

SAMSUNG

REFRIGERATOR

BOTTOM MOUNT FREEZER

MODEL NAME : RF195AC

RF197AC

RF215AC

RF217AC

RF20HFENB

RF18HFENB

SERVICE Manual

REFRIGERATOR



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For the latest parts information, Please access to our service web site
(North America : <http://service.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

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1. PRECAUTIONS(SAFETY WARNINGS)

- Due to the risk of electric shock, be sure to unplug the unit before servicing.
- Use the right electronic equipment for your new Refrigerator.
 - ⇒ Make sure to check out the right model name, rated voltage and current, operating temperature, 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.
- 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.

PRECAUTIONS(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 SYMBOLS

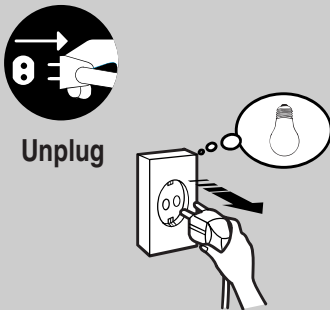
 Warning <i>Indicates that a danger of death or serious injury exists.</i>	 <i>means Prohibition".</i>
 Caution <i>Indicates that a risk of personal injury or material damage exists.</i>	 <i>means Do not disassemble".</i>
	 <i>means No contact".</i>
	 <i>means The things to be followed".</i>
	 <i>means Power cord should be unplugged from the consent"</i>
	 <i>means Earth to prevent Electric shock".</i>



Warning & Caution

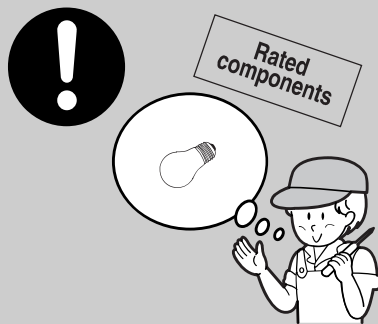
Due to risk of electric shock, be sure to unplug the unit before servicing.

- It may cause electric shock.



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.



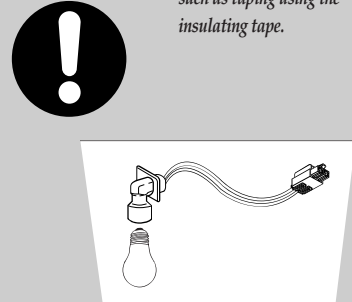
After repair, check the assembled state of components.

- 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.



PRECAUTIONS(SAFETY WARNINGS)

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



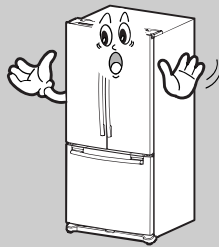
Warning & Caution

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

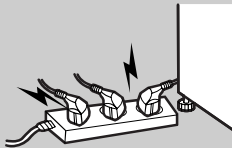


Do not allow users to insert the power plugs for many products at the same time.

- May cause abnormal generation of heat or fire.



Prohibition

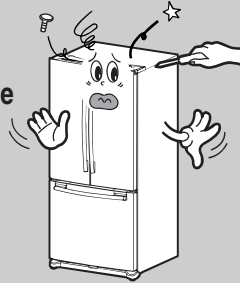


Do not allow users to disassemble, repair or alter.

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

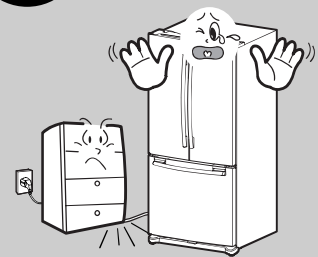


Do not disassemble



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.

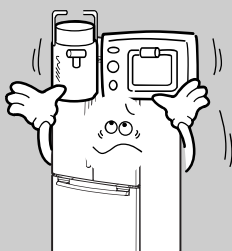


Do not allow users to store articles on the product.

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

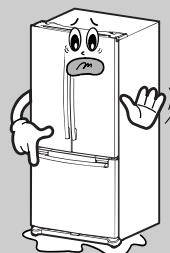


Prohibition



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.

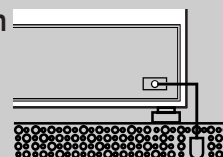


The Appliance must be properly grounded.

