S/M No. : FRS2011000

Service Manual

Side by Side Refrigerator

MODEL : FRS-2011
FRS-2031

✔ 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 (http://svc.dwe.co.kr).

DAEWOO ELECTRONICS Corp.

http : //svc.dwe.co.kr Apr. 2004

CONTENTS

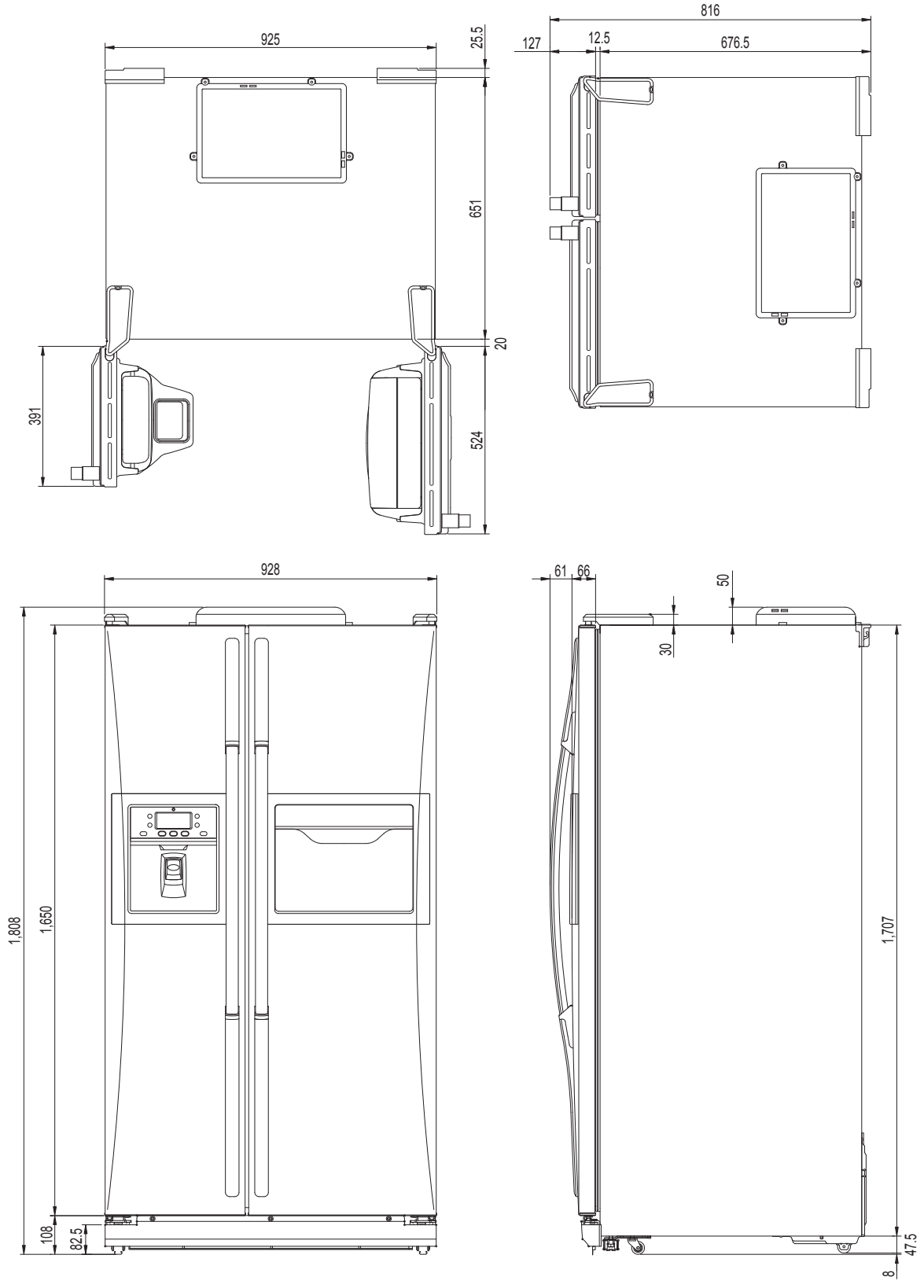
✣ SAFETY AND PRECAUTIONS ✣

1) For starters, be sure to check any chances of the leakage of electricity
2) You could handle a part in the vicinity of electricity after unplugging
3) You should put on rubber glovers to prevent an electric shock on operation test
4) Make sure the rated current, voltage, capacity before using an instrument
5) Keep your wet hands away from the metal goods in the freezer compartment not to be frostbitten
6) Be careful not to let water to permeate the electric part in the machine room
7) with the door open during your working, you might be damaged by that door
8) You should give a tilt to the refrigerator for your safe after removing the breakable goods inside the refrigerator
9) You'd better use cotton gloves if you fix it up around the evaporator

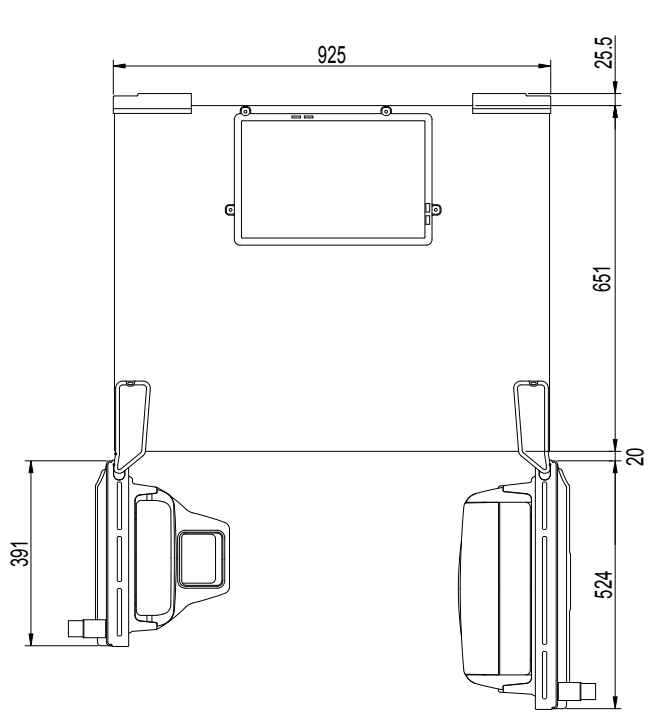
EXTERNAL VIEWS

1. EXTERNAL SIZE

■ **FRS-2011**



FRS-2031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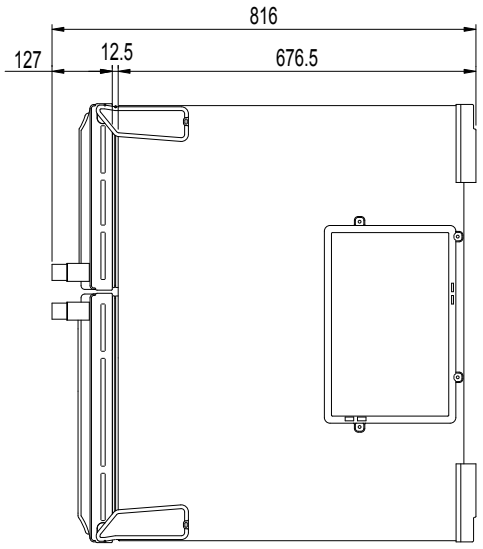
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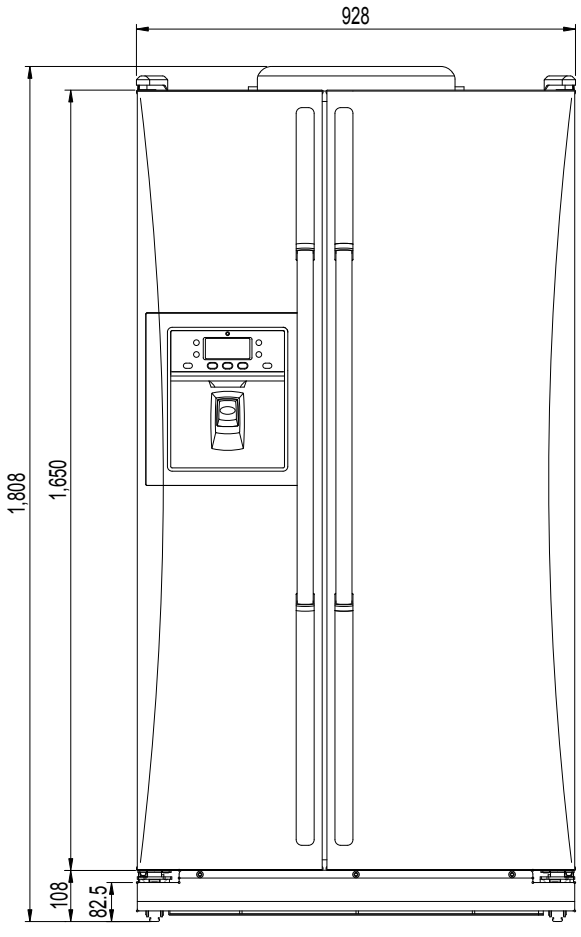
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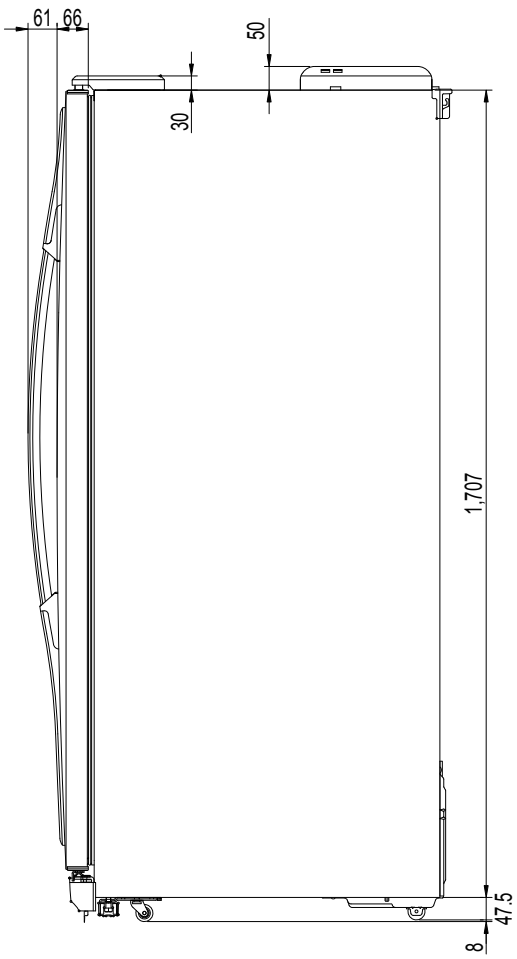
82.5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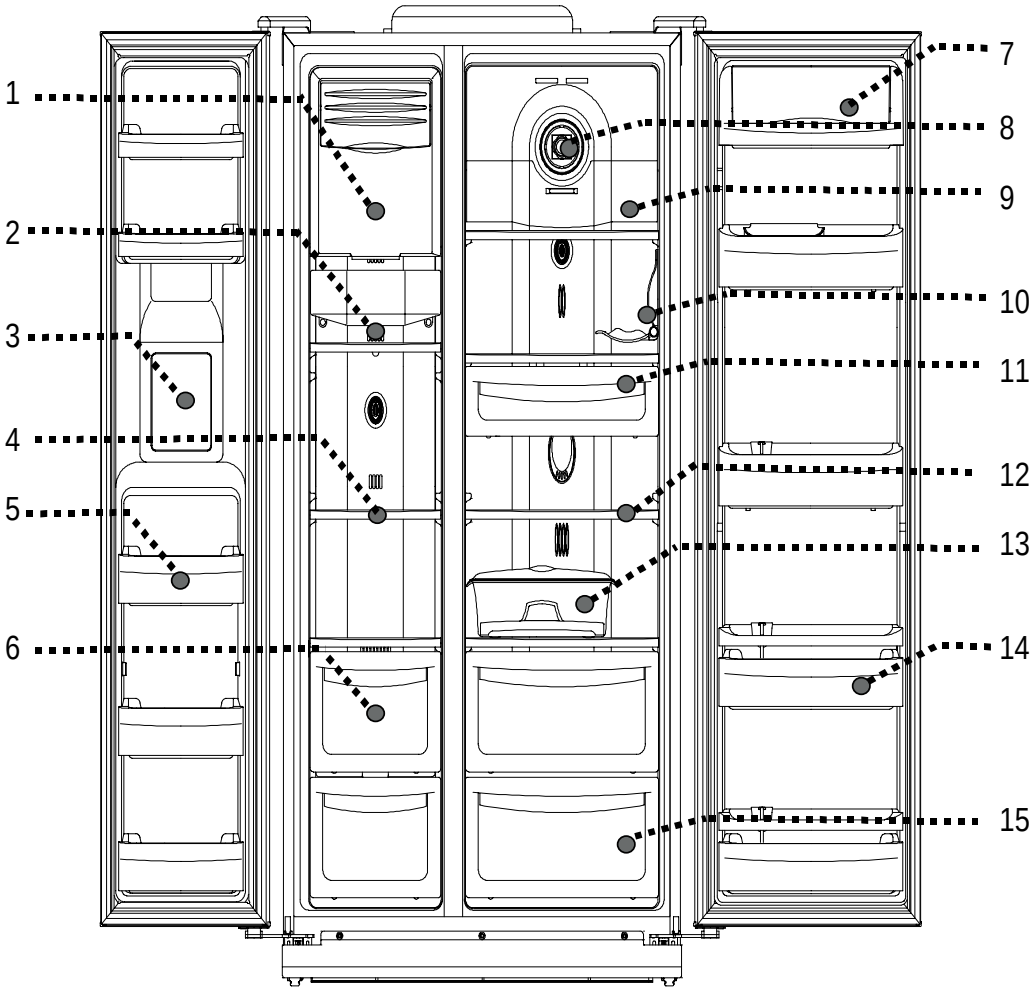
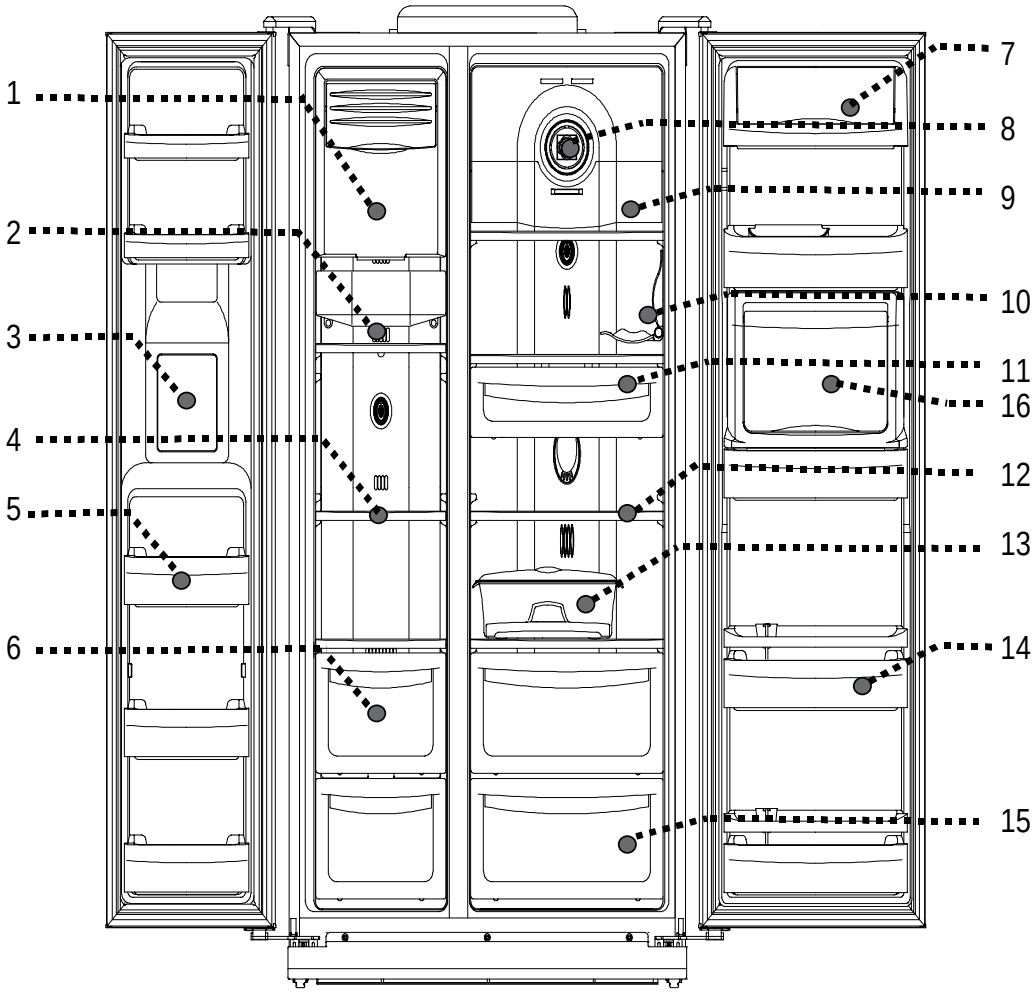
66
50
30
1,707
47.5
8

■ FRS-2031



Freezer	Refrigerator Compartment
1. Ice cubes storage case	7. Dairy pocket
2. Freezer light	8. Deordorizer
3. Water/Ice Dispenser	9. Refrigerator light(A)
4. Freezer shelve	10. Wine holder
5. Freezer pocket	11. Chilled case
6. Freezer case	12. Refrigerator shelve
	13. Movable Egg case
	14. Refrigerator pocket
	15. Refrigerator case

■ FRS-2011



Freezer	Refrigerator Compartment
1. Ice cubes storage case	7. Dairy pocket
2. Freezer light	8. Deordorizer
3. Water/Ice Dispenser	9. Refrigerator light(A)
4. Freezer shelve	10. Wine holder
5. Freezer pocket	11. Chilled case
6. Freezer case	12. Refrigerator shelve
	13. Movable Egg case
	14. Refrigerator pocket
	15. Refrigerator case
	16. Refreshment room(Pocket)

2. SPECIFICATIONS

2-1. OUTLINE

DIVISION		CONTENTS	
MODEL NAME		FRS-2031	FRS-2011(Homebar)
USABLE CAPACITY (L)	FREEZER	190	
	REFRIGERATOR	365	
	TOTAL	555	
EXTERNAL DIMENSION (mm)	WIDTH	925	
	DEPTH	816	
	HEIGHT	1808	
REFRIGENT	R134a	190	
COOLING & CONTROL SYSTEM	COOLING SYSTEM	Fan Cooling System	
	DEFROST SYSTEM	Fin Evaporator Forced	
	DEFORST CONTROL	Automatic Start & Stop	
NET WEIGHT (kg)		119	121

2-2 ELECTRIC PARTS

1) COMPRESSOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220 ~240/50	230 /50 (EUROP)
COMP MODEL	X	HBL27YG-3	X	HCL27YG-2	HPL27YG-4A	HPL30YG-5	MK183Q-L2U
PART CODE	X	3952127R30	X	3957127R20	3956127R40	395S130R50	3956183D50
STARTING TYPE	X	CSR	X	CSIR	RSCR	RSCR	RSCR

2) RELAY

REFRIGERANT		R134a						
VOLTAGE (V/HZ)		100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220~240 / 50	230 / 50
ASSY	TYPE NAME	X	783SHB	X	801SFB	419RHB	308NHB	265RHB
	PART CODE	X	3018119370	X	3018118180	3018118131	3018119980	3018125210
PTC	RESISTANCE	X	6.8 Ω	X	6.8 Ω	33 Ω	33 Ω	33 Ω
OVER LOAD	PART CODE	X	783SHB	X	801SFB	419RHB	308NHB	265RHB

3) STARTING CAPACITOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220~240 / 50	230 / 50
PART CODE	X	3016400100	X	3016400100	X	X	X
RATED VOLTAGE	X	200V	X	200V	X	X	X
RATED CAPACITANCE	X	100 ㎌	X	100 ㎌	X	X	X

