hook on Support Ice Maker and disassemble Ice Maker Kit.
		* This is the Test Button for checking the Ice Maker Kit condition.

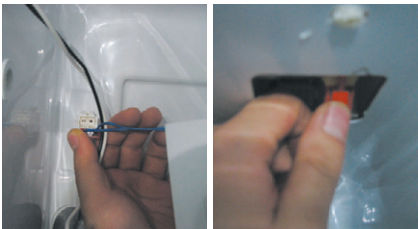
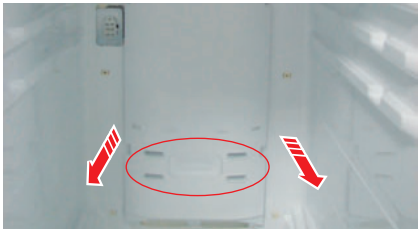
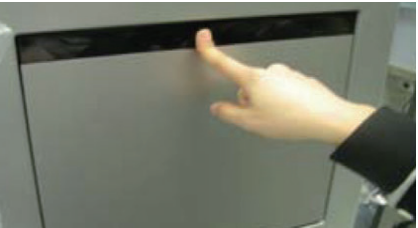
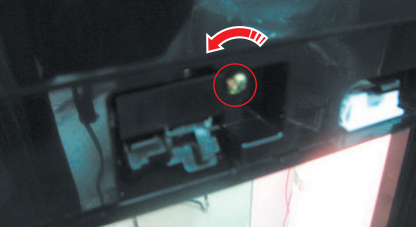
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Freezer Room Lamp & Auger Motor		Remove the Lamp Cover with pulling out and lifting up simultaneously.
		Turn the Bulb to counter clockwise and take out. ! Be careful of injury.
		Remove 2 screws and take out the Auger Motor. ! Be careful not to scratch.
		Disconnect the connector with pulling out. ! Be careful of injury.
		Remove the Cover Auger Motor using flat head screwdriver. ! Be careful of injury.
		After removing the Cover Auger Motor, unlock the Lamp Socket with pushing down.

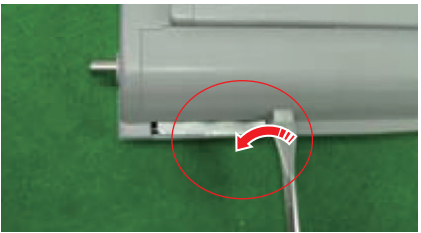
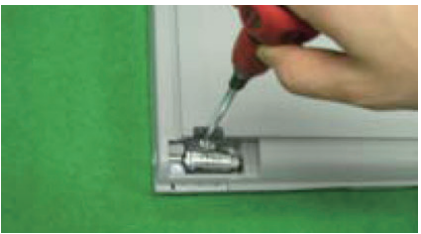
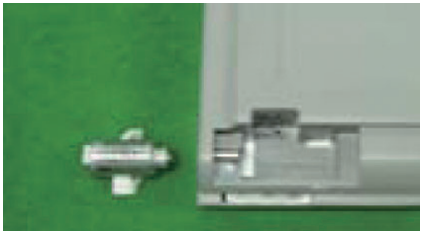
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Cover Evaporator & Evaporator Sensor on Freezer Part		Remove 4 screws to counter clockwise as shown.
		Remove the Cover Evap as shown.  Be careful not to scratch.
		Disconnect the connector and take out the Cover Evap.
		Disassemble the Fixer Housing with grabbing and take out.  Be careful of injury.
		Disconnect the connector and cut the Cable Tie to disassemble the Sensor.

DISASSEMBLY & REASSEMBLY

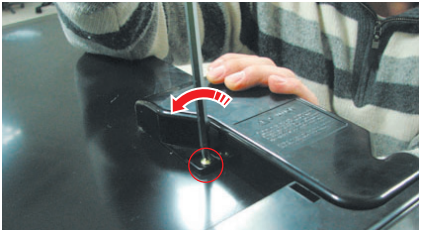
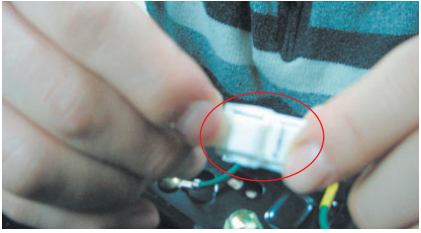
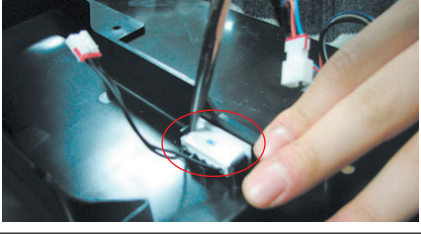
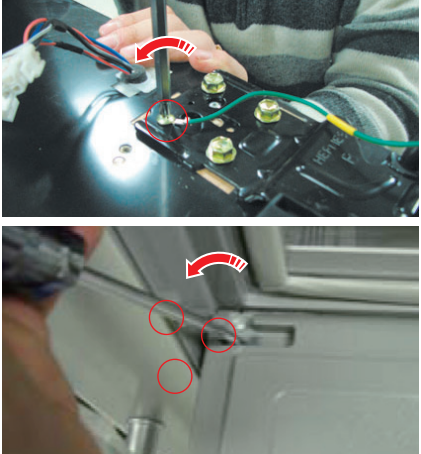
PART NAME	FIGURE	DESCRIPTION
Cover Multi on Freezer Part		After remove all Insert Part, remove 1 screw as shown.  Be careful not to scratch.
		After pulling the upper part of the Cover Multi, Disconnect the 2 connectors as shown.  Be careful of injury.
		Take out the Cover multi with pulling in.
Home Bar Latch & Oil Damper		With the Door closed, open Home Bar with pushing as shown.
		Remove screw fixing Home Bar Latch.
		Take the Home Bar Latch out with grabbing.

DISASSEMBLY & REASSEMBLY

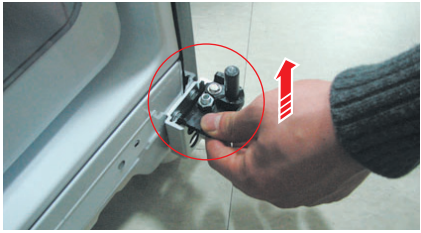
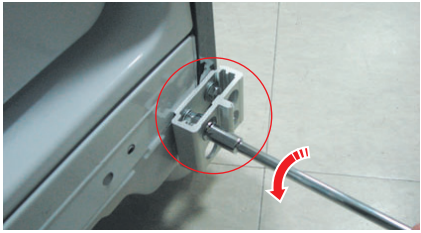
PART NAME	FIGURE	DESCRIPTION
Home Bar Latch & Oil Damper		Remove Grommet located at bottom inner place.
		Pull the shaft out with pushing down the shaft using flat head screwdriver.  Be careful not to scratch.
		After taking out Home Bar, remove the shaft.
		Remove Home Bar Damper Cover using flat head screwdriver.  Be careful not to scratch.
		Remove a screw fixing Home Bar Damper.
		Take out Home Bar Damper.

DISASSEMBLY & REASSEMBLY

3-6) Fridge Door

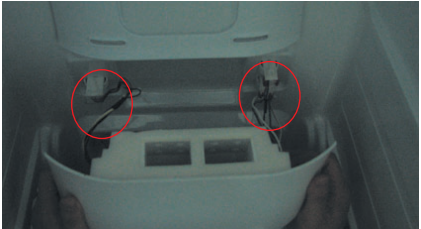
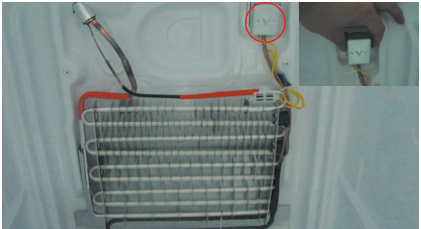
PART NAME	FIGURE	DESCRIPTION
Fridge Door		With Door opened, remove 3 screws.
		With door closed, remove 1 screw on fixing Hinge Cover on the top place.  Be careful not to scratch.
		Disconnect 3 connectors on the top place.  Be careful of injury.
		Remove Reed S/W using flat head screwdriver.
		Remove Earth screw and 3 bolts as shown.

DISASSEMBLY & REASSEMBLY

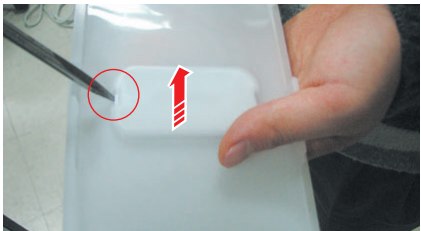
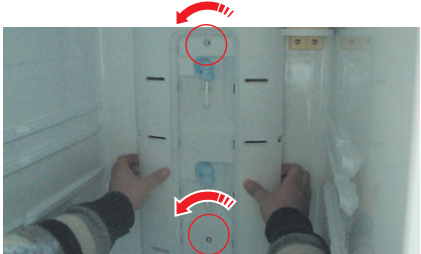
PART NAME	FIGURE	DESCRIPTION
Fridge Door		Remove Upper Hinge with handing Wires
		Lift up Fridge Door and take out.  Be careful of injury.
		Lift up Lower Hinge with grabbing.
		Remove 4 bolts to counter clockwise.

DISASSEMBLY & REASSEMBLY

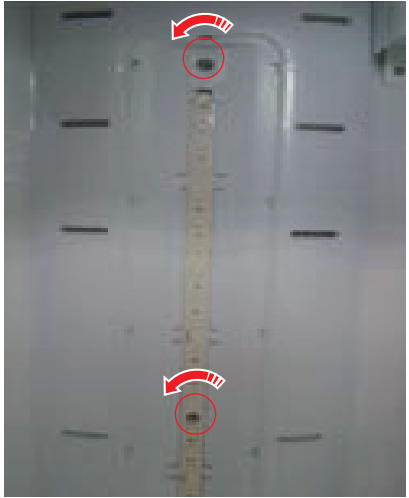
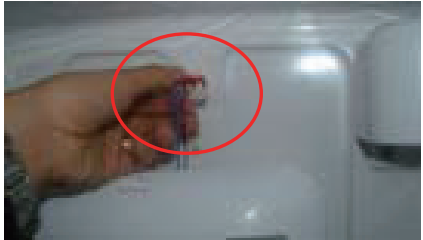
3-7) Fridge Compartments

PART NAME	FIGURE	DESCRIPTION
Cover Evaporator & Evaporator Sensor on Fridge Part		Remove 2 screws as indicated on figure.  Be careful not to scratch.
		Remove the 2 Deodorizers as indicated with grabbing.
		Remove the Cover Evap with 2 hands.  Be careful not to scratch.
		Disconnect the indicated wires as shown.  Be careful of injury.
		Disassemble the Fixer Housing with grabbing and take out.  Be careful of injury.
		Unfold the Fixer Sensor with flat head driver.  Be careful of injury.

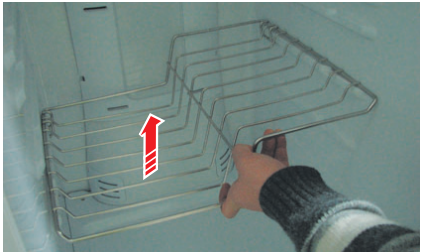
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Fridge Room Lamp & Cover Multi		Remove the Lamp Cover Assembly with grabbing both hands.
		Remove the Trim Sensor using flat head Driver.  Be careful not to scratch.
		Disassemble 3 Bulbs turning to counter clock wise.
		Remove 2 screws as indicated.  Be careful not to scratch.
		Disconnect the connector and pull out the Cover Multi Assembly.  Be careful of injury.

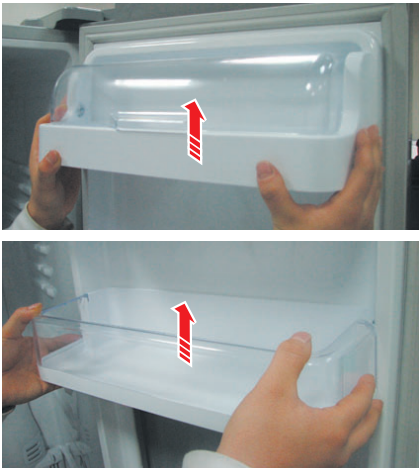
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Fridge Room Lamp & Cover Multi		Remove the LED Lamp cover using a flat head screwdriver.
		Remove 2 screws as indicated.  Be careful not to scratch.
		Disconnect the connector and pull out the Cover Multi Assembly.  Be careful of injury.

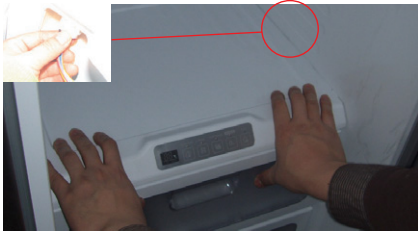
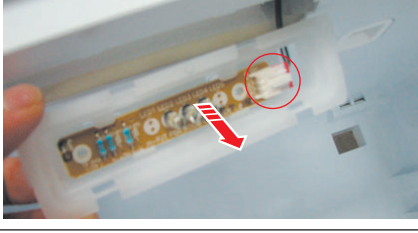
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Fridge Shelves		These shelves allow the storage of larger items and pull out for easy access. Lift it up and pull the Shelves out to the front.
Movable Tray		This Movable Shelf is designed for moving with foods easily. Lift it up and pull the Movable Shelf out to the front.
Z Shelf		This Z Shelf is designed for all kinds of wines and bottles. Lift it up and pull the Z Shelf out to the front.
Water Filter		Turn the Water Filter to the clock wise and take out.  Be careful of injury.

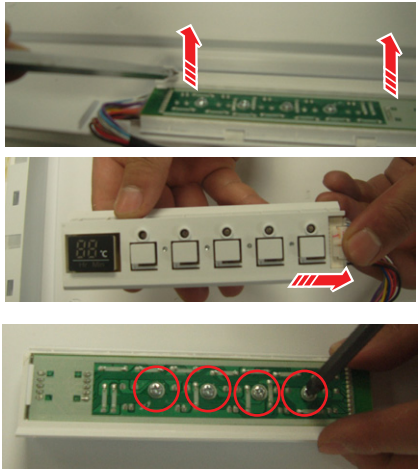
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Fridge Drawers		Drawers are designed for storage of fruits, vegetables, and deli items. The drawers are located in the lower portion of the refrigerator. 1. Pull out the drawer as far as it goes. 2. Tilt the drawer up and pull it out until it is removed.  be careful not to damage the product.
Fridge Dairy & Door Bins		The door bins allow storage of perishable items. Lift the bin up and slide it out.

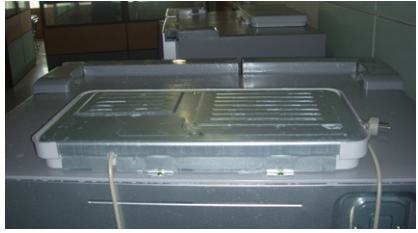
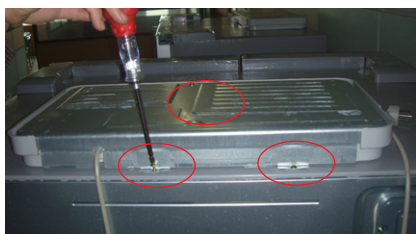
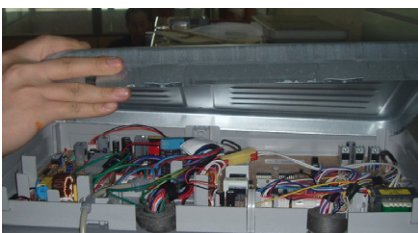
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
CoolSelect Zone Display & Room Lamp		Remove 2 screws as indicated.
		Pull out the CoolSelect Zone Assembly and disconnect the connector as shown. ! Be careful of injury.
		Remove the Tray Convertible Assembly with pulling out to the front.
		Remove the Case Room Lamp located at inner place of CoolSelect Zone. ! Be careful not to scratch.
		Disconnect the connector of the Room Lamp with pushing it and taking it out.
		Push the 4 Hooks to the another side with flat head driver and take it out. ! Be careful of injury.

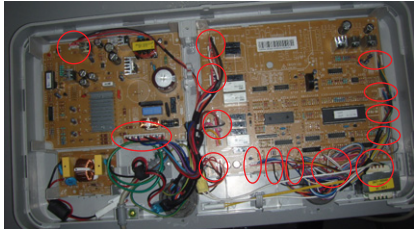
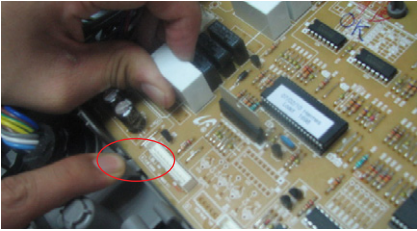
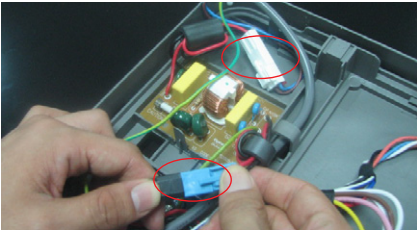
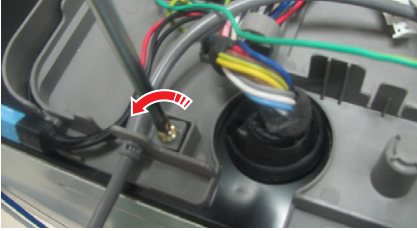
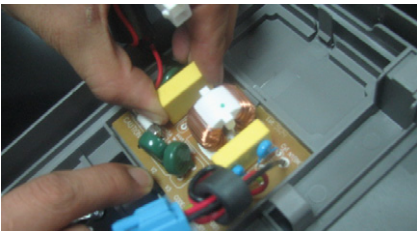
DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
CoolSelect Zone Display & Room Lamp		The Hook (-) head Screwdriver push and disconnect the connector as shown remove 4 screws.

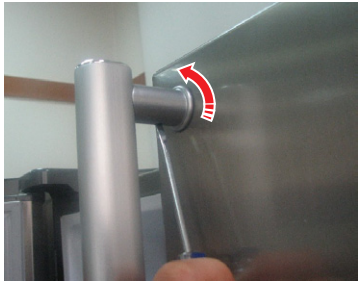
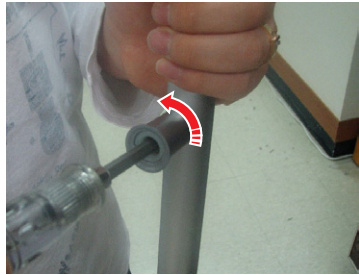
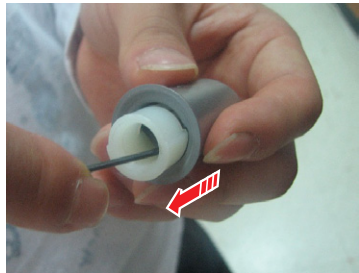
3-8) Main PBA & INVERTER PBA

PART NAME	FIGURE	DESCRIPTION
PBA MAIN & INVERTER PBA		Main PBA & INVERTER PBA is located on the top of the refrigerator.
		Unscrew 3 screws right and left side as shown. Please be careful not to damage the product.
		Insert and lift the Cover PBA Main using flat head driver with pushing the rear part down.  Be careful of injury.

DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
PBA MAIN & INVERTER PBA		Disconnect 15 connectors as indicated.
		Pull the 4 hooks out and disassemble the Main PBA.  Be careful of injury.
		Disconnect 2 connectors as indicated.
		Unscrew 1 screw to disassemble the Power Supply.
		Pull the 2 hooks out and disassemble the Noise Filter.

DISASSEMBLY & REASSEMBLY

PART NAME	FIGURE	DESCRIPTION
Handle Assembly		Handle Assemblies are located on the front of the refrigerator door.
	 	Insert the small flat-head driver to the hole at the bottom of Cap support handle and pull the handle assembly out to the front side with turning driver to one side.  Turn around the Handle assembly to one side to disassemble about the bottom position
		Unscrew 4 screws to diassemble Cap support handle and Support handle.
		Pull the Support handle out using hex wrench as shown or flat-head driver pushing the back side.

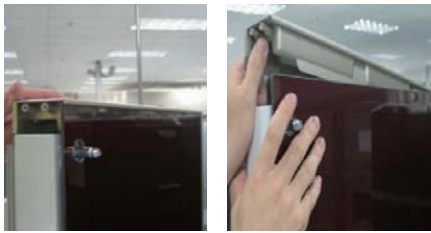
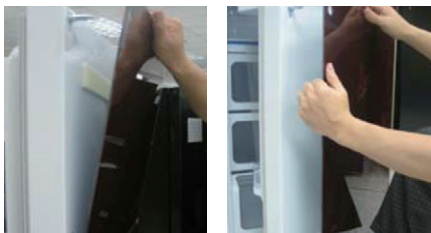
DISASSEMBLY & REASSEMBLY

3-9-1) GLASSES on the Freezer door (RS21H*L**-TRIMKIT)

PART NAME	FIGURE	DESCRIPTION
Freezer Door		1. Disassemble handles with a small flat-head driver as above.  Be careful not to scratch.
	 	2. Detach the lower Door sash with unscrewing 6 places using a small Phillips head driver as shown.  Be careful not to scratch.
	 	3. Disassemble the inner door sash with unscrewing 5 places using a Phillips head driver as shown.  Be careful not to scratch.
	 	4. Disassemble the upper door sash with unscrewing 4 places using a Phillips head driver as shown.  Be careful not to scratch.
	 	5. Detach Glasses from the door as shown.  Please be careful not to damage the GLASS
		6. After replacing glasses, assemble all in a reverse order.  Please be careful not to damage the product

DISASSEMBLY & REASSEMBLY

3-9-2) GLASSES on the Fridge door (RS21H*L**-TRIMKIT)

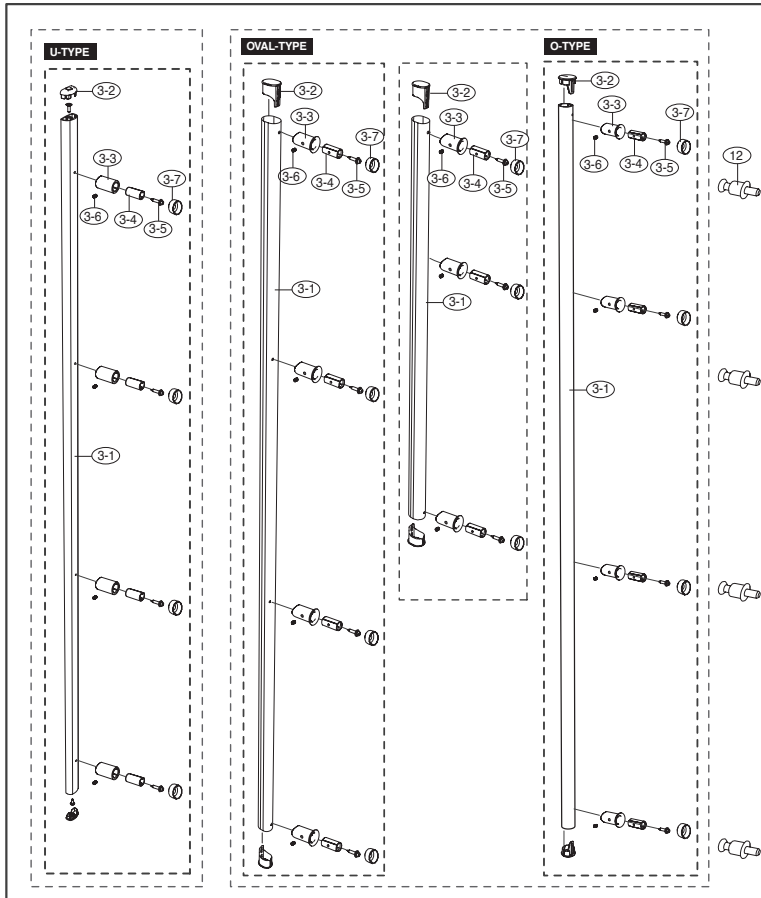
PART NAME	FIGURE	DESCRIPTION
Fridge Door		1. Disassemble handles with a small flat-head driver as above.  Be careful not to scratch.
		2. Detach the lower Door sash with unscrewing 7 places using a small Phillips head driver as shown.  Be careful not to scratch.
		3. Disassemble the inner door sash with unscrewing 5 places using a Phillips head driver as shown.  Be careful not to scratch.
		4. Disassemble the upper door sash with unscrewing 5 places using a Phillips head driver as shown.  Be careful not to scratch.
		5. Detach Glasses from the door as shown.  Please be careful not to damage the GLASS
		6. After replacing glasses, assemble all in a reverse order.  Please be careful not to damage the product

DISASSEMBLY & REASSEMBLY

Reference for previous Handle Type

- RSJ1 Series

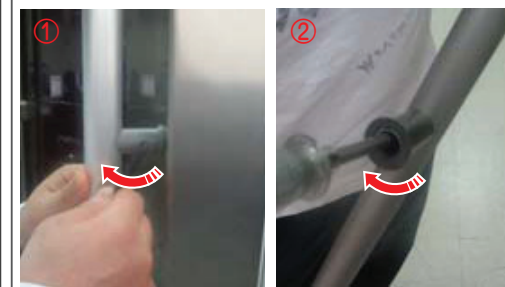
- RS21H Series



- Need Tool

IMAGE	ITEM
	Phillips Head Driver
	Hex Wrench Ø 2mm

- DISASSEMBLY & REASSEMBLY



- ① Insert the Hex Wrench to the Set Screw and disassemble the Handle Assembly turning to counter clock wise.
- ② Unscrew 4 screws and disassemble the Capsupport handle and Support handle.