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



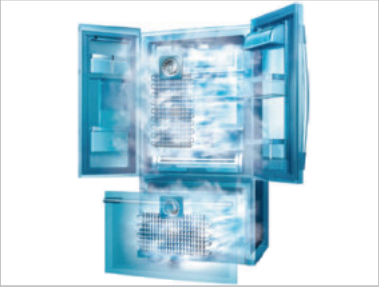
Earth



2. PRODUCT SPECIFICATIONS

2-1) Introduction of Main Function

- The SAMSUNG bottom mount freezer in 2009 has the following characteristics.

	Surround Multi Flow • Uniform cooling for each shelf by a center positioned fan and duct with multiple flow effluences.
	Twin Cooling System • The refrigerator and the freezer have two evaporators. Given this independent system, the freezer and the refrigerator are cooled individually as required and are, therefore, more efficient. Food odor from the refrigerator does not affect food in the freezer due to separate air flow circulation.
	Easy Handle System(RF197AC,RF217AC) • The freezer door is more user-friendly and convenient.
	Moving Tray • The Deli Drawer can be moved side to side for customer improved customer satisfaction.
	Digital Display & Temperature Control • Digital Display & Temperature Control look and feel neat & clear design.

PRODUCT SPECIFICATIONS

2-2) Specifications

ELECTRICAL SPECIFICATIONS

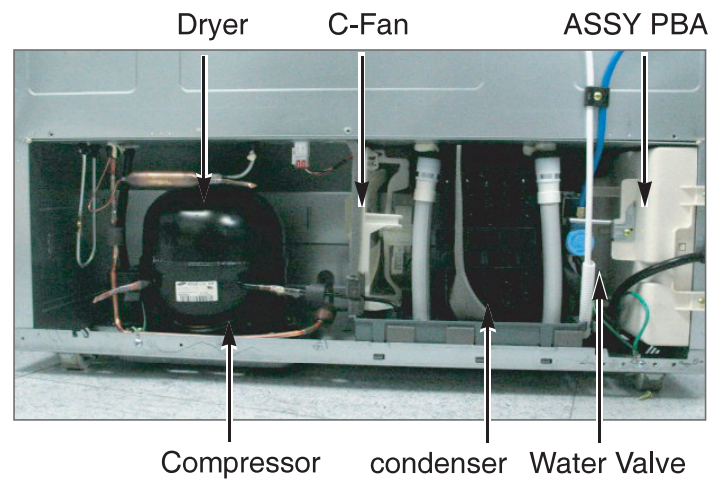
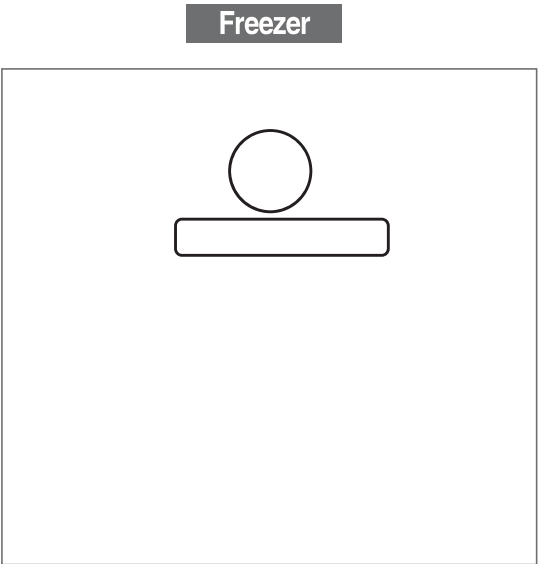
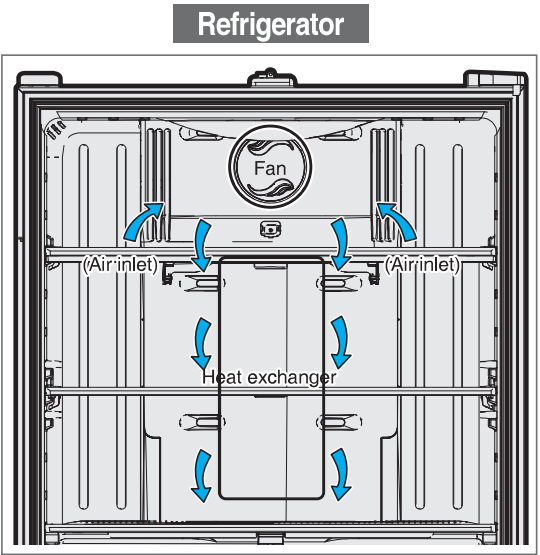
Defrost Control	From 12 to 64 hrs
Thermo Bimetal Protector	140°F(60°)(off) 104°F(40°)(on)
Defrost Thermistor(502AT)	R : 62.6°F(12°) F : 57.2°F(14°)
Electrical Rating	AC115V 60Hz 11.6 Amps
Maximum Current Leakage	0.5 mA
Maximum Ground Path Resistance	0.1 Ohm
Energy Consumption	453kWh/year(RF21) 445kWh/year(RF19) 617kWh/year(RF20) 594kWh/year(RF18)