4) RUNNING CAPACITOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220~240 / 50	230 / 50
PART CODE	X	400EL15130	X	X	3016401170	3016401920	3016401170
RATED VOLTAGE	X	230V	X	X	350V	400V	350V
RATED CAPACITANCE	X	10 §	X	X	5 §	5 §	5§

5) F-FAN MOTOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	BL-2213DWFA-1						
PART CODE	3015911300						
REVOLUTION	DC 12V 2200RPM						

6) R-FAN MOTOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	BL-2213DWRA-1						
PART CODE	3015911400						
REVOLUTION	DC 12V 2200RPM						

7) C- FAN MOTOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	BL-2213DWCA-2						
PART CODE	3015911500						
REVOLUTION	DC 12V 2200RPM						

8) DEFROST HEATER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC (W)	X	140W	←	←	←	←	←
PART CODE	X	3012811200	←	←	←	←	←

9) DRAIN HEATER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC (W)	X	110V 10W	←	←	220V 10W	←	←
PART CODE	X	3012811110	←	←	3012811100	←	←

10) LAMP ASSEMBLY

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC (W)	X	120V 15W	←	←	240V 15W	←	←
PART CODE	X	3013600070	←	←	3013600060	←	←
SPEC (W)	X	120V 25W	←	←	230~240V 25W	←	←
PART CODE	X	3013602020	←	←	3013602010	←	←

11) MAIN PCB ASSEMBLY

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	X	SBS PREMIUM	←	←	←	←	←
PART CODE	X	30143C4010	←	←	←	←	30143C4020

12) FUSE (PCB)

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
RATED CURRENT	X	250V/3.15A	←	←	←	←	←
PART CODE	X	5F3GB3282R	←	←	←	←	←

13) THERMOSTAT FUSE

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
OPERATING TEMPERATURE	x	77 ℃	←	←	←	←	←
PART CODE	x	30127201400	←	←	←	←	←

14) MOTOR GEARED AS

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	120V/60Hz	←	←	220V/60Hz	230V/50Hz	←
PART CODE	x	3015914000	←	←	3015912800	3015913900	←

15) VALVE SOLENOID DISPENSER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	110~115V/60Hz	←	←	220V/60Hz	230V/50Hz	←
PART CODE	x	3015403200	←	←	3015402100	3015403000	←

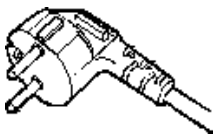
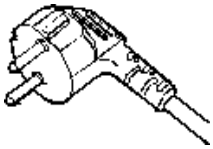
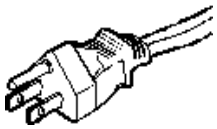
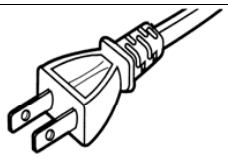
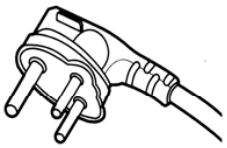
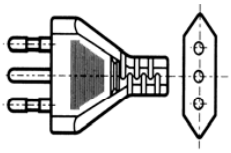
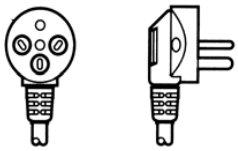
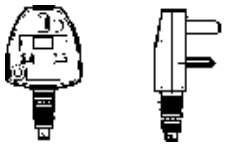
16) VALVE SOLENOID CRUSHER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	110~127V 60Hz	←	←	220~240V 50,60Hz	←	←
PART CODE	x	3015402900	←	←	3015402000	←	←

17) VALVE WATER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	110~127V 60Hz	←	←	220~240V 50,60Hz	←	←
PART CODE	x	3015402800	←	←	3015402200	←	←

2- 3. POWER CORD

NO	SHAPE OF POWER CORD	PART CODE	DESCRIPTION	REMARK
1		3011315000	CP-2PIN	For european country
2		401RA17200	CP-2PIN	For other country
3		4006D17101	KP-30	For America & El Salvador
4		401PD17101	KP-211	For Japan & Taiwan
5		3011300801	BP-3PIN	
6		3011303010	# 267	For Chile
7		3011315310		For Israel
8		3011303050	BS-1363A	For U.K, Middle Asia Singapore & Malaysia
9		3011301200	KP-551/550	For China & Australia

Upper power cord's part code is only lead wire, without any kinds of terminal or houisng

2-4 DOOR COLOR CODE

1) ASSEMBLY URETHAN FREEZER DOOR

FRS-2011 / FRS-2031 (100V ~ 127V)

Blowing Agent	Cyclo Pentane				
COLOR TYPE	Bright White PCM	White Emboss	Beige Emboss	Inox Looking Ellio 1	Inox Looking Ellio 2
COLOR CODE	RWB3C	GWG1B	FBG3B	DSG1E	ISG3E
PART CODE	3000028060	3000028070	3000028050	3000028080	3000028040

FRS-2011 / FRS-2031 (220V/60Hz)

Blowing Agent	Cyclo Pentane				
COLOR TYPE	Bright White PCM	White Emboss	Beige Emboss	Inox Looking Ellio 1	Inox Looking Ellio 2
COLOR CODE	RWB3C	GWG1B	FBG3B	DSG1E	ISG3E
PART CODE	3000028460	3000028410	3000028010	3000028420	3000028000

FRS-2011 / FRS-2031 (220V~240V/50Hz)

Blowing Agent	Cyclo Pentane				
COLOR TYPE	Bright White PCM	White Emboss	Beige Emboss	Inox Looking Ellio 1	Inox Looking Ellio 2
COLOR CODE	RWB3C	GWG1B	FBG3B	DSG1E	ISG3E
PART CODE	3000028430	3000028440	3000028030	3000028450	3000028020

2) ASSEMBLY URETHAN REFRIGERATOR DOOR

FRS-2031

Blowing Agent	Cyclo Pentane				
COLOR TYPE	Bright White PCM	White Emboss	Beige Emboss	Inox Looking Ellio 1	Inox Looking Ellio 2
COLOR CODE	RWB3C	GWG1B	FBG3B	DSG1E	ISG3E
PART CODE	3000018830	3000018820	3000018810	3000018840	3000018800

FRS-2011 (100V ~ 127V)

Blowing Agent	Cyclo Pentane				
COLOR TYPE	Bright White PCM	White Emboss	Beige Emboss	Inox Looking Ellio 1	Inox Looking Ellio 2
COLOR CODE	RWB3C	GWG1B	FBG3B	DSG1E	ISG3E
PART CODE	3000025380	3000025370	3000025360	3000025390	3000025350

FRS-2011 (200V~240V)

Blowing Agent	Cyclo Pentane				
COLOR TYPE	Bright White PCM	White Emboss	Beige Emboss	Inox Looking Ellio 1	Inox Looking Ellio 2
COLOR CODE	RWB3C	GWG1B	FBG3B	DSG1E	ISG3E
PART CODE	3000025330	3000025320	3000025310	3000025340	3000025300

OPERATION AND FUCTIONS

1. DISPLAY

INPUT	Control Object
Front PCB buttons FREEZER SET. button REFRIGERATOR SET. button SUPER FREEZER. button SUPER REFRIGERATOR. button WATER / ICE button LOCK Button / SLEEP button	LCD

CONTENTS	REMARKS
1. Normal Operation 1) Temperature control of Freezer / Refrigerator (Initial mode : Freezer & Refrigerator Middle) 2) Lock mode / Sleep mode / Ice maker Lock : OFF 3) SPEED icon : inactive 4) FUZZY & DEODORIZER letters and icons : always ON 5) Water / Cube Ice / Crushed Ice (Initial mode : Water) 6) Other display modes	

CUSTOM LCD	Normal Operation	Silent Mode			Sleep Mode
	Normal Mode	Load Mode		Silence Mode	
Freezer / Refrigerator BAR	DIAL	DIAL	DIAL	DIAL	DIAL
Temp. SEG.	DIAL	DIAL	DIAL	DIAL	DIAL
1) Letters of [FRZ., REF., LOW, HIGH, SETTEMP ,FUZZY, DEODO., SILENT, SLEEP, Water] 2) Icons of [FUZZY, DEODO., SLEEP, Water] 3) Temp. bars and lines	ON	ON	ON	ON	ON
SILENT icon	OFF	OFF	ON	ON	OFF
SPEED letters	OFF	ON	ON	OFF	OFF
SPEED bars	OFF	ON (progressive)	ON (progressive)	OFF	OFF
LOCK ON/OFF, SLEEP ON/OFF	DIAL	DIAL	DIAL	DIAL	DIAL
Water / Cube Ice / Crushed Ice	DIAL	DIAL	DIAL	DIAL	DIAL

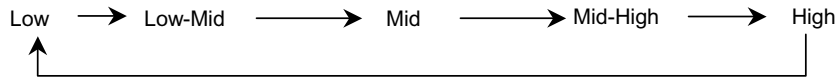
CONTENTS	REMARK
2. "FREEZER SET." button ① Temperature control of Freezer compartment ② 5 steps of sequential temperature mode Initial mode by power input : "MID" (Temperature and bars are shown.) * Letters are not indicated at Soft-Mid and Mid-Strong modes. (Just Setting temperatures and bars are shown.) Temperature progress : Low → (Low-Mid) → Mid → (Mid-High) → HIgh Temp. indication : -15°C -17°C -19°C -21°C -25°C Number of bars : 5EA 3EA 5EA 3EA 5EA 3. "SUPER FREEZER." button When this mode is chosen, "QUICK" icon and letters of freezer flicker 3 times and ON. (The set temperature and bars are still the previous value.) 4. "REFREGERATOR SET." button ① Temperature control of Refrigerator compartment ② 5 steps of sequential temperature mode Initial mode by power input : "MID" (Temperature and bars are shown.) Letters are not indicated at Soft-Mid and Mid-Strong modes. (Just temperatures and bars are shown.) Temperature progress : Low → (Low-Mid) → Mid (Mid-High) → HIgh Temp. indication : 4°C 3°C 2°C 1°C 0°C Number of bars : 5EA 3EA 5EA 3EA 5EA 5. "SUPER REFRIGERATOR." button When this mode is chosen, "QUICK" icon and letters of refrigerator flicker 3 times and ON. (The set temperature and bars are still the previous value.) 6. "SLEEP" button ① Start by pushing the button ("ON" lights.) ② Stop by pushing button again ("OFF" lights.) ③ Automaticcally terminated after maximum 12 hours ("OFF" lights.) 7. Water/Ice button ① Select Water mode or Ice mode. ② A rectangle Line around the icon lights up to indicate your selection is on. Initial mode by power input: "Water"mode. Progress: Water → Cube Ice → Crushed Ice → Water 8. "LOCK" button ① Start by pushing the button ("LOCK" letters and icon light.) * No other buttons and modes, buzzer sound are controllable. ② Stop by pushing button again for a second ("OFF" and icon light.) * Except "Lock"button, other buttons are inactive during "Sleep"mode.	

CONTENTS	REMARK
9. "Lock Ice Maker" button ①Start by pushing "Lock Ice Maker"button ► "Lock Icer Maker"is "ON", ► The Icon & Box of "Cube Ice"/"Crushed Ice"disappear ► "Water"Icon & Box is always "ON" ②Stop by pushing "Lock Ice Maker"button again. ► "Lock Icer Maker" Icon is "OFF", ► The Icon & Box of "Cube Ice"/"Crushed Ice"is "OFF", ► "Water"Icon & Box is "ON". 10. Filter information ① The normal(Green LED) is on for 6 month after first power input. ② After six month, Red LED is on. ③ How to reset Filter information. ► Push"LOCK" button and push the "Lock Ice Maker" button for 3 seconds.	

INPUT	Control Object
1. FREEZER SET. button 2. SUPER FREEZER. button 3. F-sensor	1. COMP 2. F-FAN

CONTENTS	REMARKS

1. Temperature modes change by pushing the button.

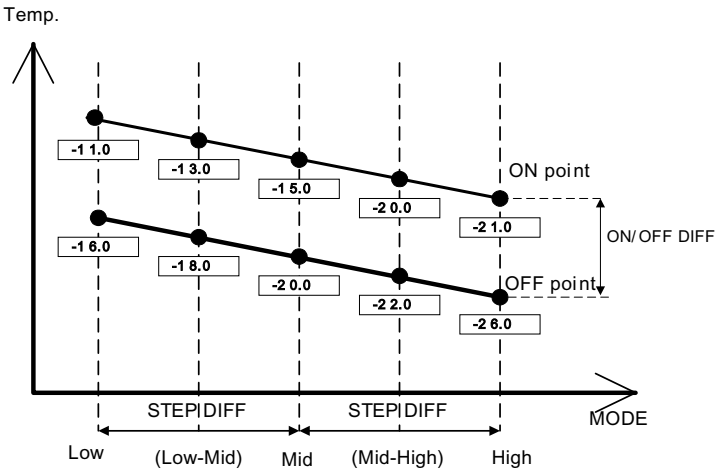


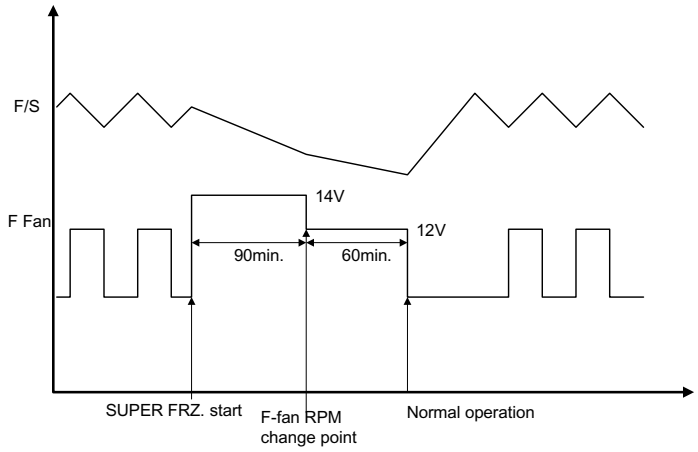
2. Comp. and F-fan are controlled by ON / OFF point of each mode.

3. FC [ON / OFF] DIFF : 2℃
(Freezer middle OFF point : -20.0℃)
(If RT† 13℃, F-S OFF point is 2℃ UP. Freezer Middle OFF point : -18℃)

4. FC [Low → (Low-Mid) → Mid →(Mid-High)] DIFF : 2 degrees respectively
*([(Mid-HIgh) →High] DIFF : 4 degrees)

5. Control point of each mode



CONTENTS	REMARKS
6. SUPER FREEZER. (Quick Freezing) 1) Comp. and F-fan are ON (about 150 minutes) regardless of F-sensor. 2) F-fan runs at 14V for the first 90 min., then at 12V for the rest time.  	* ON/OFF DIFF. : fixed by MICOM * STEP DIFF. : fixed by MICOM * Comp. and C-fan : linked

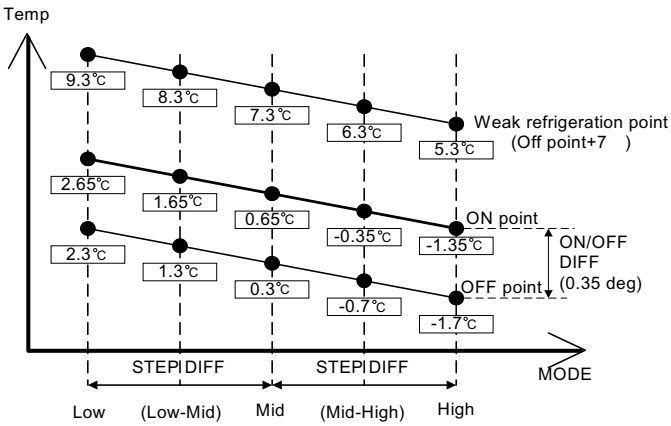
Temperature Control of Refrigerator Compartment (RC)

INPUT	Control Object
1. REFRIGERATOR SET. button 2. R-sensor	1. COMP 2. R-FAN

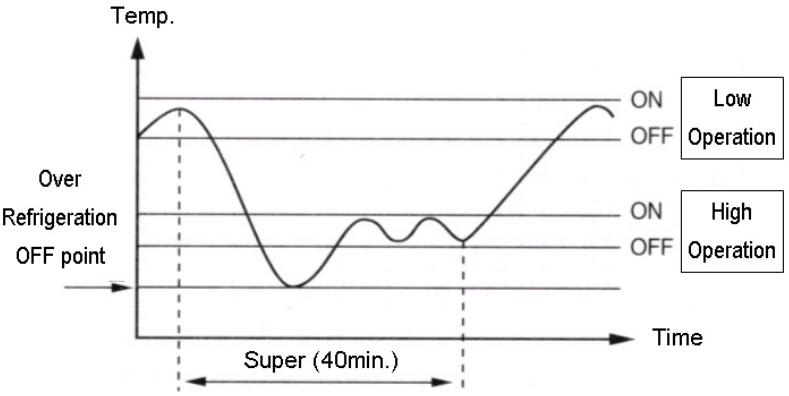
CONTENTS	REMARKS
1. Temperature modes change by pushing the button. Low → Low-Mid → Mid → Mid-High → High 2. R-fan are controlled by ON / OFF point of each mode. 3. RC [ON / OFF] DIFF : 0.5℃ (RC middle OFF point : 0.7℃) (If RT≤ 13℃, R-S OFF point is 2℃ UP. Refrigerator Middle OFF point : 2.7℃) 4. RC [Low→(Low-Mid)→ Mid →(Mid-High)] DIFF : 1 degree respectively 5. Prevention of weak/poor-refrigeration 1) When weak refrigeration is sensed, comp. is ON regardless of F-sensor. 2) When R-sensor reaches R-fan OFF point, comp. is controlled by F-sensor and R-fan turns OFF. 3) Sensing point of weak refrigeration : R-sensor OFF point of each mode + 7℃ 4) Termination point : Same as R-sensor OFF point of each mode	* ON/OFF Diff. : fixed by MICOM * STEP DIFF. : fixed by MICOM

CONTENTS	REMARKS

6. Control point of each mode



7. Super refrigeration proceeds for 40 minutes.
   * Example of temperature change
   (Refrigerator ; Low (normal) -> Super refrigeration)



1) R-fan and comp. are ON until R-sensor reaches to over-refrigeration OFF point (-7℃).
2) After reaching to the point, it goes on with HIGH mode until the end of Super refrigeration.
   It returns to normal after Quick refrigeration of 40 minutes.

INPUT	Control Object
1. SLEEP button	1. COMP 2. R-FAN 3. F-FAN 4. CUSTOM-LCD

CONTENTS	REMARKS
1. This mode starts with a push of SLEEP button. 2. Conditions to start Sleep mode ① F-sensor ≤ -13℃ ② Unless it is a restart within 40 minutes after the end of previous Sleep mode ③ F-sensor error ④ Door switch error ⑤ Defrosting (Heater defrosting, pause, Fan delay) ⑥ If the above conditions of ① ~ ⑤ are all satisfied, the sleep mode starts. 3. Control of electrical parts 1) Mode 1 Once Sleep mode starts, all the electrical parts (COMP, F-FAN, R-FAN) turn OFF. ("ON" letters of SLEEP on LCD is display.) 2) Mode 2 It operates with Silent mode and ON letters of SLEEP on LCD is displayed on.) 4. Termination of Sleep mode 1) MODE 1 ① F-sensor ≥ -9℃ ② In case of F-sensor error ③ When other button is pushed during this mode ④ Total F/R door open time exceeds 30 seconds during the mode ⑤ If Sleep mode is terminated by ① , ② and ⑥ , F/R-fan delay for 5 minutes and restart of this mode is prevented for 40minutes. ⑥ It it exceeds time limit of 130 minute, Mode1 is terminated and Mode2 starts. 2) MODE 2 Sleep mode is terminated 12 hours after the first start. (Speed mode and defrosting operate in normal way.) 5. After Sleep mode stops all the electrical parts return to normal operation and Sleep icon changes from "ON" to "OFF". 6. If Sleep mode starts during PRECOOL, it goes on again after the Sleep mode is terminated. 7. If Sleep mode starts during Super FRZ., Super REF., it returns to previous set modeafter the Sleep mode is terminated.	

