

S/M No: FR821NB001

Service Manual

Refrigerator

Model : FR-821NB



Factory Model :
FRP-632N(K)~

✓ **Caution**

: In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center

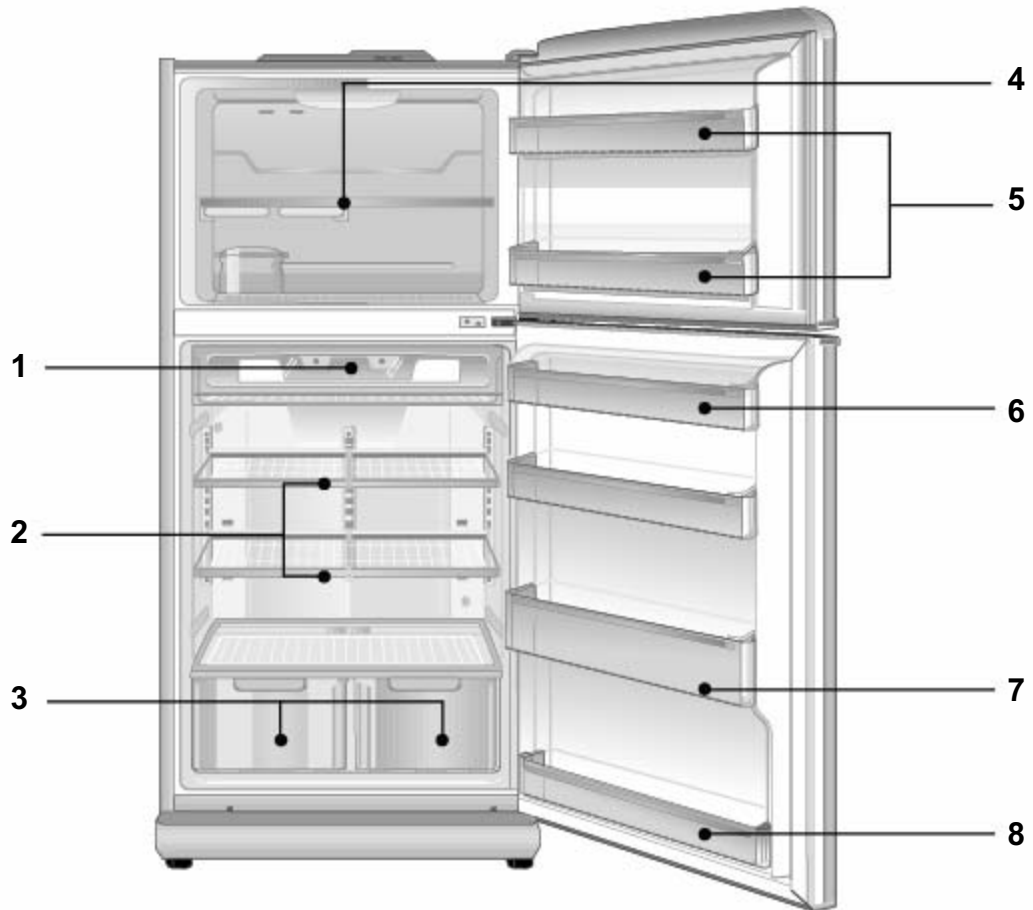
1. WARNINGS AND PRECAUTIONS FOR SAFETY

Please observe the following safety precautions in order to use safely and correctly the refrigerator and to prevent accident and danger during repair.

1. Be care of an electric shock. Disconnect power cord from wall outlet and wait for more than three minutes before replacing PCB parts.
Shut off the power whenever replacing and repairing electric components.
2. When connecting power cord, please wait for more than five minutes after power cord was disconnected from the wall outlet.
3. Please check if the power plug is pressed down by the refrigerator against the wall.
If the power plug was damaged, it may cause fire or electric shock.
4. If the wall outlet is over loaded, it may cause fire.
Please use its own individual electrical outlet for the refrigerator.
5. Please make sure the outlet is properly earthed, particularly in wet or damp area.
6. Use standard electrical components when replacing them.
7. Make sure the hook is correctly engaged.
Remove dust and foreign materials from the housing and connecting parts.
8. Do not fray, damage, machine, heavily bend, pull out or twist the power cord.
9. Please check the evidence of moisture intrusion in the electrical components.
Replace the parts or mask it with insulation tapes if moisture intrusion was confirmed.
10. Do not touch the icemaker with hands or tools to confirm the operation of geared motor.
11. Do not let the customers repair, disassemble and reconstruct the refrigerator for themselves.
It may cause accident, electric shock, or fire.
12. Do not store flammable materials such as ether, benzene, alcohol, chemicals, gas, or medicine in the refrigerator.
13. Do not put flower vase, cup, cosmetics, chemicals, etc., or container with full of water on the top of the refrigerator.
14. Do not put glass bottles with full of water into the freezer.
The contents shall freeze and break the glass bottles.
15. When you scrap the refrigerator, please disconnect the door gasket first and scrap it where children are not accessible.