NO LOAD PERFORMANCE

Ambient Temperature	70°F(21°C)	90°F(32°C)
Refrigerator,	34°F(1°C)~ 46°F(8°C)	34°F(1°C)~ 46°F(8°C)
Freezer,	-8°F(-22°C)~ 8°F(-13°C)	-8°F(-22°C)~ 8°F(-13°C)
Run Time,%	<40	<65

REFRIGERATION SYSTEM

Refrigerant Charge	(R134a)5.64 oz(160g)
Compressor(MK162D-L1U)	730 Btu/hr(0.124kw)
Compressor(MKV172C-L2J)	730 Btu/hr(0.124kw)

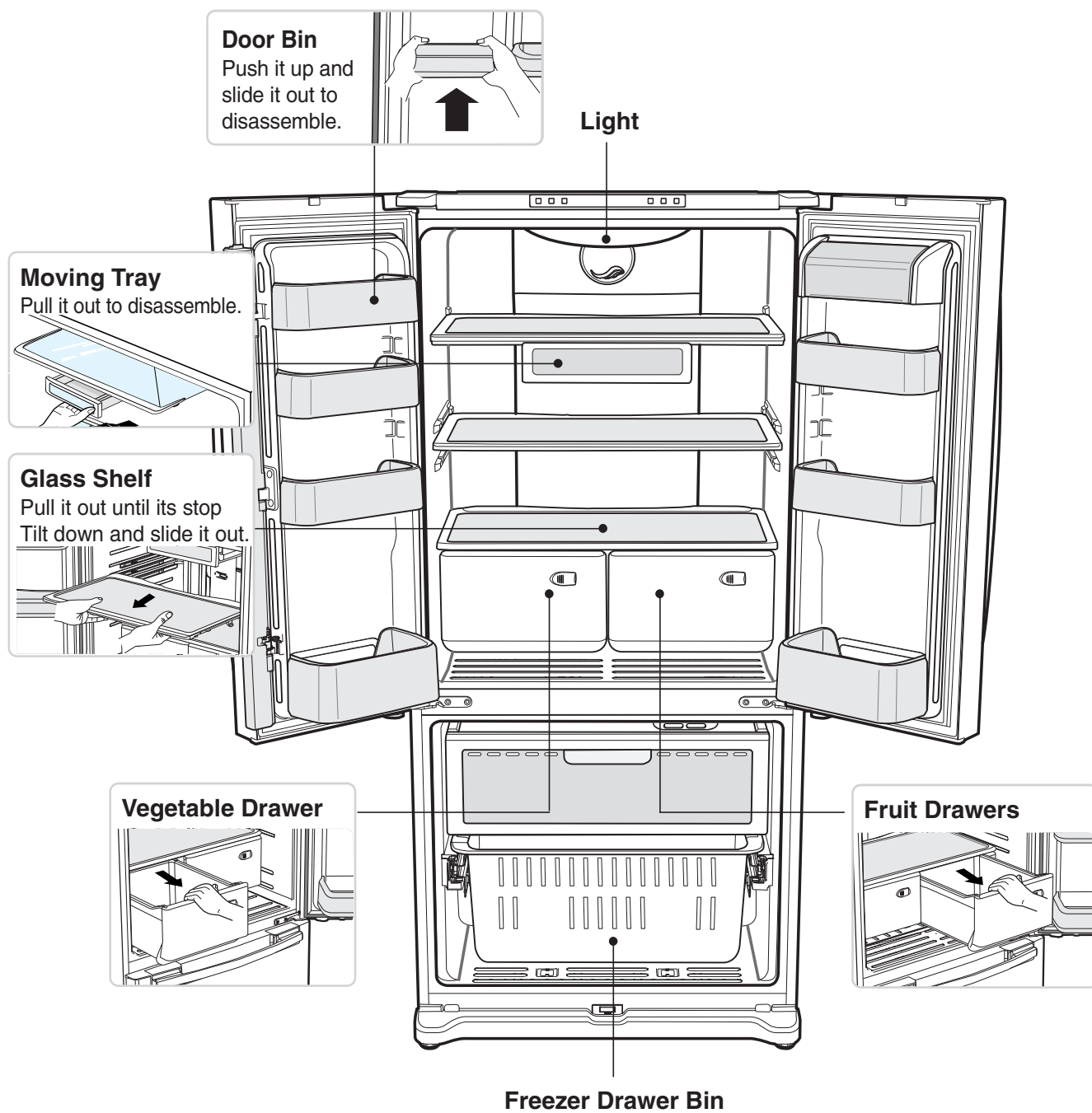


INSTALLATION

Clearance must be provided for air circulation	
AT TOP	2" (50mm)
AT SIDES	1" (25mm)
AT REAR	2" (50mm)

PRODUCT SPECIFICATIONS

2-3) Interior Views



PRODUCT SPECIFICATIONS

2-4) Model Specification

ITEM			SPEC	SAMSUNG	
				RF20/18	RF197/217
Appearance					
Product Zone			Cooling Tech	Twin Cooling	
			Door Shape	Contour	
			Special Room	Moving Tray	
Performance (RF217)	Cooling Speed(Min)	F-Room	220ℰ	177.3	
		R-Room	220ℰ	179.1	
	89.6 (32℃)	F-Room	-26.0ℰ	-29.9	
		R-Room	2.0ℰ	-1.6	
	109.4 (43℃)	F-Room	-18.0ℰ	-21.3	
		R-Room	5.0ℰ	-4.3	
	Temperature Distribution (Fridge)	F-Room	2.0ℰ	0.6	
		R-Room	2.0ℰ	0.8	
	Run Time	N-N	65%ℰ	51.6	
Noise	Sound power level		46dBℰ	41.8	
	Sound Pressure level		45dBℰ	39.7	

PRODUCT SPECIFICATIONS

2-5) Model Specification & Specification Chart

Free Standing Model			Swing/Auto Ice Maker	Swing/Auto Ice Maker	Drawer/Auto Ice Maker	Drawer/Auto Ice Maker
Model Number/ BOM code			3 Door			
			RF18	RF20	RF197	RF217
Dimension (WxDxH)Inch			32 1/8 x 30 4/8 x 70 6/8	32 1/8 x 32 4/8 x 70 6/8	32 1/4 x 30 1/2 x 69 3/4	32 1/4 x 32 1/2 x 69 3/4
Dimension (WxDxH)Imm			817*775*1798	817*825*1798	817*774*1772	817*824*1772