SILENT (Silence Mode)

INPUT	Control Object
1. CDS SENSOR	5. COMP 6. R-FAN 7. F-FAN 8. CUSTOM-LCD

CONTENTS | **REMARKS**

1. Purpose of Silence mode
   To reduce refrigerator noise at night by decresing fan RPM to a minimum degree

2. Condition to start
   1) The optical or light sensor in top middle of control panel senses surround light and Silence mode starts if the amount of light sensed is below the standard value for more than 1 minute.
      (The mode does not start for initial 240 minutes to prevent down of cooling performance.)
      ① Standard value to decide "night" : below 5~7 Lux (optical sensor surface)
      ② Standard value to decide "daytime" : above 4~16 Lux (optical sensor surface)

3. Control Method

Control Mode		F-FAN	R-FAN	C-FAN
Silence	Normal	10V	10V	10V
	Load Control	12V	12V	10V

4. Termination Condition
   The mode stops if lux value is above the standard for more than 1 minute.

Control of Each Mode

INPUT	Control Object
1. CDS SENSOR 2. R SENSOR 3. F SENSOR	1. F-FAN (14V, 12V, 10V)

CONTENTS | **REMARKS**

Control of Silence mode : operation mode when the optical sensor feels that it is night
Normal control : daytime operation mode (Refrigerator noise is relatively low at daytime.)
Load control : operation mode when inside temperature goes up due to an increase of load (foods) or frequent door openings

CONTENTS	REMARKS

1. Fan voltage of each control mode

Control Mode		F-FAN	R-FAN	C-FAN
Normal		12V	12V	10V
Load Control	Normal	14V	14V	
	Silence	12V	12V	
Silence	Normal	10V	10V	
Sleep Mode2	Normal	10V	10V	
	Load control	12V	12V	

2. Control against (under) load (Load Control)

1) Purpose : To restore F/R-temperature which has risen by load (much foods in or frequent door openings) as soon as possible

2) Display : "SPEED" lights until the mode and speed icons flicker.

3) Conditions to start (from both Normal and Silence)

① F or R door open time exceeds 30 seconds at a time Freezer and Refrigerator load control starts respectively.

② Over [F-sensor On Point + 5 degree] →F load control

③ Over [R-sensor On Point + 5 degree] →R load control

4) Conditions to avoid load control

① Initial operation (right after pow

② Just after Pre-cool, Heater defrosting, Pause, Defrosting cycle

(After door opening, the load control enters if the condition complies with.)

(During Sleep Mode1, load control isn t active.)

5) Control Method

5-1) Control mode by F/R-door open time (over 30 seconds)
F/R-fan works by 14V respectively.

5-2) Control mode by [F-sensor On Point + 5 degree]
F-fan works by 14V.

5-3) Control mode by [R-sensor On Point + 5 degree]
R-fan works by 14V.
C-fan works by 10V as normal.

6) Conditions to stop

① The mode works for 20 minutes.
(If another condition happens at the end of the mode, it starts again.)

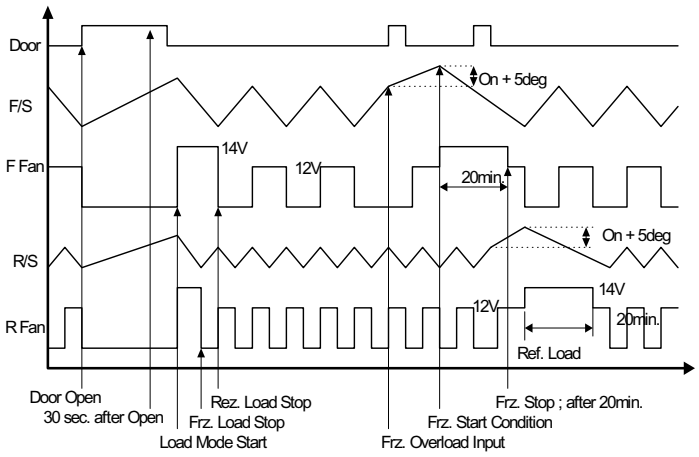
② When it reaches to [F-sensor Off point], F-fan load control mode stops.

③ When it reaches to [R-sensor Off point], R-fan load control mode stops.

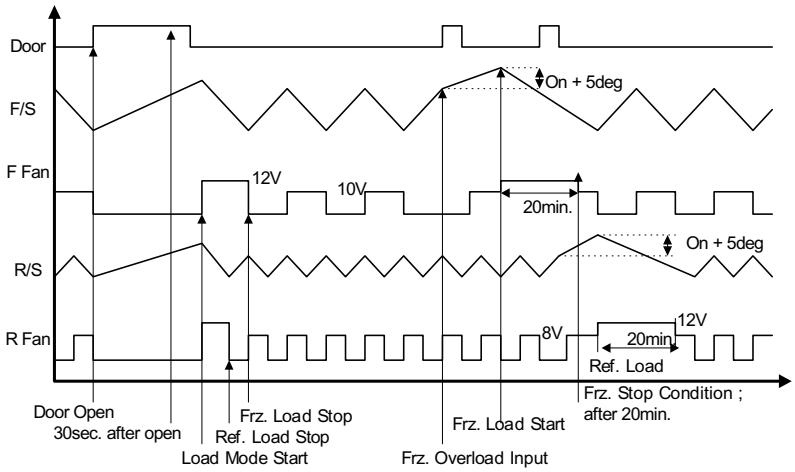
CONTENTS	REMARKS

3. Control Time Chart of Each Mode

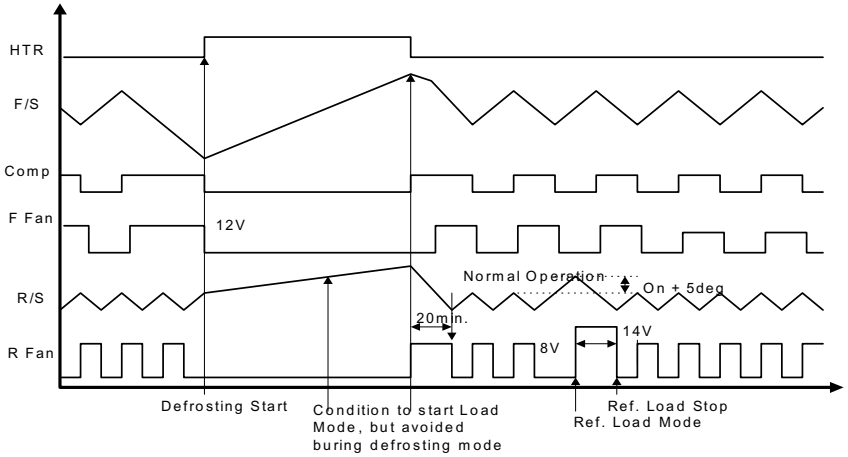
1) Start & stop of load control mode (Normal Control)



2) Start & stop of load control mode (Silence Control)

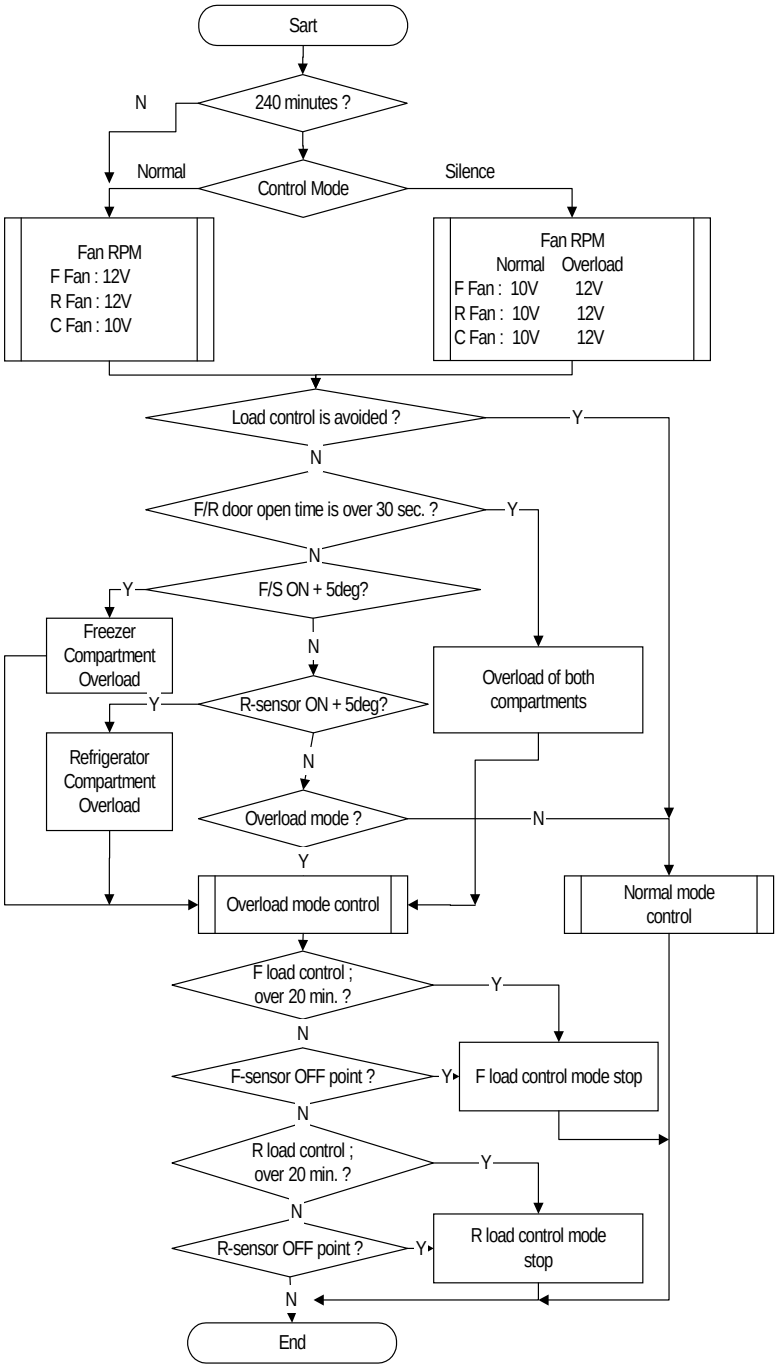


3) Start & stop of load control mode (Normal defrosting control)



CONTENTS	REMARKS

4. Flow Chart of Load Control Mode



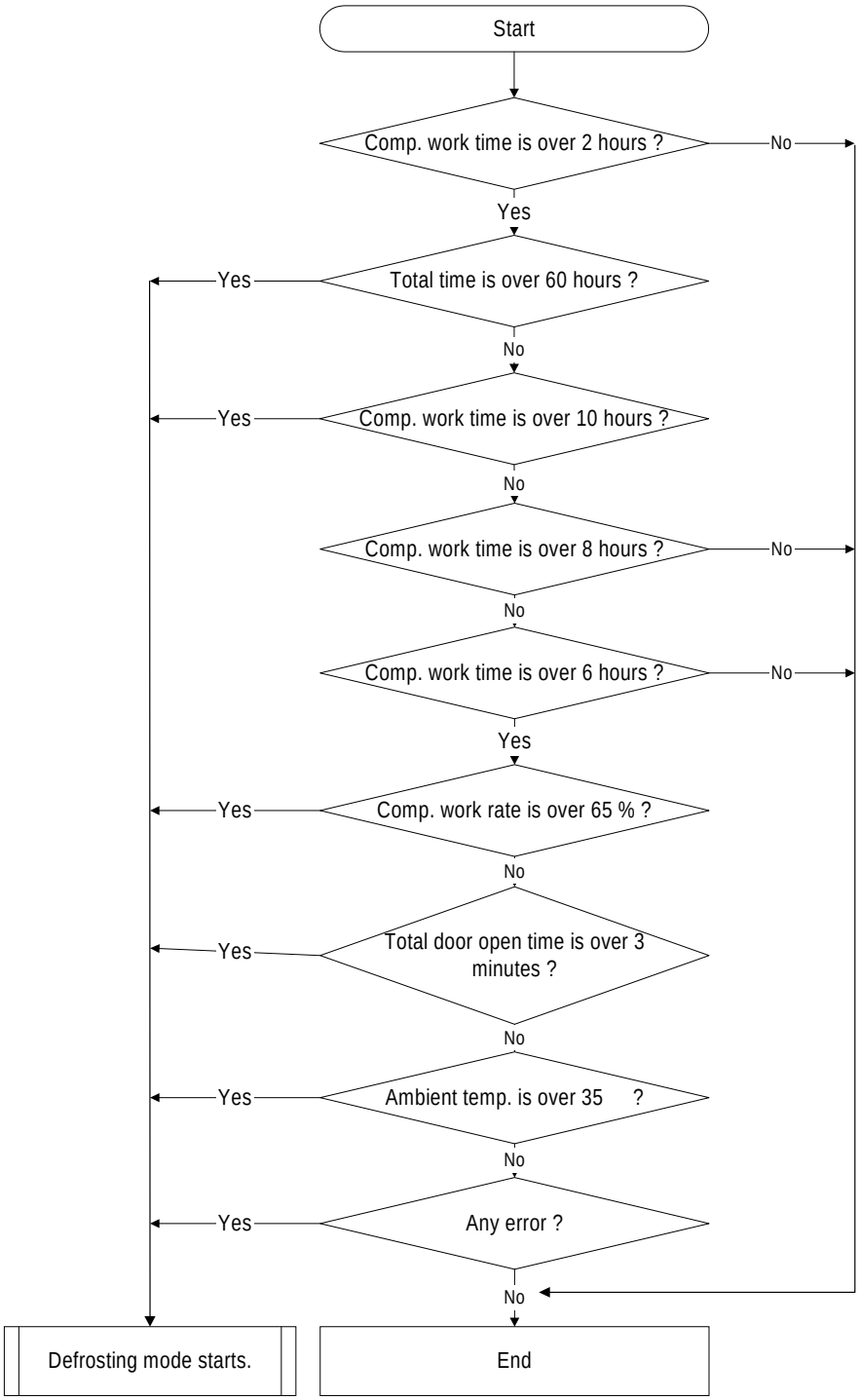
Defrosting Cycle

INPUT	Control Object
1. Total comp. work time 2. Comp. work rate 3. RT temperature 4. Total door open time	1. Defrosting Mode

CONTENTS	REMARKS
1. Conditions to start defrosting cycle 1) Total comp. work time : 6, 8, 10 hours 2) Comp. work rate (by the 2 hours) : over 65% 3) Total door open time : 3 minutes (Any door - F or R - open time is over 3 minutes.) 4) Total time of [comp. ON + comp. OFF] : 60 hours 5) Ambient temperature over 35℃ 6) Any error mode : R1, F1, D1, F3, RT/S, Door-switch 2. Conditions to start defrosting mode 1) The mode starts in the following conditions ; ① Any error happens when total comp. work time is 6 or 8 or 10 hours. ② Comp. work rate by the 2 hours is over 65%. ③ Total door open time is over 3 minutes. (Any door - F or R - open time is over 3 minutes.) Ambient temperature is over 35℃. 2) Defrosting mode starts unconditionally as long as total comp. work time is 10 hours, even if the above conditions(①~④) are not satisfied. 3) Defrosting mode starts immediately as long as total time of [comp. ON + comp. OFF] is over 60 hours, even if the above 1) and 2) conditions are not satisfied.	

CONTENTS	REMARKS

3. Flow Chart of Defrosting Start

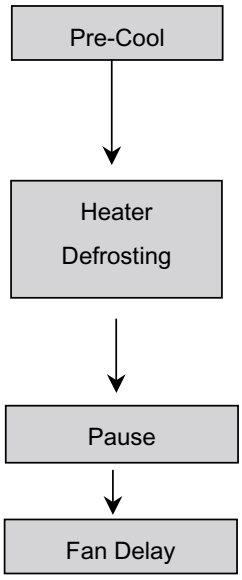


Defrosting Mode

INPUT	Control Object
1. Defrosting Cycle	1. COMP 2. F-FAN 3. R-FAN 4. HEATER

CONTENTS

1. Defrosting Mode



1) Time ; 50 minutes
2) Comp. / F-fan : ON
R-fan : Control
Heater : OFF
3) If F-sensor≤ - 27℃, PRE-COOL becomes OFF.

1) If D-sensor ≥ 10℃, Heater becomes OFF.
2) In case of Heater return by time limit of 40 or 80 min (F3-Error)
3) Heater is ON for 30 minutes (time limit) in case of D-sensor error.
4) Time limit
① 30 seconds : Heater is ON regardless of D-sensor temperature right after defrosting start.
② 30 minutes : in case of D1-Error
③ 80 minutes : in normal control state

1) Time : 7 minutes
Comp., F-fan, R-fan, Heater : OFF

1) Time : 5 minutes
Comp. : ON
F/R-fan, Heater : OFF

Output control and time limit of each defrosting mode

	PRE-COOL	Heater Defrosting	Pause	Fan Delay
COMP	ON	OFF	OFF	ON
F-FAN	ON	OFF	OFF	OFF
R-FAN	Co ntrol	OFF	OFF	OFF
HEATER	OFF	ON	OFF	OFF
Time Limit	50 min.	①80 min. ②30 min. (in case of D1-Error)	7 min.	5 min.

REMARKS

C-fan and comp. are linked.

Error Display (LCD Display of F-PCB)

INPUT	Control Object
1. Temperature Control Buttons	CUSTOM LCD

CONTENTS | **REMARKS**

1. How to start
   1) Set "LOCK ON" first.
   2) Push "Refrigerator Set" button 5 times while pushing "Freezer Set" button.

2. Display
   Error code is displayed on Freezer temperature display part.

3. How to stop
   1) Push "LOCK" button 3 times while pushing "REF SET." button.
   2) It stops automatically 4 minutes after the start.

4. All the error Ccdes are reset if they turn to be normal.

5. Error Code

ERROR CODE	CONTENTS
F1	F-sensor ; disconnection, short(pull-down)
r1	R-sensor ; disconnection, short(pull-down)
rt	RT-sensor ; disconnection, short(pull-down)
d1	D-sensor ; disconnection, short(pull-down)
dr	R-Door Switch ; defective
dF	F-Door Switch ; defective
dH	Homebar (Refreshment Center) Door Switch ; defective
C1	Cycle ; abnormal or defective.
F3	Return after defrosting ; abnormal or defective
d2	Forced defrosting mode for A/S

E1	I sensor; disconnection, short
EF	FLOW sensor; disconnection, short
Et	Level sensor sw error
E9	Water supply Error
EA	Continuously Ice drop 3times at Et.
Eu	Fully Ice sensor sw error

CONTENTS	REMARKS

6. Control Way of Errors (if any)

1) "F1" ERROR
Cause : F-sensor disconnection / short (pull-down)
Control : Comp. / F-fan ON for 25min., OFF for 25min.
if F-sensor is normal, the error is terminated automatically.

2) "r1" ERROR
Cause : R-sensor disconnection / short (pull-down)
Control : Condition of ambient temperature

RT/S	In ERROR	~13℃	14℃ ~19℃	20℃ ~29℃	29℃ ~
Work rate ON/OFF	8 / 12	7 / 13	8 / 12	8 / 12	9 / 11

If R-sensor is normal, the error is terminated automatically.

3) "rt" ERROR
① Cause : RT-sensor disconnection / short (pull-down)
② Control : Normal operation, deletion of control condition by RT-sensor
③ If RT-sensor is normal, the error is terminated automatically.

4) "d1" ERROR
① Cause : D-sensor disconnection / short (pull-down)
② Control : Time limit (30min.) of defrosting-return
③ If D-sensor is normal, the error is terminated automatically.

5) Door ERROR("dF","dR","dH" on display)
① Cause : in case it senses that door is open for more than 1
② Control : Deletion of function related door switch sensing
③ If door switch (open & close) is sensed, the error is terminated automatically.
④ After displaying on LCD the mode is terminated.

6) "C1" ERROR
① Cause : in case comp. works for over 3 hours when D-sensor temp. is over -5℃
② Control : Normal operation
③ When D-sensor temp. is below -5℃ in comp. OFF, it is terminated.