Part List of previous Handle Type

NO	CODE-NO	PART NAME	Spec	Quantity	Remark
3-3	DA67-01673B	CAP-SUPPORT HANDLE	JM,ABS,T3,SC-00477R(I-BLACK),LONG	4	RSJ1*UBP
	DA67-01673C		JM,ABS,T3,SC-05010S(PLATINUM-SILVER),LONG	4	RSJ1*USV/PS
	DA67-01673D		JM,ABS,T3,SC-06036S(MANHATTAN SILVER),LONG	4	RSJ1*UMH/IS
	DA67-01673E		JM,ABS,T3,SC-05061S(VERSAILLES STS),LONG	4	RSJ1*URS
	DA67-01501E		HERMES, SNOW WHITE	4	RSH1*B/T/HSW
	DA67-01501F		HERMES, I-BLACK	4	RSH1*B/T/HBP
	DA67-01501G		HERMES, PLATINUM SILVER	4	RSH1*B/T/HPE
	DA67-01501H		HERMES, MANHATTAN SILVER	4	RSH1*B/T/HMH
	DA67-01501J		HERMES, VERSAILLES STS	4	RSH1*B/T/HRS
	DA67-01501K		HERMES, INOX	4	RSH1*B/T/HIS
3-4	DA61-03378A	SUPPORT-HANDLE	HERMES,ALDC12,DIE CASTING	4	
3-5	6009-001512	SCREW-SPECIAL	BH,+,M4,L16,ZPC(WHT),SWRCH18A	4	
3-6	6004-001082	SCREW-SET	HT,M4,L4,PASS,STS304,FP	4	
3-7	DA63-03717A	GROMMET-SUPT HANDLE	CULLINAN-PJT,PP,NTR	4	
13	DA61-03403A	BRACKET-HANDLE	HERMES,SWRC10A,FH, MR, L10.5	4	

4. TROUBLE SHOOTING

4-1. ALIGNMENT AND ADJUSTMENTS

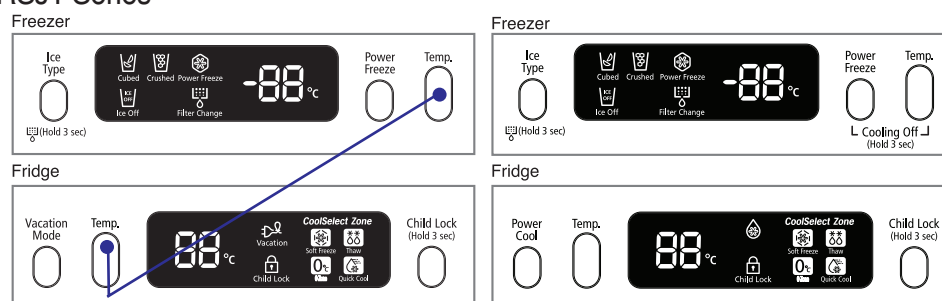
4-1-1) Test Function (Forced Operation / Forced Defrost).....	48
4-1-2) Communication Error Display Function	50
4-1-3) Load Status Display Function	53
4-1-4) Restoration of Previous Settings Upon Power Failure	55
4-1-5) Exhibition	56
4-1-6) Option Setting Function	57
4-1-7) Option Table	60

4. TROUBLE SHOOTING

4-1-1) Test Function (Forced Operation / Forced Defrost)

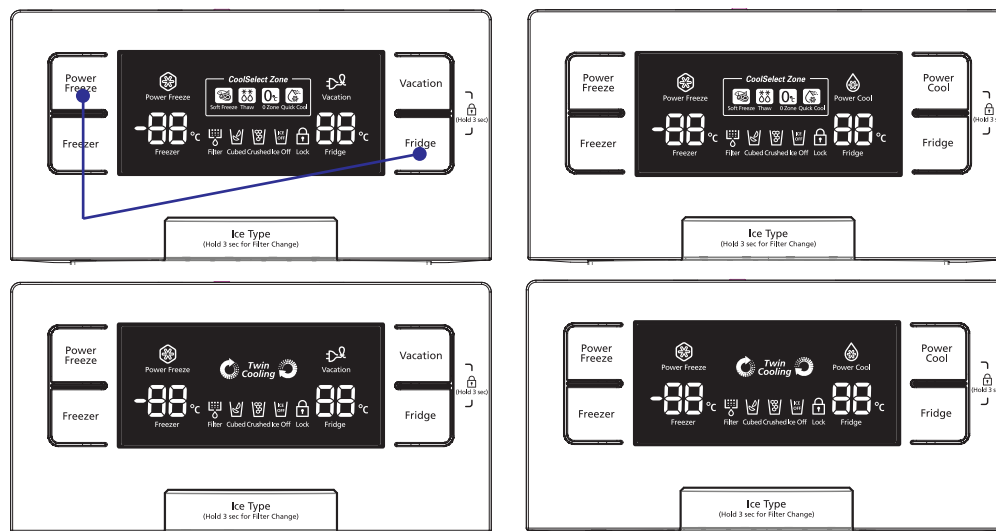
- Press the Power Freeze and the Fridge buttons for more than 8 seconds at the same time. Then, the Freezer & Fridge temperature display will be turned off and the Test mode begins.
- With the TDM Cycle Model when you press the Test button, the Test function will be selected in the following order.
Forced Operation (FF) → R Off Forced Operation (OF r) → Forced Fridge Defrost (rd) → Forced Fridge / Freezer Defrost (Fd)
- With the TDM Cycle Model when you press the Test button, the Test function will be selected in the following order.
Forced Operation (FF) → Forced Operation (OF r) → Forced Fridge (rd) → Force Fridge/Freezer Defrost (Fd)
- Cancelled (Normal Operation)
- The recommended way to cancel the Test function is turning off an on the unit.

RSJ1 Series



- ① Press the Power Freeze and the Fridge buttons for 8 seconds at the same time.

RS21/23H Series



- ② Press the Power Freeze and the Fridge buttons for 8 seconds at the same time.

TROUBLE SHOOTING

1) Forced Operation

1-1) For all model

- When the Fridge button is pressed once at the Test mode. FF lights up on the Display Panel indicating Forced Operation. At this time, it sends out "Beeping" sound.
- At the Forced Operation, when you press the Fridge button once, OF r lights up on the Display Panel.

* All Forced Operation (FF/OF r) : 3450RPM



1-2) AC Compressor Model

- When you press the Fridge button once at the Test mode, FF lights up on the Display Panel, indicating Forced Operation. At this time, it will send out "Beeping" sound.



1-3) When Forced Operation is selected, the Comp starts operating immediately without a 7-minute delay at any operating mode. At this time, when it is in the middle of Defrost, Defrost will be stopped immediately and Forced Operation will be performed.

1-4) When Forced Operation is selected, Comp and F-Fan (Freezer Fan) operates continuously.

- FF : Fridge compartment will be controlled according to its set temperature.
- OF r : Fridge compartment will be off (For checking TDM Valve; F Valve Open, R Valve Off)

1-5) When Forced Operation is selected, the Freezer temperature will be set to -25°C and the Fridge temperature will be set to 1°C automatically.

1-6) During the Forced Operation, the Power Freeze and the Quick Cool functions do not work. When the Power Freeze or the Quick Cool is selected, its indicator lamp will be turned off in 10 seconds automatically.

1-7) To cancel the Forced Operation in the middle of its operation, plug out and in the unit or perform the Test cancellation mode as the section 3) below.

1-8) With the Forced Operation, it sends out "Beeping" sound (0.25 sec On and 0.75 sec Off) until the Forced Operation is completed and the sound can't be turned off.

2) Forced Defrost

2-1) When you press the Fridge button one more time at Fridge Off Forced Operation [OF r], rd lights up on the Display Panel. At this time, the Forced Operation stops immediately and R-Defrost will be performed at the same time.

2-2) When you press the Fridge button one more time at Forced R-Defrost [rd], Fd lights up on the Display Panel. At this time, the Forced Operation stops immediately and R-Defrost will be performed at the same time.

2-3) At this time, it will send out "Beep" sound for 3 seconds and then it will perform Forced F/R-Defrost while sending out "0.5 sec On and 0.5 sec Off" sound.

TROUBLE SHOOTING

3) Test Cancellation Mode

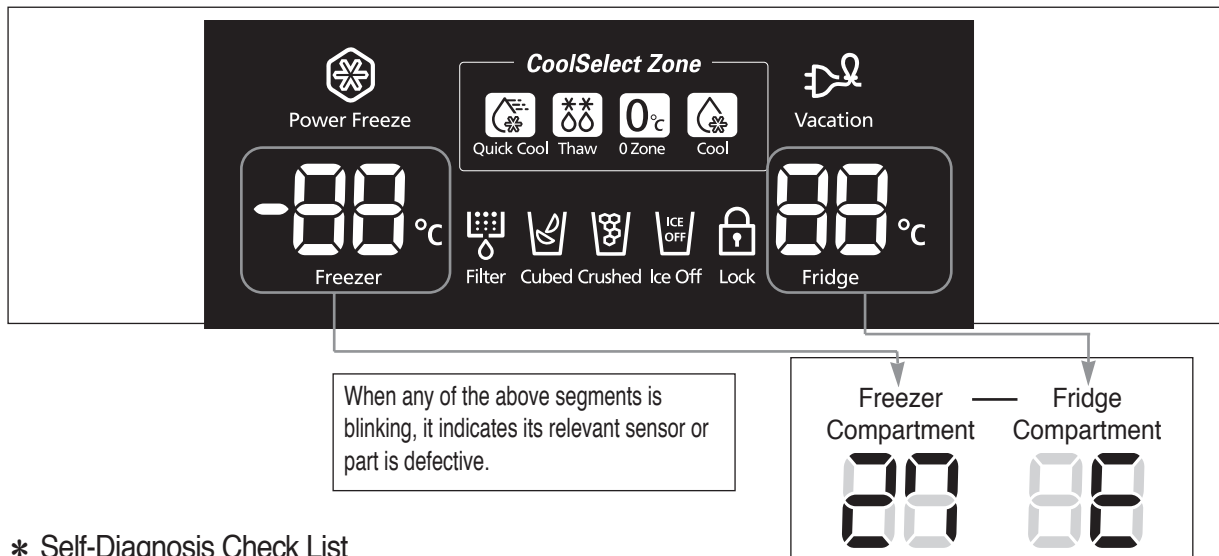
- 3-1) During the F/R-Defrost mode, put the Display Panel to the Test mode and press the Fridge button once. Then, the F/R-Defrost mode will be cancelled and it will go to the normal operation mode. Or, turn off and on the unit to cancel the Test mode.

4-1-2) Communication Error Display Function

1) Communication Error between MAIN MICOM and Load MICOM

- 1-1) When there is no response in 10 seconds after the Main MICOM sends a communication signal to the Load MICOM, "LC Er" will blink on the Display Panel until the communication error is released.
- 1-2) When there is no response in 10 seconds after the Main MICOM sends a communication signal to the Load MICOM, the entire Cool Select Zone Display Panel will blink until the communication error is cancelled (0.5 sec On and 1.5 sec Off).

TROUBLE SHOOTING



* Self-Diagnosis Check List

Display		ITEM	Description	Operation condition during error					
Freezer	Fridge			F-Fan	R-Fan	Condenser Fan	F-Defrost Heater	R-Defrost Heater	Damper
1	E	F-SENSOR	Open Short	○	○	○	○	○	○
2	E	R-SENSOR	Open Short	○	○	○	○	○	○
4	E	F-DEF-SENSOR	Open Short	○	○	○	○	○	○
5	E	R-DEF-SENSOR	Open Short	○	○	○	○	○	○
6	E	EXT-SENSOR	Open Short	○	○	○	○	○	○
7	E	COOLSELECT ZONE SENSOR	Open Short	○	○	○	○	○	○
8	E	ICE MAKER SENSOR	Open Short	○	○	○	○	○	○
13	E	HUMIDITY SENSOR	Open Short	○	○	○	○	○	○
21	E	F-Fan Error	Freezer Fan Trouble	OFF	○	○	○	○	○
22	E	R-Fan Error	Fridge Fan Trouble	○	OFF	○	○	○	○
23	E	C-Fan Error	Condenser Fan Trouble	○	○	OFF	○	○	○
24	E	F-DEF-Error	Defrost Trouble (Overheating)	○	○	○	○	○	○
25	E	R-DEF-Error	Defrost Trouble (Overheating)	○	○	○	○	○	○
26	E	ICE MAKER FUNCTION ERROR	Ice Ejection Trouble	○	○	○	○	○	○
27	E	Damper Heater Error	Damper Heater Open	○	○	○	○	○	○
41	E	Communication Error Panel ↔ Main	Communication Trouble between Panel & Main	○	○	○	○	○	○

TROUBLE SHOOTING

Descriptions of Self-Diagnosis Error Code

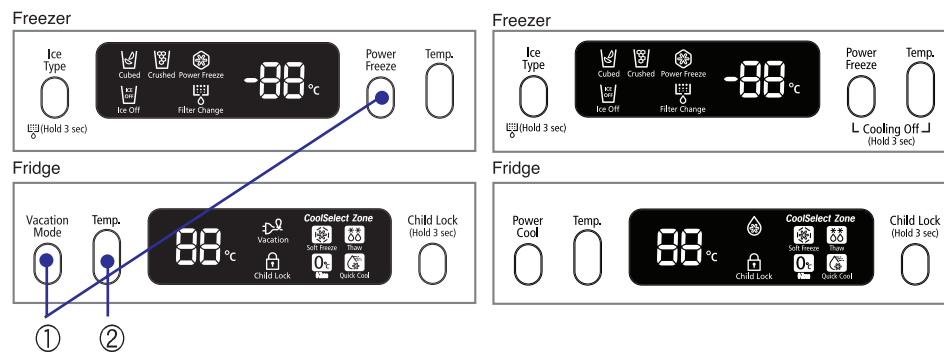
NO	Digital no.	Item	Description	How to do Self-Diagnosis
1	88	FREEZER SENSOR	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited, Abnormal Sensing Temp (+50°C and over or -50 °C and lower)	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN40 #5 and #8.
2	88	FRIDGE SENSOR	Same as the above	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN40 #9 and #8.
3	88	FREEZER DEFROST SENSOR	Same as the above	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN40 #6 and #8.
4	88	FRIDGE DEFROST SENSOR	Same as the above	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN40 #11 and #8.
5	88	AMBIENT SENSOR	Same as the above	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN40 #2 and #1.
6	88	CoolSelect ZONE SENSOR	Same as the above	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN51 #13 and #14.
7	88	ICE MAKER SENSOR	Same as the above	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN90 #3 and #8.
8	888	I HUMIDITY SENSOR	Same as the above	The voltage should be within the range of 4.5V~1.0V between MAIN PCB CN40 #10 and #8.
9	888	FREEZER FAN ERROR	Bad Feed-Back Signaling Wire Contact, Motor Wire Slipped-Out, Defective Motor	The voltage should be 7V~12V between MAIN PCB CN75 GRAY and YELLOW.
10	888	FRIDGE FAN ERROR	Same as the above	The voltage should be 7V~12V between MAIN PCB CN75 GRAY and ORANGE.
11	888	CONDENSOR FAN ERROR	Same as the above	The voltage should be 7V~12V between MAIN PCB CN75 GRAY and SKYBLUE.
12	888	FREEZER DEFROST ERROR	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited, Defective Thermistor, or When it keeps heating during Fridge Defrost even after it does defrosting for 80 minutes.	Disconnect MAIN PCB CN70, CN71 from PCB, and read the resistance between Orange and Brown wire terminals (Refer to the Wire Diagram for the resistance value). 0 Ohm → Heater Short ∞ Ohm → Wire Cut or Blown Thermistor.
13	888	FRIDGE DEFROST ERROR	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited, Defective Thermistor, or When it keeps heating during Fridge Defrost even after it does defrosting for 80 minutes.	Disconnect MAIN PCB CN70, CN71 from PCB, and read the resistance between Orange and White wire terminals (Refer to the Wire Diagram for the resistance value). 0 Ohm → Heater Short ∞ Ohm → Wire Cut or Blown Thermistor.
14	888	ICE MAKER ERROR	I/M Ice Ejection Horizontal Positioning Error ** Only for Dispenser models	After replacing Ice-Maker, plug in the unit and check its operation.
15	888	DAMPER HEATER ERROR	Damper Heater is sensed as open error due to Connector Slipped-Out or Open-Contact, Wire Cut.	Disconnect MAIN PCB CN76 from PCB, and read the resistance between Black and Brown wire terminals (Refer to the Wire Diagram for the resistance value). 0 Ohm → Heater Short ∞ Ohm → Wire Cut or Slipped-out Terminal
16	888	COMM ERROR	No communication between MICOM MAIN and PANEL => The PC E error code will light up with alarming sounds.	It needs a Oscilloscope to do the error check. So, it is more realistic checking the error after replacing Main or Panel PCB.

TROUBLE SHOOTING

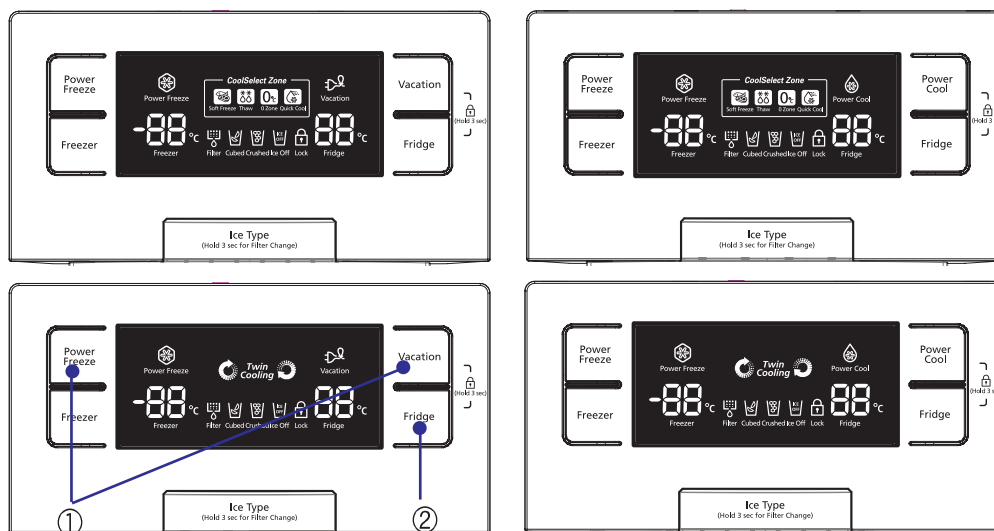
4-1-3) Load Status Display Function

- 1) When the Power Freeze and the Vacation (or Power Cool) buttons are held down together for 6 seconds during the normal operation, the Fridge and Freezer temperature LEDs will blink for 2 seconds at an interval of 0.5 sec.
- 2) At this time, when taking your fingers off the Power Freeze and the Vacation (or Power Cool) buttons and pressing the Fridge (sending out a "Ding-Dong" sound, it goes into the Load Status Display function.
- 3) The Load Status Display mode shows the loads which MICOM sends out operational signals to. It only means that there are operational signals from MICOM. So, it does not indicate that those signalled loads are in operation. And, even though a specific part is displayed as in-operation, it may not operate due to its own defect or the defective relay on PCB.
- 4) The Load Status Display lasts for 30 seconds and it goes back to the normal operation mode.

RSJ1 Series



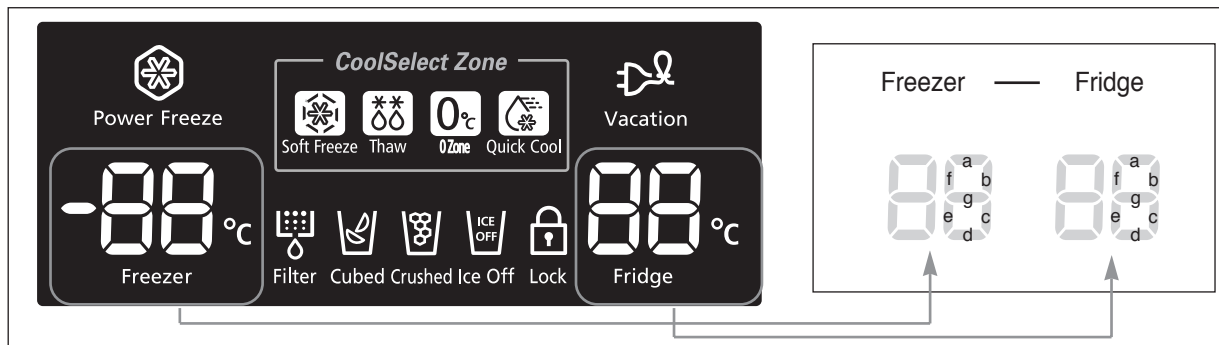
RS21/23H Series



- ① When the Display Panel blinks for 2 seconds after pressing the Power Freeze and the Vacation (or Power Cool) for 6 seconds at the same time
- ② Take your fingers off from all the buttons and press the Fridge button.

TROUBLE SHOOTING

5) The 7-Segment Load Status is as follows.



* Load Mode Check List

NO	ITEM	Description	Display	Digital no.
1	FRIDGE FAN HIGH	R-FAN HIGH RPM	Fridge second digit a	Fridge (second)
2	FRIDGE FAN LOW	R-FAN LOW RPM	Fridge second digit b	Fridge (second)
3	FRIDGE DEFROST HEATER	R-DEF HEATER ON	Fridge second digit c	Fridge (second)
4	START MODE	Operating Step Display (no particular meaning)	Fridge second digit d	Fridge (second)
5	OVER-LOAD MODE	Over 34°C Ambient Temp	Fridge second digit e	Fridge (second)
6	LOW-TEMP MODE	Less than 21°C Ambient Temp	Fridge second digit f	Fridge (second)
7	EXHIBIT MODE	Exhibition Mode On	Fridge second digit g	Fridge (second)
8	COMPRESSOR	COMP On	Freezer second digit a	Freezer (second)
9	FREEZER FAN HIGH	F-FAN HIGH RPM	Freezer second digit b	Freezer (second)
10	FREEZER FAN LOW	F-FAN LOW RPM	Freezer second digit c	Freezer (second)
11	FREEZER DEFROST HEATER	F-DEF HEATER ON	Freezer second digit d	Freezer (second)
12	CONDENSER FAN HIGH	C-FAN HIGH RPM	Freezer second digit e	Freezer (second)
13	CONDENSER FAN LOW	C-FAN LOW RPM	Freezer second digit f	Freezer (second)
14	DISPENSER HEATER	Dispenser Heater On	Freezer second digit g	Freezer (second)
15	WATER TANK HEATER	Fridge Water Tank Heater On	Freezer first digit a	Freezer (first)
16	FREEZER VALVE	F Valve On	Freezer first digit b	Freezer (first)
17	FRIDGE VALVE	R Valve On	Freezer first digit c	Freezer (first)
18	DAMPER	Damper Open	Freezer first digit f	Freezer (first)
19	NORMAL CONDITIONS	⑤ & ⑥ All Off(22~33°C)	Fridge second digit e,f LED all Off	Fridge (second)

TROUBLE SHOOTING

4-1-4) Restoration of Previous Settings Upon Power Failure

- 1) If the panel display is reset upon instant power failure, it will trigger nonsense calls at the call center.
To prevent this, the following measure is implemented into the unit. Upon the power supply, it initializes the unit or brings back its previous settings based on the Freezer temperature.
- 2) Upon the initial power on, it checks its Freezer temperature. When it is lower than $+5^{\circ}\text{C}$, it is to be considered as an instant power failure and it brings back all its previous operation functions (Power Freeze, Power Cool, Vacation, Freezer Settings, Fridge Settings, Ice Type, Child Lock, etc) related to the panel display.
- 3) When it is higher than $+5^{\circ}\text{C}$, it is to be considered as a long-period power failure and it will initialize the panel display (Freezer: -20°C , Fridge: 3°C , Cubed).

TROUBLE SHOOTING

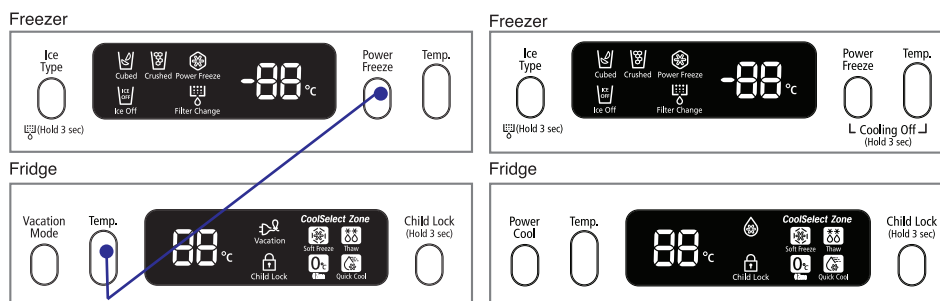
4-1-5) Exhibition & Cooling-Off Mode

Exhibition Mode

- 1) When the Power Freeze and the Fridge buttons are pressed at the same time for 8 seconds during the normal operation, it will be set to the Exhibition mode.
- 2) When the Exhibition mode is activated, the display panel and all the functions will work normally, but the compressor and the Condenser Fan remain off.
- 3) To deactivate the Exhibition Mode, do the Exhibition entering mode again or turn off the power.
- 4) When the Freezer or the Fridge temperature becomes over 65°C, the Exhibition mode will be terminated and the unit will go to the normal operation mode.

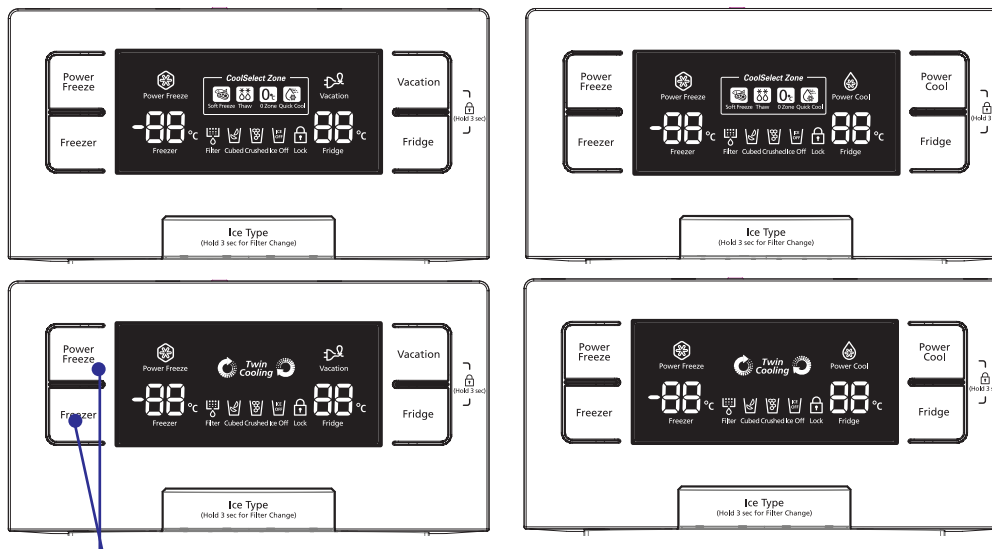
How to Enter Exhibition Mode

RSJ1 Series



- ① Press the Power Freeze and the Fridge buttons for 8 seconds at the same time.

RS21/23H Series



- ① Press the Power Freeze and the Freezer buttons for 8 seconds at the same time.

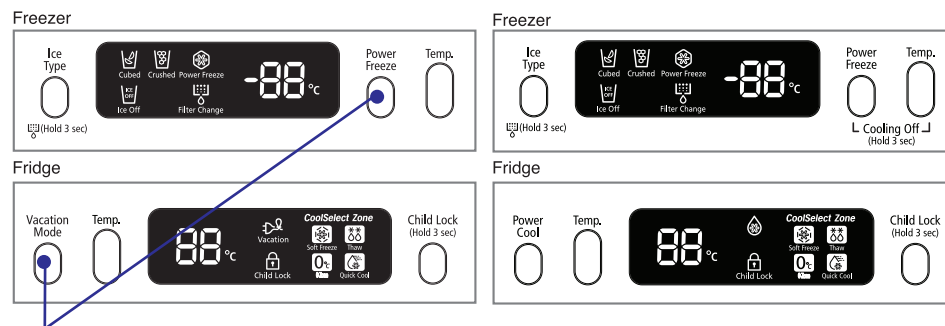
TROUBLE SHOOTING

4-1-6) Option Setting Function

- At the normal operation mode, press the Freezer and the Vacation (or Power Cool) buttons for 12 seconds at the same time. Then, the Display Panel will be shifted to the Option Setting mode.

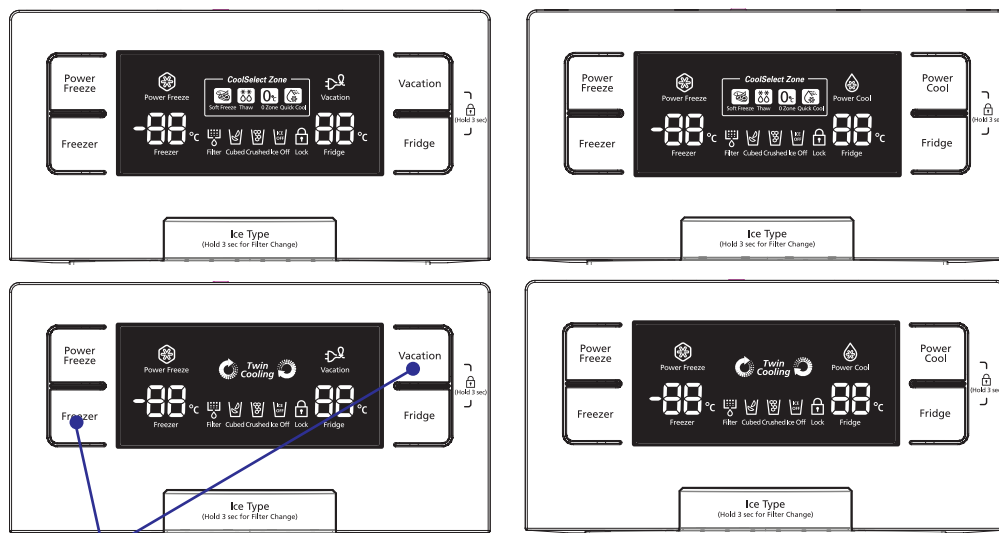
How to Enter Option Setting mode

RSJ1 Series



- Press the Freezer and the Vacation (or Power Cool) buttons for 12 seconds at the same time.