Capacity (net) (cu.ft/l)	Total		17.5 / 496	19.4 / 550	17.8 / 504	19.7 / 557.8
	Refrigerator		11.8 / 334	12.8 / 363	12.1 / 342.6	13.3 / 376.6
	Freezer		5.7 / 162	6.6 / 187	5.7 / 161.4	6.4 / 181.2
Dimension (Net : Inch(mm))	Width		32 1/8 (817)	32 1/8 (817)	32 1/4 (817)	32 1/4 (817)
	Height	w/o Hinge	70 6/8 (1798)	70 6/8 (1798)	68 5/8 (1743)	68 5/8 (1743)
		With Hinge	70 6/8 (1798)	70 6/8 (1798)	69 3/4 (1772)	69 3/4 (1772)
	Depth	with Handle	30 4/8 (775)	32 4/8 (825)	30 1/2 (774)	32 4/8 (824)
		w/o Handle	28 1/8 (715)	30 1/8 (765)	28 1/2 (715)	30 1/8 (765)
		w/o Door	24 2/8 (617)	26 2/8 (667)	24 3/8 (617)	26 2/8 (667)
Dimension (packing : Inch/mm)	Width		34 5/8 (880)	34 5/8 (880)	34 5/8 (879)	34 5/8 (880)
	Height		75 (1906)	75 (1906)	75 (1906)	75 (1906)
	Depth		30 4/8 (776)	32 4/8 (826)	30 4/8 (776)	32 4/8 (826)
Weight (lb/kg)	Net		231 / 105	243 / 110	231 / 105	243 / 110
	Packing		254 / 115	267 / 121	254 / 115	267 / 121
Compressor			Reciprocate			
Rated Frequency and Frequency			AC 115V/60Hz			
Refrigerant			R 134a			
Foaming Agent			C-Pentane			
Refrigerant Input Amount			5.64 oz (160g)			
Type Refrigerator			Indirect Cooling Method Refrigerator			
Motor Rated Consumption Power			130W			
Electric Heater Rated Consumption Power			350W			
COLOR						
			Cabinet (Both Side)	Door	Molding	
Black			All Black	Empire Black	I Black	
Real STS			Noble STS	Real Stainless	INOX GRAY	
White			Snow White	Snow White	Snow White	
Platinum Inox			Noble STS	Platinum Inox	INOX GRAY	