7) "F3" ERROR
① Cause : in case defrosting-return is done by time limit of 80min.
② Control : Deletion of Pre-cool mode in defrosting mode
③ If defrosting-return is done by D-sensor, it is terminated.

8) "d2" MODE (A/S forced defrosting mode)
① Set "LOCK ON" first, then push "REFRIGERATOR SET." button 5 times while pushing "FREEZER SET." button simultaneously.
② Control : A/S forced defrosting control (Pre-cool is deleted.)
③ If D-sensor temp. is over 10℃, the mode is terminated automatically.

CONTENTS	REMARKS

9) "EI" ERROR
- ①Cause : I-SENSOR disconnection / short (pull-down)
- ②Control : After water suppy, Ice drop every 4.8hour.
- ③Termination : When I-SENSOR is normal.

10) "Ft" ERROR
- ① Cause : When Level SW is ERROR
- ② Control : Time control (Skip water supply mode)
- ③ Termination : Normal

11) "EF" Error
- ①Cause : When Flow-sensor is ERROR(There is no Pulse during some time.)
  When water supply valve is "ON" Pulse input is below 10 during 1s. ,
- ②Control : Time control(By Vector time recorded EEPROM.)
  (Generally, Water is supplied about 5.5s.)
- ③ Termination : Exchang Flow-Sensor.

12) "Eg" Error
- ①Cause : I-Sensor temp(5M after Water supply) dosen t get high.
- ②Control : Normal control
- ③Termination : Normal

13) Dispenser S/W Error
- Cause : When it senses 1M continuously.
- Control : Stop Dispenser & Crusher function.
- Display : Relative ICON BOX is "OFF".
- Termination : Normal

14) Malfunction of Ice Drop Motor
- ①Cause : Malfunction of Ice Drop Motor.
  [Check the Motor by pushing Test S/W.]
- ②Termination : Exchange Motor

15) "Eu" Error
- ① Cause : Fully TM position is Error
- ② Control : When dropping the Ice, the motor just rotates 90 degree.
- ③ Termination : Fully sensor is normal.

16) "EA" Error
- ①Cause : When sensing Ice dropping 3 times with level sensor SW Error.
- ②Control : Pause Ice Maker.
- ③Termination : With level sensor SW is normal,
  Reset the Power or Push TEST S/W.

* When all ERROR CODE is normal, the Refrigerator reset.

Forced Defrosting

INPUT	Control Object
1. "FREEZER SET." Button 2. "REFRIGERATOR SET." button 3. "LOCK" button	Defrosting Mode

CONTENTS	REMARKS
1. How to start Set "LOCK ON" first, then push "REFRIGERAOTR SET." button 5 times while pushing "FREEZER SET." button simultaneously. 2. How to proceed 1) Delete Pre-cool mode. (Others are same as normal defrosting.) 2) Heater is ON regardless of D-sensor temp. at first 30 seconds. (Check of defrosting current)	

6-11. Initial Defrosting

INPUT	Control Object
D-sensor Initial or first power input (power plugin)	Defrosting Mode

CONTENTS	REMARKS
If D-sensor temp. ≤ 3.5℃ , defrosting mode starts from Pre-cool at first power input.	Comp. is delayed for 6 min. at the initial defrosting.

6-12. Buzzer or Alarm

INPUT	Control Object
F-PCB buttons Door Switch Initial Power Input	BUZZER

CONTENTS	REMARKS
1. Buzzer sounds if any button of F-PCB is pushed. 2. Buzzer sounds 3 times 3 minutes after initial power input. 3. Buzzer sounds for 1 second in case of A/S forced defrosting, short (pull-down) operation, explanation mode. 4. If door is open, buzzer sounds continually 3 times for 5 seconds. (Door open alarm)	

LCD Background Light

INPUT	Control Object
F-PCB buttons Door Switch Initial Power Input	LCD BACK LIGHT

CONTENTS	REMARKS
1. Conditions to turn on LCD Light 1) Power input (plugin) 2) When any button on the panel is pushed, first the back light turns on, then button control is done. 3) When F/R door is open, the light turns on. 2. Conditions to turn off the light 1) The back light turns off 10 seconds after F/R door is closed 2) 1 minute after button control	

Explanation After Delivery

INPUT	Control Object
"FREEZER SET." button "REFRIGERATOR SET." button Power Cord	Electrical components and LCD

CONTENTS	REMARKS
1. Start Push "REFRIGERATOR SET." button for 3 seconds within 10 seconds just after power input. 2. Control 1) Electrical components are OFF for 3 hours. 2) Display operates in normal way.	

Prevention of Compressor Restart

INPUT	Control Object
None Comp.	

CONTENTS	REMARKS
Comp. does not start again for 6 minutes though F-sensor is ON.	6min. delay

Back Up Function

INPUT	Control Object
None	

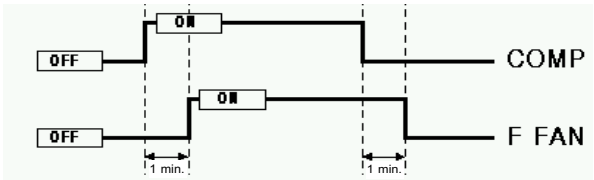
CONTENTS	REMARKS
1. Filter Exchange Information : Record as a realtime from the point of Power Input. 2.P FACTOR (Information about Ice Maker) 3.Ice Maker Lock	

Delay Function of Electric Components

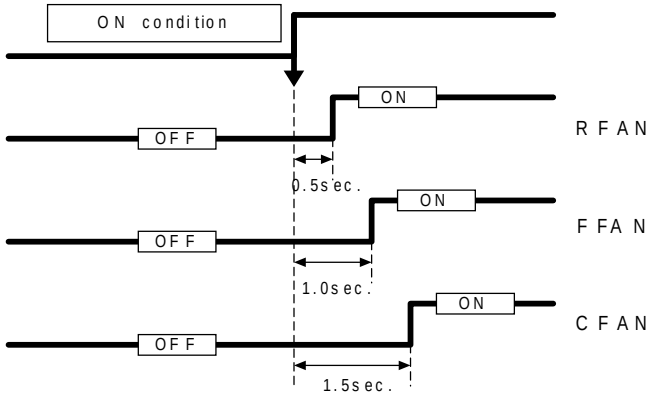
INPUT	Control Object
COMP ON/OFF	COMP F-FAN

CONTENTS

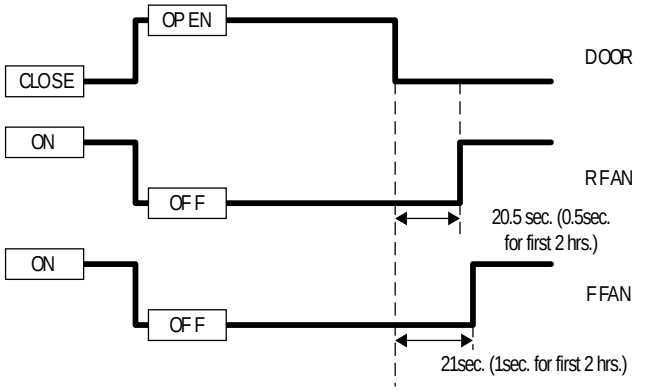
1) F-fan delay by comp. ON/OFF
F-fan is ON/OFF 1 minute after comp. is ON/OFF.



2) F an Delay and Priority



3) F /R-fan delay by door open/close for easy door opening.
Inspection : checkup door opening 2 hours after initial start.
First R is ON, 1 second later F is ON to protect DC fan against over current at initial start.



REMARKS

Home Bar (Refreshment Center) Heater

INPUT	Control Object
None COMP	
CONTENTS	**REMARKS**
It is linked with comp.	

Control of Interior Lights

INPUT	Control Object
Refrigerator Door Freezer Door Home-Bar Door (Refreshment Center)	COMP
CONTENTS	**REMARKS**
1) Control of Refrigerator Compartment Lights R lights turn ON/OFF by R-door switch (ON/OFF). 10 minutes after sensing door open, the lights turn off automatically though door close is not sensed. 2) Control of Freezer Compartment Lights F lights turn ON/OFF by F-door switch (ON/OFF). 10 minutes after sensing door open, the lights turn off automatically though door close is not sensed. 3) R-lights ON/OFF by Home-Bar door opening R-lights turn ON for 1 minute after sensing HOME-BAR switch open. (If the switch is pushed again within 1 minute, the light turns on another 1 minute.) 4) DISPENSER LAMP CONTROL DISPENSER LAMP turns ON/OFF by DISPENSER SW. Dispenser Lamp turns ON for 5 seconds after sensing switch close.	

Demonstration Function

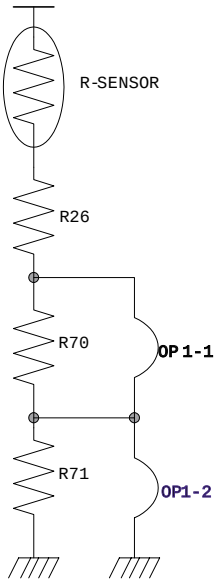
INPUT	Control Object
"LOCK" button "REFRIGERATOR SET." button "SLEEP" button	COMP F-FAN R-FAN
CONTENTS	**REMARKS**
1. Start 1) Set "LOCK ON" first. 2) Push "SLEEP" button 5 times while pushing "REF SET." button simultaneously. 2. Control 1) All other electrical components are OFF except for F-fan / R-fan. 2) Fan Control DOOR OPEN→FAN ON / DOOR CLOSE → FAN OFF 3) Display : Normal mode (3.8sec.)→ SPEED(3sec.)→Silent mode(3sec.)→ Sleep mode (3sec.) 3. Stop or Termination 1) During Demo mode push "SLEEP" button 5 times while pushing "REF SET." button simultaneously. 2) Power in again.	

Regulation of R-sensor OFF Point

INPUT	Control Object
J18, 22 on Main PCB	Resistance of R-sensor Mid OFF Point

CONTENTS	REMARKS

Regulation of R-sensor OFF point (1.5degree DOWN)
In case refrigeration of refrigerator is weak or insufficient, take the following action.



R26 : R-SENSOR standard resistance in normal mode (31.4K)
R70 : In case of weak ref., cut J18 to down the standard resistance by 1.5deg(2K)
R71 : In case of weak ref., cut J22 to down the standard resistance by 1.5deg(2K)

R26 = Mid OFF point
R26 + R70 = Mid OFF point - 1.5 deg
R26 + R70 + R71 = Mid OFF point - 3.0 deg

Summary of Function

CONTENTS	REMARKS

How to start function modes
All the modes are started with "LOCK ON" except for "explanation after delivery & installation".

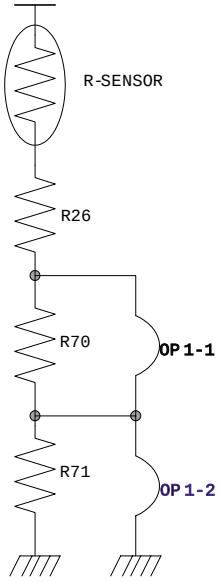
A/S forced defrosting	"FREEZER SET." + "REFRIGERATOR SET." 5 times
Demonstration	"REFRIGERATOR SET." + "SLEEP" 5 times
Explanation after delivery & installation	"REFRIGERATOR SET." for 3 sec. Right after first power in
ERROR display	"REFRIGERATOR SET." + "LOCK" 3 times

Regulation of R-sensor OFF Point

INPUT	Control Object
J18, 22 on Main PCB	Resistance of R-sensor Mid OFF Point

CONTENTS	REMARKS

Regulation of R-sensor OFF point (1.5degree DOWN)
In case refrigeration of refrigerator is weak or insufficient, take the following action.



R26 : R-SENSOR standard resistance in normal mode (31.4K)
R70 : In case of weak ref., cut J18 to down the standard resistance by 1.5deg(2K)
R71 : In case of weak ref., cut J22 to down the standard resistance by 1.5deg(2K)

R26 = Mid OFF point
R26 + R70 = Mid OFF point - 1.5 deg
R26 + R70 + R71 = Mid OFF point - 3.0 deg

Summary of Function

CONTENTS	REMARKS

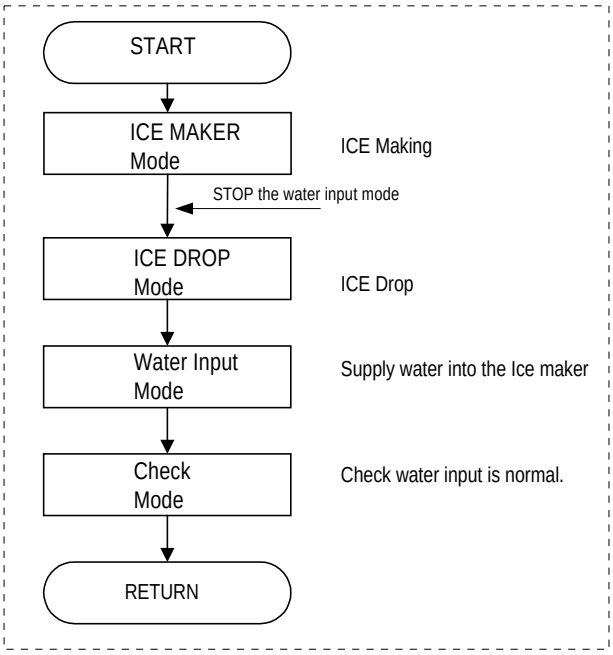
How to start function modes
All the modes are started with "LOCK ON" except for "explanation after delivery & installation".

A/S forced defrosting	"FREEZER SET." + "REFRIGERATOR SET." 5 times
Demonstration	"REFRIGERATOR SET." + "SLEEP" 5 times
Explanation after delivery & installation	"REFRIGERATOR SET." for 3 sec. Right after first power in
ERROR display	"REFRIGERATOR SET." + "LOCK" 3 times

Input	Control Object
Fully Ice Sensor Ice Maker Lock	Ice seperation Motor

CONTENTS	REMARKS

1-1. Ice Maker FLOW



1) By Pushing of Ice Maker ASS'Y TEST S/W (Over 1 Sec.):
TEST Mode Convert
(Ice Drop Mode Start with Test Mode Proceed)

2) Initial Power input => Ice Maker is horizontal => Proceed from Ice maker Mode

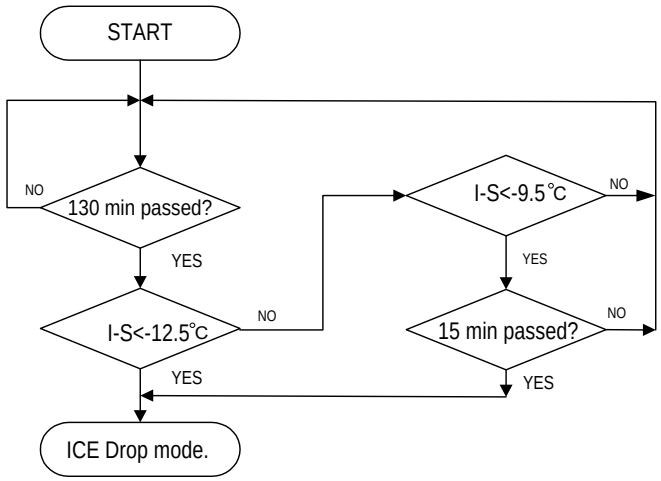
3) Water-Input hose HTR Control
① Normal operation -: ON
② Ice Marker Operation -: OFF
③ Ice Marker Stop- : OFF
④ Demo Mode -: OFF

4) Water Input Ready State
① Condition : Full Sensing of Ice
② Operation : Processing to Ice Markder Mode during Ice Marker Flow(Ice Drop, Water Input mode Stop)
③ Stop: If Normal operation Proceed => Auto -Stop

5) Crusher Function
①F-DOOR OPEN : Function stop
②F-DOOR CLOSE : Function Normal Start

CONTENTS	REMARKS

1-2. Ice Maker MODE

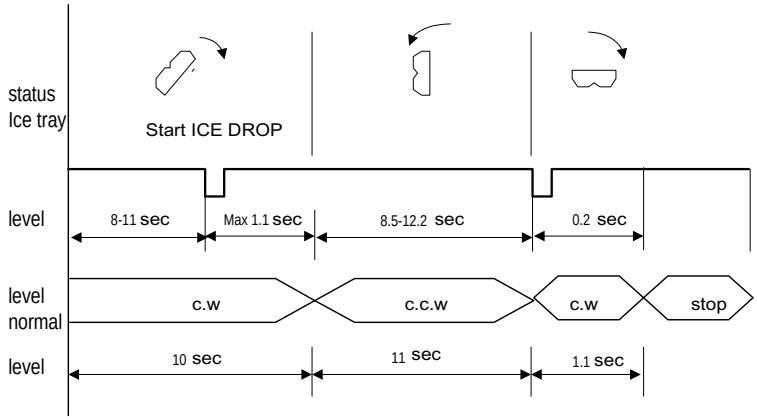


1) I-S is -12.5℃ and below after 130 min.=> Ice maker complete

2) Although I-S isn't -12.5℃ below for 130 min, I-S maintains -9.5℃ below continuously => Ice maker comlpete

3) I-Sensor Error: Ice Maker Complete after 4.8HR

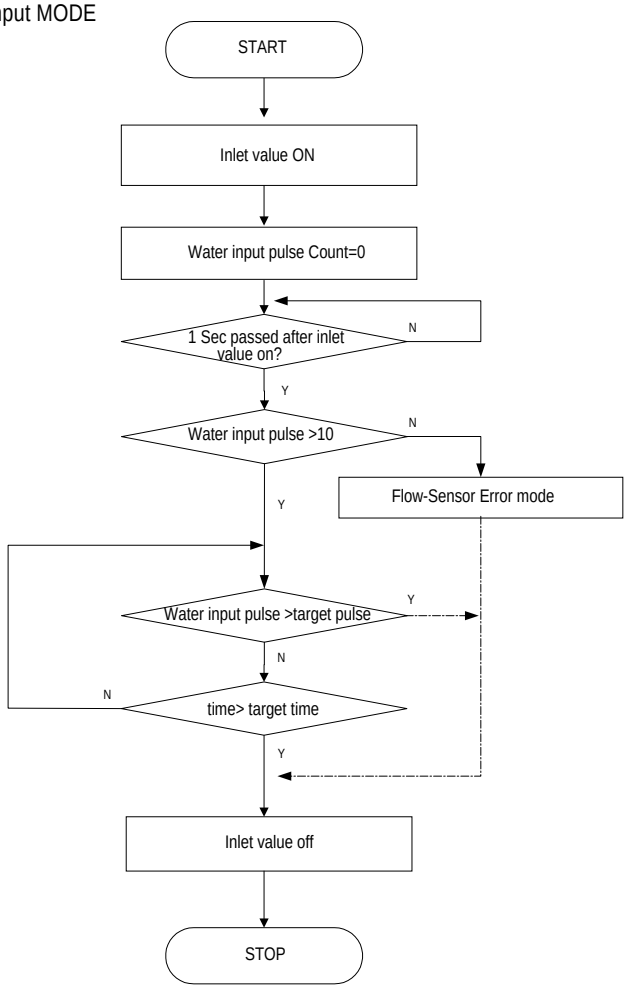
2. Ice Drop MODE



1) Each Section's Time used in S/W ERROR Confirm
2) Ice Drop MOTOR Rotation is Sensible by Each Sections
3) S/W ERROR: Ice Drop Every Time
4) Ice Drop MOTOR ERROR: Stop to the Status

CONTENTS	REMARKS

3. Water-Input MODE



1) Convert of Water-Input Mode After Ice Drop:
   Water-Input Valve Open.
2) Flow Sensor Error: Water-Input is Controlled by Time
3) Veriable Factor Value : Using for A/S Steps
   ①Flow Sensor Normal Operation : Flow Pulse Value sets "238"
   (Water input by Time -: Maximum Water Inut Time => 15 sec.
   ②Flow Sensor error : Water input time => 5.5 sec.