RS21/23H Series

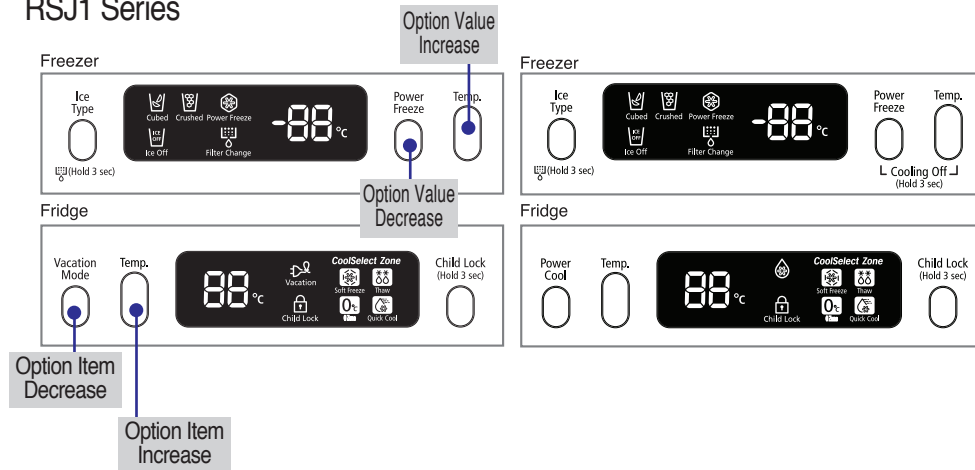


- Press the Freezer and the Vacation (or Power Cool) buttons for 12 seconds at the same time.

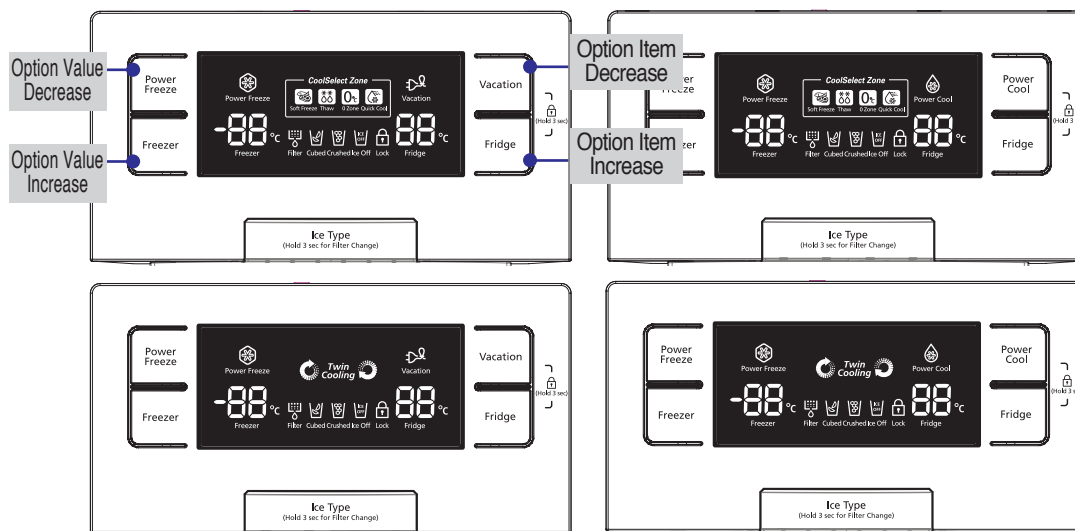
TROUBLE SHOOTING

How to Control Buttons at Option mode

RSJ1 Series



RS21/23H Series



※ Button Operation at Option Setting Mode

Button	Function
Fridge	Option Item Increase
Vacation	Option Item Decrease
Freezer	Option Value Increase
Power Freeze	Option Value Decrease

TROUBLE SHOOTING

- When the display is converted to Option Setting mode, the entire display is to be turned off except the Fridge & Freezer 7-SEG LEDs as follows.



- The following shows the way to shift the Freezer temperature by -3°C . This function is to shift its base temperature. For example, if the current base temperature is -18°C and it is lowered by -3°C with the Option Setting function, the unit is to be controlled based on -21°C ; that is even though it shows -18°C on the display panel after shifting the base temperature, it is to be controlled based on -21°C . So, when the base temperature is lowered by -3°C , the unit is controlled $-3^{\circ}\dots$ lower than the displayed temperature.

NOTE The units are shipped out with all their data being cleared. i.e. the setting values are "0" for all together. But, for the purpose of quality improvement, the settings can be changed before being shipped out, make sure to check relevant SVC bulletins.

- With the Option Setting mode, "0" blinks on both of the Fridge and the Freezer sections. (Generally, they are set to "0" at both the Fridge and the Freezer sections. But, they can be changed for the purpose of quality improvement.) - When "0" blinks on the Fridge section, it is set to the Freezer Option Setting and the Freezer temp code will be displayed on the Freezer temp section.
- If the Freezer temp code is set to "6" as the following table after setting the Fridge section to "0", the Freezer base temperature is to be lowered by -3°C (Refer to the Freezer temperature setting image.)



: In 15 seconds after completing the adjustment, MICOM is to store the setting value in EEPROM and it goes back to the normal display mode, deactivating the Option Setting mode.

- The above Option Setting is the same for both of the Dispenser model and the No-Dispenser model.
- With the same method as the above, you can control the Fridge temperature, the water supply quantity, the Ice-Maker sensor temperature and the Cool Select Zone temperature.
- Make sure not to change the factory-set default values otherwise exception cases. Also, the Option Setting is to be completed when it goes back to the normal display mode in 20 seconds. So, do not turn off the unit before it goes back to the normal display mode.

NOTE There are more functions which can be adjusted. But, they are not to be described in this manual because they are not actually related to the diagnosis of the unit. (Do not change the option settings other than the ones described in this manual)

TROUBLE SHOOTING

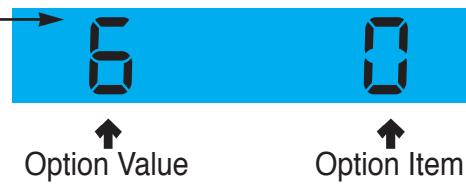
4-1-7) Option Table

1) Freezer Temp Shifting Table

Value	TEMP VALUE
Freezer Value	
0	0
1	-0.5 °C
2	-1.0 °C
3	-1.5 °C
4	-2.0 °C
5	-2.5 °C
6	-3.0 °C
7	-3.5 °C
8	+0.5 °C
9	+1.0 °C
10	+1.5 °C
11	+2.0 °C
12	+2.5 °C
13	+3.0 °C
14	+3.5 °C
15	+4.0 °C

ITEM	FREEZER TEMP SHIFT
MODEL	SAME FOR ALL MODELS
Option	LOCATION: FRIDGE TEMP DISPLAY
	0

Ex) Lowering the Freezer default temp by -3°C

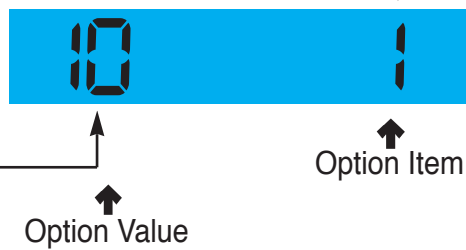


2) Fridge Temp Shifting Value

Value	TEMP VALUE
Freezer Value	
0	0
1	-0.5 °C
2	-1.0 °C
3	-1.5 °C
4	-2.0 °C
5	-2.5 °C
6	-3.0 °C
7	-3.5 °C
8	+0.5 °C
9	+1.0 °C
10	+1.5 °C
11	+2.0 °C
12	+2.5 °C
13	+3.0 °C
14	+3.5 °C
15	+4.0 °C

ITEM	FREEZER TEMP SHIFT
MODEL	SAME FOR ALL MODELS
Option	LOCATION: FRIDGE TEMP DISPLAY
	1

Ex) Raising the Fridge default temp by +1.5°C



TROUBLE SHOOTING

- The following option applies to models with Ice-Maker or Cool Select Zone.

Basic models do not have the following functions.

3) Ice-Maker Water Supply

It controls the water supply quantity with the Flow Sensor.

ITEM	OPTION ITEM
Ice-Maker Water Supply Qty Control	2

Water Supply Quantity	Option Value (Freezer Temp)
85cc	0
95cc	1

Ex) Changing the water supply quantity to 85cc



4) Ice-Maker Ice Ejection Standby Time Controlling

; It is an option controlling the Ice Ejection Standby time of the Ice-Maker.

Item	Display Location (Fridge Temp)
ICE MAKER Ice Ejection Standby Time	3

Standby Time	Freezer Display
58 min	0
57 min	1
56 min	2
55 min	3
54 min	4
53 min	5
52 min	6
51 min	7
50 min	8
49 min	9
48 min	10
47 min	11
46 min	12
45 min	13
59 min	14
60 min	15

5) Minimum Comp RPM Setting

- This option is for sising minimum Comp RPM. As this option is applied, Comp RPM will be rise.

It will help reducing continual Comp operation.

Minimum Comp RPM Setting	Freezer Display
No RPM Change	0
Minimum 2450RPM	1
Minimum 2450RPM	2
Minimum 2450RPM	3

Item	Display Location (Fridge Temp)
Minimum Comp RPM Setting	12

TROUBLE SHOOTING

- The following option applies to models with Ice-Maker or Cool Select Zone.

Basic models do not have the following functions.

6) Temp Display Option

- This option is for temp display all on mode. If user wants temp display always on, this option is solution.

Temp Display Option	Freezer Display
Normal Display (Temp display temporally on at use)	0
Always Temp Display On	1
Always Temp Display On	2

Item	Display Location (Fridge Temp)
Temp Display Option	16

7) Ice-Maker Sensor Temp Shifting

- It is an option shifting the ice ejecting base temperature.

Item	Display Location (Fridge Temp)
Ice-Maker Sensor Temp Shifting	4

Ice-Maker Sensor Temp	Freezer Display
-17 °C	0
-16 °C	1
-15 °C	2
-14 °C	3
-13 °C	4
-12 °C	5
-18 °C	6
-19 °C	7

8) Cool Select Zone Temp Shifting

- It is an option shifting the Cool Select Zone controlling temperature.

Item	Display Location (Fridge Temp)
C/S Zone Temp Shifting (Base Temp)	20

C/S Zone Temp	Freezer Display
0 °C	0
-0.5 °C	1
-1.0 °C	2
-1.5 °C	3
+0.5 °C	4
+1.0 °C	5
+1.5 °C	6
+2.0 °C	7

TROUBLE SHOOTING

4-2. SELF DIAGNOSIS

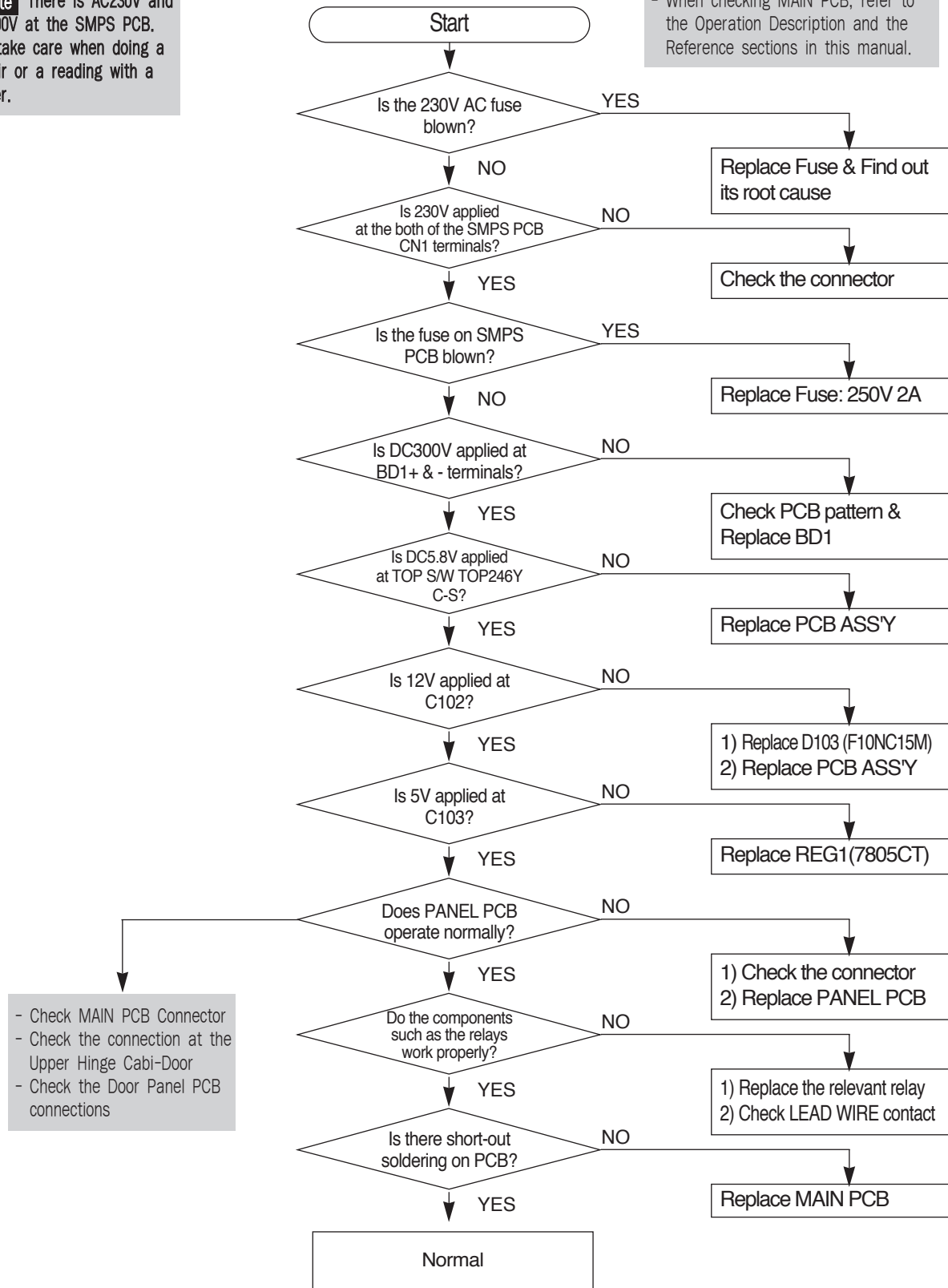
4-2-1-1) When there is no power (AC COMP model)	64
4-2-1-2) When there is no power (INVERTER COMP model)	65
4-2-2-1) When the Comp does not operate (AC COMP model)	66
4-2-2-2) When the Comp does not operate (INVERTER COMP model)	67
4-2-3) Unable to Defrost	69
4-2-4) Self-Diagnosis Error (Defective Sensor)	70
4-2-5) When Alarm Sound continues (Buzzer Sound)	71
4-2-6) When PANEL PCB operates abnormally	73
4-2-7) When Fan does not operate	74
4-2-8) Freezer / Fridge Lamp does not light up	75
4-2-9) When Crush (Crushed Ice) & Cube (Cubed Ice) does not operate well	76
4-2-10) When Water Tank Heater does not operate	77

TROUBLE SHOOTING

4-2-1-1) When there is no power (AC COMP model)

Note There is AC230V and DC300V at the SMPS PCB. So, take care when doing a repair or a reading with a tester.

- When checking MAIN PCB, refer to the Operation Description and the Reference sections in this manual.

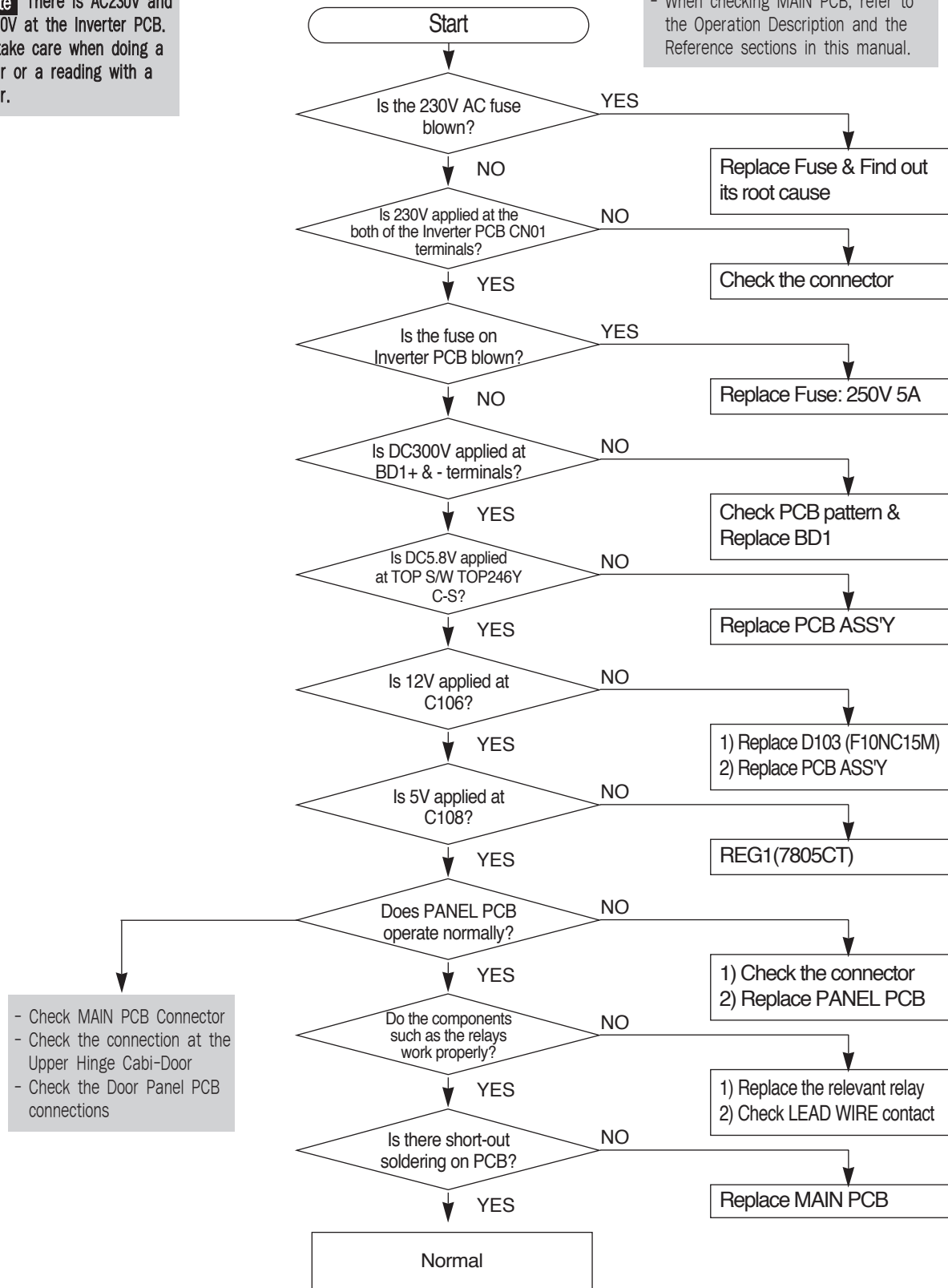


TROUBLE SHOOTING

4-2-1-2) When there is no power (INVERTER COMP model)

Note There is AC230V and DC300V at the Inverter PCB. So, take care when doing a repair or a reading with a tester.

- When checking MAIN PCB, refer to the Operation Description and the Reference sections in this manual.



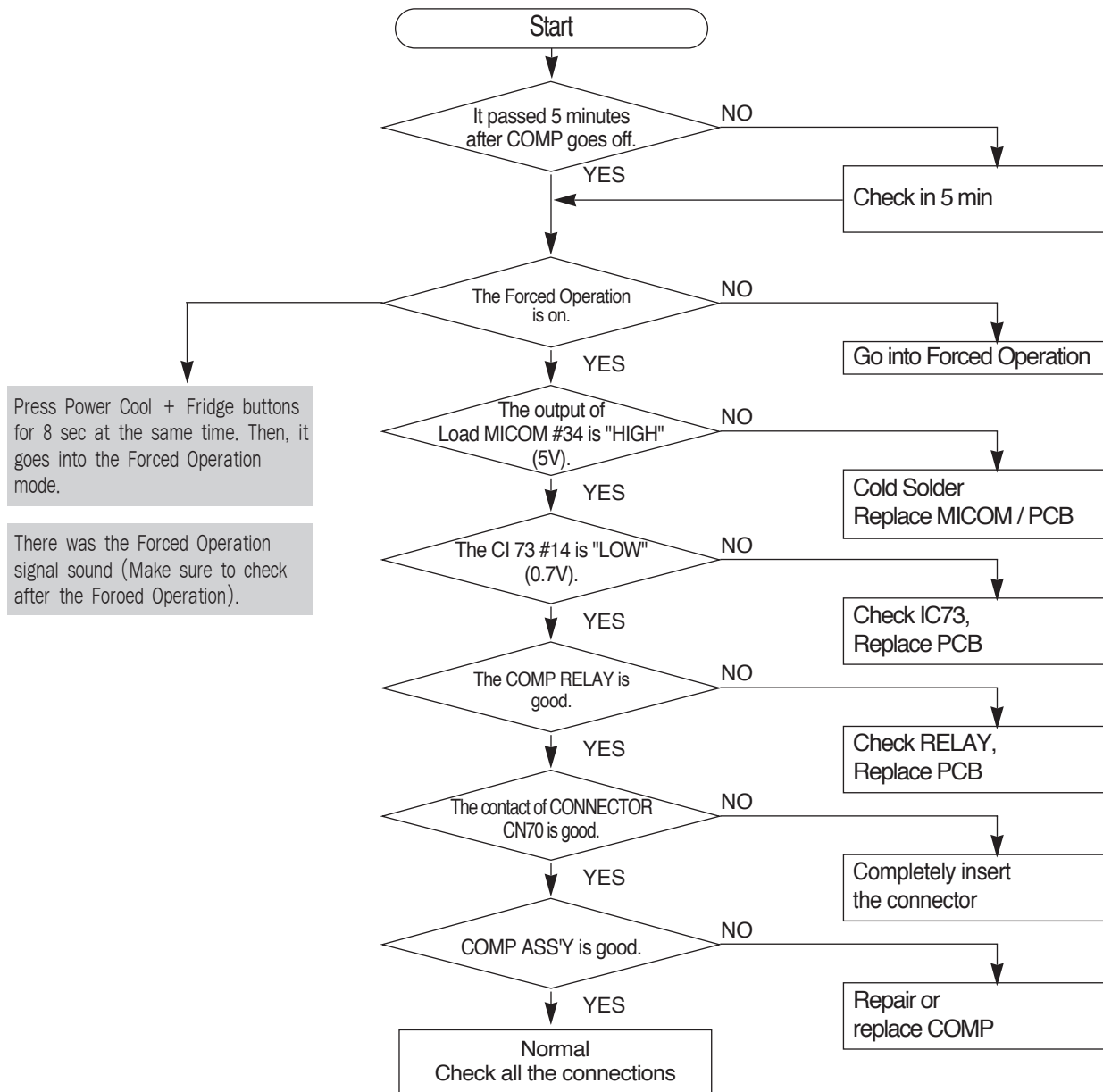
TROUBLE SHOOTING

4-2-2-1) When the Comp does not operate (AC COMP model)

Pre-Check

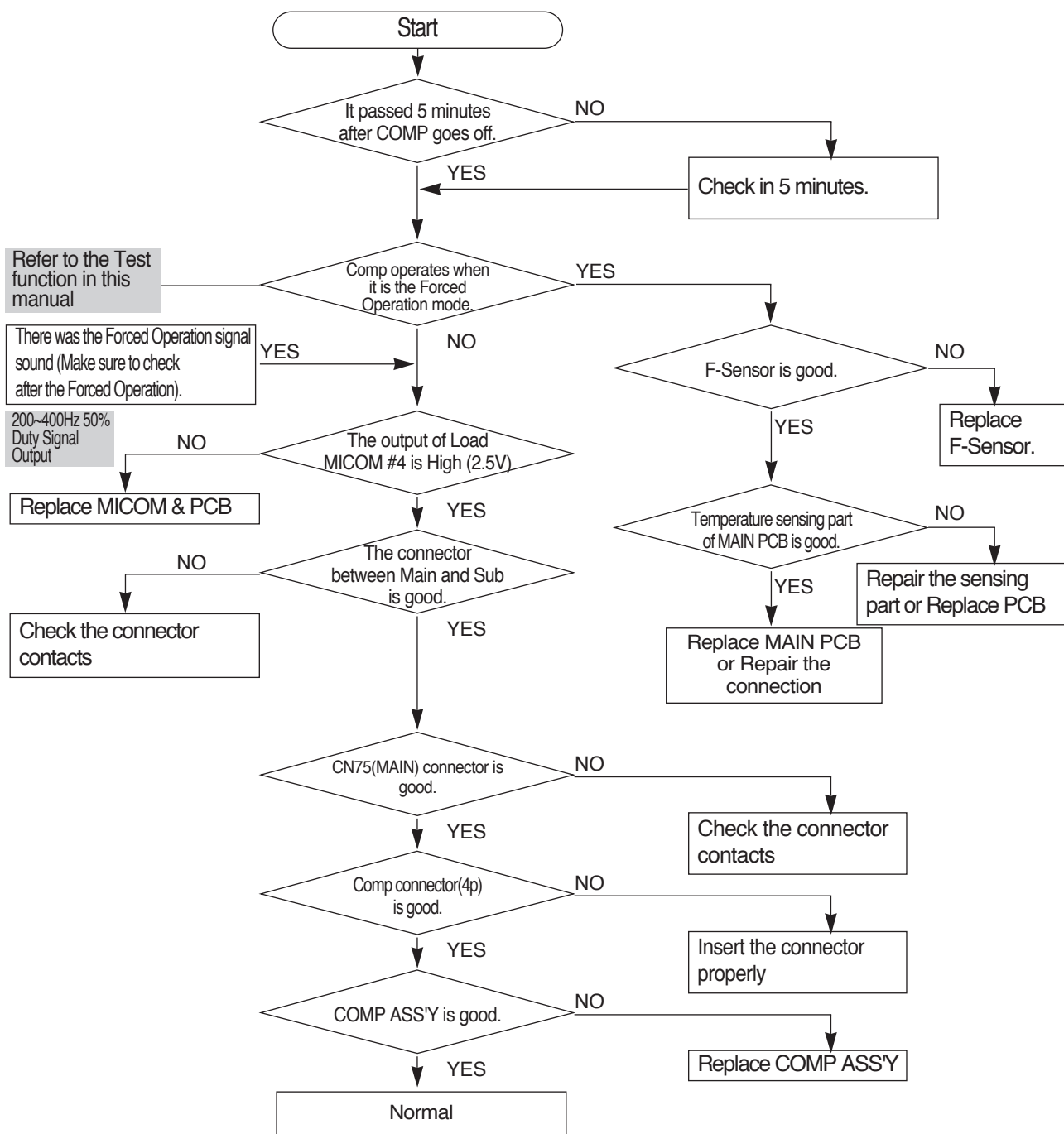
Check the compressor during the Forced Operation

1. It takes more than 5 minutes before the compressor starts operating since it becomes the set temperature.
2. The compressor does not work during the defrost.
3. It also takes more than 5 minutes to run the compressor again when an instant power failure is detected.