PRODUCT SPECIFICATIONS

Items			Specification			
Model			RF19*,RF21*	RF18*/RF20*		
Components for Freezer	Compressor	Model	MK162DL1U-E09	MKV172CL2J-SJ1		
		Starting type	AC	INV		
		Oil Charge	FREOL α -10			
	Evaporator	Freezer	SPLIT FIN TYPE			
		Refrigerator	SPLIT FIN TYPE			
	Condenser		Forced and Natural Convection Type			
	Dryer		Molecular shieve XH-9			
	Capillary tube(Dia x Length)		0.032" x 157" (0.82mm x 4000mm)			
	Refrigerant		R134a			
Room Temperature Sensor Components	Freezer	Model	Temperature Selection	ON(°F)	OFF(°F)	
		THERMISTOR (F-SENSOR) 502AT	-8°F (-22℃)	0°F (-18℃)	-15°F (-26℃)	
			-2°F (-19℃)	5°F (-15℃)	9°F (-23℃)	
			8°F (-13℃)	16°F (-9℃)	1°F (-17℃)	
	Refrigerator	Model	Temperature Selection	ON(°F)	OFF(°F)	
		THERMISTOR (R-SENSOR) 502AT	34°F (1℃)	41°F (5℃)	27°F (-3℃)	
			38°F (3℃)	45°F (7℃)	30°F (-1℃)	
			46°F (8℃)	54°F (12℃)	39°F (4℃)	
Defrost Related Components	Defrost Cycle	First Defrost Cycle (Concurrent defrost of F and R)		6hr ± 10min		
		Defrost Cycle(FRE)		12~34hr(varies according to the conditions used)		
		Defrost Cycle(REF)		6~17hr(varies according to the conditions used)		
		Pause time		12 ± 1min		
	Defrost Sensor	F Defrost-Sensor	Model	THERMISTOR (502AT)		
			SPEC	5.0KΩat 77°F (25℃)		
		R Defrost-Sensor	Model	THERMISTOR (502AT)		
			SPEC	5.0KΩat 77°F (25℃)		
	Bimetal	F Bimetal-thermo Protector	Rated	AC 125V 6A		
			Operating temperature	Off : 140°F (60℃) / On : 104°F (40℃)		
		R Bimetal-thermo Protector	Rated	AC 125V 6A		
			Operating temperature	Off : 140°F (60℃) / On : 104°F (40℃)		

PRODUCT SPECIFICATIONS

Items			Specification	
Model			RF19*,RF21*	RF20*/RF18*
Electric Components	Defrost Heater(FRE)	Heated at F Defrost	AC 120V, 240W	
	Defrost Heater(REF)	Heated at R Defrost	AC115V, 120W	
	Over Load Relay	Model	4TM412SFBYY-53	4TM445PHBYY-82
		Temp.ON	275 ± 9°F(135±5°C)	2 5 7 ± 9°F(125±5°C)
		Temp.OFF	141.8 ± 9°F(61±5°C)	1 5 6 ± 16°F(69±9°C)
	Rated Voltage		AC 115V/ 60Hz	
	Motor-BLDC(FRE)		DC12V / DREP5020LC	
	Motor-BLDC(REF)		DC12V / DREP5020LC	
	Motor-BLDC(CIRCUIT)		DC12V / DRCP5030LA	
	Lamp(FRE)		DC 12V / 100mA~130mA(1EA)	
	Lamp(REF)		DC 12V / 255mA~320mA(1EA)	
	Door Switch	FRE	DC200V 0.5A / MS-406-SS-01(1EA)	
		REF	DC200V 0.5A / MS-406-SS-01(2EA)	
	Power Cord		AC125V 15A	
	Ground Screw		BSBN (BRASS SCREW)	