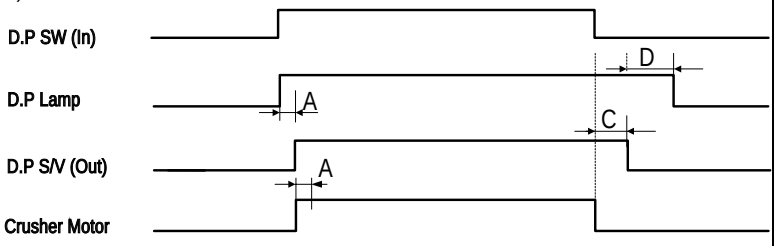
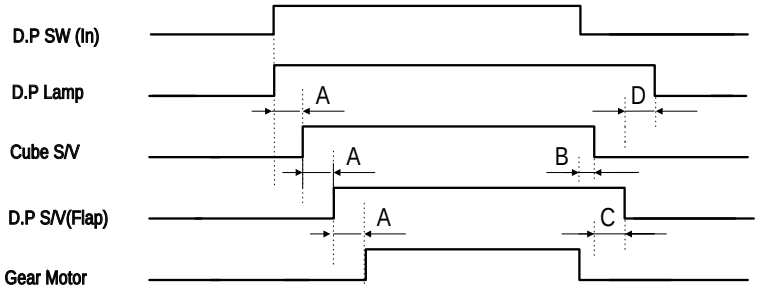
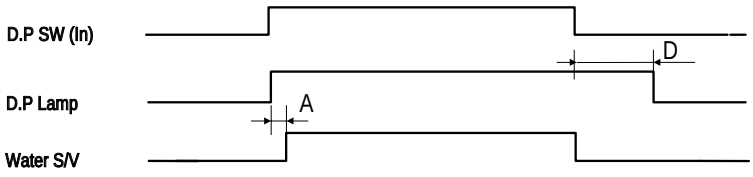
4. Water-Input Confirm MODE
   I-S Temp. Rising Value with RT-S Temp. Mode after 5 min. : Estimate of Water Input

RT-S	7℃	~13℃	~19℃	~29℃	~39℃	39℃
I-S	-10℃	-9℃	-8℃	-7℃	-6℃	-5℃

Dispenser Control Function

Input	Control Object
Dispenser SW Water/Ice Button Lock Ice Maker Button Freezer Door SW	Dispenser Lamp Crusher Motor Flat Solenoid Crusher Solenoid Dispenser Water Valve

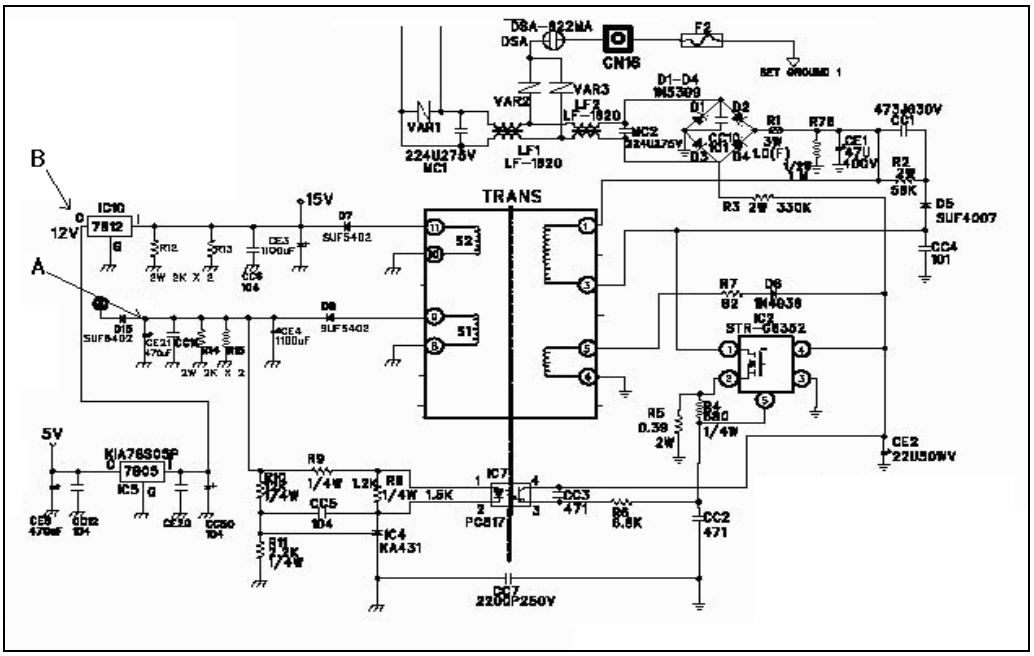
Contents	Remark
1) Water/Ice Selection Button * Initial Mode : Water Progress : Water ⟶ Ice Cube ⟶ Crushed Ice ⟶ Water * Pushing the dispenser value, water/Ice cube/crushed Ice is dispensed as your selection. 2) Lock Ice Maker Button ① Start by pushing "Lock Ice Maker" button " Lock Icer Maker" is "ON", The Icon & Box of "Cube Ice"/"Crushed Ice" disappear, "Water"Icon & Box is always "ON" ② Stop by pushing "Lock Ice Maker" button again. "Lock Icer Maker" Icon is "OFF", The Icon & Box of"Cube Ice"/"Crushed Ice"is "OFF", "Water"Icon & Box is "ON". 3) Display - Initial Mode : Wateer ICON & Letter is "ON". - A rectangle Line around the icon lights up to indicate your selection is on. - The Icon of water, Ice Cube, Crushed Ice is always " ON".(Exception, Dispenser S/W Error) - When pushing ' Lock Ice Maker': Lock Ice Maker LED is "ON" , The letters of crushed, cube Ice are "OFF" - There is no input during 1 hour, Dispeser transform into Water Mode.	

Contents	Remark
4) Control Flow & Timing Chart 4-1)Crushed Ice  4-2) Ice Cube  4-3) Water  Delay Time : A = 500ms, B = 500ms, C = 2.0s D = 5.0s	

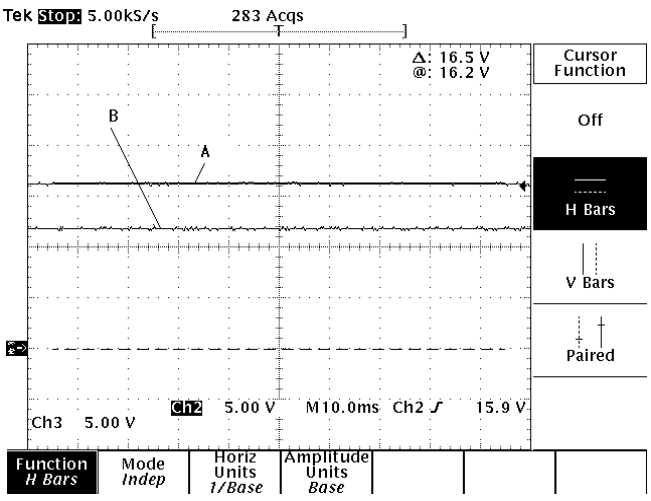
MICOM Circuit

Power

Circuit

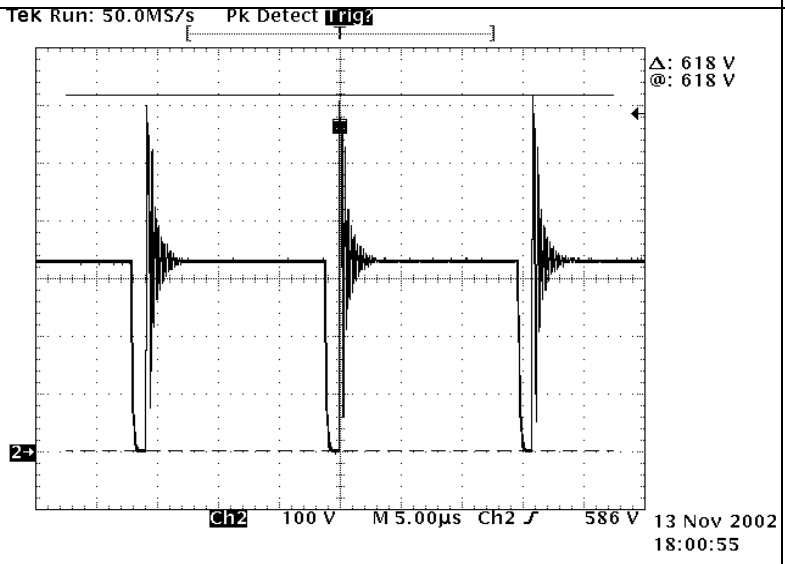


DC Output Power (Voltage)

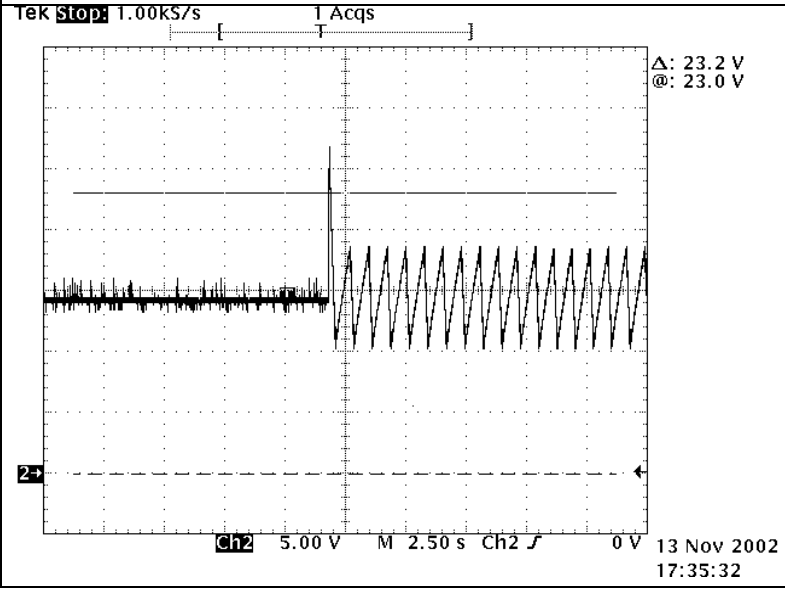
Point	Oscilloscope Measurement	Remarks
		* DC output 15.7V 11.96V

SMPS Movement Wave

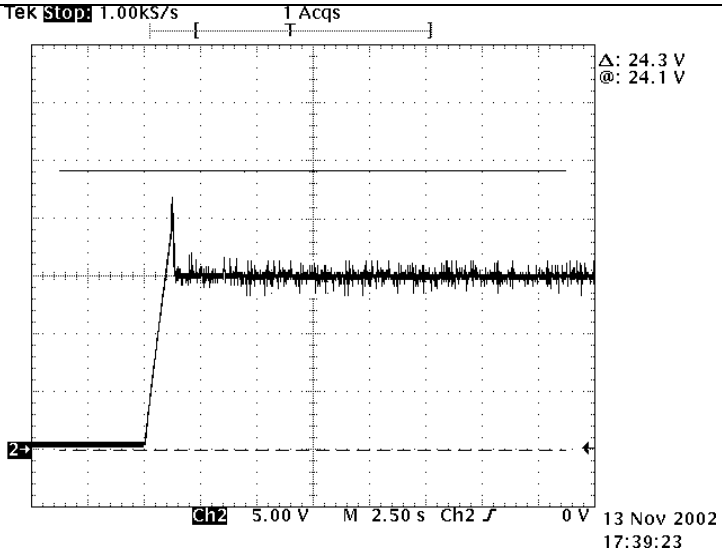
Drain to Source Break Voltage

Point	Oscilloscope Measurement	Remarks
SMPS IC PIN 1,2		*Voltage between DRAIN and SOURCE : below 650V

OVP(Overvoltage Protection) Wave at power input

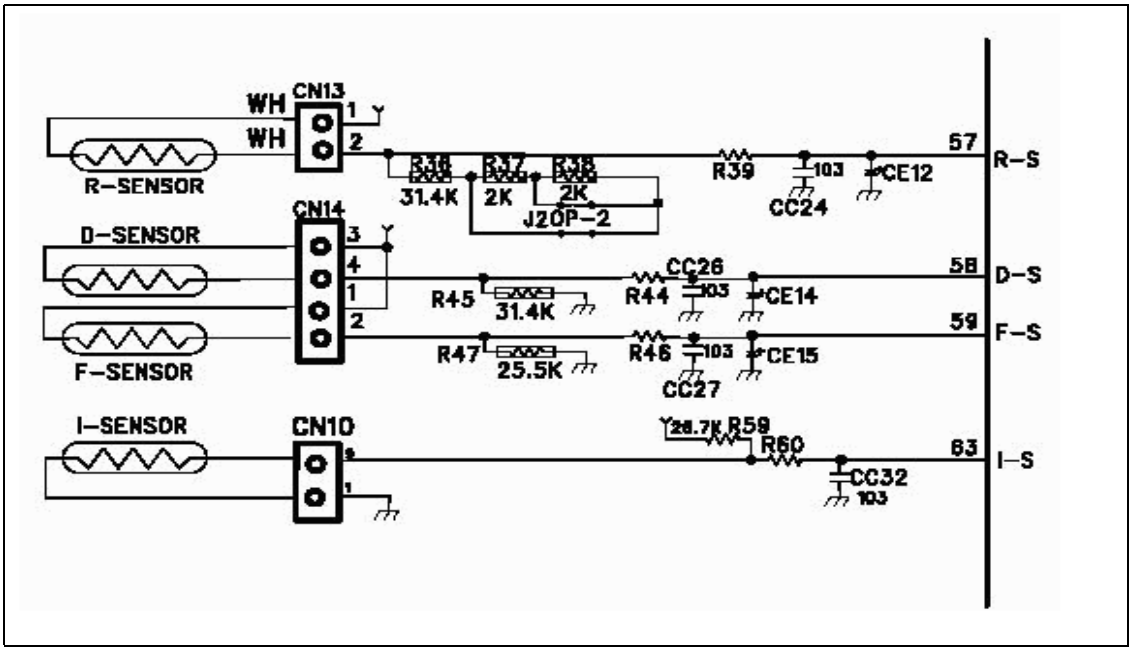
Point	Oscilloscope Measurement	Remarks
SMPS IC PIN 3,4		*Minimum standard voltage at OVP start : 23.2V

Initial Power Wave of Switching Power IC

Point	Oscilloscope Measurement	Remark
SMPS IC PIN 3,4		

Sensors

Circuit Diagram



Fnction of Each Sensor

[F-sensor]

1) It senses the temperature of freezer compartment and controls Comp., F-fan ON / OFF.

2) How it works ;

Working Point	Low ON	Mid OFF	High OFF
Working Temp.	-11.0℃	-20.0℃	- 26.0℃
Resistance	14.74kΩ	22.33kΩ	30.92kΩ
Sensing Voltage	≒3.50 V	≒3.00 V	≒2.14 V

[D-sensor]

It senses return point of defrosting heater.

Working Point	Return point of defrosting heater
Working Temp.	10℃
Resistance	19.53kΩ
Sensing Voltage	≒3.1 V

[R-sensor]

1) It senses the temperature of refrigerator compartment and controls R-fan ON / OFF.

2) How it works ;

Working Point	Low ON	Mid OFF	High OFF
Working Temp.	2.65℃	0.3℃	-1.7℃
Resistance	26.88kΩ	29.34kΩ	32.00kΩ
Sensing Voltage	≒2.90V	≒ 2.81V	≒2.74V

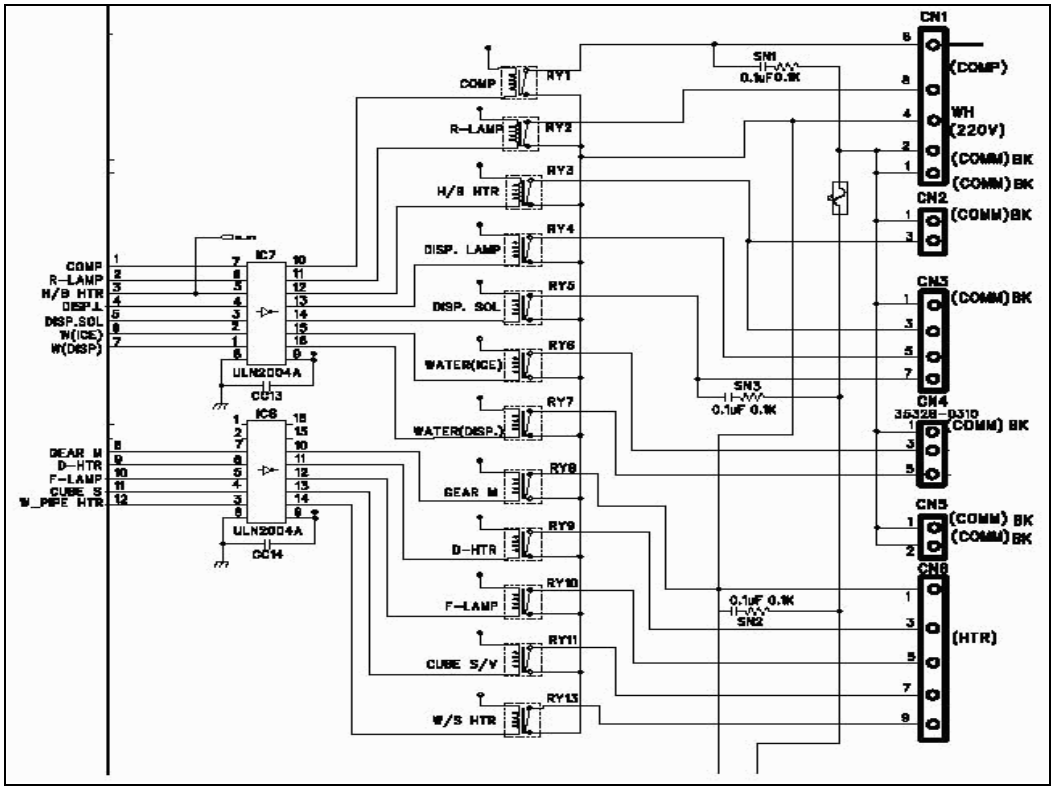
* In case refrigeration of refrigerator compartment is poor or insufficient though comp. and R-fan operate in normal way ;

1) Cut J18 on M-PCB, then temp. is lowered -2 ℃ than [Mid OFF point].

2) In addition to 1) action, cut J22 on M-PCB, then the temp. is lowered -1℃ more.