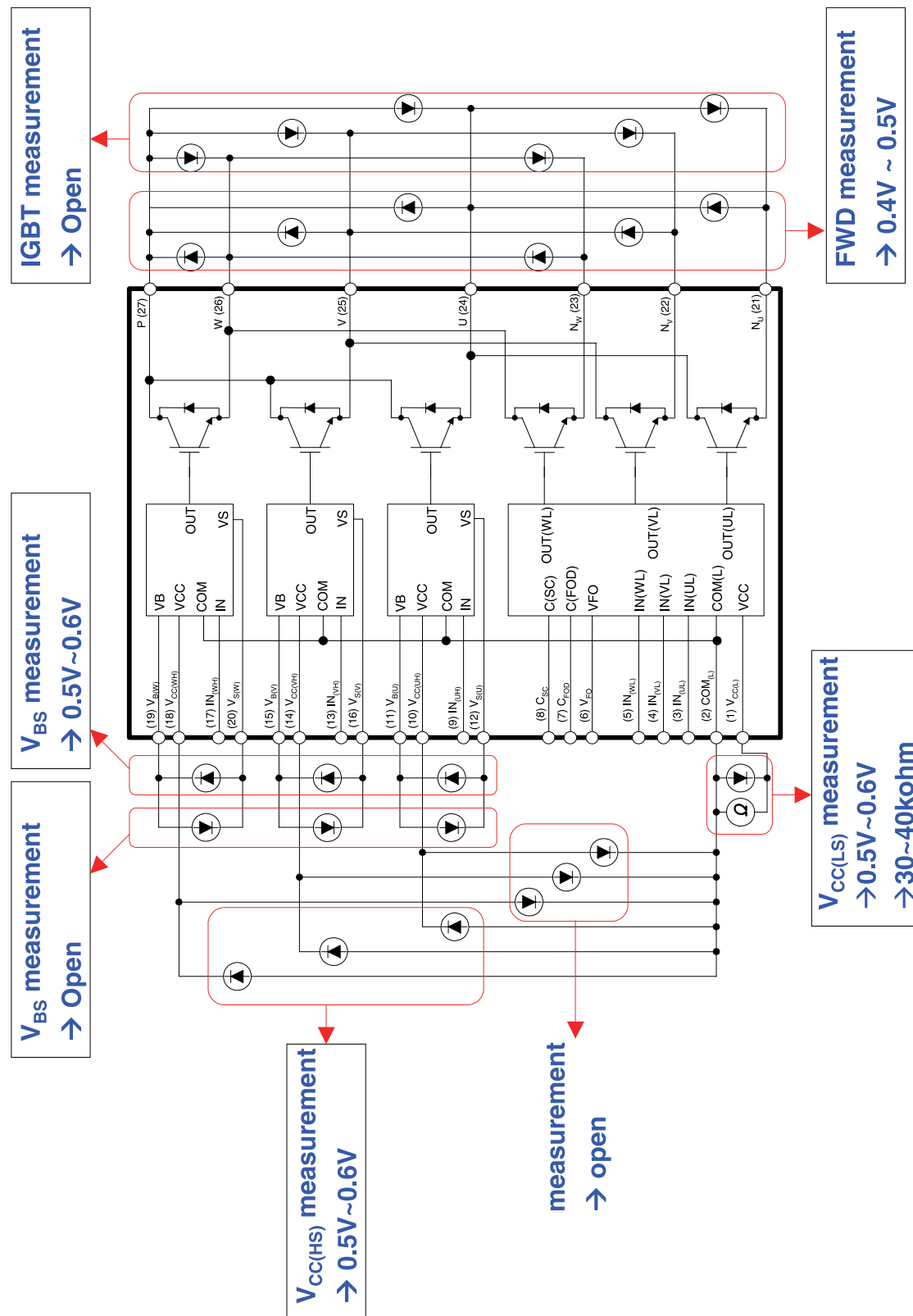
TROUBLE SHOOTING

4-2-2-2) When the Comp does not operate (INVERTER COMP model)



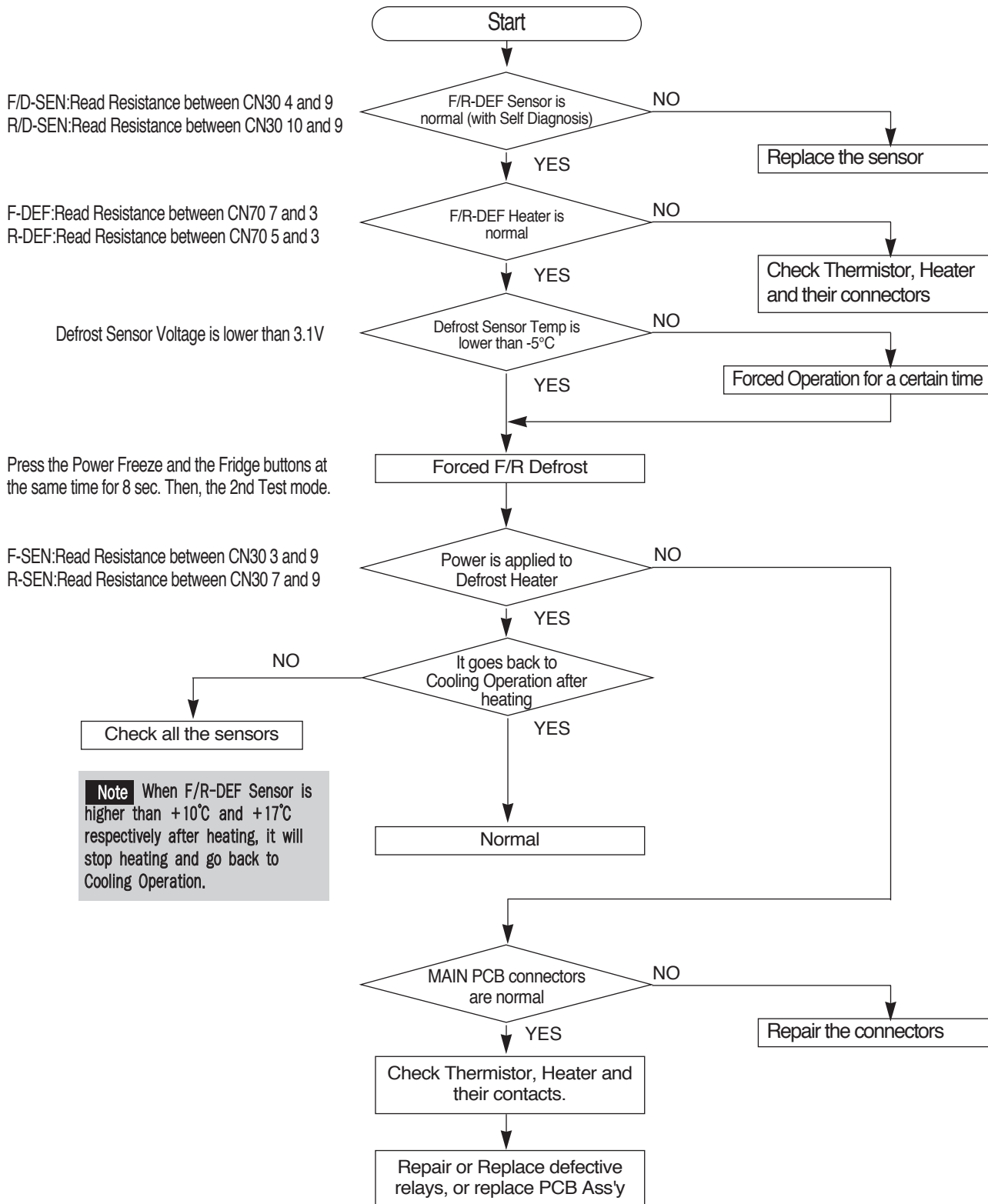
TROUBLE SHOOTING

SPM FREEWHEELING DIODE Voltage



TROUBLE SHOOTING

4-2-3) Unable to Defrost

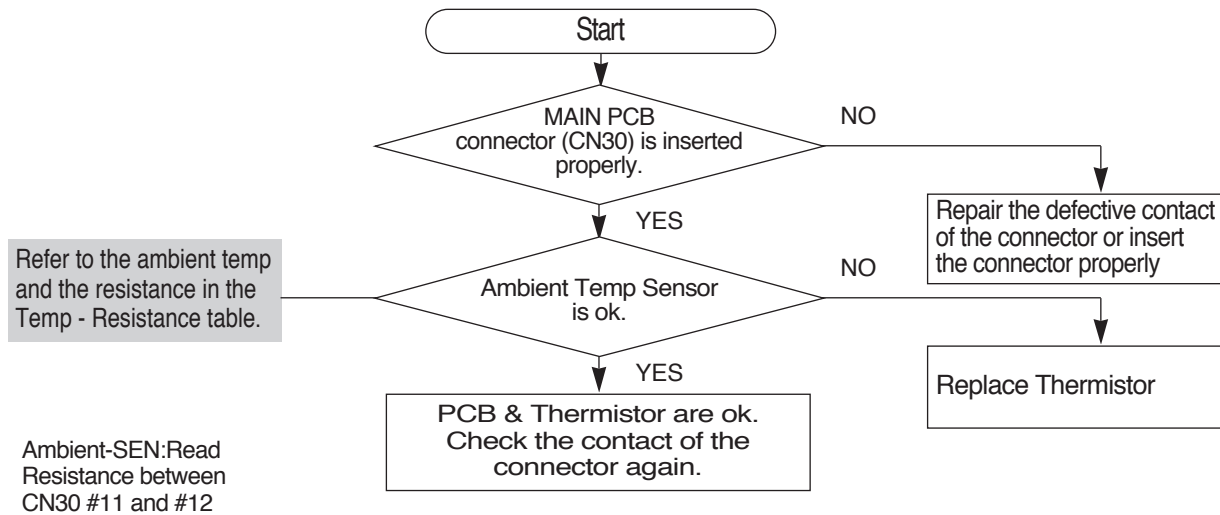


TROUBLE SHOOTING

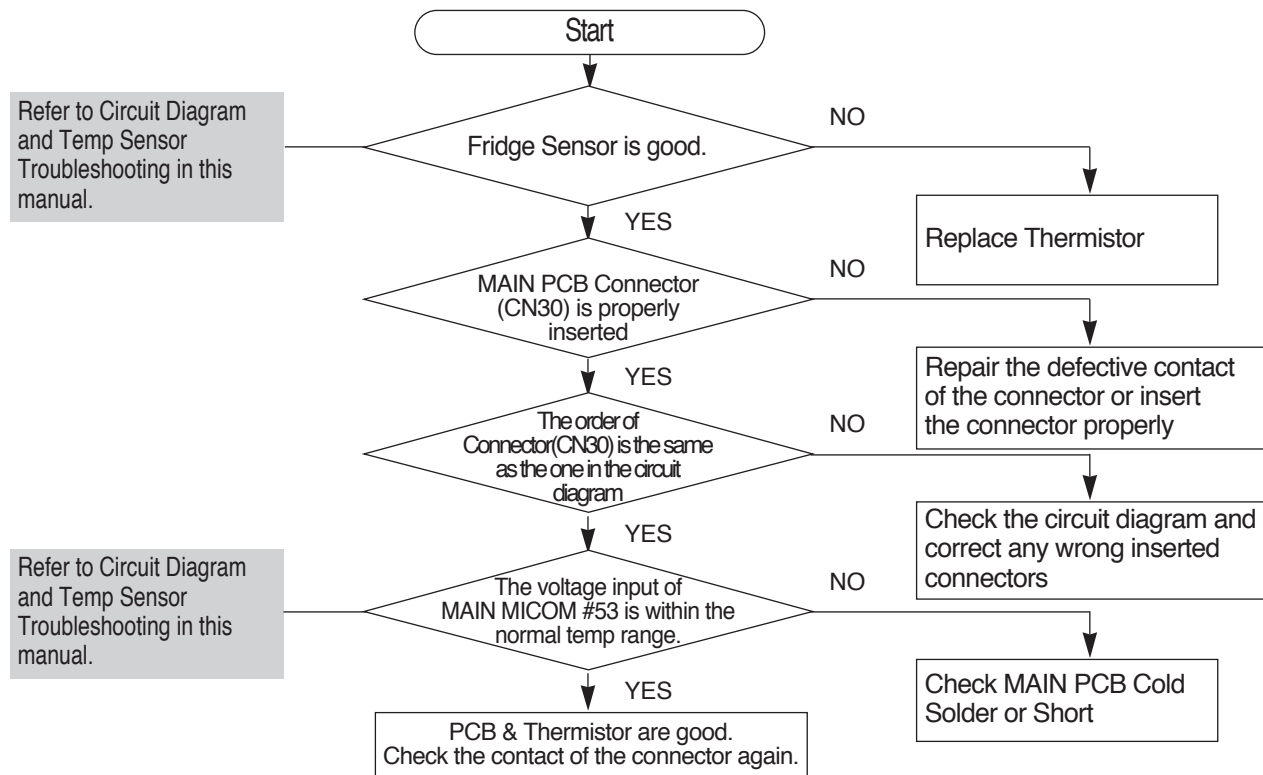
4-2-4) Self-Diagnosis Error (Defective Sensor)

- When there is a sensor error, it will light up on the display panel. And, when there is a sensor error upon the initial power on, it will go into the emergency operation mode blinking relevant 7-SEG.
- The refrigerator does not stop when there are sensor errors during the operation, but it goes into the emergency operation mode, which is not able to do the normal operation.
So, do the double check with the Self Diagnosis in this manual.

1) When the Ambient Sensor is defective,



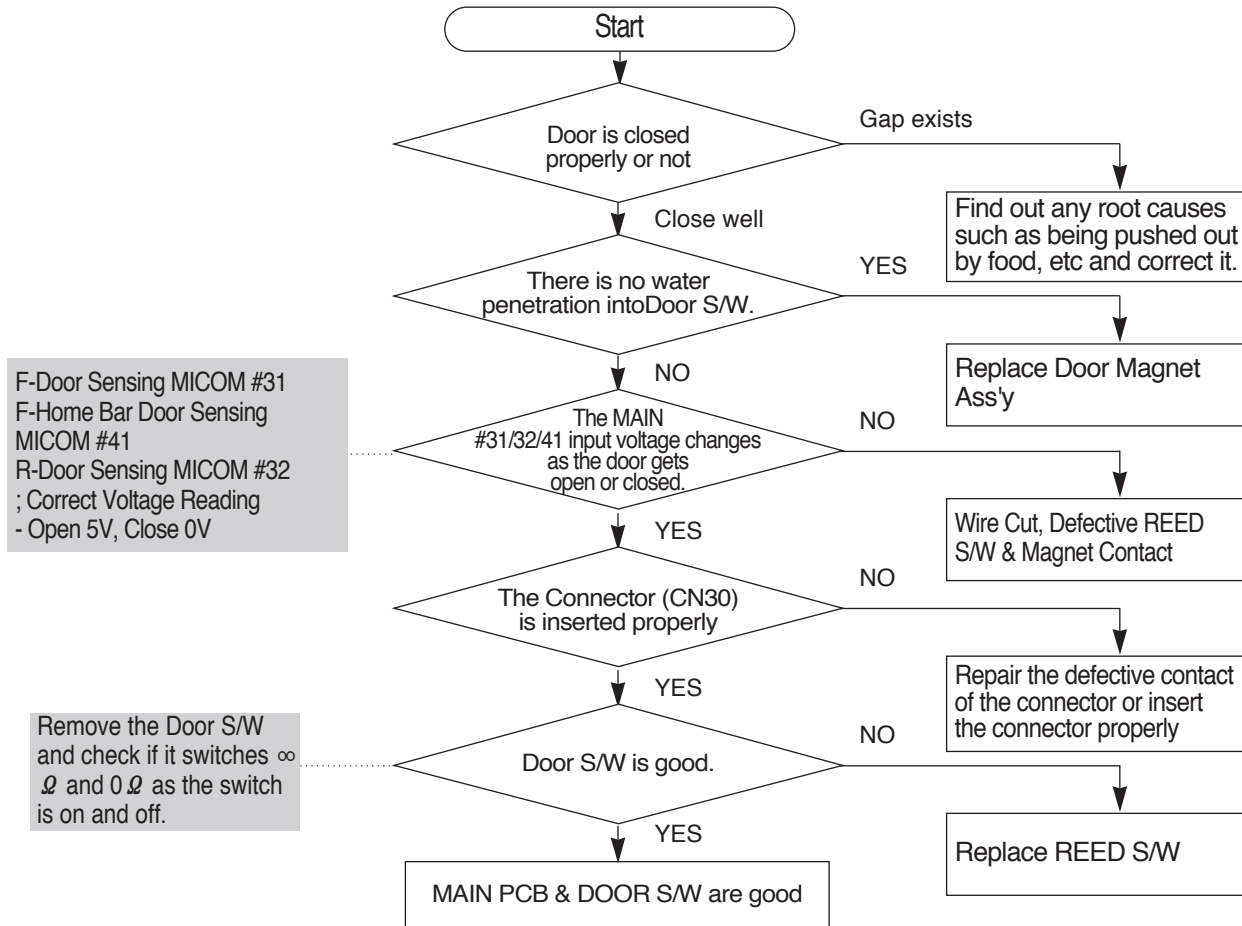
2) When the Fridge Temp Sensor is defective (also applied to other sensors)



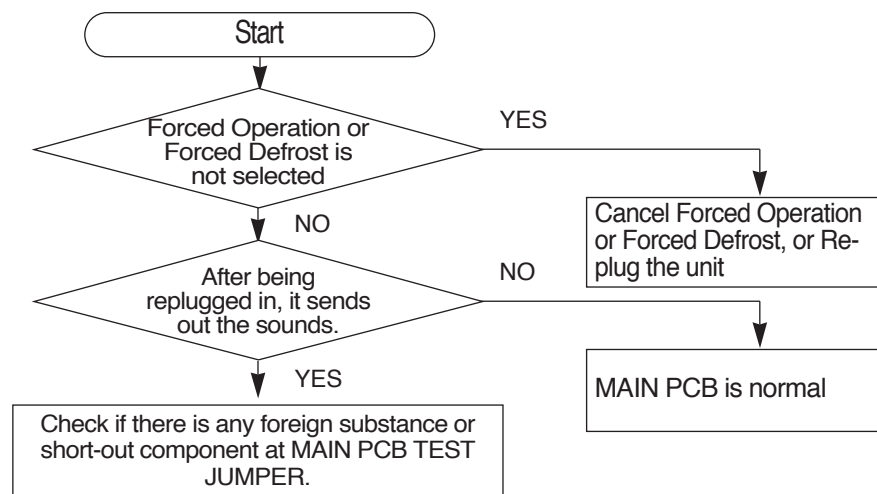
TROUBLE SHOOTING

4-2-5) When Alarm Sound continues (Buzzer Sound)

1) When "DingDong" sound continues



2) When "Beeping" sounds continue



TROUBLE SHOOTING

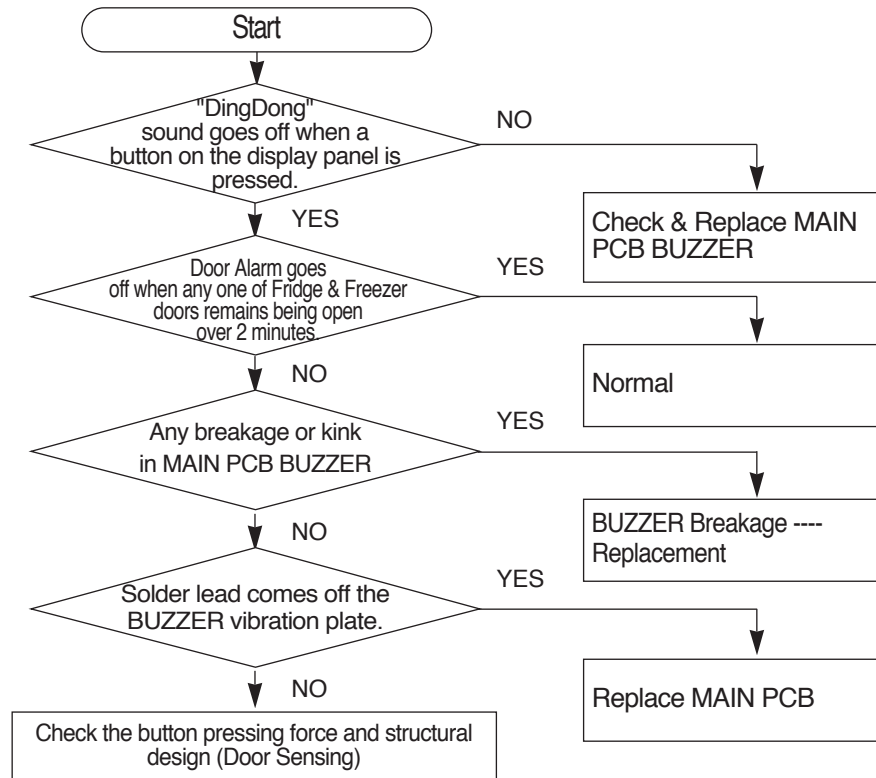
3) No Buzzer Sound

This model has a buzzer affixed on the MAIN PCB.

If there is no buzzer sound upon button press, Forced Operation or Door Open, disconnect MAIN PCB and check if the buzzer is damaged or there is any defective soldering.

(If it is not a soldering problem, it is recommended replacing MAIN PCB due to difficulties in repairing)

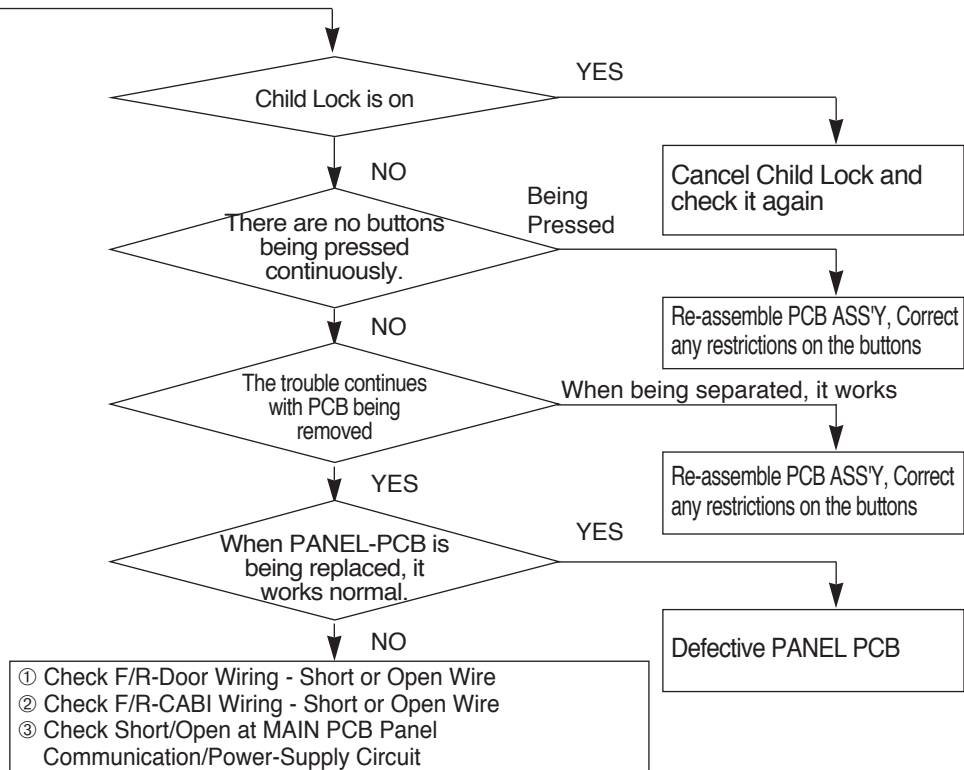
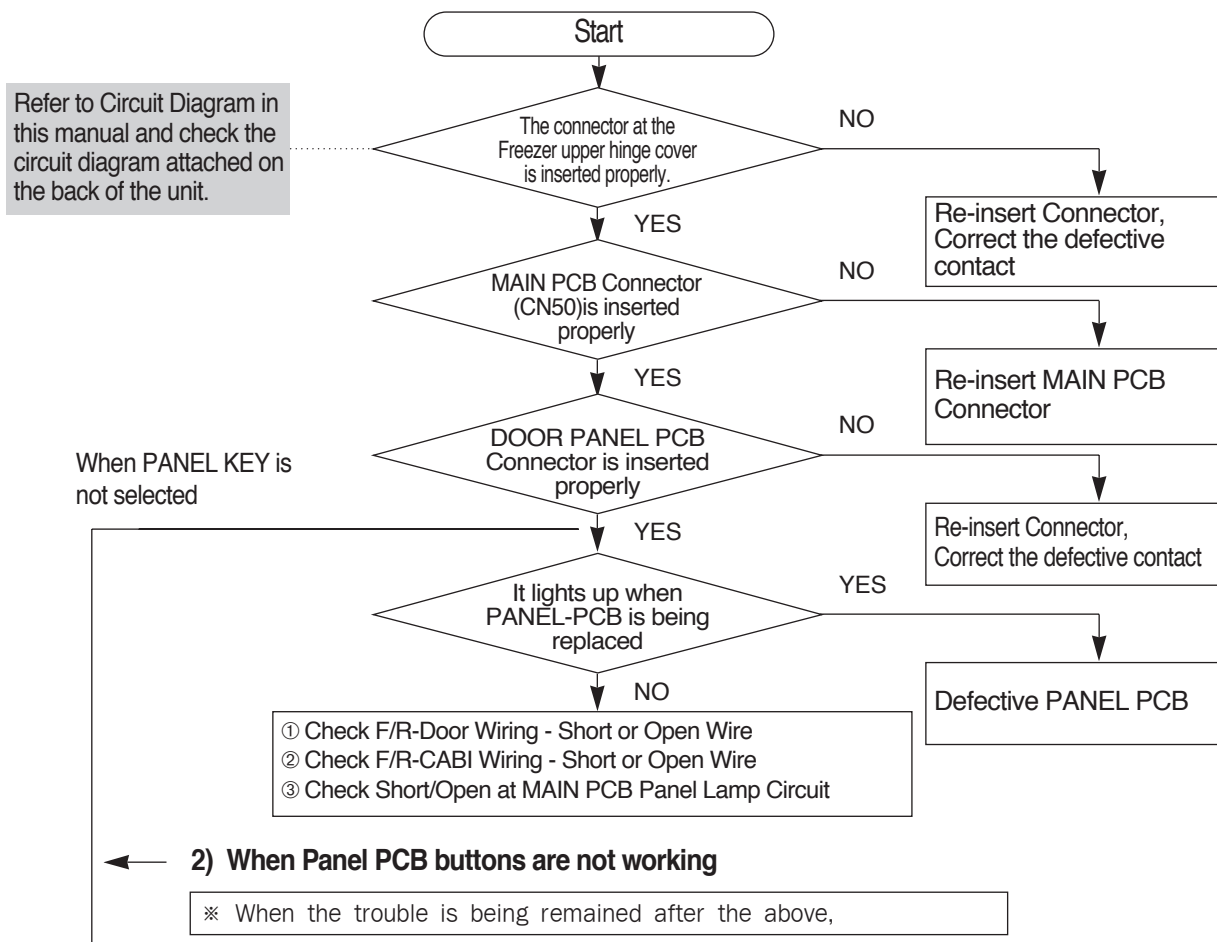
※ It may not be able to check when it is a closed built-in environment and there is lots of noise around.



TROUBLE SHOOTING

4-2-6) When PANEL PCB operates abnormally

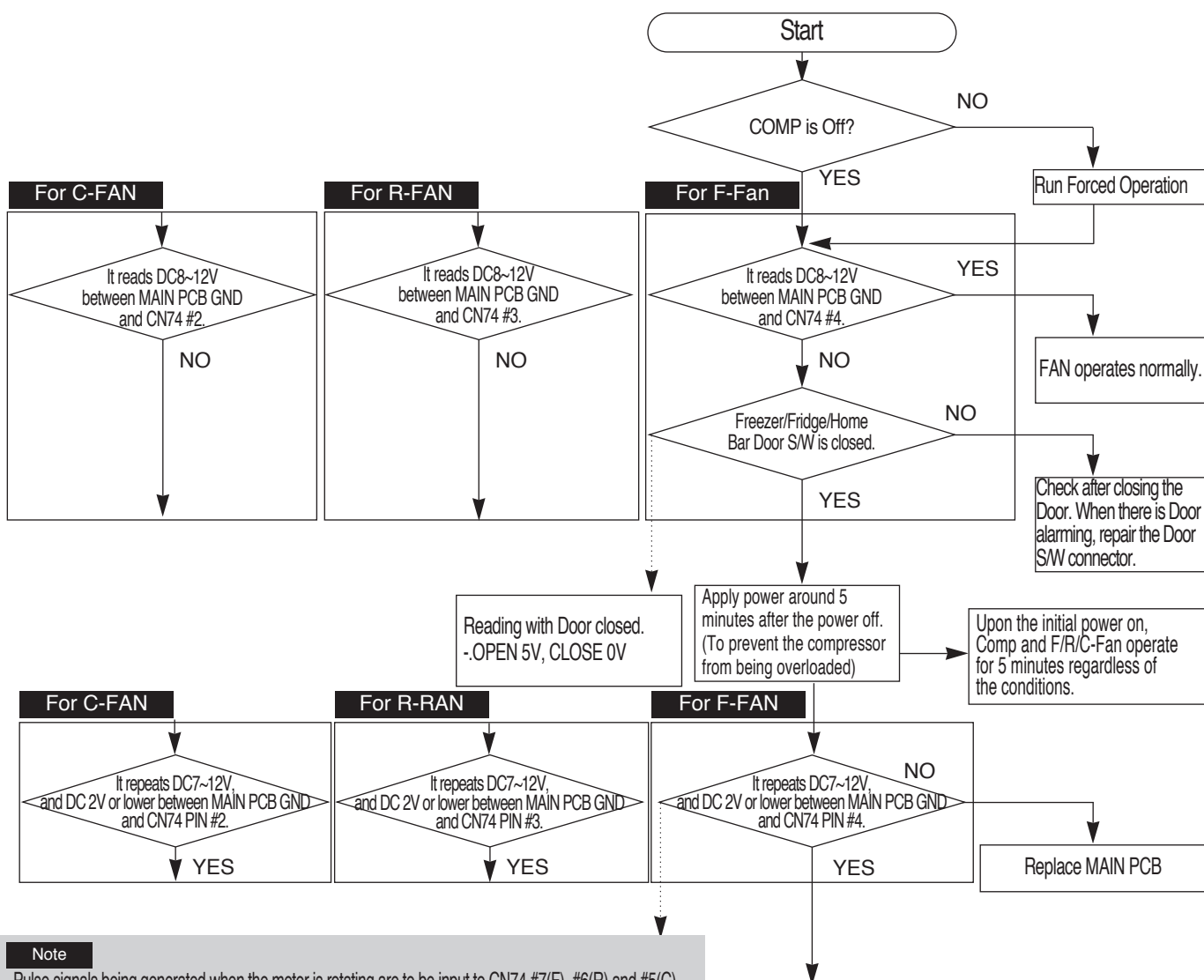
1) When PANEL PCB does not light up or partially does



TROUBLE SHOOTING

4-2-7) When Fan does not operate

- A BLDC Fan Motor is applied to this refrigerator. The BLDC motor runs on DC 8~12V.
- The F-Fan motor runs together with the compressor. But, due to conditions of the Cool Select Zone or other components, the F-Fan Motor does not operate. Also, when the ambient temperature is high and the Door is open and closed, the F-Fan operate after one minute. So, it needs addition checking before considering it as a defect.
- Also, when the Fridge door is open, the F-Fan Motor stops together with the R-Fan Motor.