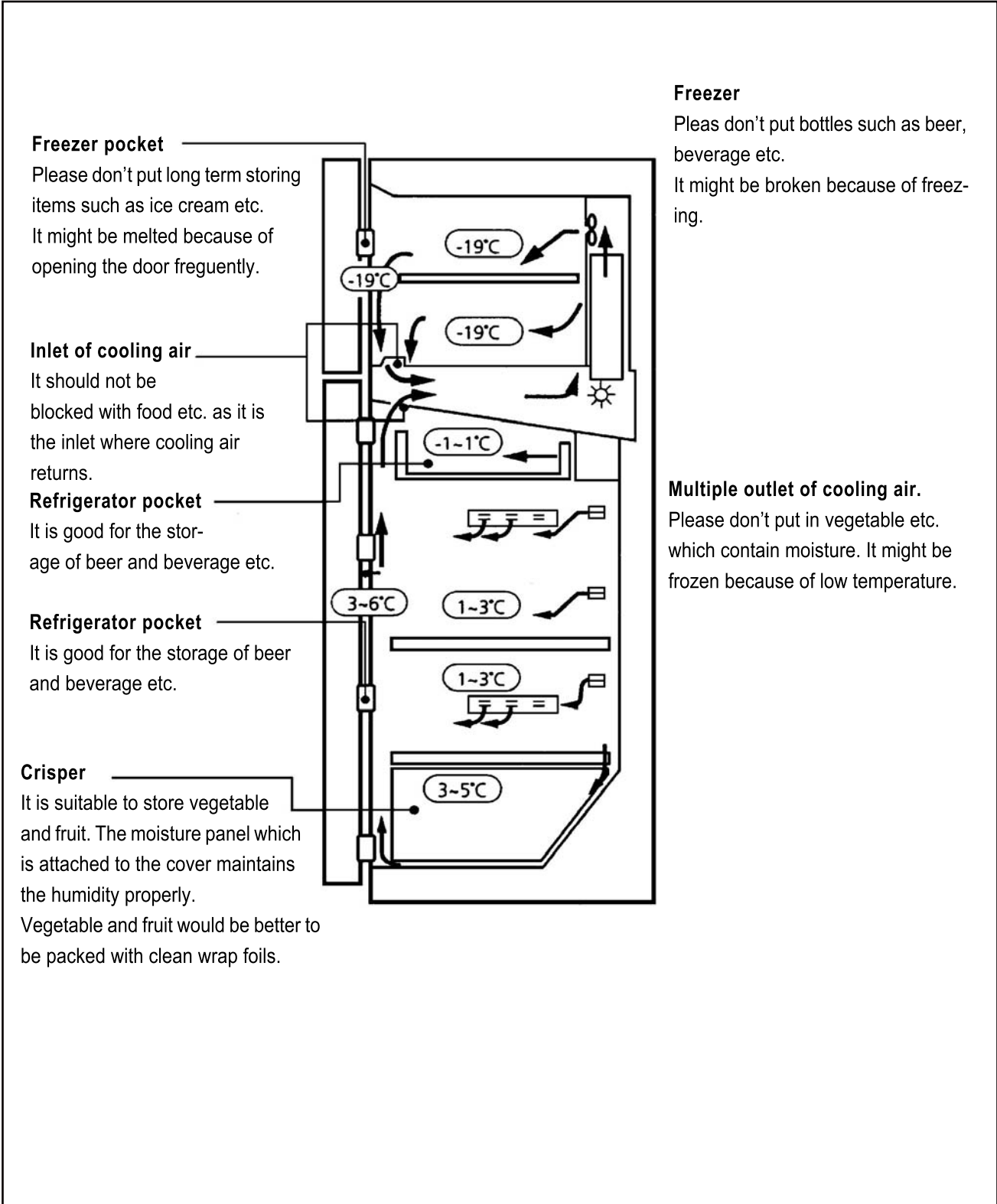
2. EXTERNAL VIEWS

2-1. Name of Each Parts

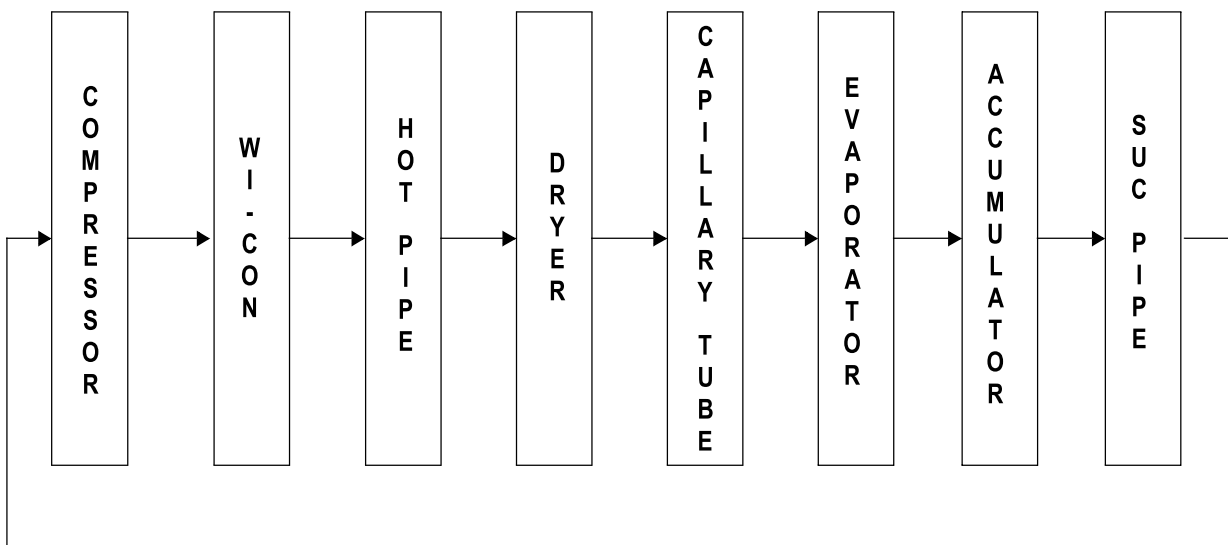
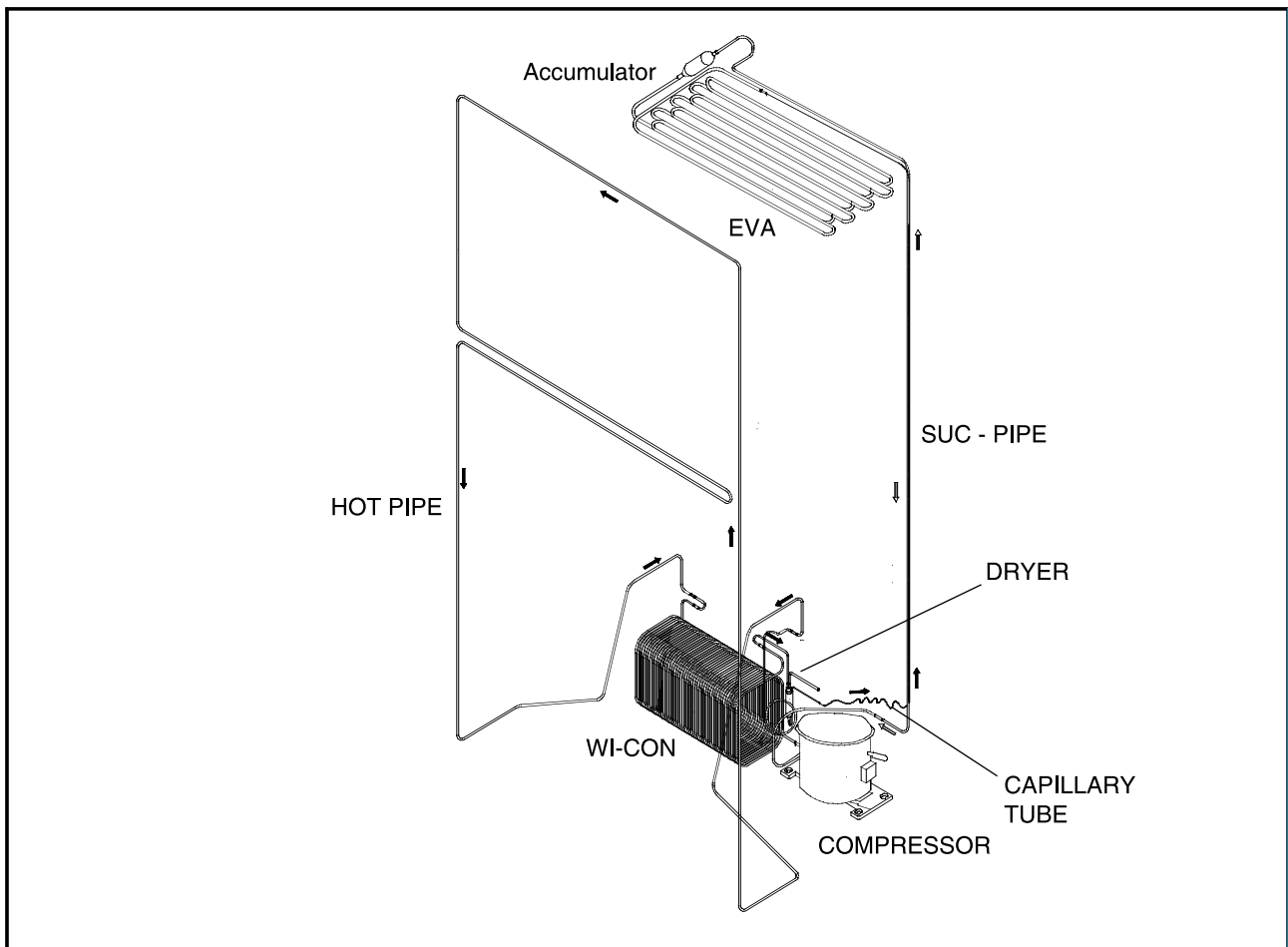