Relay Function

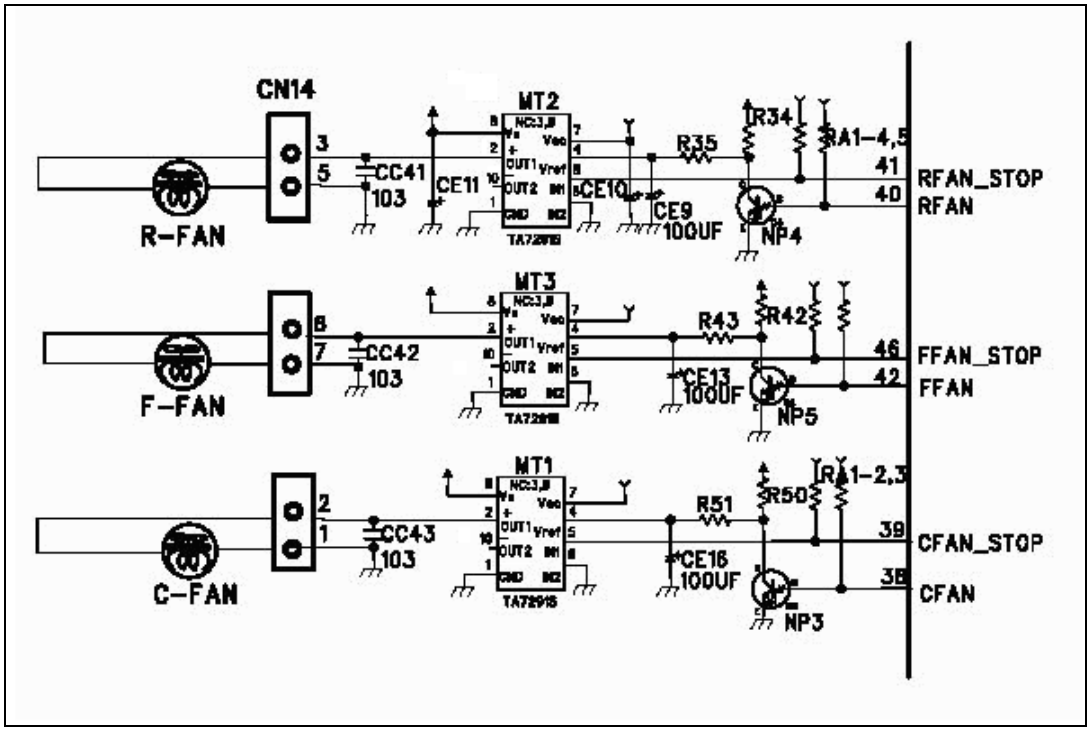
Circuit Diagram



How it works ;

Control	Control Method	ON Condition		OFF Condition	
		MICOM PORT	IC 2 Output PIN	MICOM PORT	IC03 Output PIN
COMP	REPLAY	#1≒3.7V	#10 ≒ 0.7V	#1 ≒ 0V	#10 ≒ 12V
R-LAMP	REPLAY	#4≒3.7V	#11 ≒ 0.7V	#4 ≒ 0V	#11 ≒ 12V
DIS-LAMP	REPLAY	#3≒3.7V	#12 ≒ 0.7V	#3 ≒ 0V	#12 ≒ 12V
DISP-SOL	REPLAY	#5≒3.7V	#13 ≒ 0.7V	#5 ≒ 0V	#13 ≒ 12V
WATER(ICE)	REPLAY	#1≒3.7V	#10 ≒ 0.7V	#1 ≒ 0V	#10 ≒ 12V
WATER(DIS)	REPLAY	#4≒3.7V	#11 ≒ 0.7V	#4 ≒ 0V	#11 ≒ 12V
GEAR-M	REPLAY	#3≒3.7V	#12 ≒ 0.7V	#3 ≒ 0V	#12 ≒ 12V
D-HTR	REPLAY	#5≒3.7V	#13 ≒ 0.7V	#5 ≒ 0V	#13 ≒ 12V
F-LAMP	REPLAY	#4≒3.7V	#11 ≒ 0.7V	#4 ≒ 0V	#11 ≒ 12V
CUBE-SOL	REPLAY	#4≒3.7V	#11 ≒ 0.7V	#4 ≒ 0V	#11 ≒ 12V
W/S HTR	REPLAY	#2≒3.7V	#14 ≒ 0.7V	#2 ≒ 0V	#14 ≒ 12V

Fan Function



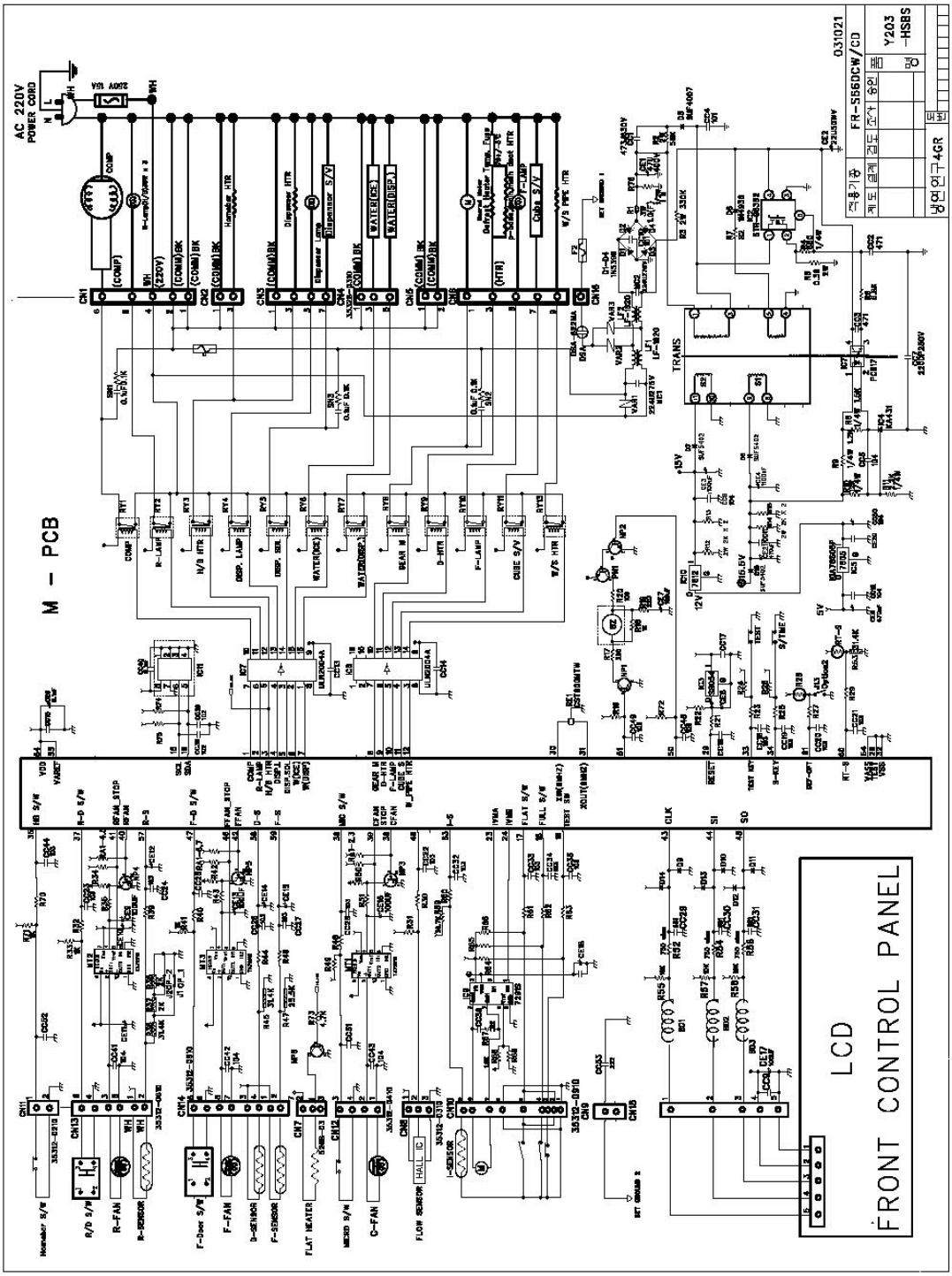
How it works ;

Control Object	Control Method	ON Condition				OFF Condition			
		MICOM Port			IC Collector	MICOM Port			IC Collector
		31	32	33		31	32	33	
F-FAN	Low (10V) operation	5V	0V	0V	10.35V	5V	5V	5V	0V
	Mid (12V) operation	0V	5V	0V	12.19V				0V
	High (14V) operation	0V	0V	0V	14.38V				0V

Control Object	Control Method	ON Condition				OFF Condition			
		MICOM PORT			IC Collector	MICOM Port			IC Collector
		39	40	41		39	40	41	
R-FAN	Low (10V) operation	0V	5V	5V	10.38V	0V	0V	0V	0V
	Mid (12V) operation	5V	0V	5V	12.24V				0V
	High (14V) operation	5V	5V	5V	14.42V				0V

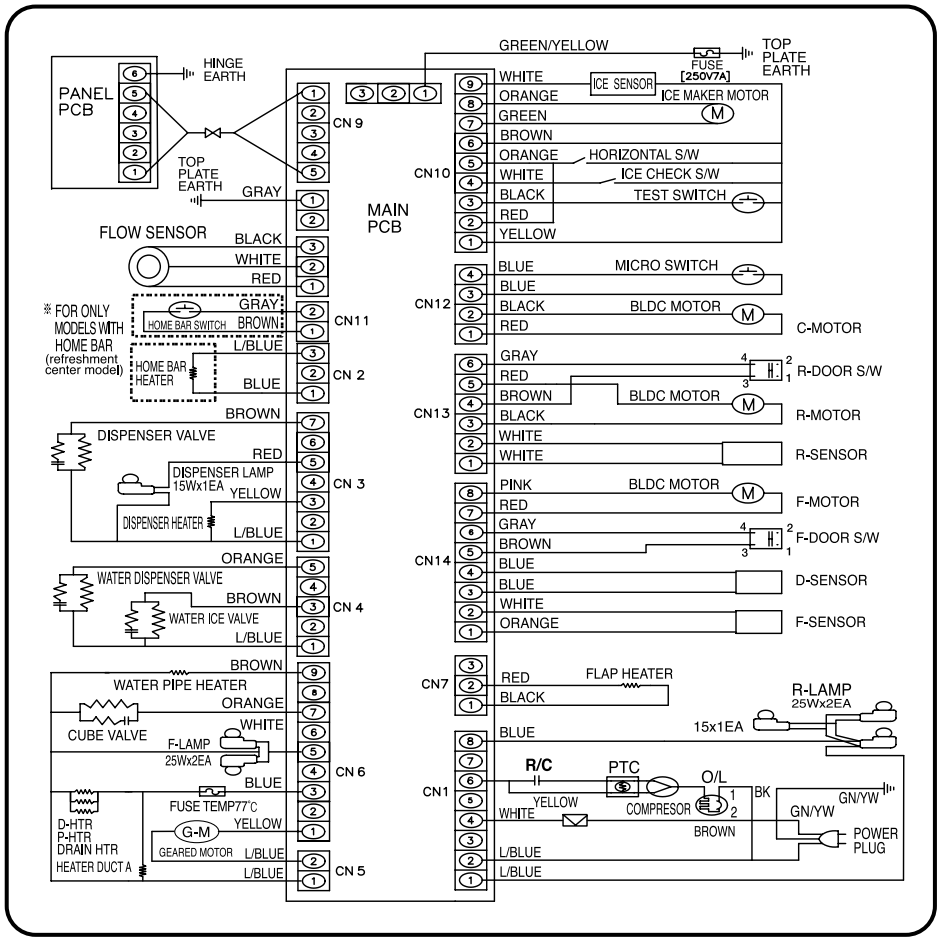
Control Object	Control Method	ON Condition			OFF Condition		
		MICOM Port		IC Collector	MICOM Port		IC Collector
		37	38		37	38	
C-FAN	High (14V) operation	0V	0V	14.54V	5V	5V	0V
	Low (10V) operation	5V	0V	10.45V			0V

Circuit Diagram of Main PCB

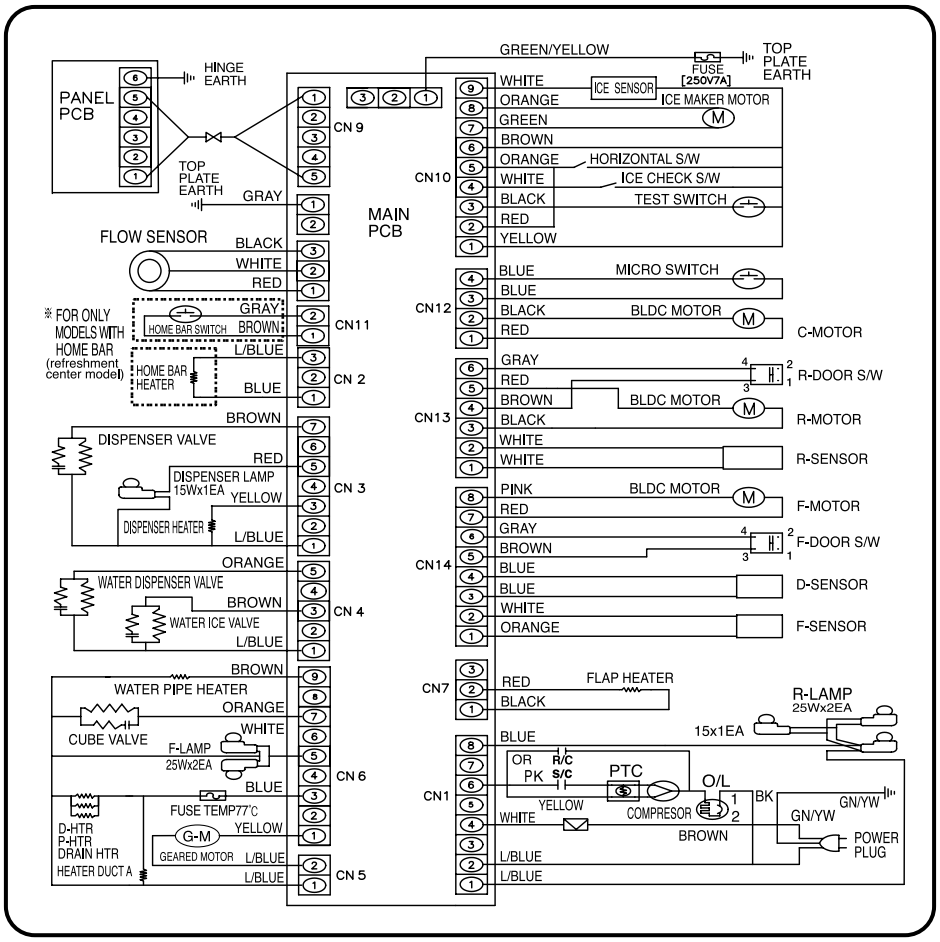


WIRING DIAGRAM

< RSCR TYPE >

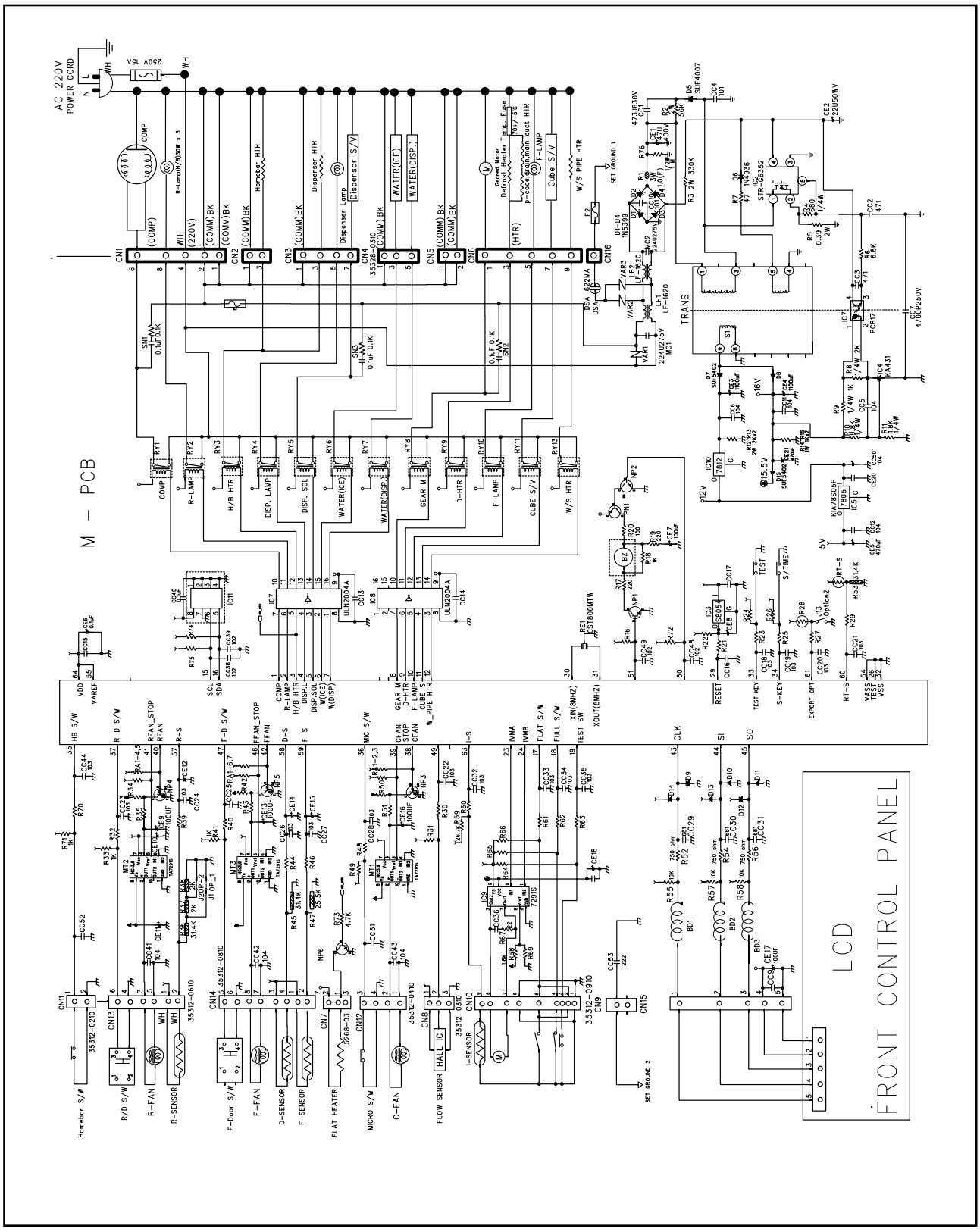


< CSR TYPE >

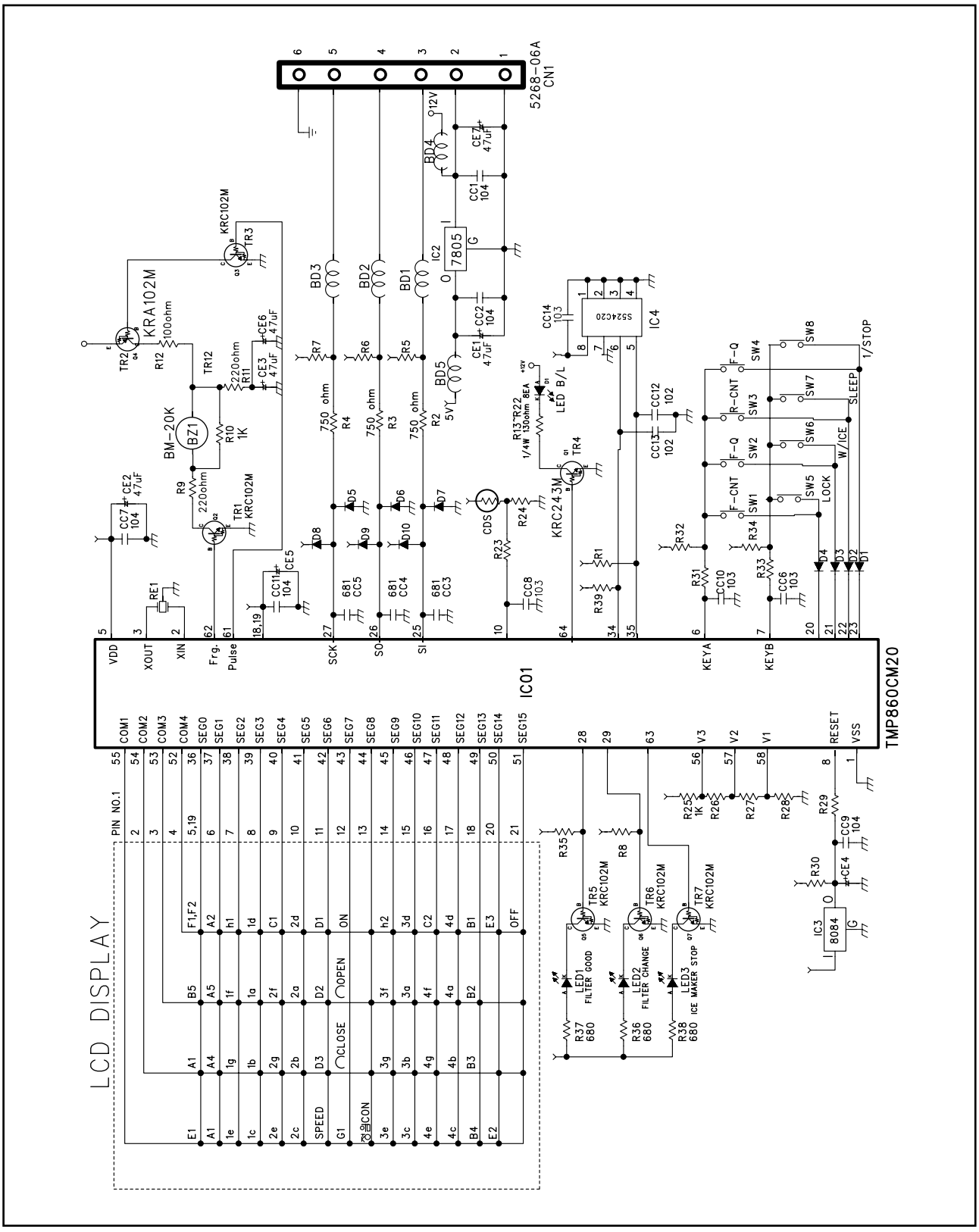

PANEL PCB
HINGE EARTH
TOP PLATE EARTH
GRAY
CN 9
MAIN PCB
GREEN/YELLOW
FUSE [250V7A]
TOP PLATE EARTH
WHITE
ORANGE
GREEN
BROWN
ICE SENSOR
ICE MAKER MOTOR
M
CN10
ORANGE
WHITE
BLACK
RED
YELLOW
HORIZONTAL S/W
ICE CHECK S/W
TEST SWITCH
FLOW SENSOR
BLACK
WHITE
RED
※ FOR ONLY MODELS WITH HOME BAR (refreshment center model)
GRAY
HOME BAR SWITCH
BROWN
CN11
L/BLUE
HOME BAR HEATER
BLUE
CN 2
BLUE
BLUE
MICRO SWITCH
CN12
BLACK
RED
BLDC MOTOR
C-MOTOR
BROWN
DISPENSER VALVE
RED
DISPENSER LAMP 15Wx1EA
YELLOW
DISPENSER HEATER
L/BLUE
CN 3
GRAY
RED
BROWN
BLACK
WHITE
WHITE
H.
R-DOOR S/W
BLDC MOTOR
R-MOTOR
R-SENSOR
CN13
ORANGE
WATER DISPENSER VALVE
BROWN
WATER ICE VALVE
L/BLUE
CN 4
PINK
RED
GRAY
BROWN
BLUE
BLUE
WHITE
ORANGE
BLDC MOTOR
F-MOTOR
F-DOOR S/W
D-SENSOR
F-SENSOR
CN14
BROWN
WATER PIPE HEATER
ORANGE
CUBE VALVE
WHITE
F-LAMP 25Wx2EA
BLUE
CN 6
CN7
RED
BLACK
FLAP HEATER
R-LAMP 25Wx2EA
15x1EA
BLUE
OR
PK
R/C
S/C
PTC
O/L
YELLOW
WHITE
COMPRESOR
BROWN
BK
GN/YW
GN/YW
POWER PLUG
CN1
L/BLUE
L/BLUE
D-HTR
P-HTR
DRAIN HTR
HEATER DUCT A
FUSE TEMP77℃
G-M
GEARED MOTOR
YELLOW
L/BLUE
L/BLUE
CN 5