Note

Pulse signals being generated when the motor is rotating are to be input to CN74 #7(F), #6(R) and #5(C). These will be input to MICOM and when there are no input signals with the motor rotating, the fan will be turned off and then be turned on in 10 seconds. If there are still no input signals, it keeps trying the above 4 times. And, if it still fails, it runs the motor in 10 minutes. It is implemented to prevent the motor from being overloaded due to restrictions by foreign substances such as ice built up around the motor.

◆ Possible Causes

1. Defective FAN-MOTOR
2. Contact problem at the terminal
3. Check the motor rotating pulse input upon Fan Motor operation. (Refer to Fan-Motor Circuit in this manual)

TROUBLE SHOOTING

4-2-8) Freezer / Fridge Lamp does not light up

Caution

1. When replacing the Freezer Lamp, be sure to turn off the power to prevent electric shock.
2. Take care when replacing the incandescent lamp to prevent skin burn.

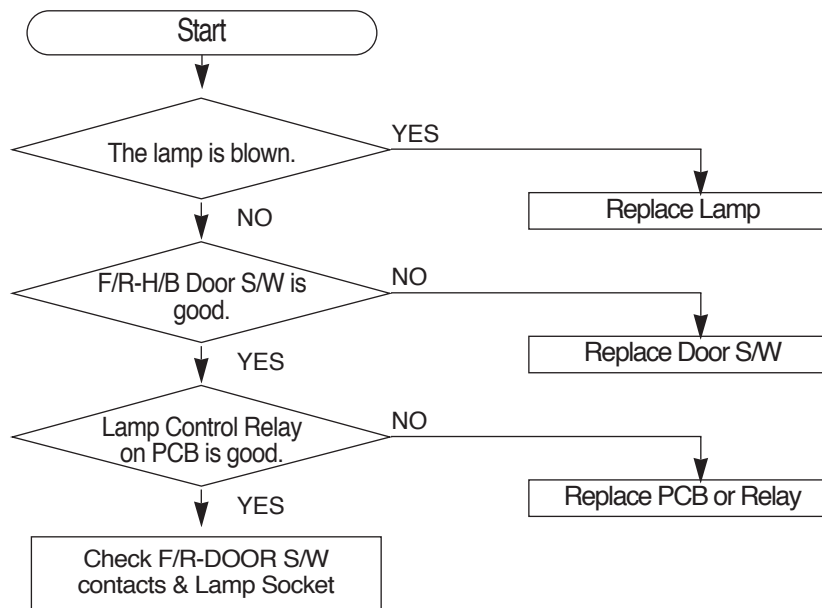
Note

When the F-Door is open, its Door S/W will be open. And then 5V is to be applied to MICOM, signalling the Door Open. After that, when 5V is input for more than 2 minutes, it will send out Door Open alarm for 10 seconds at an interval of 1 minute. (it's the same for the R-Door and the R/F-H/B Door.) So, when the Door S/W is defective, it will send "Ding Dong" sound at an interval of 1 minute with the doors closed. In this case it needs repairing.

When the lamp is controlled with Relay
(Refer to the specifications below).

Note

The Room Lamp Relay switches on & off when the door gets opened and closed. When the lamp does not light up, check the relay operation with its switching sounds by opening & closing the door.



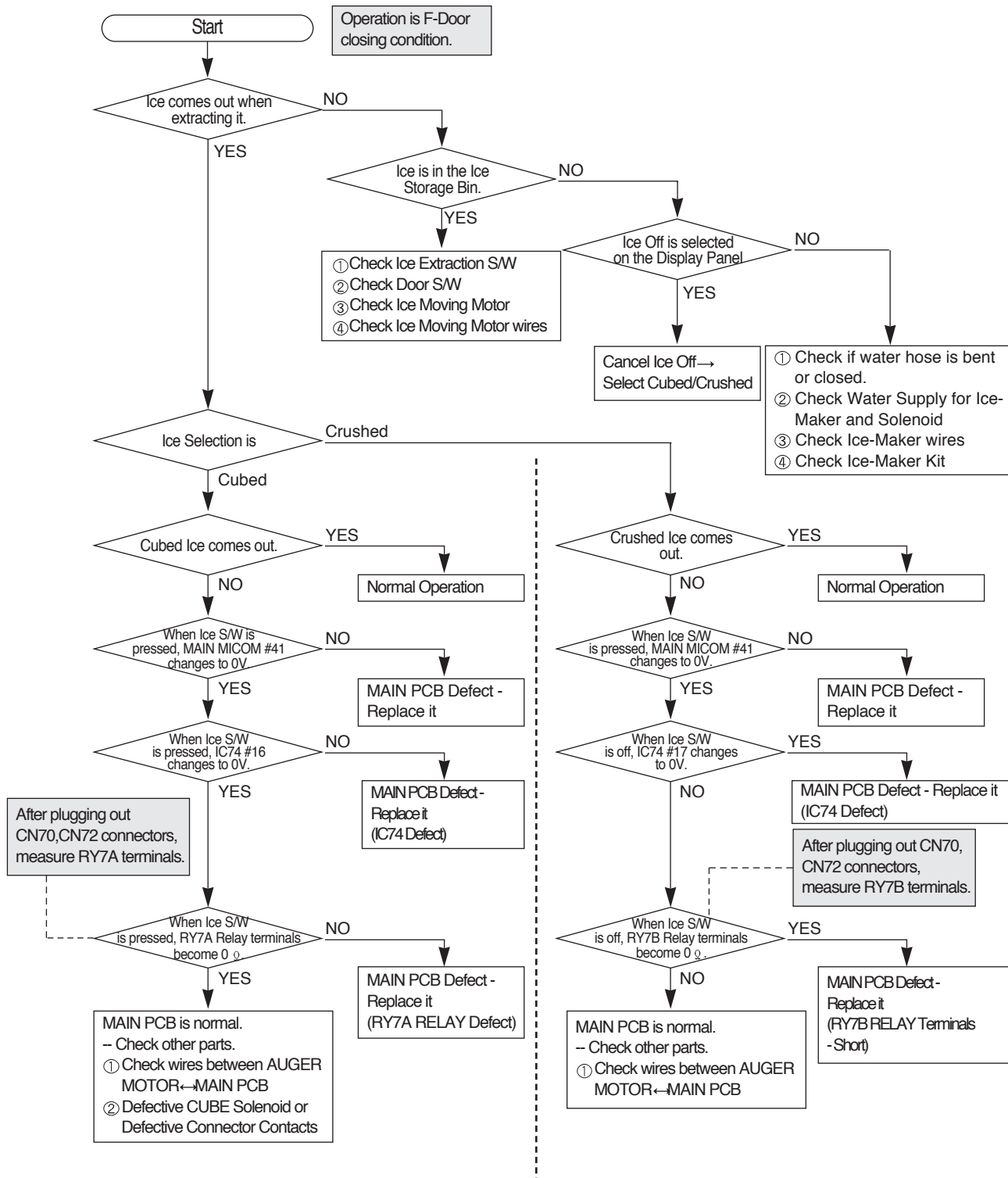
<How to Control Lamp>

	Fridge Lamp	Freezer Lamp
All Models	Conditions) R-Door or R-H/B Door Open	Conditions) F-Door or F-H/B Door Open
	RY75	RY74

TROUBLE SHOOTING

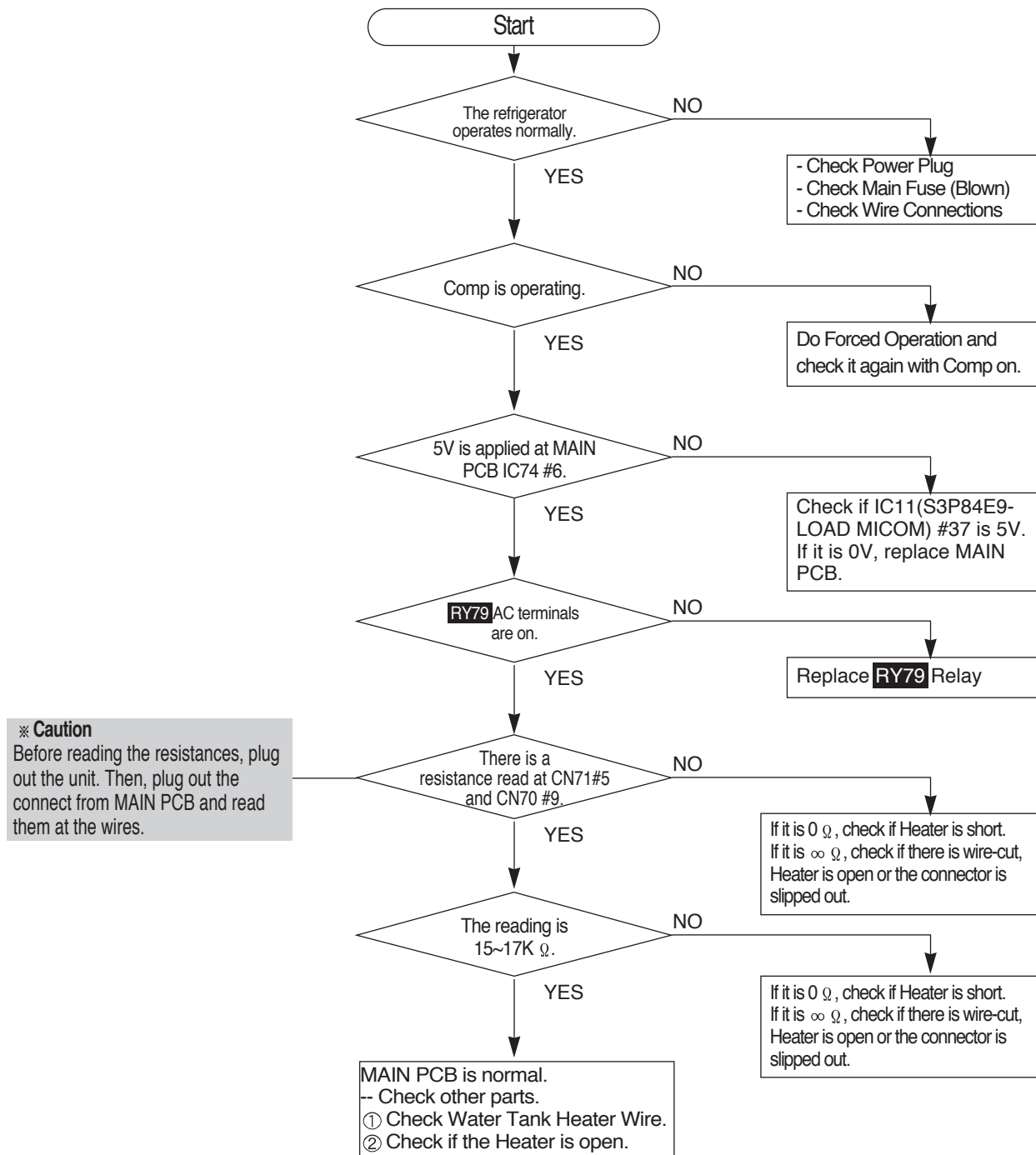
4-2-9) When Crush (Crushed Ice) & Cube (Cubed Ice) does not operate well

Only for Dispenser models



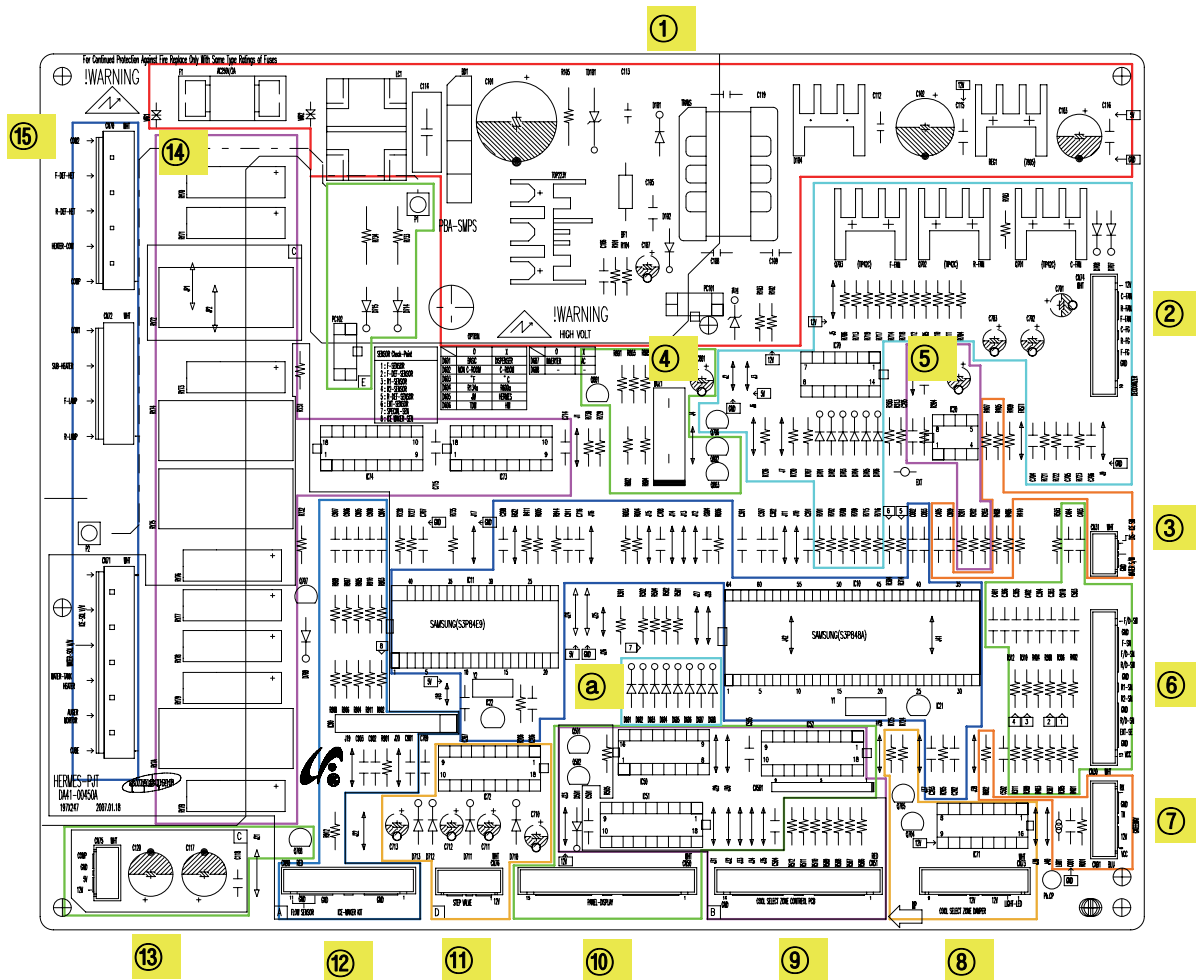
TROUBLE SHOOTING

4-2-10) When Water Tank Heater does not operate



5. PCB DIAGRAM

5-1) PART ARRANGEMENT (Main Board)

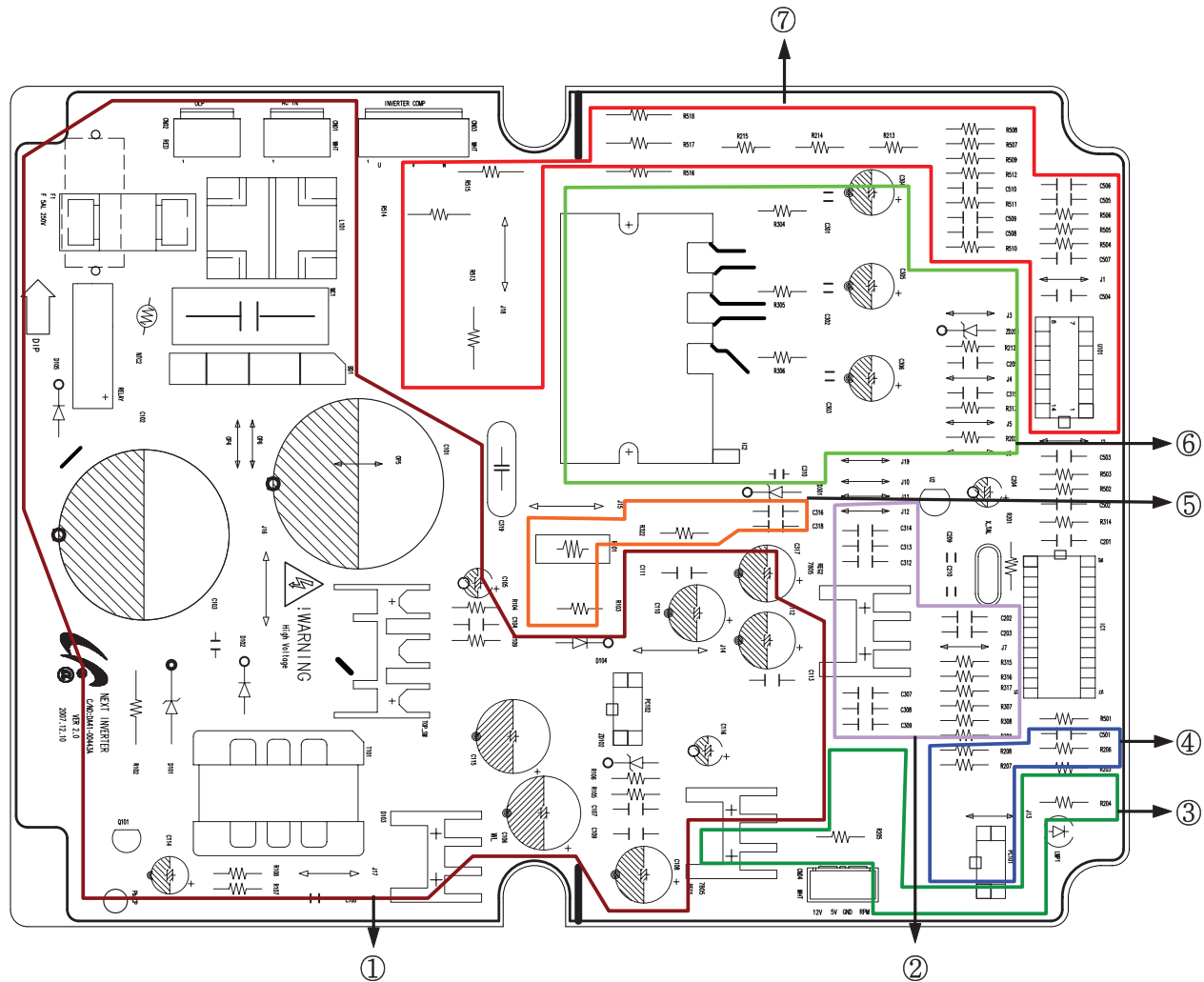


1. SMPS Circuit: With input AC voltage, it outputs DC12V and 5V.
2. It supplies 8.3V~10V to Deodorizer & Fan Motors.
3. Dispenser Ice & Water (Freezer Home Bar) S/W
4. Buzzer
5. EEPROM : Data Storing
6. Receives various sensor voltages and door operation signals, and filter their noises.
Then, send them to MICOM.
7. Prepare PLC;PCD Circuit(PLC Input/Output)-PLC(Power Line communication)
In HM09 Dispenser Model Case CN01 provide (Touch IC Source) 5V, GND to PANEL PBA
8. Cool Select Zone Damper and its Heater/LED
9. Cool Select Zone Display Driver :LED Display, Button Signalling
10. Display Control (MAIN → PANEL PCB)
11. Step-Valve Control (3-Way Valve)
12. Ice-Maker Kit Control
13. PCB & Inverter Comp Driver: DC12V, 5V and GND are input (Applied to Inverter Model).
14. AC Load Control Relay - It operates with Micom driving signals being receipt through Sink IC.
15. AC Load Connector
 - a. Diode Option Setting

PCB DIAGRAM

5-2) Parts Layout (Inverter comp control Board)

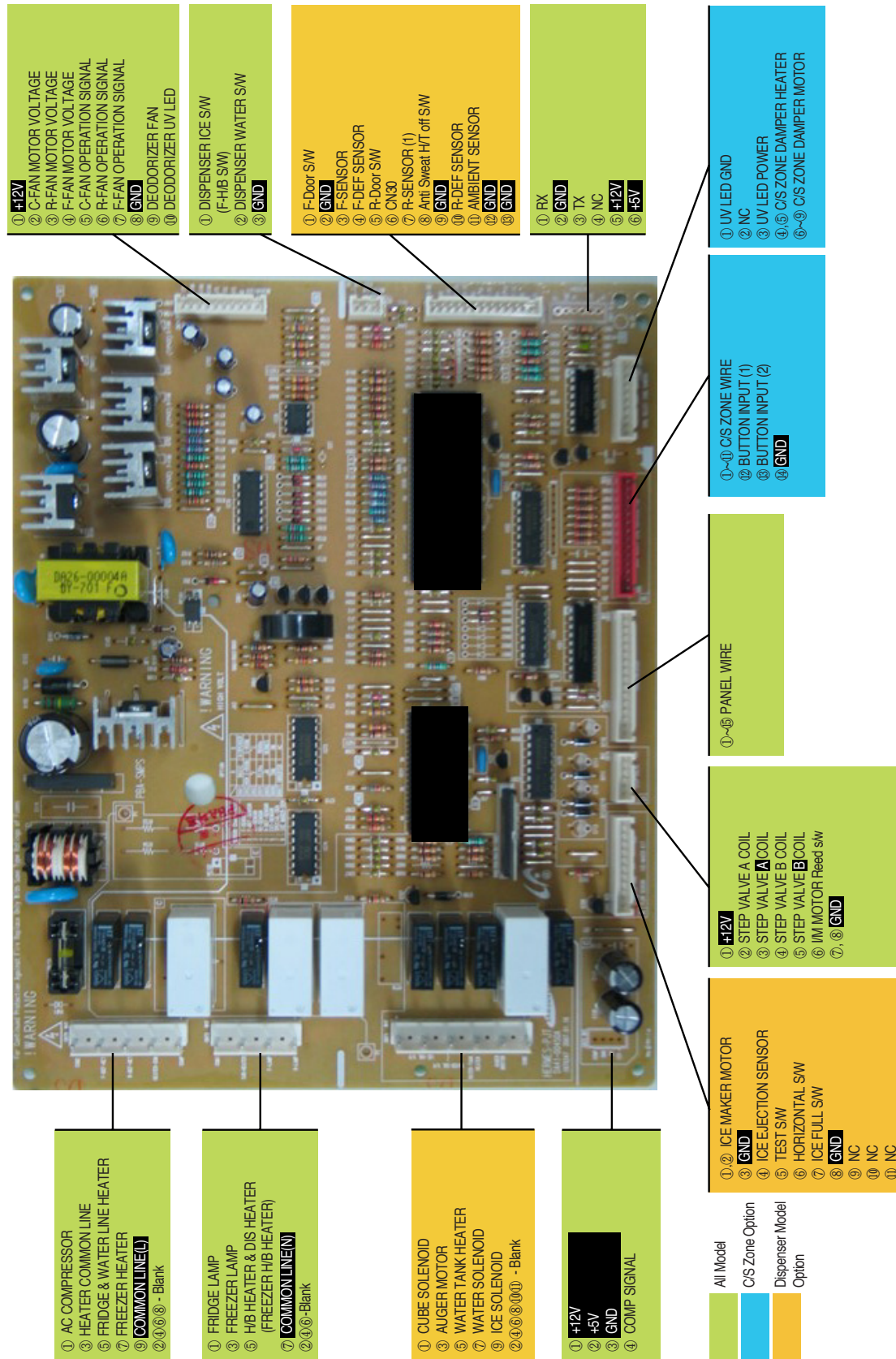
Used for Inverter Model



1. PCB Power Source: SMPS Circuit It supplies DC12V,5V and GND to MAIN PCB.
2. Filter: It receives various signals, and then after filtering their noises, it sends them to MICOM.
3. Comp Signaling: It receives comp operation signals from MAIN PCB.
4. Option Setting
5. Surge Detecting: It protects IPM form voltage surge.
6. Comp Controlling (IPM): With Comp signals, it controls Comp RPM.
7. Sensor: By monitoring each phase of Comp with Comparator (KA339A), it controls Comp.