Interior Parts	Door Parts
1. CHILLED ROOM	5. FREEZER COMPARTMENT POCKETS
2. FRESH FOOD COMPARTMENT SHELF	6. EGG POCKET
3. VEGETABLE / FRUIT DRAWER	7. JUMBO POCKET
4. FREEZER COMPARTMENT SHELF	8. MULTI-PURPOSE POCKET

2-2. Cold Air Circulation




2-3. Refrigerant Cycle Diagram



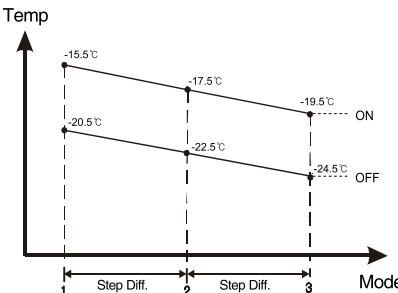
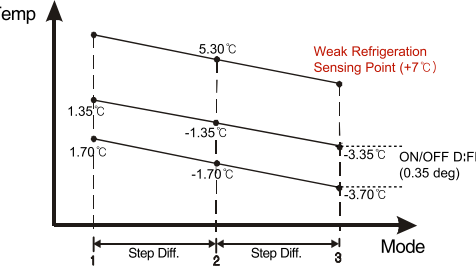
3. SPECIFICATION

Item		Specification
Model Name		FR-821NB (FRP-632~)
Gross Volume	Freezer (L/cuft)	219 / 7.7
	Refrigerator (L/cuft)	601 / 21.3
	Total (L/cuft)	820 / 29.0
Net (KS) Volume	Freezer (L/cuft)	185 / 6.5
	Refrigerator (L/cuft)	449 / 15.9
	Total (L/cuft)	634 / 22.4
External Dimension (W × D × H)		884 x 821 x 1831
Weight		106 kg

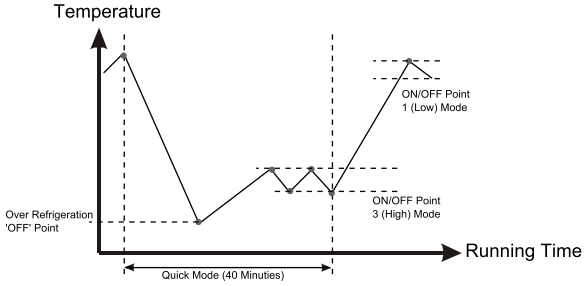
OPERATION AND FUNCTION

NO	CONTROL FUNCTION	CONTROL OBJECTS	CONTENTS	REMARK
1	DISPLAY	CUSTOM LED	 <p>1. Normal state</p> <ol style="list-style-type: none"> 1) SILENT Icon (Amber) is off. 2) Initial State : Both compartments, Icons indicate Middle-mode ("1", and "2" are lit..) <p>2. FRZ.SET Button</p> <ol style="list-style-type: none"> 1) Temperature Regulation of Freezer Compartment 2) Middle-left Icons are lit by pressing the button. <p>(1) → 1 → 2 → 3 → Q.F.</p> <p>3) When Q.F Mode is set, Freezer Mode's Icons (middle-left) are on and off 3 times, then only Q.F LED(red) is lit.</p> <p>3. REF.SET Button</p> <ol style="list-style-type: none"> 1) Temperature Regulation of Freshfood Compartment. 2) Middle-right Icons are lit by pressing the button. <p>(1) → 1 → 2 → 3 → Q.R.</p> <p>3) When Q.R Mode is set, Refrigerator Mode's Icons (middle-right) are on and off 3 times, the only Q.R LED(red) is lit.</p> <p>4. SILENT Button</p> <ol style="list-style-type: none"> 1) SILENT Mode starts by pressing the button. <ul style="list-style-type: none"> - SILENT Icon IS LIT. - All the other LED is off. 2) The mode is finished by pressing the button once again. <ul style="list-style-type: none"> - The Icon turns off and it returns to previous[normal] state. 3) The mode ends by itself in 130minutes after its start. <ul style="list-style-type: none"> - The Icon turns off. - All the other LED is off. 	