CIRCUIT WIRING DIAGRAM

Main PCB



Front PCB

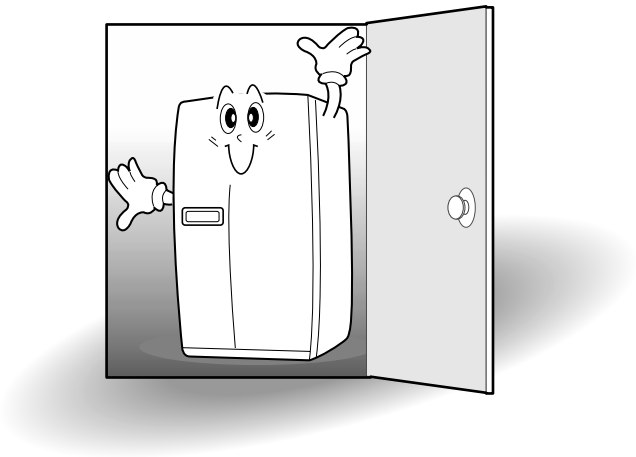

LCD DISPLAY
IC01
TMP860CM20
5268-06A
CN1
KRA102M
KRC102M
BM-20K
7805
S524C20
KRC243M
LED B/L
1/STOP
SLEEP
W/ICE
LOCK
SPEED
OPEN
CLOSE
ON
OFF
LED1 FILTER GOOD
LED2 FILTER CHANGE
LED3 ICE MAKER STOP
8084

INSTALLATION GUIDE

Installation Preparation

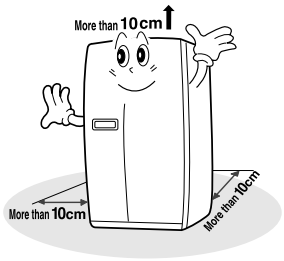
Check if the refrigerator can pass a doorway or enter a door first.

	Dimensions(including Door Handles)
FRS-20＊＊＊＊＊	(Width*Depth*Height) 928mm × 816mm × 1808mm
FRS-24＊＊＊＊＊	(Width*Depth*Height) 928mm × 896mm × 1808mm

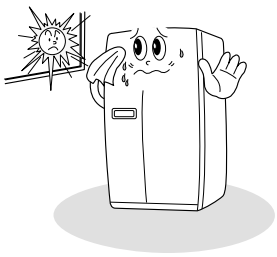


Find a suitable place to install

※Sufficient space from refrigerator back to the wall for free air ventilation



※Avoid direct sunlight.



Note

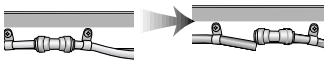
●Once the installation place is ready follow the installation instructions.
If surround temperature of refrigerator is low (below 5℃), foods can be frozen or the refrigerator can work in abnormal way.

If the refrigerator can not enter the door, follow these steps.

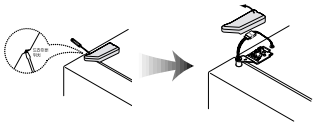
Removing Freezer Door

※Remove front bottom cover first, if it is attached.

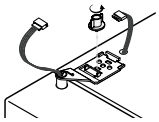
1 Remove the bottom cover first.
Pull out the left collar of the coupling first, then hold the coupling and pull out the left water tube.



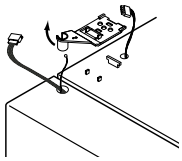
2 Unscrew top hinge cover with a screw driver.
Insert a thin screw driver into the side groove of the cover to remove.



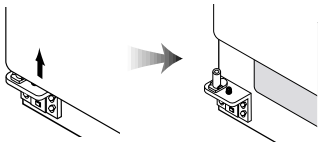
3 Turn top hinge fastener counterclockwise 3~4 times.
Disconnect the harness wires.



4 Lift up the front of hinge to remove.
(After the hinge is removed the door can fall down forward. Be careful !)

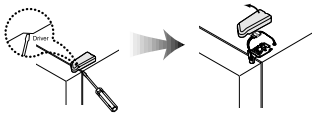


5 Be careful not to damage the water line when removing the door.

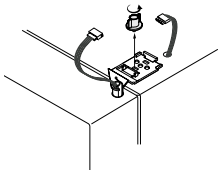


Removing Refrigerator Door

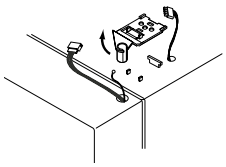
1 Unscrew top hinge cover with a screw driver.
Insert a thin screw driver into the side groove of the cover to remove.



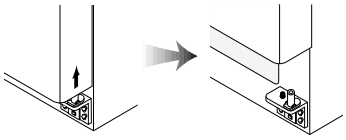
2 Turn top hinge fastener counterclockwise 3~4 times.
Disconnect harness wires.



3 Lift up the front of hinge to remove.
(After the hinge is removed the door can fall down forward. Be careful !)



4 Lift the door straight up to remove.

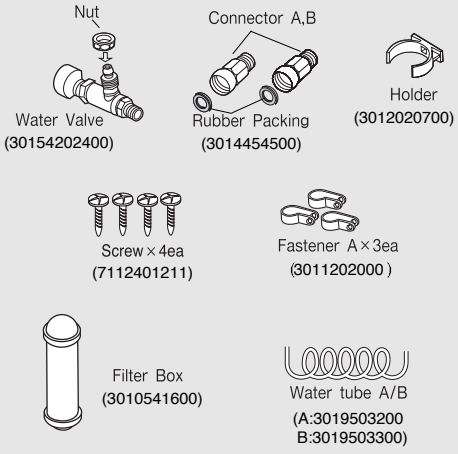


How to install Water Line

1. The water pressure should be 3kgf/cm^2 or more to run the automatic icemaker .
   ※ Checkup your tap water pressure ; if a cup of 180cc is full within 10 seconds, the pressure is OK.
2. When installing the water tubes, ensure they are not colse to any hot surfaces.
3. The water filter only " filters " water ; it does not eliminate any bacteria or microbes.
4. If the water pressure is not so high to run the icemaker , call the local plumber to get an additional water pressure pump.
5. The filter life depends on the amount of use. We recommend you replace the filter at least once every 6months.
   ※ When attaching the filter , place it for easy access (removing & replacing)
6. After installation of refrigerator and water line system, select [WATER] on your control panel and press it for 2~3 minutes to supply water into the water tank and dispense water.
7. Use sealing tape to every connection of pipes/tubes to ensure there is no water leak.
8. The water tube should be connected to the cold water line.

WATER SUPPLY KIT

※ Check the parts below for installing water supply. Some other necessary parts are available at your local service agents.

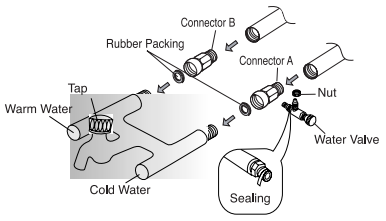


Installation Procedure

1. Join [Connector A], [Connector B] and [Water Valve] to the tap water lines.

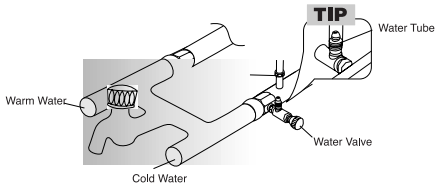
1) Switch off the main water line(valve).
2) Connect [Water Valve] and [Connector A].
3) Join [Connector A], [Connector B] to the tap water lines
   ※ Use only [Connector A + Water Valve] in case there's only one tap water line.
   ※ Apply the sealing tape to all the joints as the figure shows.
   ※ If the connectors(valves) do not fit the existing water line, call your service agent for additional guideance and action.

Achtung
The water valve should be connected to the cold water line, otherwise there can be a problem of cold water supply."



2. Connect the Water Tube to the Water Valve.

1) Insert the Nut to the Water tube.
2) Insert the Tube to the Valve as the figure shows.
3) Fasten the nut to join firmly.

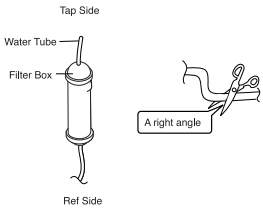


3. Get ready to install the Water Filter

1) Measure an approximate distance between the filter and the Water Tube and cut the tube off filter vertically.

2) Connect the tubes to the filter as the figure shows.

Achtung: Leave a sufficient distance when cutting the tubes.



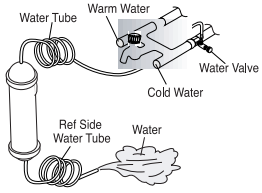
4. Remove any substances in the filter.

1) Open the main tap water valve and check if water comes out of the Water Tube.

2) Check if the Water Valve is open in case water does not come out.

3) Leave the valve open until clean water is coming out.

※ Initial water may contain some substances out of filter (manufacturing process).

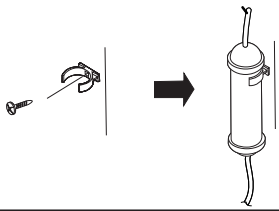


5. Attach the Filter Box

1) Screw and fasten the filter holder to the left/right side of the back of refrigerator.

※ In case the holder is not fastened well, remove the back paper of the tape on the filter holder and attach it."

2) Insert the filter box into the holder.



6. Connect the Water Tube to the refrigerator.

1) Remove the rear cover at the bottom back of the refrigerator.

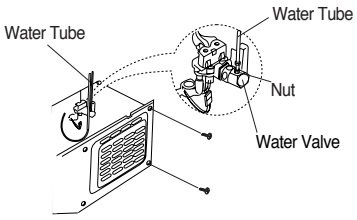
2) Insert the fastening ring into the Water tube. (Be careful to follow the direction of the nut.)

3) Insert the Water Tube into the top of Water Valve, turn the nut clockwise to fasten it. (The Water valve is to the right of the motors.)

4) Check for any bent tubes or water leaks; if so, re-ckeck instalation procedure.

5) Replace the rear cover. (The Water Tube should be placed between the groove of the refrigerator back and motor cover.)

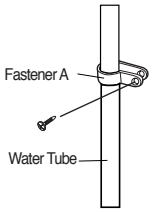
Achtung: Set the tube upright as the figure shows.



7. Fasten the Water Tube.

1) Fasten the Water Tube with the [Fastener A] .

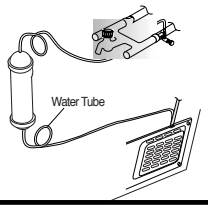
2) Check if the tube is bent or sqeezed. If so, set it right to prevent any water leak.



8. After installation of Water Supply System

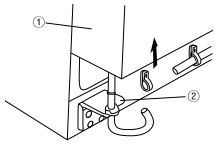
1) Plug the refrigerator, press the [WATER] button on the control panel for 2~3 minutes to remove any air (bubble) in the pipes and drain out the initial water.

2) Check the water leak again through the water supply system (tubes, connectors and pipes) Rearrange the tubes again and do not move the refrigerator.

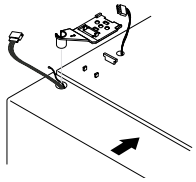


Replacing Freezer Door

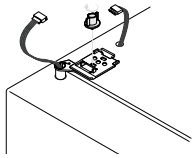
1 Insert the water tube into the hole of the bottom hinge pin first, then Insert the bottom of freezer door into the bottom hinge pin.



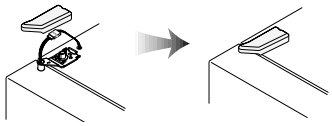
2 Insert the bottom hole of freezer door straight to the bottom hinge pin.



3 Let the top of door close to the cabinet and insert the top hinge pin to the top hole of freezer door. (Insert the back of hinge to the groove of protrusion first, then front to the top hole of door.)



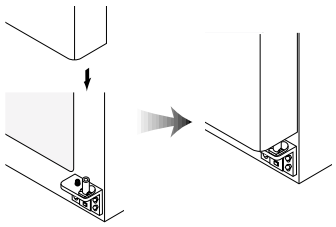
4 Turn the hinge fastener tightly to the end.
Connect harness wirings and screw ground wire.



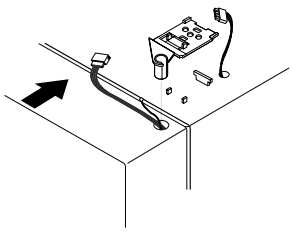
5 Insert the water tube far into the coupling.

Replacing Refrigerator Door

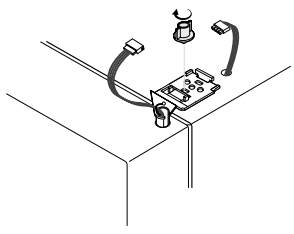
1 Insert the bottom hole of refrigerator door straight to the bottom hinge pin



2 Let the top of door close to the cabinet and insert the top hinge pin to the top hole of freezer door (Insert the back of hinge to the groove of protrusion first, then front to the top hole of door.)



3 Turn the hinge fastener tightly to the end.
Connect harness wirings and screw ground wire.
Click and screw the top hinge cover.

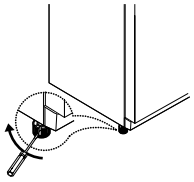


Refrigerator Leveling & Door Adjustment(If needed.)

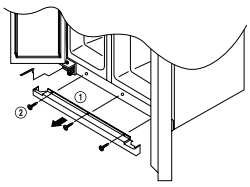
Refrigerator must be level in order to maintain optimal performance and desirable front appearance.
(If the floor beneath the refrigerator is uneven, freezer and refrigerator doors look unbalanced.)

In case freezer door is lower than refrigerator door ...

1 Insert a screw driver (flat tip) into a groove of the left wheel (bottom of freezer) and turn it clockwise until the door is balanced. (clockwise to raise freezer door ; counterclockwise to lower)
※Unless the freezer door is balanced by step 1, then follow the next steps.

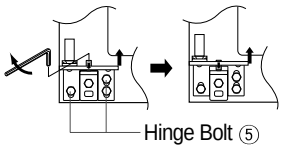


2 Open the doors, unscrew the front cover and remove, if it is attached.



3 Loosen 3 hinge bolts(1 on the left + 2 on the right) a little. (Do not unfasten them completely.) Insert a hexagonal wrench into the groove of adjusting nut and turn clockwise until the door is level.

4 Once the door is balanced, fasten the hinge bolts tightly and screw the front cover.



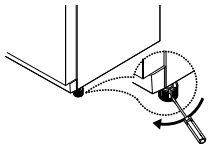
Caution

- The front of refrigerator needs to be higher just a little than the back for easy door closing, but if the wheel is raised too much for door balance, i.e. front of refrigerator is too higher than the back, it can be difficult to open the door.

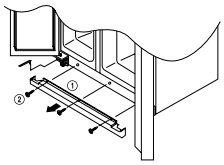
In case refrigerator door is lower than freezer door ...

1 Insert a screw driver (flat tip) into a groove of the right wheel (bottom of refrigerator) and turn it clockwise until the door is balanced. (clockwise to raise refrigerator door ; counterclockwise to lower)

※Unless the refrigerator door is balanced by step 1, then follow the next steps.



2 Loosen 3 hinge bolts(2 on the left + 1 on the right) a little. (Do not unfasten them completely.)
Insert a hexagonal wrench into the groove of adjusting nut and turn clockwise until the door is level.



3 Once the door is balanced, fasten the hinge bolts tightly.

Front Cover

After installation and/or door leveling, fasten front cover with screws.(Remove the screws on the front bottom panel first. Click and screw the cover)

Attaching of W ater Filter Holder

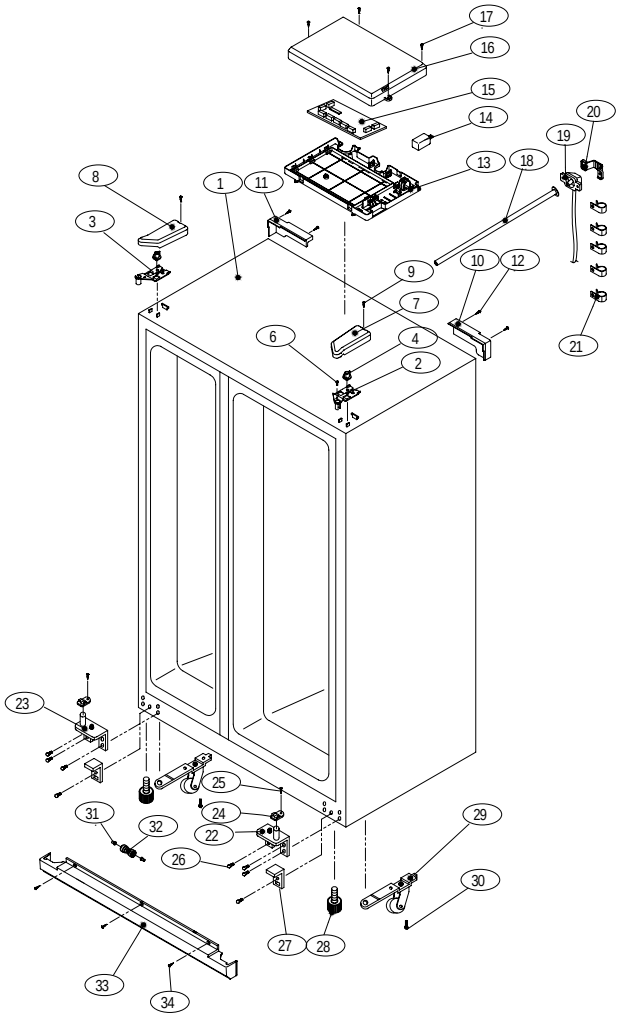
Remove the back paper of the tape on the filter holder and attach the filter holder on a suitable place.