PCB DIAGRAM

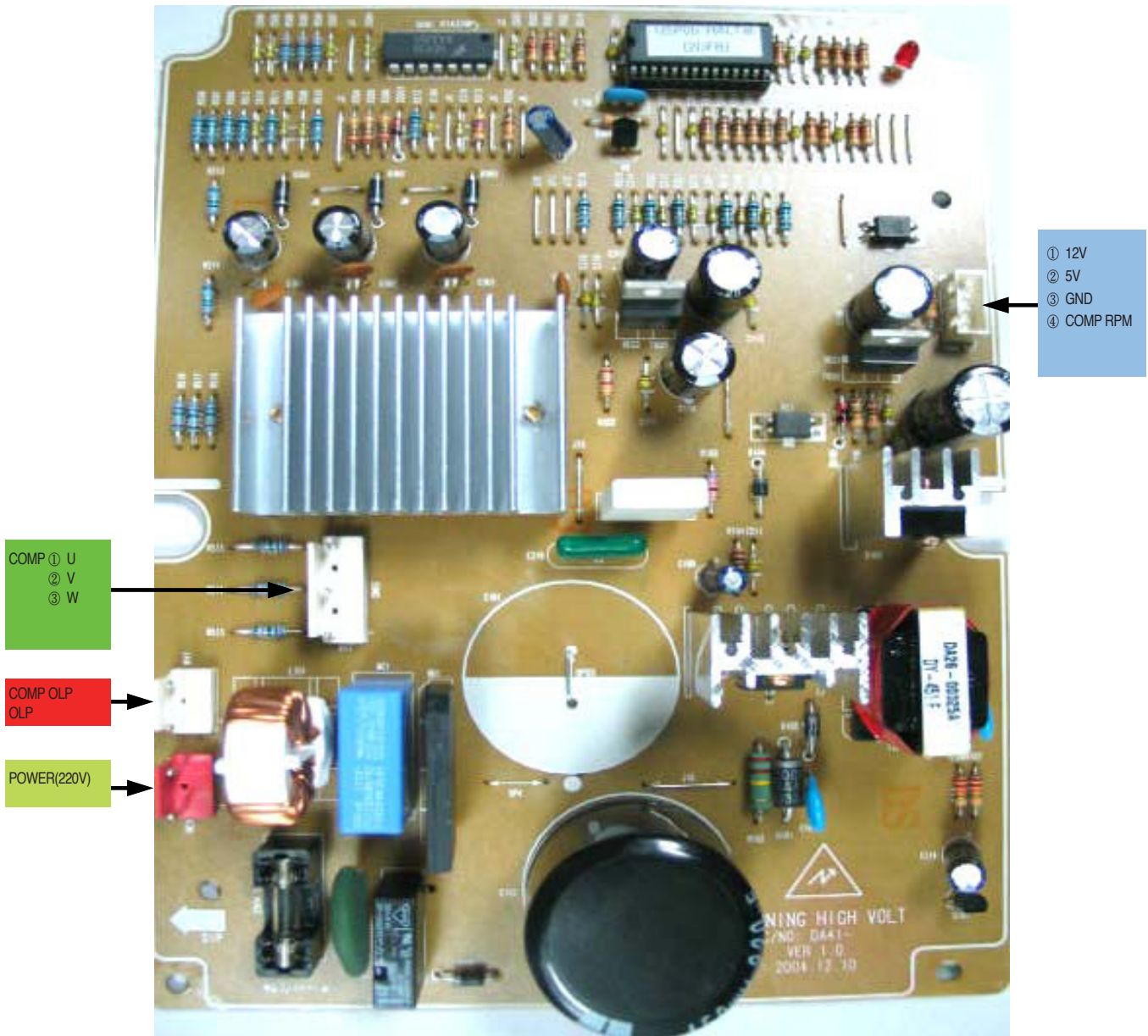
5-3) Connector Layout & Description (Main Board)



PCB DIAGRAM

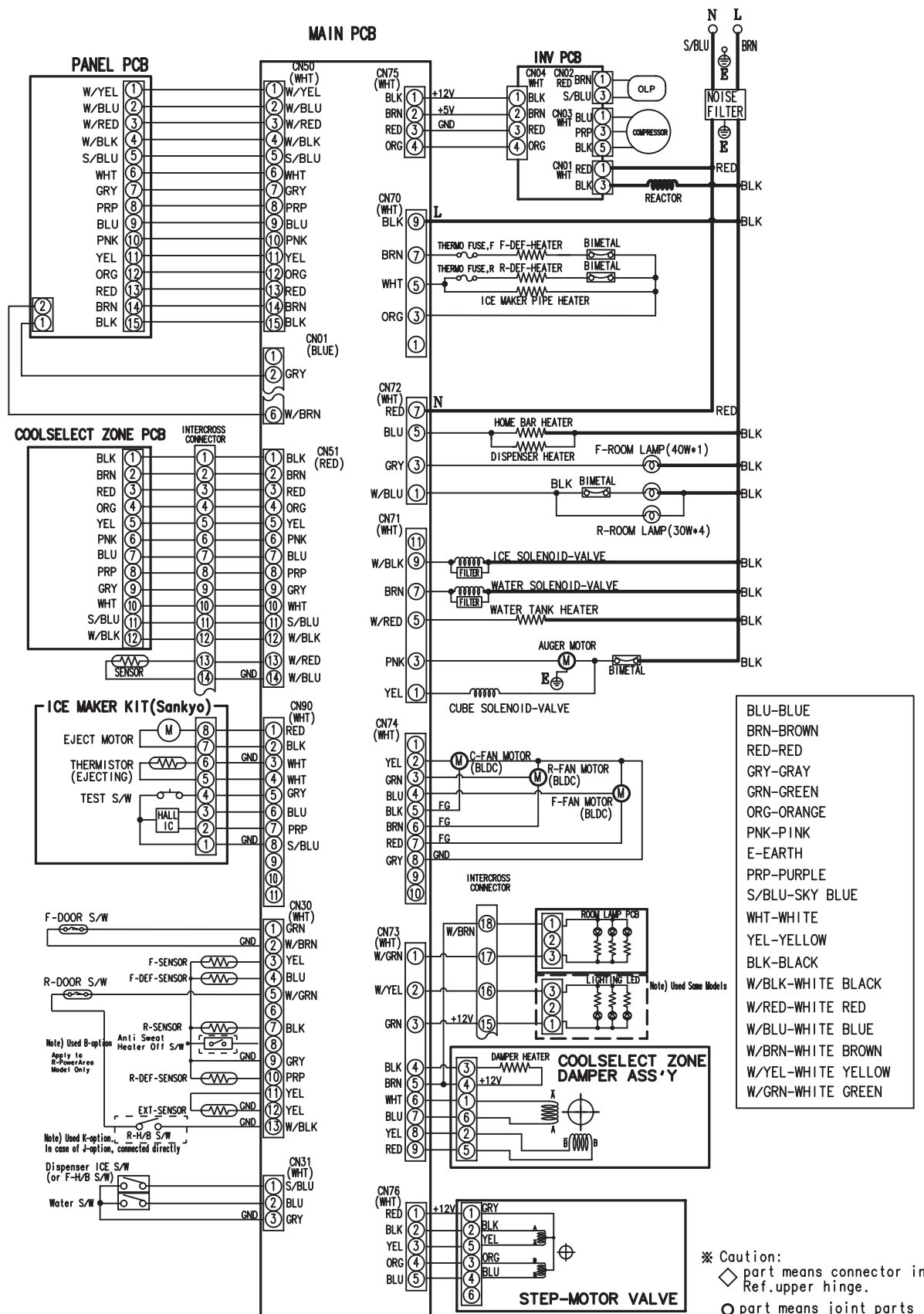
5-4) Connector Layout & Description (Inverter comp control Board)

Used for Inverter Model



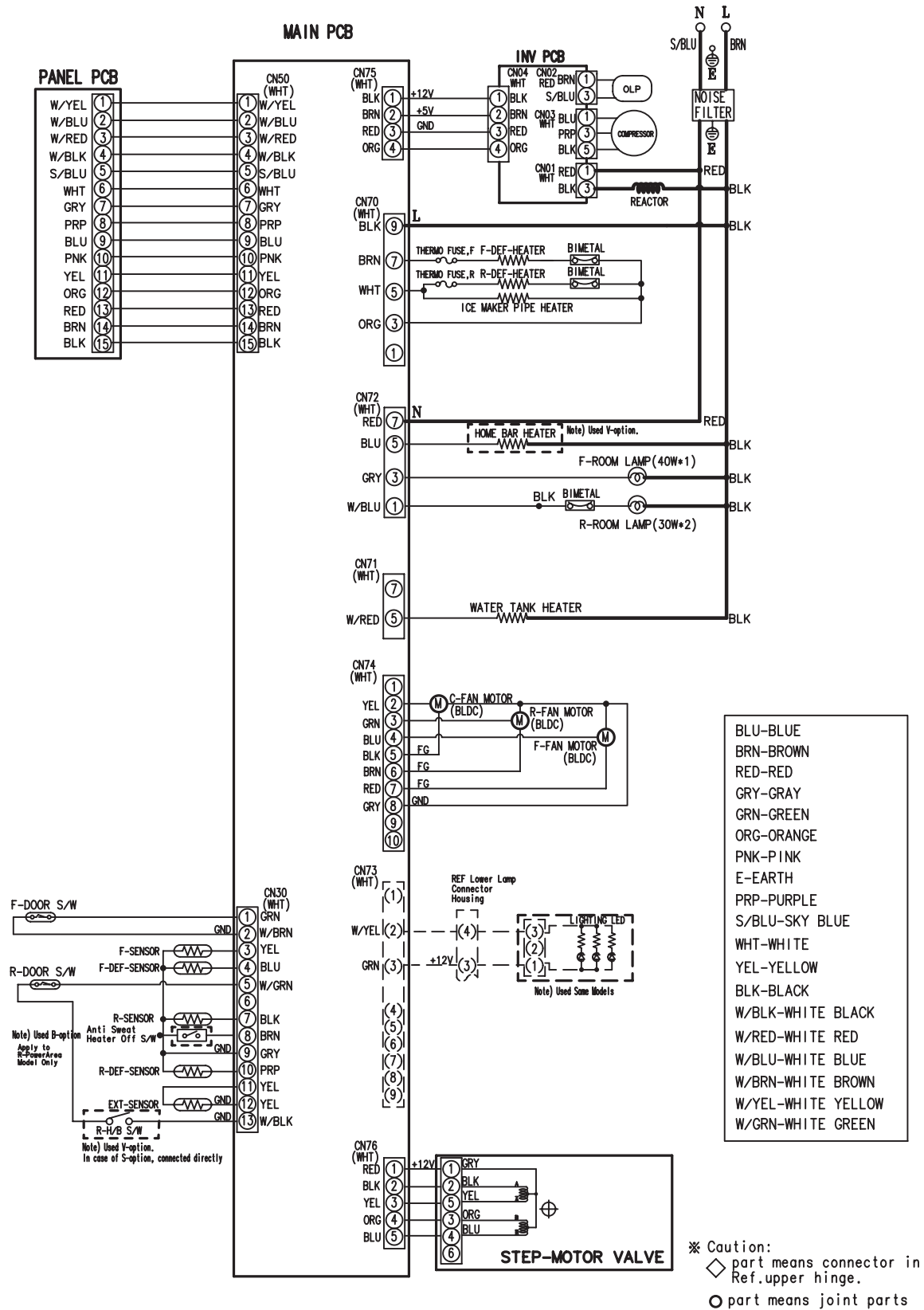
6. WIRING DIAGRAM

6-1) RS21/23H Series (CHINA Z-Option, Inverter COMP)



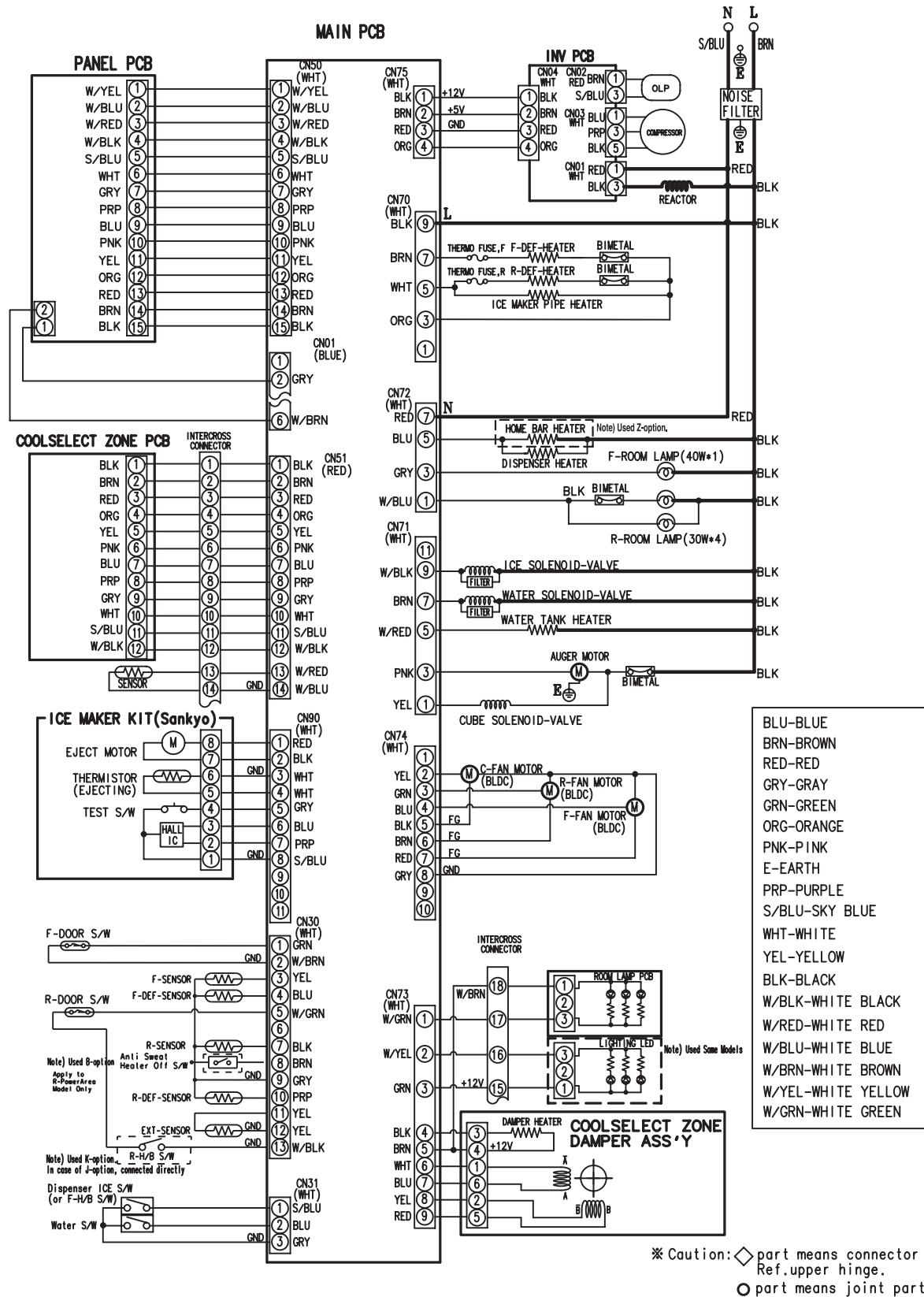
WIRING DIAGRAM

6-2) RS21/23H Series (CHINA V/S-Option, Inverter COMP)



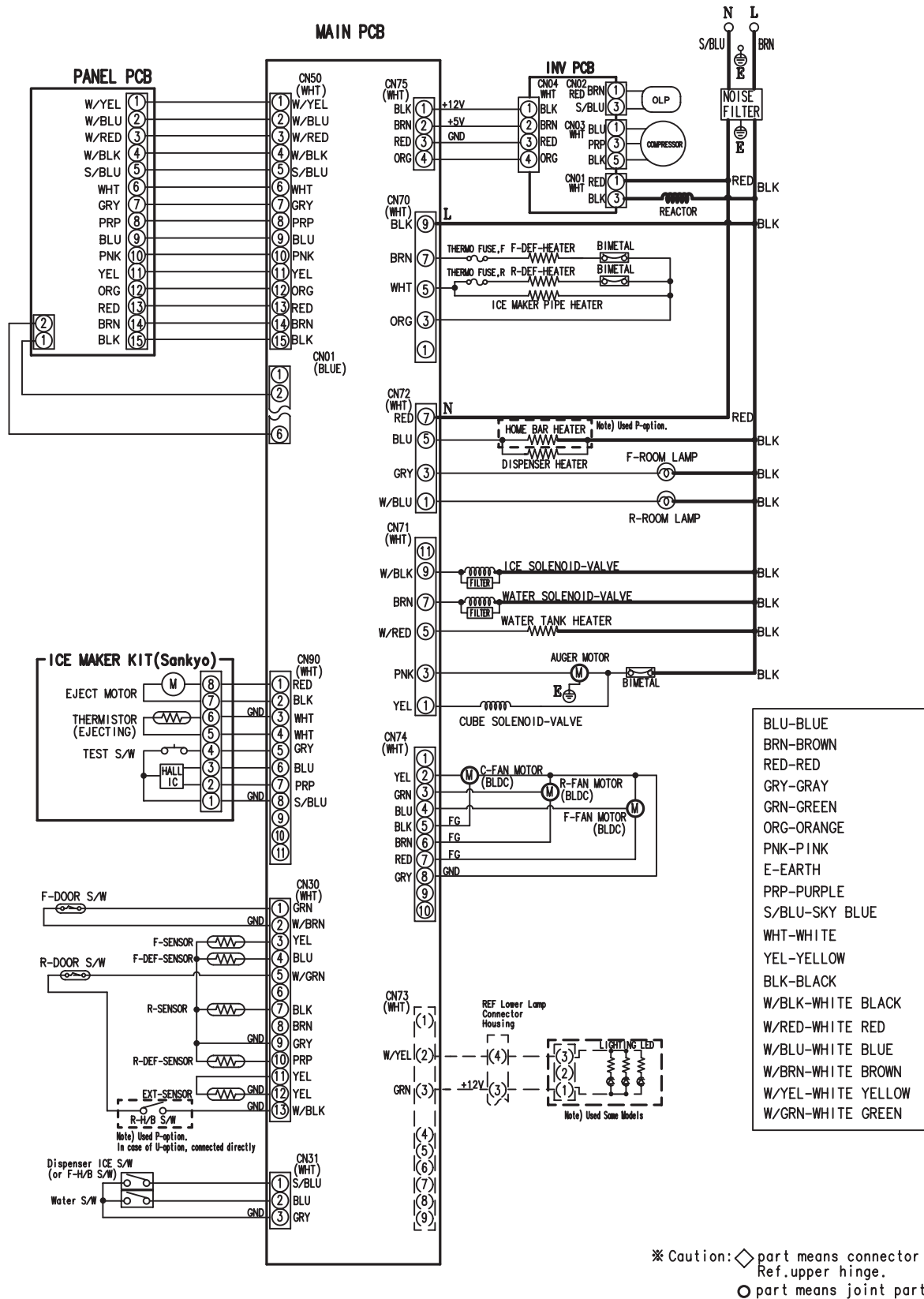
WIRING DIAGRAM

6-3) RS21/23H Series (Z/Y-Option, Inverter COMP)



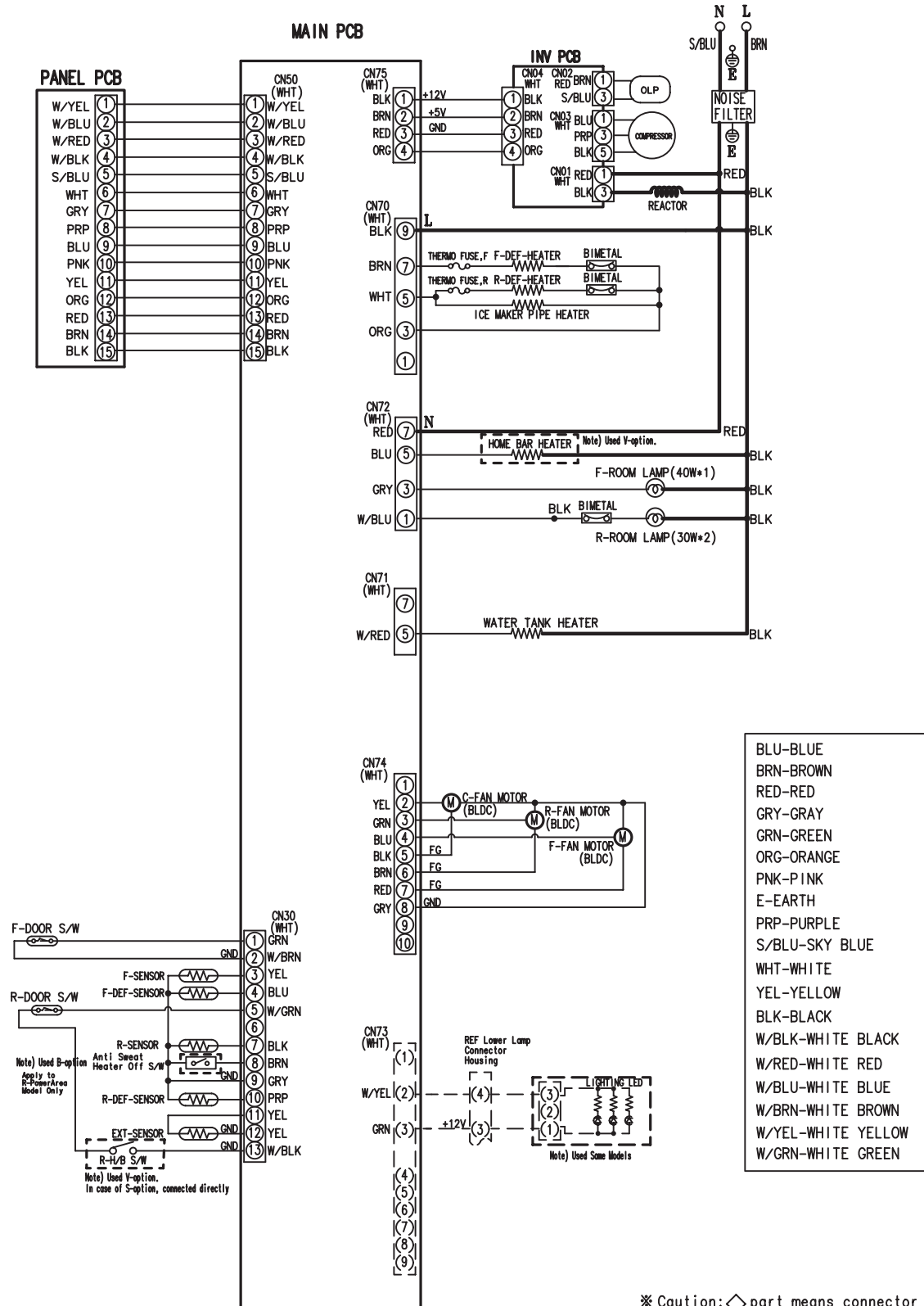
WIRING DIAGRAM

6-4) RS21/23H Series (P/U-Option, Inverter COMP)



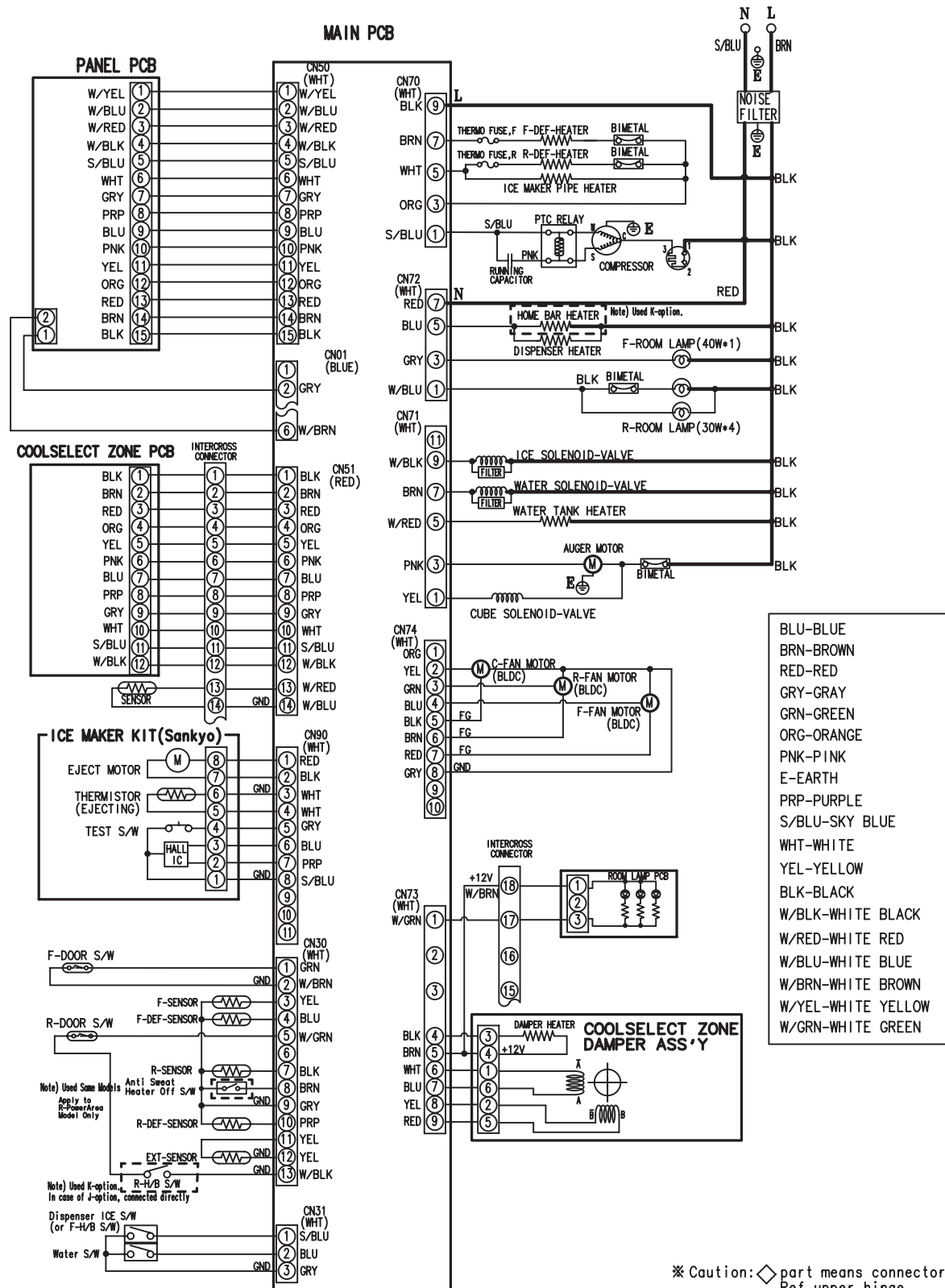
WIRING DIAGRAM

6-5) RS21/23H Series (V/S-Option, Inverter COMP)



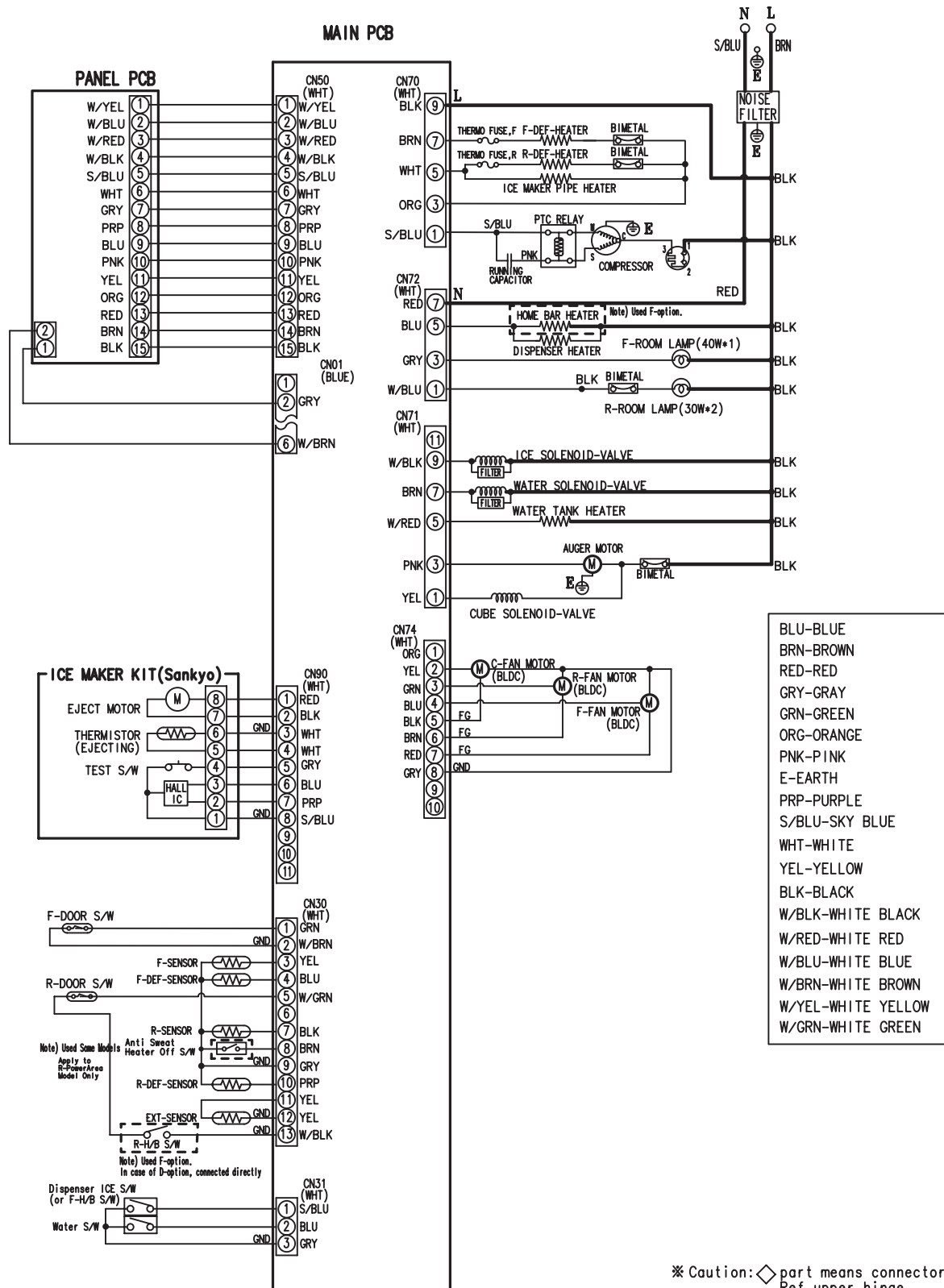
WIRING DIAGRAM

6-6) RS21/23H Series (K/J-Option, AC COMP)