OPERATION AND FUCTIONLS

NO	CONTROL FUNCTION	CONTROL OBJECTS	CONTENTS	REMARK
2	Temperature Regulation of Freezer Compartment	1. COMP 2. F-FAN	<p>1. Temperature regulation by FRZ.SET Button.</p> <p>(1) → 1 → 2 → 3 → Q.F</p> <p>2. COMP and F-Fan are controlled by On/Off point of each mode.</p> <p>3. Freezer Compartment ON / OFF DIFF : 5 °C (Middle(2)-OFF : -22.5)</p> <p>4. "3" / "1" DIFF : 2 °C</p> <p>5. Control Point of each Mode</p>  <p>6. COMP and F-FAN are ON during Q.F Mode regardless of F-Sensor. (Approximately 150minutes)</p>	<p>※ Reference</p> <p>ON/OFF Diff : Fixed at Micom</p> <p>STEP Diff : Fixed at Micom</p> <p>Comp/C- fan co-working</p>
3	Temperature Regulation of Refrigerator (Freshfood Compartment)	1. COMP 2. R-FAN	<p>1. emperature regulation by REF.SET Button.</p> <p>(1) → 1 → 2 → 3 → Q.F</p> <p>2. R-Fan is controlled by On/Off-point of each mode.</p> <p>3. ON / OFF DIFF : 0.35°C (Middle("1" Off-point : -1.0 °C)</p> <p>4. "3" / "1" DIFF : 2°C</p>  <p>5. Prevention of Weak-refrigeration</p> <ol style="list-style-type: none"> 1) When weak-refrigeration is sensed, COMP turns on regardless of F-Sensor. 2) When R-Sensor reaches to R-Fan Off-point, COMP is controlled by F-Sensor and R-FAN turns off. 3) Sensing point of weak-refrigeration ; R-S Off-point of each mode +7 °C 4) Finishing point of weak-refrigeration ; same as R-S Off-point <p>6. Q.R(Quick Refrigeration) continues for 40minutes.</p>	<p>ON/OFF, Diff : Can not be changed</p> <p>STEP DIFF : Can not be changed</p>

OPERATION AND FUCTIONLS

NO	CONTROL FUNCTION	CONTROL OBJECTS	CONTENTS	REMARK
3	Temperature Regulation of Refrigerator (Freshfood Compartment)	1. COMP 2. R-FAN	<p>* In case Q.R starts during 1(refrigeration) mode</p>  <p>1) R-Fan and COMP continue to be On until the R-Sensor reaches to Off-point(-7℃) of over-refrigeration. 2) It continues to be 3 until Q.R ends after reaching to Off-point of over-refrigeration. 3) It returns to normal[previous] state when Q.R (40 minutes) ends.</p>	
4	SILENT Control	1. COMP 2. R-FAN 3. F-FAM 4. Custom LED	<p>1. SILENT Mode starts by pressing the button.</p> <p>2. Terms to start SILENT Mode</p> <ol style="list-style-type: none"> ① F-Sensor $\leq -15^{\circ}\text{C}$ ② Restart of SILENT within 40 minutes after the mode ③ F-Sensor error ④ Door Switch error ⑤ In Defrosting Mode (HTR Defrosting, Pause, Fan-delay) ⑥ SILENT starts if conditions ① to ⑤ happen. <p>3. Once SILENT starts, all the electric devices (COMP, F-Fan, R-Fan) turn Off and only SILENT Icon is lit.</p> <p>4. Terms to finish SILENT Mode</p> <ol style="list-style-type: none"> ① F-Sensor $\geq -9^{\circ}\text{C}$ ② More than 130 minutes of Limit-time ③ F-Sensor error ④ In case any other button is pressed during SILENT Mode ⑤ Door opened time is more than 30 seconds during the mode. ⑥ If the mode is finished by ①, ② and ③, F/R-Fan Delay time is set to 5 minutes, and prevention of SILENT Restart time is set to 40 minutes. <p>5. When the mode is finished all the electric devices and C-LEDs return to normal [previous] state.</p> <p>6. Pre-cool continues after SILENT Mode.</p> <p>7. Q.F and Q.R continue after SILENT Mode for the rest time.</p>	

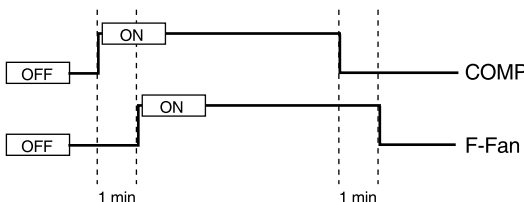
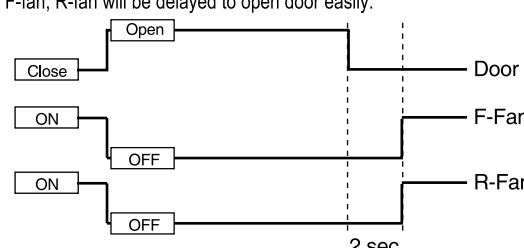
OPERATION AND FUCTIONLS

NO	CONTROL FUNCTION	CONTROL OBJECTS	CONTENTS	REMARK																														
5	Defrosting Period	1. Defrosting Mode	<p>1. What to be considered in determining Defrosting Period</p> <ol style="list-style-type: none"> Total Run-time of COMP : 6, 8, 10, 12, 14 hours Running-rate of COMP (each 2hours running-rate) : more than 80% Total time of Door openings : 10minutes Total Time (COMP-On + COMP-Off) : 60hours Ambient Temperature : more than 35 °C In each Error : R1, F1, D1, F3, RT-S, Door-SW Error <p>2. Terms to start Defrosting Period</p> <ol style="list-style-type: none"> The Defrosting starts with the following conditions, in case total COMP-run time passes 6, 8, 10 or 12hours <ol style="list-style-type: none"> when an Error occurs when running-rate of COMP is more than 80% when total Door-opening time is more than 10minutes when the ambient temperature is more than 35 °C Defrosting starts unconditionally when total COMP-run time passes 14 hours, under the condition that terms of 1) are not satisfied. Defrosting starts immediately when Total-time (COMP-On + Off time) is more than 60 hours, under the condition that terms of 1) and/or 2) are not satisfied. 																															
6	Defrostiong Mode	1.COMP 2. F-FAN 3. R-FAN 4. HEATER	<p>1. Defrosting Period</p> <p>Pre-cool</p> <ol style="list-style-type: none"> Time : 50minutes COMP and F-Fan are On, R-fan is in Control, and HTR is off Pre-cool turns off when F-Sensor $\leq -27^{\circ}\text{C}$. <p>Heater Defrosting</p> <ol style="list-style-type: none"> Heater turns off when D-Sensor $\geq 10^{\circ}\text{C}$. Limit time : 80minutes Heater continues to be On for 40 minutes of limit time when D-Sesor is in error. Limit time <ol style="list-style-type: none"> 30seconds: Heater continues to be On after Defrosting regardless of D-Sensor temperature. 40minutes: in case of D1-Error 80minutes: in normal control state <p>Pause</p> <ol style="list-style-type: none"> Time : 4minutes COMP, F-Fan and R-Fan are Off. <p>Fan-delay</p> <ol style="list-style-type: none"> Time : 5minutes Only COMP is On, while F or R-Fan is Off. <p>2. Output Control and Limit Time of each Defrosting Mode</p> <table border="1"> <thead> <tr> <th></th> <th>Pre-cool</th> <th>HTR Defrosting</th> <th>Pause</th> <th>Fan-delay</th> </tr> </thead> <tbody> <tr> <td>COMP</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>F-Fan</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>R-Fan</td> <td>Control</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>Heater</td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>Limit Time</td> <td>50 min.</td> <td>① 80 min. ② 40 min. (In D-Sensor error)</td> <td>4 min.</td> <td>5 min.</td> </tr> </tbody> </table>		Pre-cool	HTR Defrosting	Pause	Fan-delay	COMP	ON	OFF	OFF	ON	F-Fan	ON	OFF	OFF	OFF	R-Fan	Control	OFF	OFF	OFF	Heater	OFF	ON	OFF	OFF	Limit Time	50 min.	① 80 min. ② 40 min. (In D-Sensor error)	4 min.	5 min.	C-Fan and COMP are co-working.
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OPERATION AND FUNCTIONALS

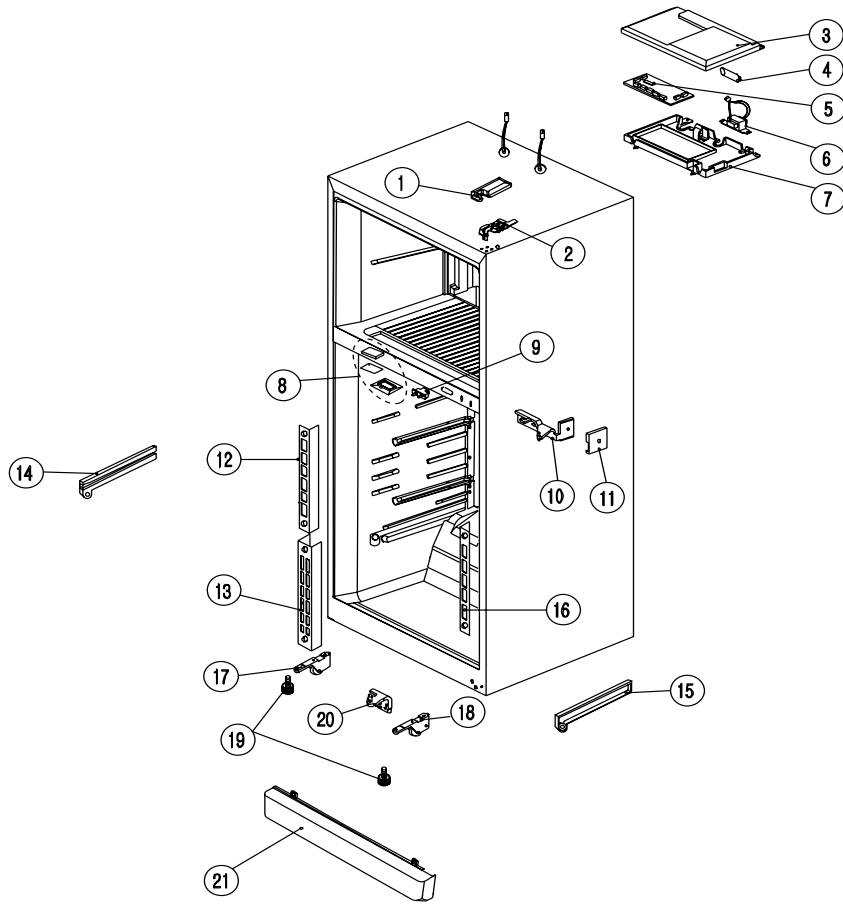
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7	Error Display (displayed on C-LED of F-PCB)	1. Custom-LED	<p>1. How to start ; open and close refrigerator door 3 times while pressing REF.SET Button and it starts after 3 seconds.</p> <p>2. Display</p> <p>① If any error, characters(Bar-LED) of C-LED are lit.</p> <p>② In Error Display Mode, the Buzzer beeps in short interval - every 0.1second at 5seconds cycle.</p> <p>3. How to finish : doing above 1 again.</p> <p>4. It ends by itself 4 minutes after start.</p> <p>5. All the Error Code is reset by itself when it returns to normal state.</p> <p>6. Error Code</p> <table border="1"> <thead> <tr> <th>Error Code</th> <th>C-LED</th> <th>CONTENTS</th> <th>Running State</th> </tr> </thead> <tbody> <tr> <td>F 1</td> <td>"1" of Freezer</td> <td>F-S disconnection/ short-circuit</td> <td>COMP and F-Fan are On for 40min., Off for 20min. at 60min.s period.</td> </tr> <tr> <td>r 1</td> <td>"2" of Freezer</td> <td>R-S disconnection/ short-circuit</td> <td>Running by 20min.s period according to RT</td> </tr> <tr> <td>d 1</td> <td>"Q.F" of Freezer</td> <td>D-S disconnection/ short-circuit</td> <td>Heater is On for 40 min. during Defrosting.</td> </tr> <tr> <td>r t</td> <td>"3" of Freezer</td> <td>RT-S disconnection/ short-circuit</td> <td>Deletion by RT-Sensor</td> </tr> <tr> <td>d 00r</td> <td>"1" of Ref.</td> <td>Defective Door S/W (when S/W senses that door opened more than 1 hour)</td> <td>Deletion of sensing Door-S/W</td> </tr> <tr> <td>C 1</td> <td>"2" of Ref.</td> <td>Abnormal Cycle (COMP runs more than 3 hours at D-S $\geq 5^{\circ}\text{C}$.)</td> <td>Normal Running</td> </tr> <tr> <td>F 3</td> <td>"3" of Ref.</td> <td>In case of Heater Defrosting, when it returns to Time (80min.), not D-Sensor</td> <td>Normal Running (Deletion of Pre-cool Mode in Defrosting Mode)</td> </tr> </tbody> </table> <p>7. Error Control</p> <p>1) F1 Error</p> <p>① Occurrence ; in case of F-Sensor disconnection/short-circuit</p> <p>② Control ; let COMP and F-Fan On for 40min., Off for 20min.</p> <p>③ Dissolu ; if F-Sensor is in normal state, it is finished by itself.</p> <p>2) r1 Error</p> <p>① Occurrence : in case of R-Sensor disconnection/short-circuit</p> <p>② Control it in accordance as ambient temperature.</p> <table border="1"> <thead> <tr> <th>RT/S</th> <th>In Error</th> <th>$\sim 13^{\circ}\text{C}$</th> <th>$14^{\circ}\text{C}\sim 29^{\circ}\text{C}$</th> <th>$29^{\circ}\text{C}\sim$</th> </tr> </thead> <tbody> <tr> <td>Running-Rate (ON/OFF)</td> <td>8/12</td> <td>7/13</td> <td>8/12</td> <td>9/11</td> </tr> </tbody> </table> <p>③ Dissolution : if R-Sensor is in normal state, it is finished by itself.</p> <p>3) rt Error</p> <p>① Occurrence : RT-Sensor disconnection/short-circuit</p> <p>② Control : deletion of control-condition by RT-Sensor</p> <p>③ Dissolution : if RT-Sensor is in normal state, it is finished by itself.</p>	Error Code	C-LED	CONTENTS	Running State	F 1	"1" of Freezer	F-S disconnection/ short-circuit	COMP and F-Fan are On for 40min., Off for 20min. at 60min.s period.	r 1	"2" of Freezer	R-S disconnection/ short-circuit	Running by 20min.s period according to RT	d 1	"Q.F" of Freezer	D-S disconnection/ short-circuit	Heater is On for 40 min. during Defrosting.	r t	"3" of Freezer	RT-S disconnection/ short-circuit	Deletion by RT-Sensor	d 00r	"1" of Ref.	Defective Door S/W (when S/W senses that door opened more than 1 hour)	Deletion of sensing Door-S/W	C 1	"2" of Ref.	Abnormal Cycle (COMP runs more than 3 hours at D-S $\geq 5^{\circ}\text{C}$.)	Normal Running	F 3	"3" of Ref.	In case of Heater Defrosting, when it returns to Time (80min.), not D-Sensor	Normal Running (Deletion of Pre-cool Mode in Defrosting Mode)	RT/S	In Error	$\sim 13^{\circ}\text{C}$	$14^{\circ}\text{C}\sim 29^{\circ}\text{C}$	$29^{\circ}\text{C}\sim$	Running-Rate (ON/OFF)	8/12	7/13	8/12	9/11	<p>Limit-time : 4min.</p> <p>Check error without using jig.</p>
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OPERATION AND FUCTIONS