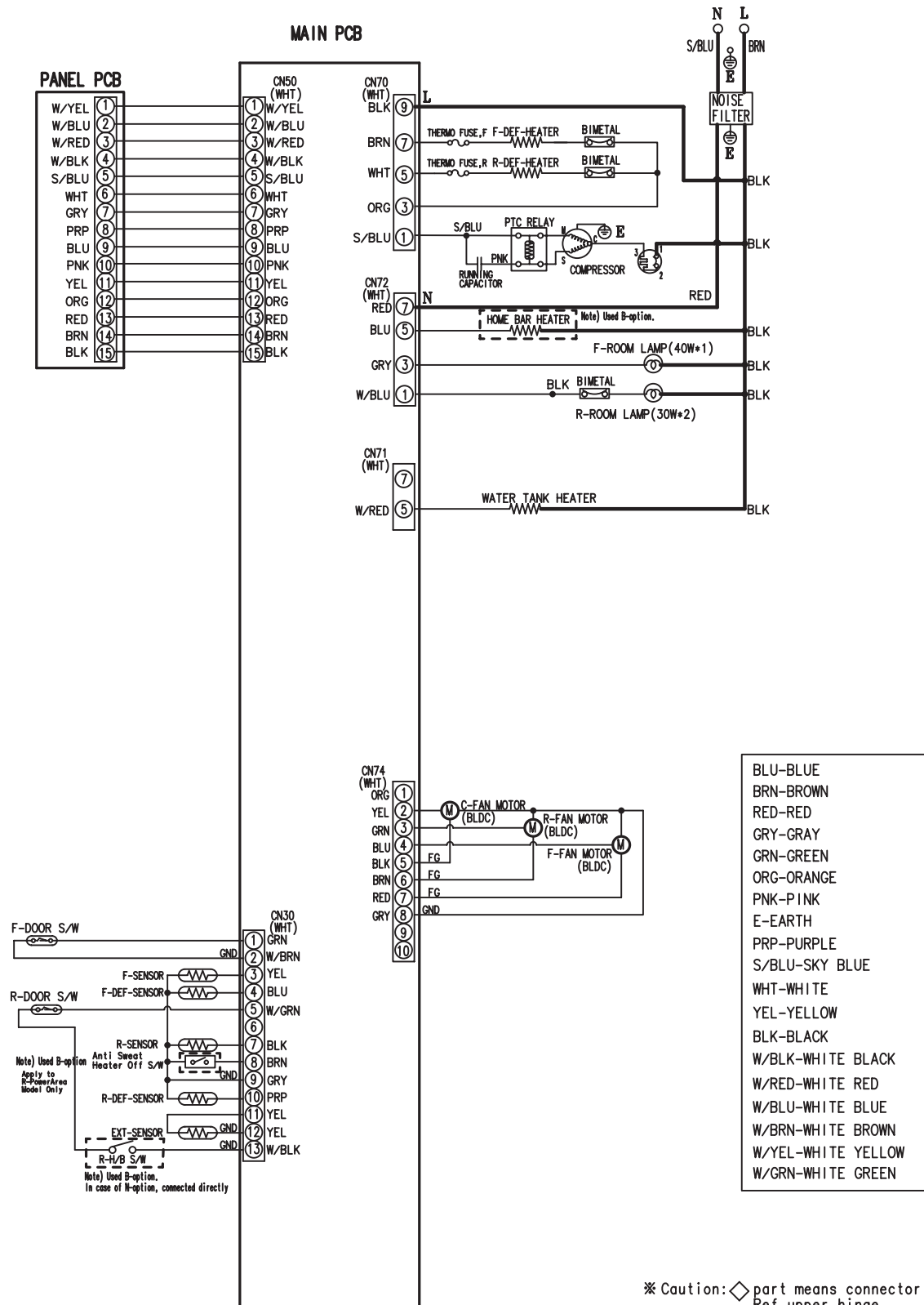
WIRING DIAGRAM

6-7) RS21/23H Series (F/D-Option, AC COMP)



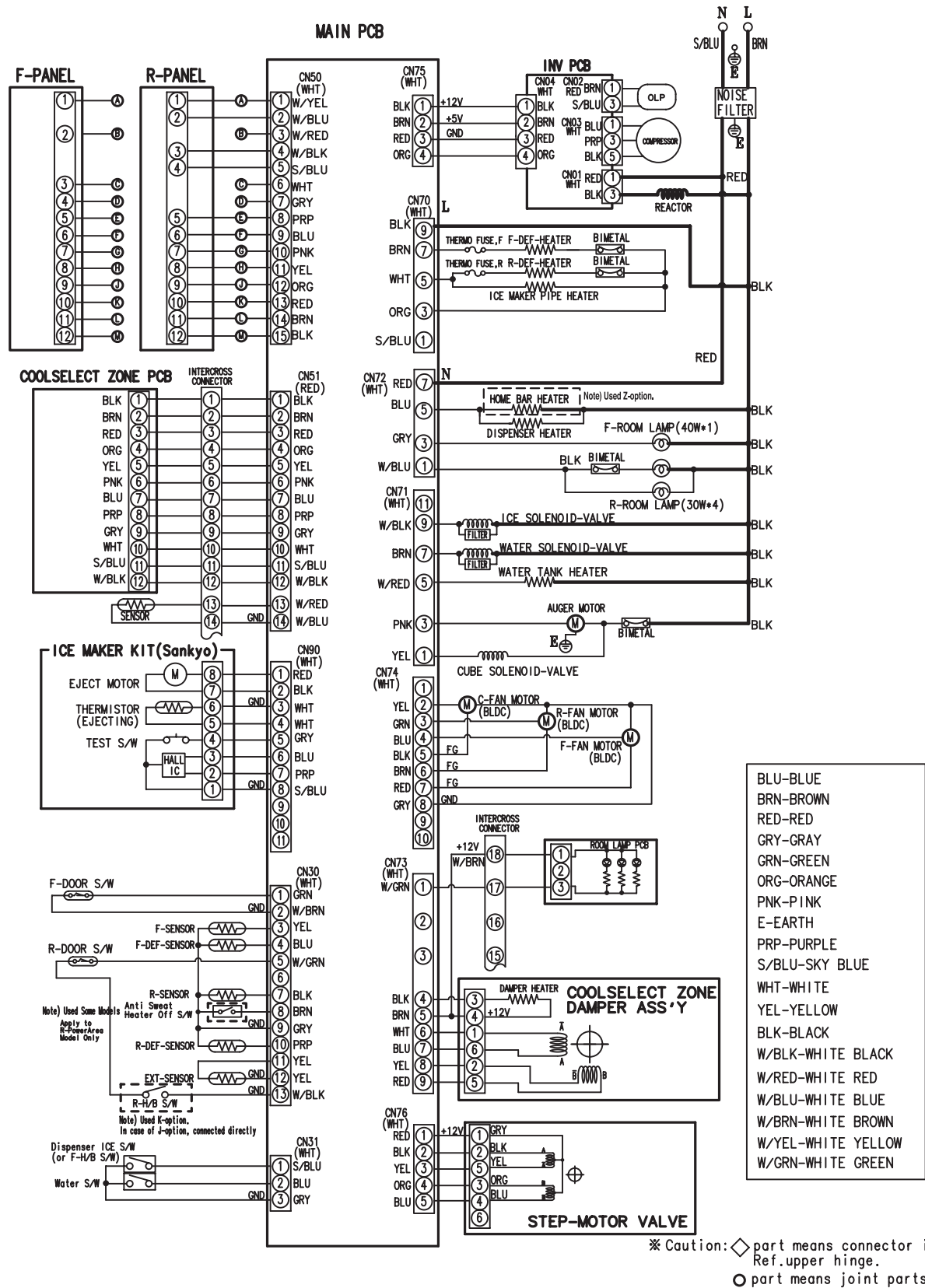
WIRING DIAGRAM

6-8) RS21/23H Series (B/N-Option, AC COMP)



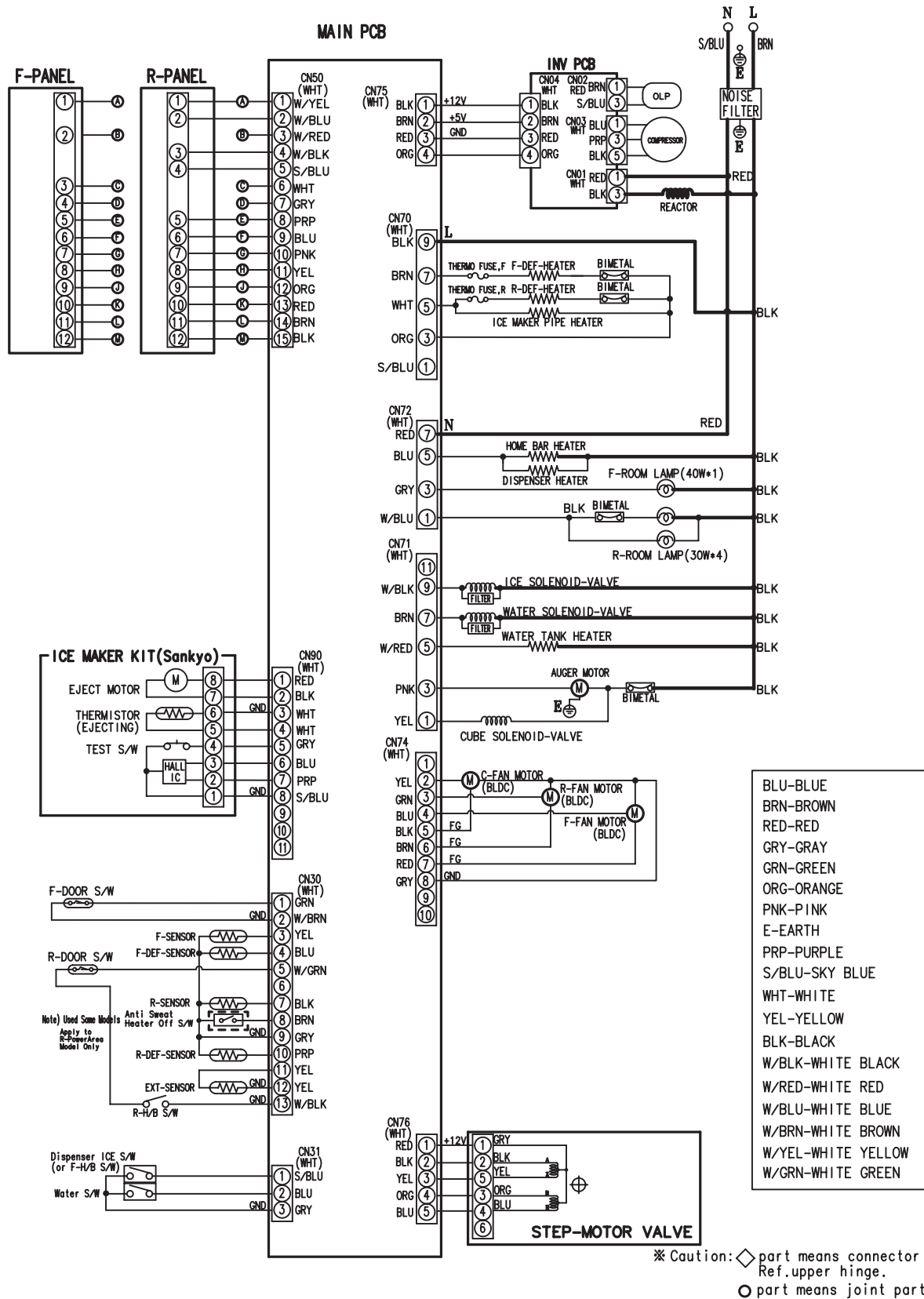
WIRING DIAGRAM

6-9) RSJ1 Series (Z-Option, Inverter COMP)



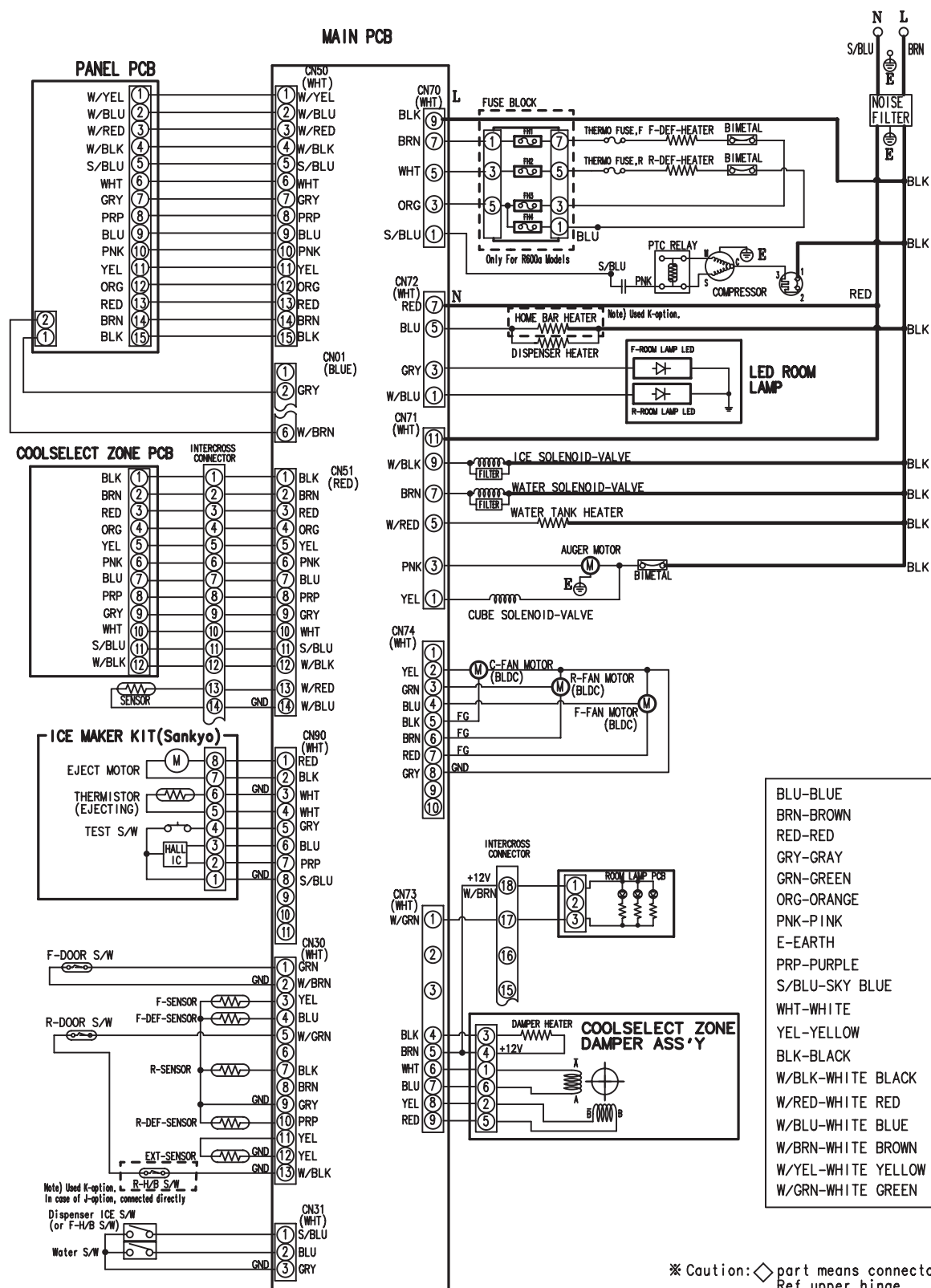
WIRING DIAGRAM

6-10) RSJ1 Series (P-Option, Inverter COMP)



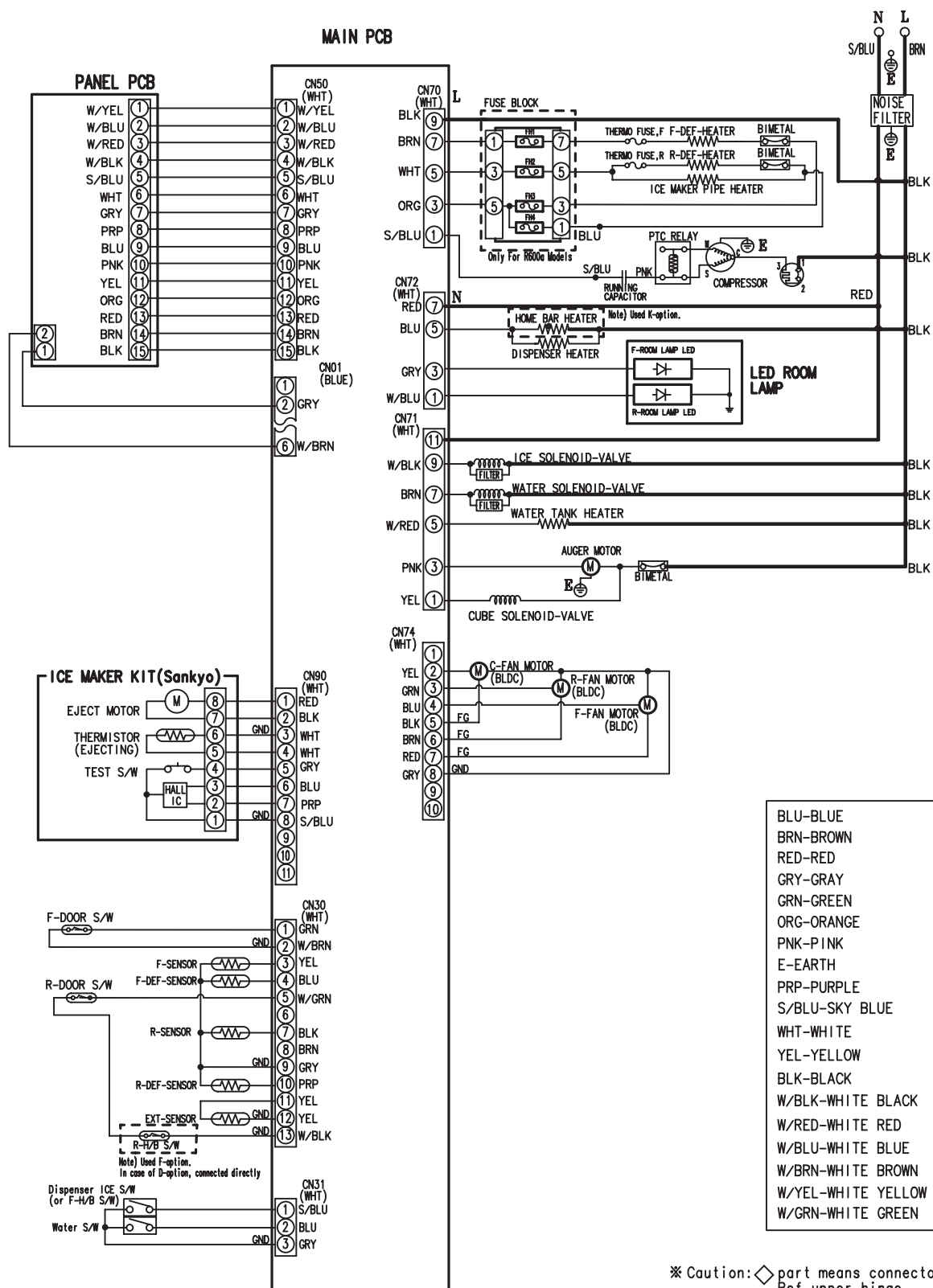
WIRING DIAGRAM

6-11) RSJ1 Series (K/J-Option, AC COMP)



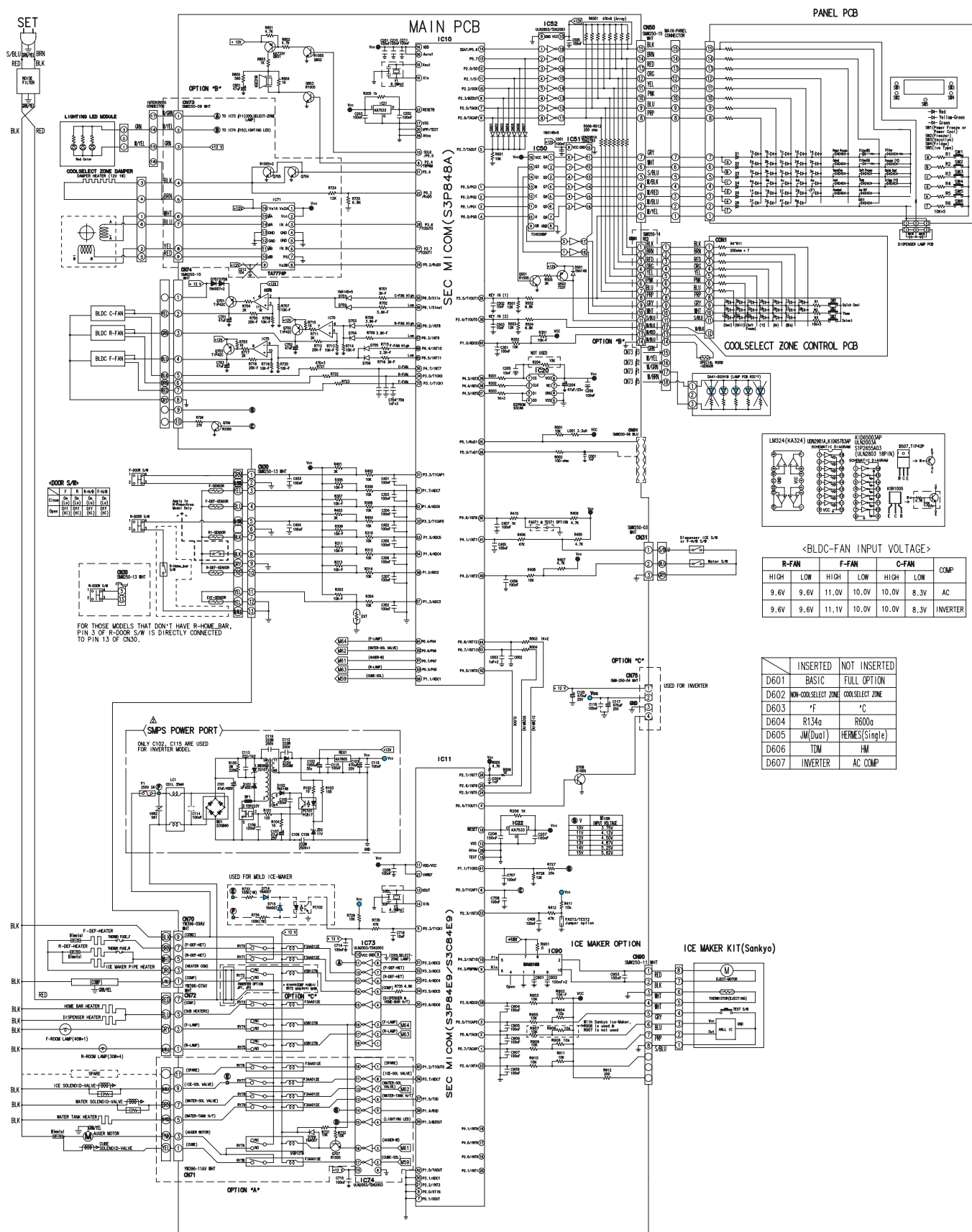
WIRING DIAGRAM

6-12) RSJ1 Series (F/D-Option, AC COMP)



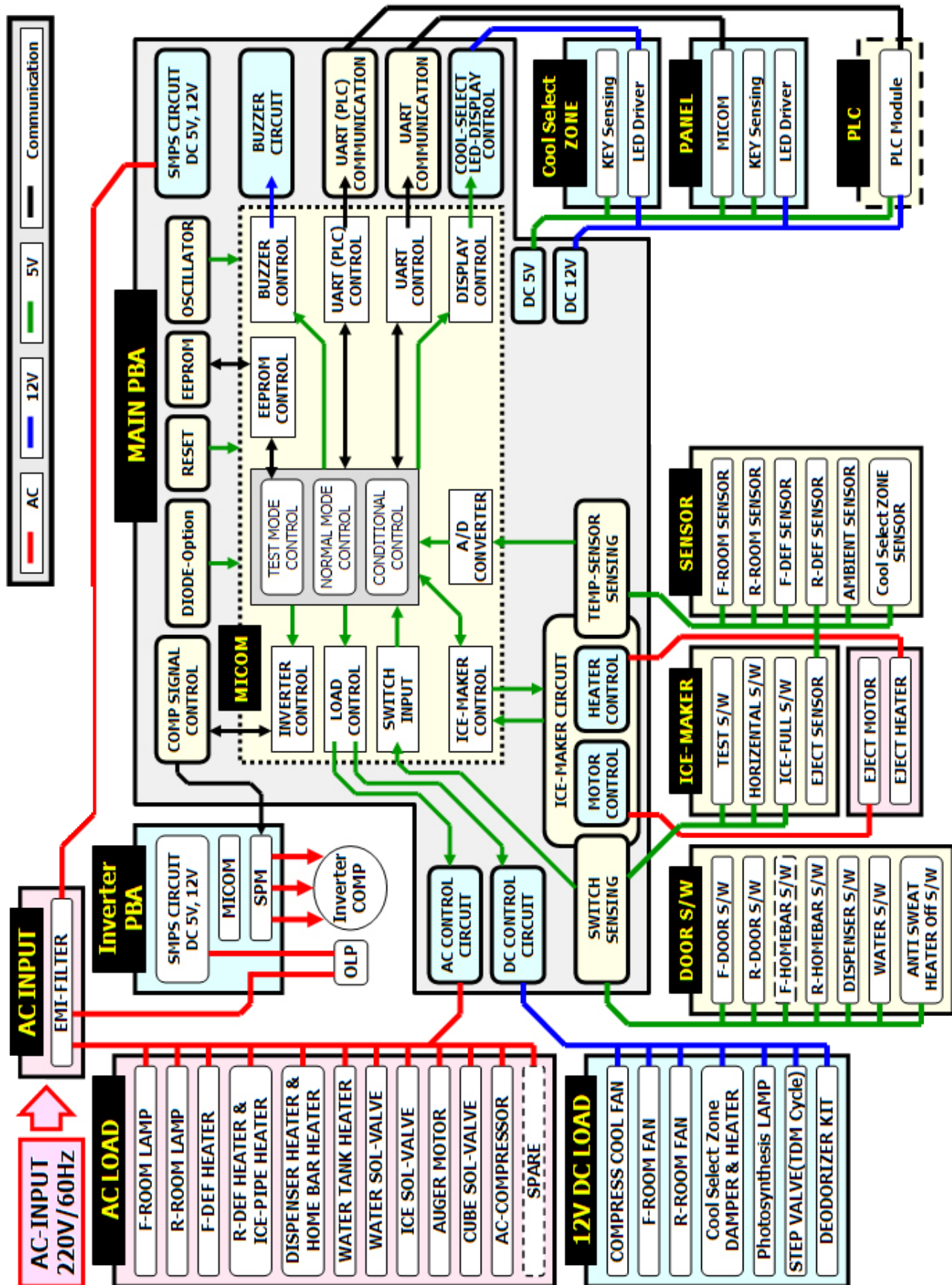
SCHEMATIC DIAGRAM

7-2) Main PCB Schematic Diagram - RS21/23H Series



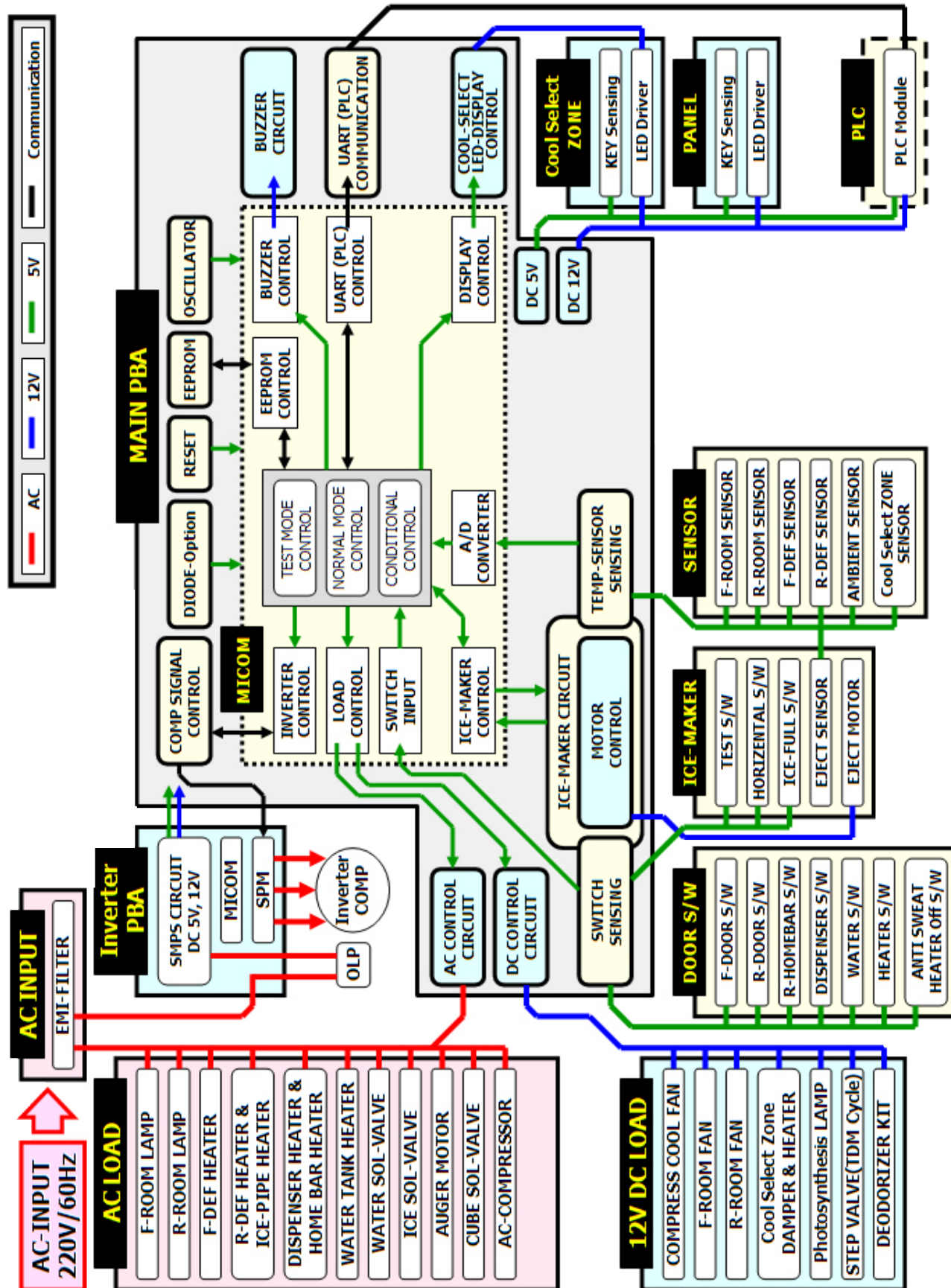
SCHEMATIC DIAGRAM

7-3-1) BLOCK DIAGRAM (RS21/23H Series All)