NO	CONTROL FUNCTION	CONTROL OBJECTS	CONTENTS	REMARK
7	Error Display (displayed on C-LED of F-PCB)		<p>4) d1 Error</p> <ul style="list-style-type: none"> ① Occurrence : D-Sensor disconnection/short-circuit ② Control : by limit time(40min.) of Defrosting-return ③ Dissolution : if D-Sensor is in normal state, it is finished by itself. <p>5) door Error</p> <ul style="list-style-type: none"> ① Occurrence : when door-opening is sensed for more than 1 hour ② Control : deletion of Door SW sensing function ③ Dissolution : if Door SW open-close is sensed, it ends by itself. ④ Display dissolution : after Custom LED Display Mode (Door SW should be in normal state if Error Display Mode is to start.) <p>6) C1 Error</p> <ul style="list-style-type: none"> ① Occurrence : when COMP runs continuously for more than 3 hours while D-Sensor is above -5℃ ② Control : normal running ③ Dissolution : when D-Sensor temperature is below -5℃ while Comp is Off <p>7) F3 Error</p> <ul style="list-style-type: none"> ① Occurrence : by limit time of 80min. at defrosting-return ② Control : deletion of Pre-cool mode at defrosting mode ③ Dissolution : the end of defrosting is done by D-Sensor 	
8	Forced Defroston	1. Defrosting Mode	<p>※ A/S (Heater) Forced Defrosting</p> <p>1. Start : press REF.SET Button 5 times while pressing FRZ.SET Button (It is impossible in the state of Energy Consumption Forced Defrosting.)</p> <p>2. Process</p> <ul style="list-style-type: none"> 1) Let Heater On for 30seconds. 2) Delete Pre-cool of normal defrosting mode. <p>HTR Defrosting → Pause → Fan Delay → Normal Running</p> <p>3. Heater turns Off when D-Sensor temperature is more than 10, 30 seconds after Heater On.</p>	
9	Time Delay of Electric Devices	1. F-Fan 2. R-Fan	<p>1. F-Fan Time Delay in COMP On/Off</p> <p>☞ F-Fan turns On/Off 1 minute after COMP On/Off.</p>  <p>2. F-fan, R-fan will be delayed to open door easily.</p> 	
10	Initial Defrosting	Defrosting Mode	<p>1. Defrosting mode starts when D-Sensor $\leq 3.5^{\circ}\text{C}$ at initial power supply. (It starts from Pre-cool.)</p>	COMP delayed for 6min. at initial defrosting

OPERATION AND FUCTIONLS

NO	CONTROL FUNCTION	CONTROL OBJECTS	CONTENTS	REMARK									
11	Explanation after Delivery	Electric Devices	<ol style="list-style-type: none"> 1. Start : press both buttons for 3 seconds after initial power supply (plug-in). 2. Electric devices turn Off for 3 hours. 3. Display works in normal way. 										
12	Prevention of COMP Restart	COMP	<ol style="list-style-type: none"> 1. COMP does not restart for 6 minutes after COMP Off, though F-Sensor turns On. 	6min. delay									
13	Buzzer Alarm	Buzzer	<ol style="list-style-type: none"> 1. Buzzer rings by pressing F-PCB Buttons. 2. Buzzer rings for 1 second after initial power supply (plug-in). 3. Buzzer rings for 1 second at the start of A/S Forced Defrosting. 4. Buzzer rings every 1 minute after door opening. (It rings within 5minutes and ring-time is prolonged as time passes.) 5. Buzzer makes short ring every 5 seconds in Error Display. 										
14	Demonstration Function	Electric Devices	<ol style="list-style-type: none"> 1. Start : open and close Refrigerator[Freshfood Compartment] Door 5 times while pressing FRZ.SET Button. 2. Control <ol style="list-style-type: none"> 1) Electric devices turn Off except for F-Fan and R-Fan. 2) Fan Control <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Door Open</th> <th>Door Close</th> </tr> </thead> <tbody> <tr> <td>F-FAN</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>R-FAN</td> <td>ON</td> <td>OFF</td> </tr> </tbody> </table> 3. Dissolution : <ol style="list-style-type: none"> 1) Open and close Refrigerator[Freshfood Compartment] Door 5 times while pressing REF.SET Button in Demonstration mode. 2) Supply the power again(plug-out and plug-in) 		Door Open	Door Close	F-FAN	ON	OFF	R-FAN	ON	OFF	
	Door Open	Door Close											
F-FAN	ON	OFF											
R-FAN	ON	OFF											
15	Control of R-Sensor Off-Point	<ol style="list-style-type: none"> 1. Control Resistance of R-Sensor "2" Off-point 	<ol style="list-style-type: none"> 1. In case of Weak-refrigeration (though R-Fan and COMP work on and on), the following actions are to be done. 2. Resistance R13 : Control Resistance of R-Sensor Middle("2") Off-point (- 1.0℃ , 31.4kΩ) 3. Resistance R14 : reduceing R-Sensor Resistance by 1.5℃ in case of weak-Refrigeration (-2.5℃ , 2.15kΩ) 4. SW1 : during A/S, if SW1 is opened, R-Sensor Middle Off-point decreases by 1.5℃ . 5. Switch Status and R-Sensor Middle Off-point <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Switch Status</th> <th>R-Sensor Middle Off-point</th> </tr> </thead> <tbody> <tr> <td>Normal / Using Jig</td> <td>-1.0</td> </tr> <tr> <td>In Weak-refrigeration</td> <td>-2.5</td> </tr> </tbody> </table> 	Switch Status	R-Sensor Middle Off-point	Normal / Using Jig	-1.0	In Weak-refrigeration	-2.5				
Switch Status	R-Sensor Middle Off-point												
Normal / Using Jig	-1.0												
In Weak-refrigeration	-2.5												

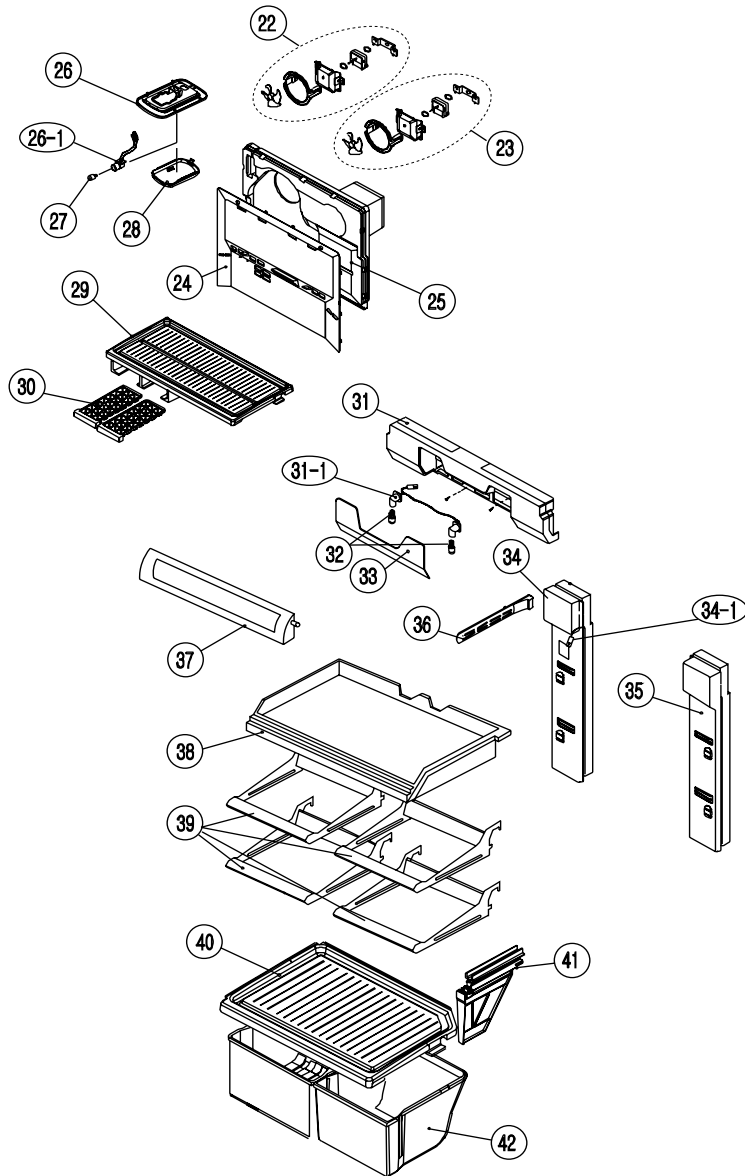


NO	PART-CODE	PART NAME	SPEC.	Q'ty
1	3011429000	COVER *T HI	PP FRB-5050NT	1
2	3012905400	HINGE *T	SCP-1 T2.3 FRB-5050NT	1
3	3011444901	COVER M/PCB BOX	PP VO FH21 FRB-4490KB	1
4	3016401910	CAPACITOR RUN	400VAC 4UF(WIRE)	1
	3816800400		300V-7MFD	1
	3016401930		400VAC 15UF	1
	3016401170		350VAC 5UF(EUROPEAN)	1
5	3014388010	PCB MAIN AS	FR-1 197X122-1.6T N808(N)	1
	3014388020		N808(N),FRP-631(EUROP)	1
	3014388030		N808(N),FRP-631(110V)	1
6	5EPK057004	TRANS POWER	220V 60/50HZ 10V	1
	5EPK057860		110V/60HZ 10V	1
7	3010519210	BOX M/PCB	PP FRP-480	1
8	3011101802	CASE DEO AS	CASE+DEO	1
9	3018100010	SWITCH DR	2 BUTTON/4P,DSD-5	1
10	3012905802	HINGE *M AS	FRB-5090EB	1
11	3011424700	COVER HI *M	ABS FRB-6040NT	1
12	3014529600	STOPPER G SHELF SAS	SBHG T1.6	1
13	3014529701	STOPPER SHELF *M SAS	SBHG T1.6	1
14	3012505400	GUIDE *L AS	FRB-5650NB	1
15	3012504000	GUIDE *R AS	FRB-5650NB	1
16	3014529600	STOPPER G SHELF SAS	SBHG T1.6	1
17	3016500720	CASTER *F *L AS	FRB-5070SB	1
18	3016500820	CASTER *F *R AS	FRB-5070SB	1
19	3012104400	FOOT ADJ AS	FR-S580CG	2
20	3012910001	HINGE *U AS	FRB-59 6360NB/NB6560NA	1
21	3011420900	COVER CAB BRKT	PP	1

- Some parts can be chaged for improving their performance without notice.
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Date	A mendment Note