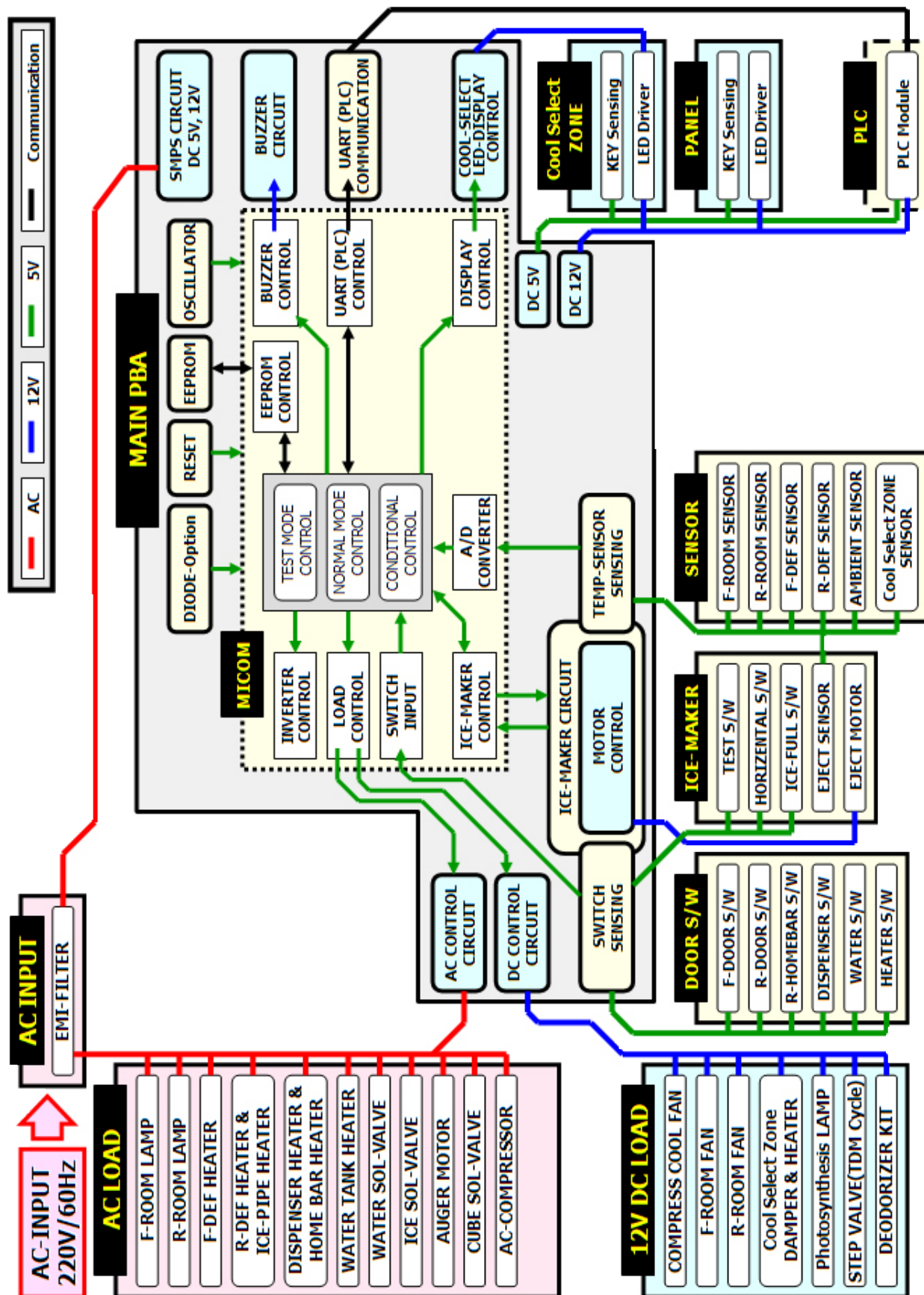
SCHEMATIC DIAGRAM

7-3-2) BLOCK DIAGRAM (RS21/23H Series Inverter-COMP)



SCHEMATIC DIAGRAM

7-3-3) BLOCK DIAGRAM (RS21/23H Series AC-COMP)



8. REFERENCE INFORMATION

8-1) RSJ1 Series (Nomenclature)

R

S

J1

K

U

PS

1

/

BUYER NO.

Exterior Color

PS DOOR : Platinum Silver (PET)
CABI : Platinum Silver (PET)
MH DOOR : Manhattan Silver (PCM)
CABI : Manhattan Silver (PCM)
RS DOOR : Real Stainless (coated STS)
CABI : Versaiu Stainless (PET)
BP DOOR : Empire Black (PCM)
CABI : All Black (PCM)
SV DOOR : Snow White (VCM)
CABI : Snow White (PCM)

HANDLE TYPE (DESIGN)

U : Long Handle (AL, U TYPE)
S : Short Handle (AL, U TYPE)
E : Easy Handle (AL)

Function

F : Full option
J : Dispenser + Convertible
K : Full + Convertible

P : Full (NO CONVERTIBLE)+Inverter comp
Z : FULL (CONVERTIBLE 0) + Inverter Comp

CATEGORY

S : SBS

Capacity: J1 (21 cu.ft)

BRAND : R-SAMSUNG REFRIGERATOR B-OEM REFRIGERATOR



REFERENCE INFORMATION

8-2) RS21/23H Series (Nomenclature)

R	S	21	H	K	B	SW	1	/	***
Exterior Color SW DOOR : Snow White (PCM) CABI : Snow White (EMBO PCM) TS DOOR : Titanium Silver (PET) CABI : Titan Gray (PCM) MH DOOR : Manhattan Silver (PCM) CABI : Manhattan Silver (PCM) BP DOOR : Empire Black (PCM) CABI : All Black (PCM) RS DOOR : Real Stainless (coated STS) CABI : Versailu Stainless (PET) IS DOOR : Inox (VCM) CABI : Noble Stainless (PCM) EW DOOR : Snow White(EMBO) CABI : Snow White (EMBO PCM) VB DOOR : Vanilla Beige(VCM) CABI : Vanilla Beige (PCM) PN DOOR : Platinum Inox (VCM) CABI : Noble Stainless (PCM) TRIM KIT MR Black Mirror RR Real Mirror BG Black Glass FH Fore White PM Anemone Wine FB Black Glass + Tulip pattern (CIS) NA No Sash/Panel									
Series H : HM-PJT HANDLE TYPE (DESIGN) B : Long Handle(AL, O TYPE) T : Long Handle(AL, ELLIPSE TYPE) H : Half Handle K : Long Handle(AL, ELLIPSE TYPE),BLUE LED E : Easy Handle (AL) N : Built-in Easy Handle R : Round Handle,BLUE LED L : TRIM KIT (AL, O TYPE),BLUE LED X : No HANDLE (TRIM KIT, only XET) A : Long Handle(AL,ELLIPSE TYPE),BLUE LED,Silver handle -SENA WHITE ONLY									
Function N :BASIC MODEL B :HOME BAR ONLY D :DISPENSER (NO CONVERTIBLE) F :FULL (NO CONVERTIBLE) J :DISPENSER + CONVERTIBLE K :FULL + CONVERTIBLE U :Dispenser+Inverter comp P :Full (NO CONVERTIBLE)+Inverter comp S :BASIC MODEL + Inverter Comp V : HOME BAR ONLY + Inverter Comp Z :FULL (CONVERTIBLE) + Inverter Comp Y :DISPENSER + CONVERTIBLE + Inverter Comp Capacity : 21 (21 cu.ft), 23 (23 cu.ft), 22 (In door ice maker model)									
CATEGORY S : SBS									
BRAND : R-SAMSUNG REFRIGERATOR B-OEM REFRIGERATOR									



REFERENCE INFORMATION

8-3) Q & A

Problem	Possible Causes	What To Do
The refrigerator does not work sufficiently or at all	• Disconnected power plug	• Check that the power plug is properly connected.
	• Is the temperature control on the display panel set to the correct temperature?	• Try setting it to a lower temperature.
	• Is the refrigerator in direct sunlight or located near a heat source?	• Move the refrigerator to the proper location.
	• Is the back of the refrigerator too close to the wall?	
The food in the refrigerator is frozen	• Is the temperature control on the display panel set to the correct temperature?	• Try setting it to a warmer temperature.
	• Is the temperature in the room too low?	
	• Did you store the food with a high water content in the coldest part of the refrigerator.	
Unusual noises or sounds are heard	• Is the back of the refrigerator too near to the wall?	• Check that the floor is levelled and stable. • Move the refrigerator to the proper location.
	• Was anything dropped behind or under the refrigerator?	• Remove the foreign thing.
	• A “ticking” sound may be heard from inside the refrigerator. This is normal and occurs because various accessories contract or expand.	
The front corners and sides of the cabinet are hot; condensation occurs	• HOT-PIPE is installed in the front corners of refrigerator. That makes refrigerator’s temperature low quickly and save the power consumption.	• Normal state
	• Condensation can occur when you leave the door open for a long time.	• Normal state
Ice is not dispensed	• Did you stop the ice making function?	• See the control panel.
	• Is there any ice in the storage unit?	• See the ice container.
	• Is the water pipe connected and the shut-off valve open?	• See the valve.
	• Is the freezer temperature too warm?	• Set the temperature lower.
	• Did you wait for 12 hours after installation of the water supply line before making ice?	
You can hear water bubbling in the refrigerator	• The bubbling comes from the refrigerant circulating in the refrigerator and is normal.	• Normal state
There is a bad smell in the refrigerator	• Wrap strong smelling food so that it is airtight. Throw away any rotten food.	
Frost forms on the wall of the freezer		• Allow sufficient space between stored food for efficient air circulation.
	• Is the air vent blocked?	
	• Is the door closed properly?	
No water is supplied	• Is the water pipe connected and the shut-off valve open?	
	• Is the water supply pipe crushed?	
	• Is the water tank frozen because the refrigerator temperature is too low? Select a warmer setting on the display panel.	

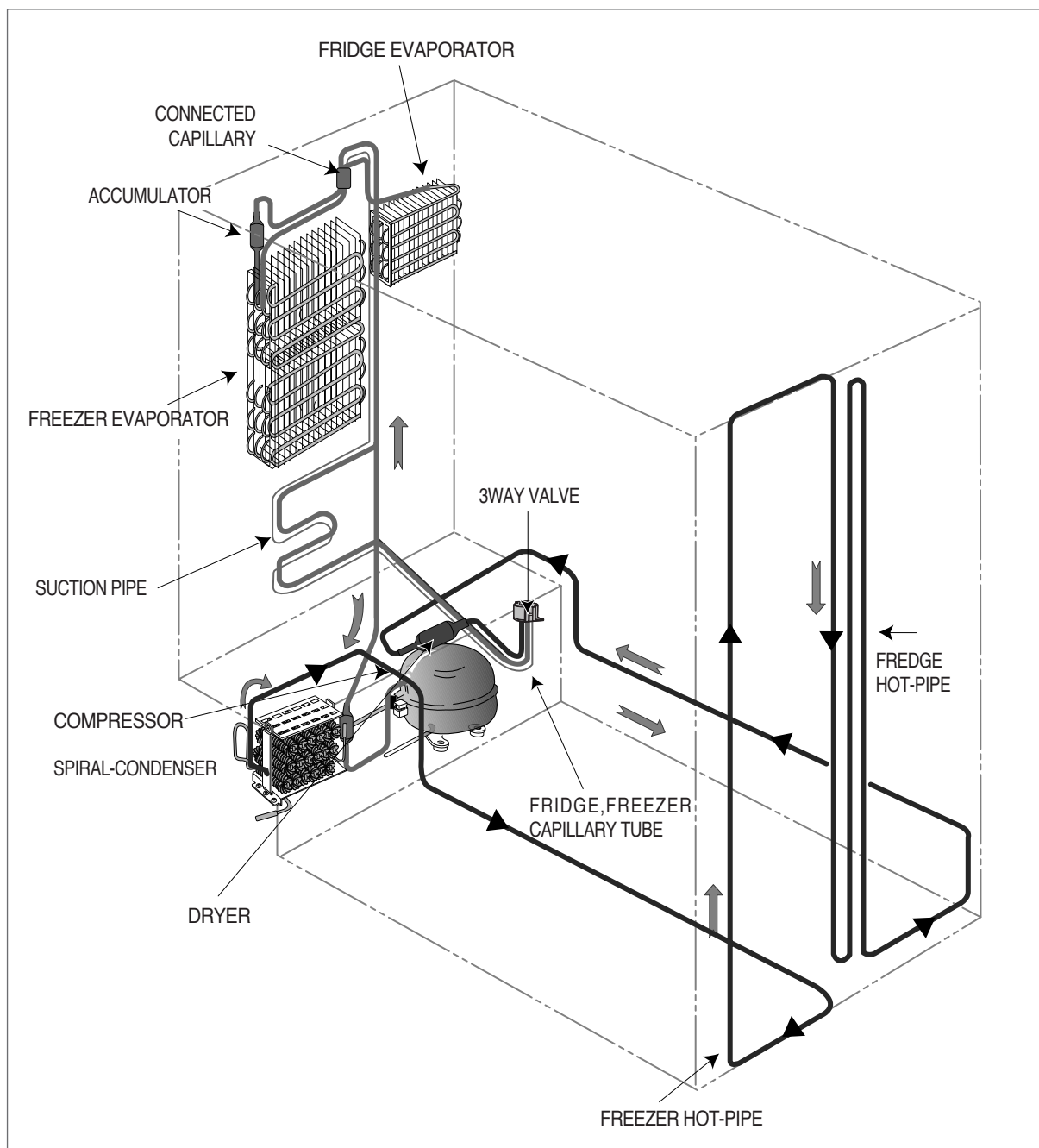
REFERENCE INFORMATION

Problem	Possible Causes	What To Do
Small or hollow cubes	Water filter clogged.	• Replace filter cartridge with new cartridge or with plug.
Slow ice cube freezing	Door left open.	• Check to see if package is holding door open.
	Temperature control not set cold enough.	• See about the controls.
Orange glow in the freezer	Defrost heater is on.	• This is normal.
Cube dispenser does not work(on some models)	Icemaker turned off or water supply turned off.	• Turn on icemaker or water supply.
	Ice cubes are frozen to icemaker feeler arm.	• Remove cubes and move the feeler arm to the ON position.
	Irregular ice clumps in storage container.	• Break up with fingertip pressure and discard remaining clumps. • Freezer may be too warm. Adjust the freezer control to a colder setting, one position at a time, until clumps do not form.
	Dispenser is LOCKED.	• Press and hold the CHILD LOCK for 3 seconds.
Water has poor taste/odor (on some models)	Water dispenser has not been used for a long time.	• Dispense water until all water in system is replenished.
Water in first glass is warm (on some models)	Normal when refrigerator is first installed.	• Wait 24 hours for the refrigerator to completely cool down.
	Water dispenser has not been used for a long time.	• Dispense water until all water in system is replenished.
	Water system has been drained.	• Allow several hours for replenished supply to chill.
Water dispenser does not work(on some models)	Water supply line turned off or not connected.	• See Installing the water line.
	Water filter clogged.	• Replace filter cartridge or remove filter and install plug.
	Air may be trapped in the water system.	• Press the dispenser arm for at least two minutes.
	Dispenser is LOCKED.	• Press and hold the CHILD LOCK pad for 3 seconds.
Water spurting from dispenser (on some models)	Newly-installed filter cartridge.	• Run water from the dispenser for 3 minutes (about one and a half gallons).
	Water in reservoir is frozen.	• Call for service.
	Refrigerator control setting is too cold.	• Set to a warmer setting.
Water is not dispensed (on some models) but icemaker is working	Ice cubes stuck in icemaker. (Green power light on icemaker blinking).	• Turn off the icemaker, remove cubes, and turn the icemaker back on.
Water on kitchen floor or on bottom of freezer	Drain in the bottom of the freezer clogged.	• See Care and cleaning. • Check the lock of filter.
	Cubes jammed in chute.	• Poke ice through with a wooden spoon.
No water or ice cube production	Supply line or shutoff valve is clogged.	• Call a plumber.
	Water filter clogged.	• Replace filter cartridge or remove filter and install plug.
	Dispenser is LOCKED.	• Press and hold the CHILD LOCK pad for 3 seconds.

REFERENCE INFORMATION

8-4) Additional Information-TDM CYCLE

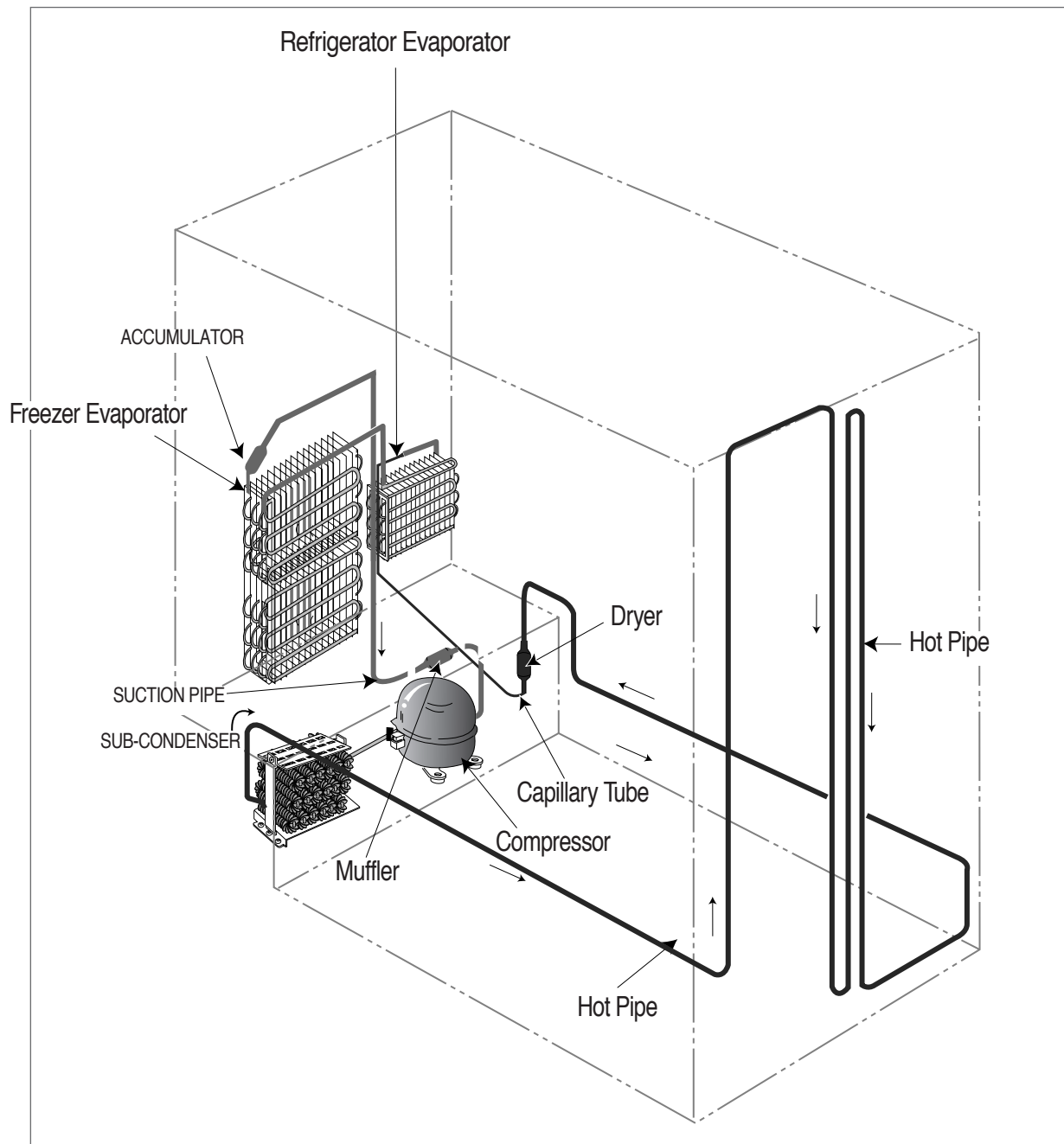
COMPRESSOR → SPIRAL-CONDENSER → FREEZER HOT PIPE → FRIDGE HOT PIPE → DRYER →
 3WAY VALVE → FRIDGE CAPILLARY TUBE → FRIDGE EVAPORATOR → CONNECTED CAPILLARY
 → FREEZER CAPILLARY TUBE → FREEZER EVAPORATOR → ACCUMULATOR → SUCTION
 PIPE → COMPRESSOR



REFERENCE INFORMATION

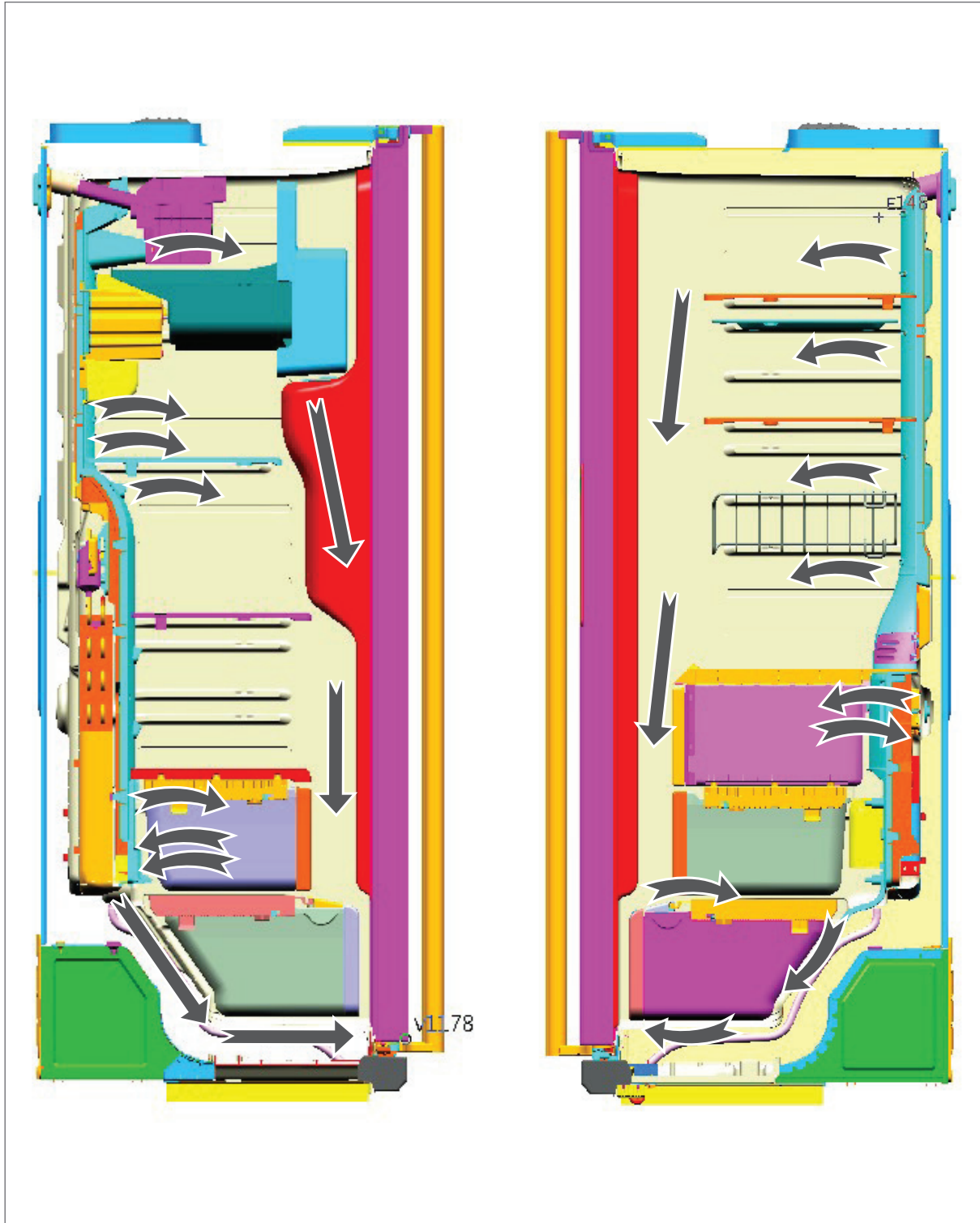
8-5) Additional Information-HM CYLCE

Compressor → Sub-condenser → Hot Pipe → Dryer → Capillary Tube → Refrigerator Evaporator → Freezer Evaporator → Suction Pipe → Compressor



REFERENCE INFORMATION

8-6) Air Circulation





272, Oseon-Dong, Gwangsan-Gu,
Gwangju-City, Korea, 506-253
TEL : 82-62-950-6193, 6896
FAX : 82-62-950-6829

– This Service Manual is a property of Samsung Electronics Co., Ltd.
Any unauthorized use of Manual can be punished under applicable
International or domestic law. –