Freezer & Refrigerator Room

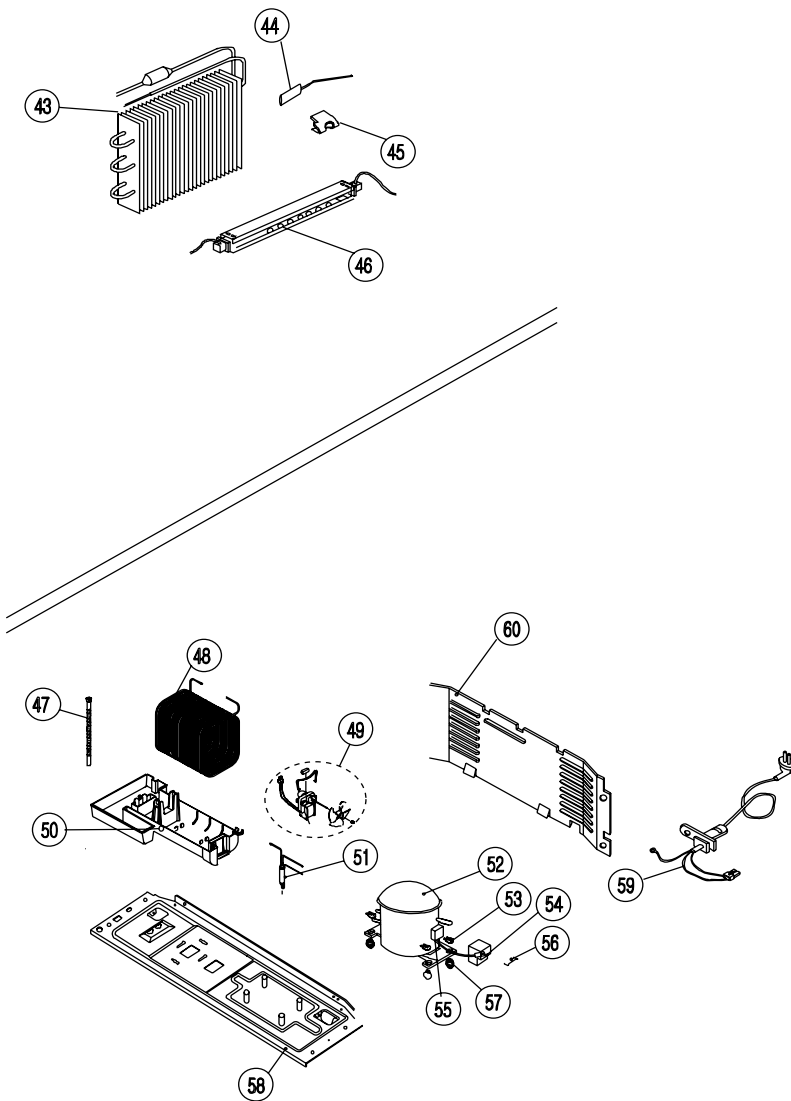


NO	PART-CODE	PART NAME	SPEC.	Q'ty
22	3015907400	MOTOR F AS	FRB-5970NB-6370NB	1
23	3015906700	MOTOR R FAN	FRB-5970NB/6370NB	1
24	3018903821	LOUVER F AS	FRP-631,632,633	1
25	3013321510	INSU F LUVR AS	FRB-5960NB/6370NB	1
26	3012004200	FIXTURE F LAMP AS	FRB-48/50/5350NT	1
26-1	3017900842	SOCKET F LAMP AS	FRB-48/52/56/60/6540	1
27	3013600020	LAMP AS	240V/15W (E14,CC7A)	1
	3013600050		120V/15W (110V/60HZ)	1
28	3015502601	WINDOW F	MIPS L/BLUE	1
29	3017820930	SHELF F AS	FRB-6370NB	1
30	3011110210	CASE ICING	PP N-PRINT	2
31	3016903520	DUCT CHILD CASE AS	FRB-6540NA	1
31-1	3017902322	SOCKET R LAMP AS	FRB-5970NB	1
32	3013600020	LAMP AS	240V/15W (E14,CC7A)	2
	3013600050		120V/15W (110V/60HZ)	2
33	3015500902	WINDOW R	MIPS (FRB-59/63/65)	1
34	3018906900	LOUVER R *S *L AS	FRB-5960NT/NB 6560NA	1
34-1	3014800911	SENSOR R1 AS	ABS	1
35	3018906800	LOUVER R *S *R AS	FRB-5960NT/NB 6560NA	1
36	3011441100	COVER CUBIC DUCT	HIPS	4
37	3011716802	DOOR CHILD CASE	GPPS (FRB-6380NB)	1
38	3011117501	CASE CHILD	GPPS	1
39	3010041900	SHELF GLAS AS	FRB-6530NA	4
40	3011432702	COVER V/CASE	GPPS	1
41	3012503900	GUIDE *M AS	FRB-5650NB	1
42	3011114410	CASE VEGETB AS	FR-B590BA HIPS	2
	3011114430		NANO+NO PRT(FRP-63)	2

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Date	Amendment Note

Evaporator & Machine Room



NO	PART-CODE	PART NAME	SPEC.	Q'ty
43	3010018710	PRE EVA AS	FRP-632	1
44	3017200101	FUSE TEMP AS	SW-103T (77C)	1
45	4017290590	FIXTURE FUSE TEMP	PP	1
46	3010040220	ASSY D HTR	FRB-5980NA 110V/250W	1
	3010040202		FRB-5980NA 220V/250W	1
47	3013202210	HOSE DRN AS	PP	1
48	3014413720	PIPE WICON AS	0D4.76XT0.7XL28280	1
49	3015911500	MOTOR C FAN	BL-2213DWCA-2	1
50	3011109902	CASE VAPORI AS	FB-5960NB	1
51	3016801010	DRYER AS	FRB-4460NT/4760NT	1
52	3956126550	COMPRESSOR	HPL26YH-5	1
	3952125R30		HBL25YG-3	1
	395S130R50		HPL30YG-5-N	1
	3957127R20		HCL27YG-2	1
	3956127R40		HPL27YG-4-N	1
53	3016002500	SPECIAL WASR	SK-5 T0.8	3
54	3811400503	COVER RELAY	PP(SW5101SW) 40*54*45*T2.0	1
55	3018119390	SWITCH P RELAY AS	4TM783NHB(BK/YW/OR/PK)	1
	3018119980		4TM308NHBYY-52,S330(RSCR)	1
	3018118170		783SHBZZ,S068,SASO	1
	3018119920		4TM197NHBYY-52(3P,S330)	1
	3018118131		419RHB RSCR SASO	1
56	3012610000	CLAMP BAND RELAY	SK-5 0.7T	1
57	3010101600	ABSORBER COMP	NBR	4
58	3010317600	BASE COMP AS	SBHG1-R	1
59	4006D17104	CORD POWER AS	KP-30 125V-10A SPT-3	1
	3011301260		RW-125(2)	1
	3011343620		125V 10A,SASO(37)	1
	3011302030		CP-2PIN(2)	1
	3011302820		BS-1363(FRP-650)	1
60	3012401011	GRILLE AS	FRP-651 T0.35	1

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