EXPLODED VIEW AND PARTS LIST

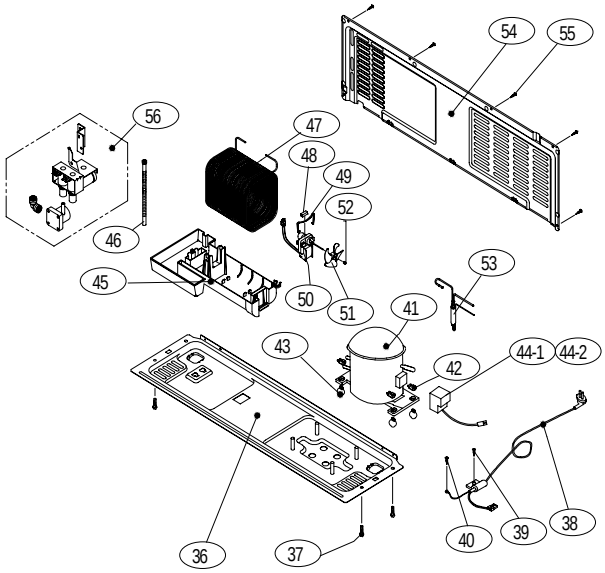
Total Explded View

■ FRS-2011

CABINET



MECH ROOM



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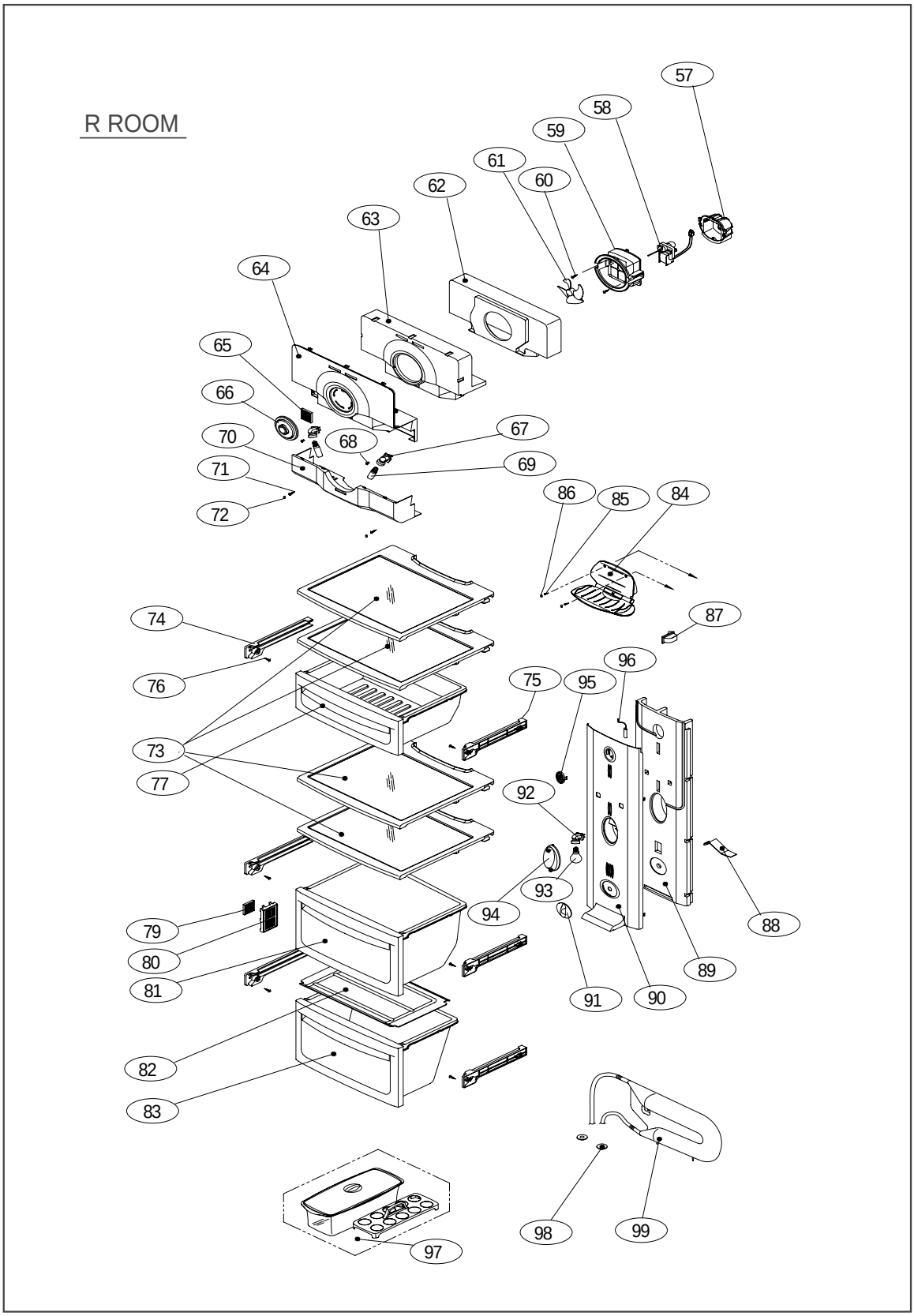
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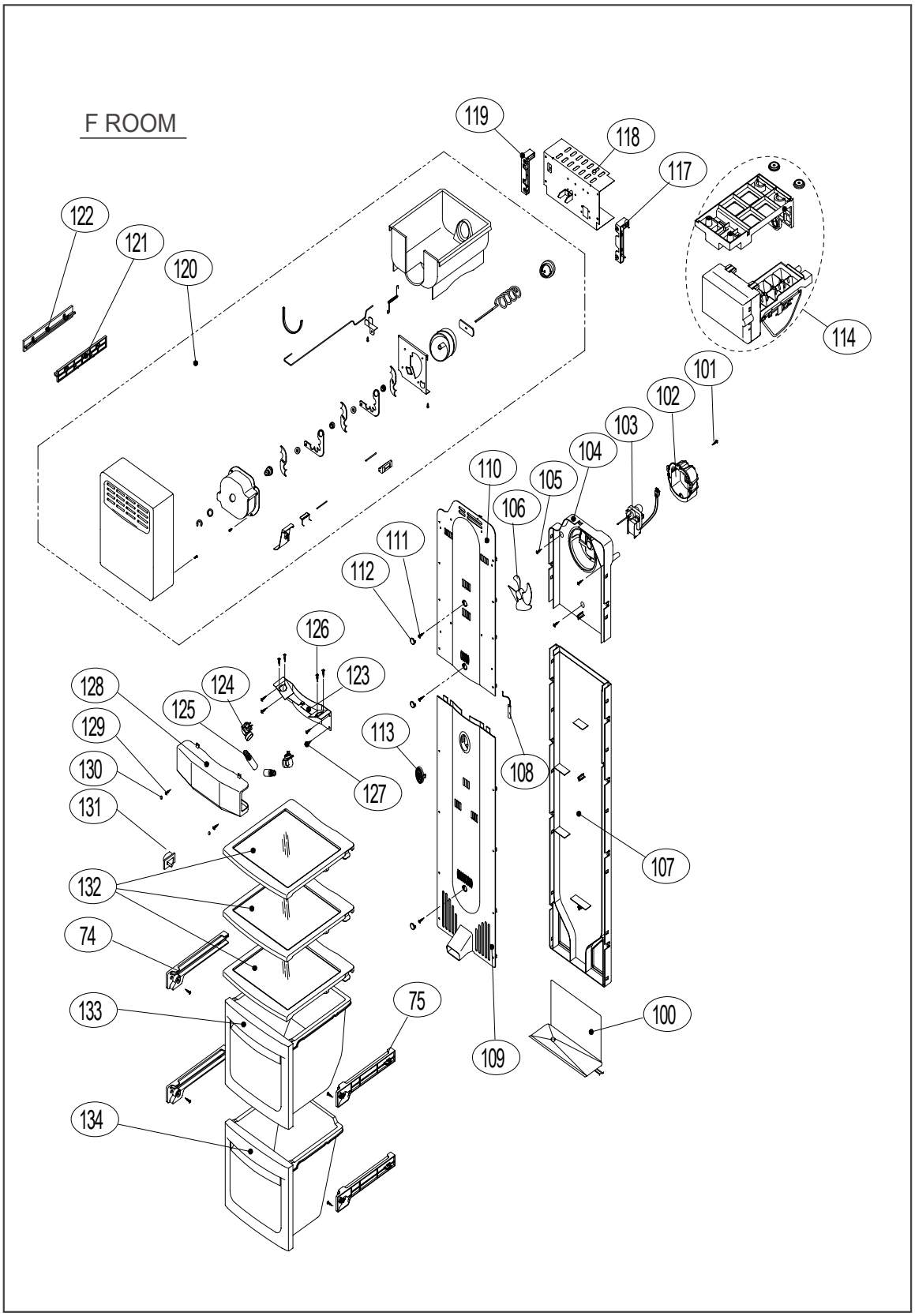
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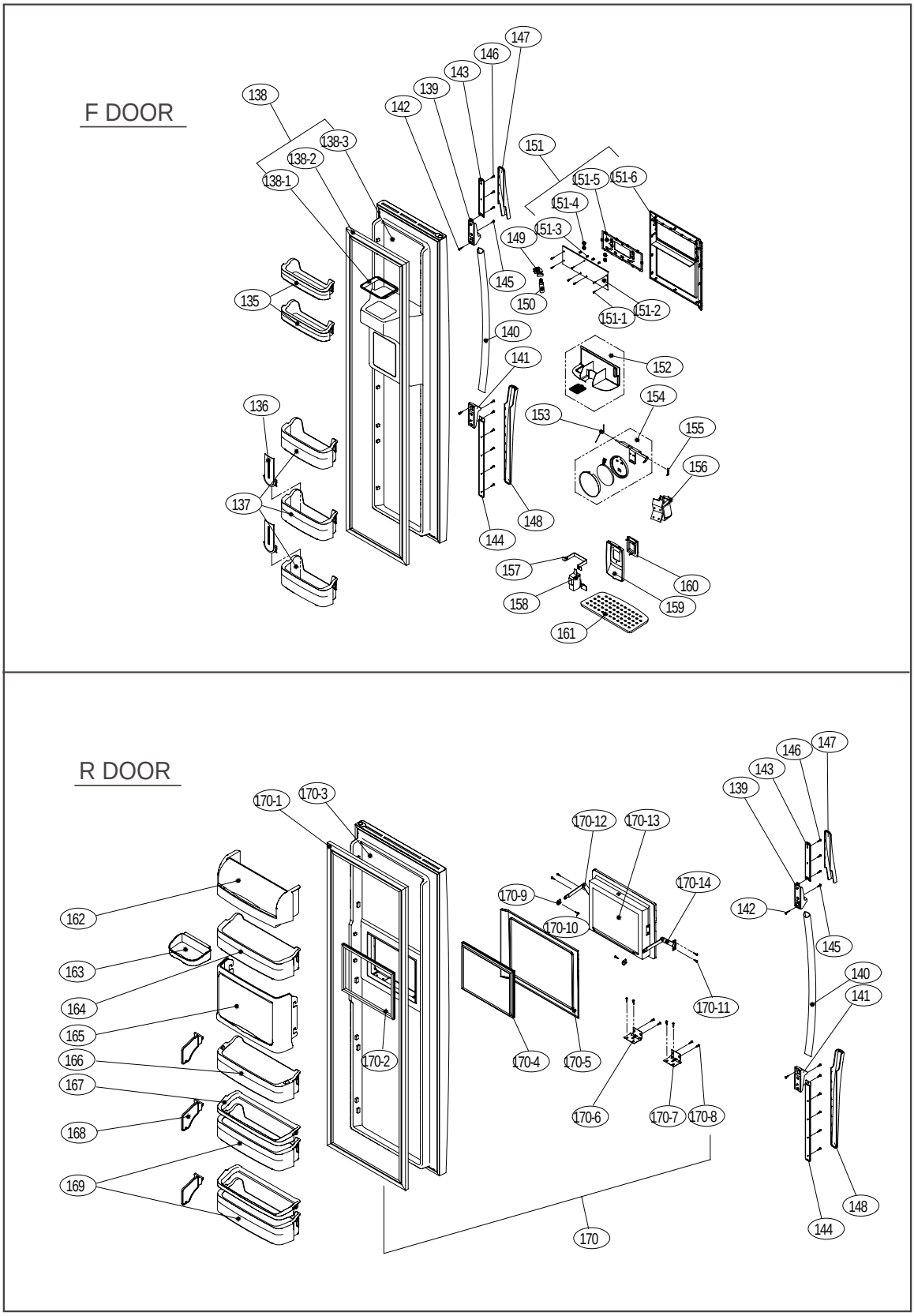
■ FRS-2011


F DOOR
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R DOOR
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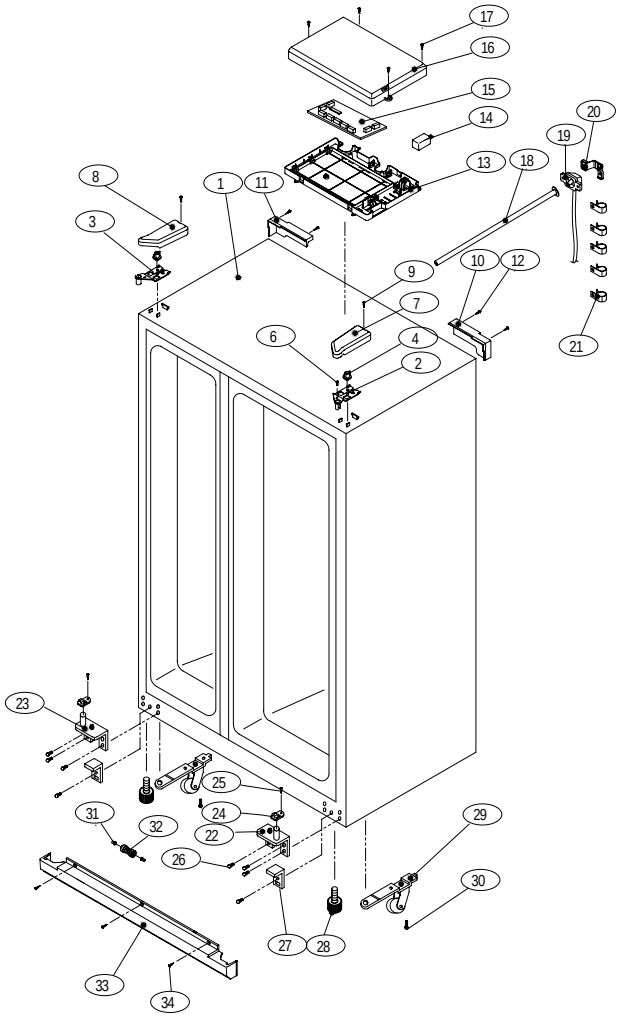
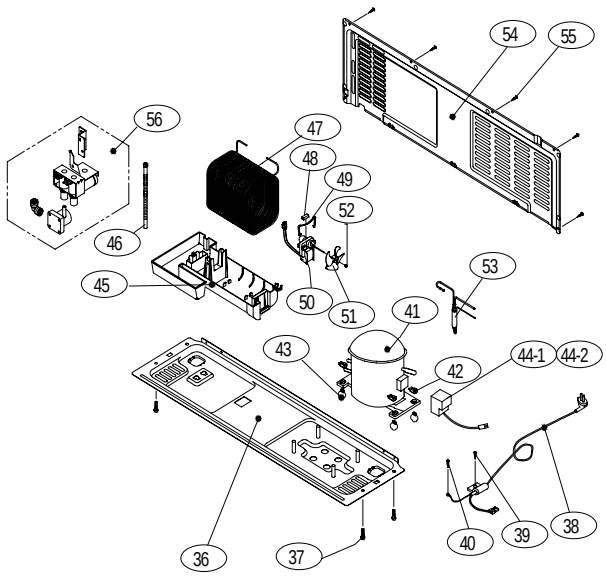
■ FRS-2031

CABINET



MECH ROOM



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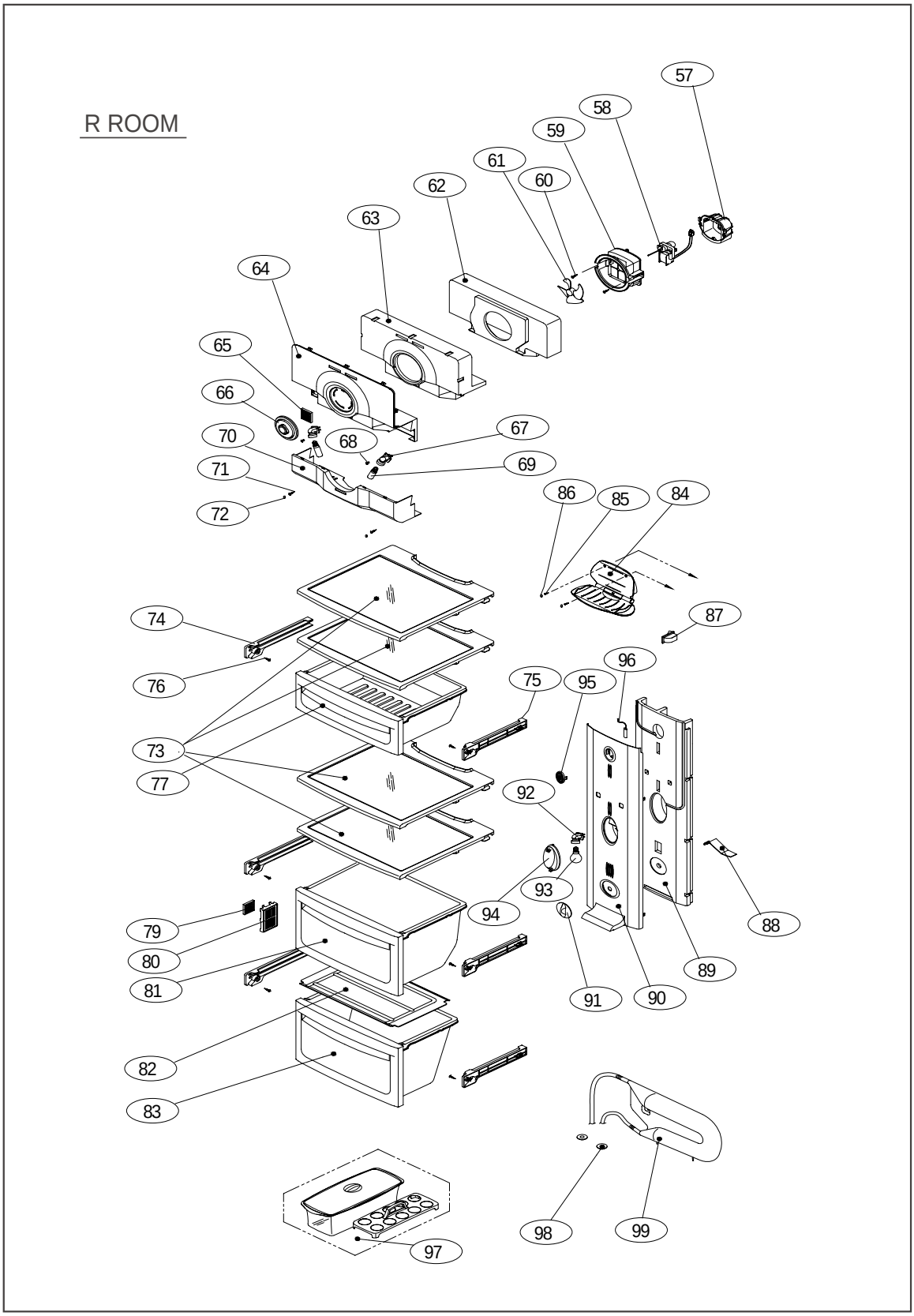
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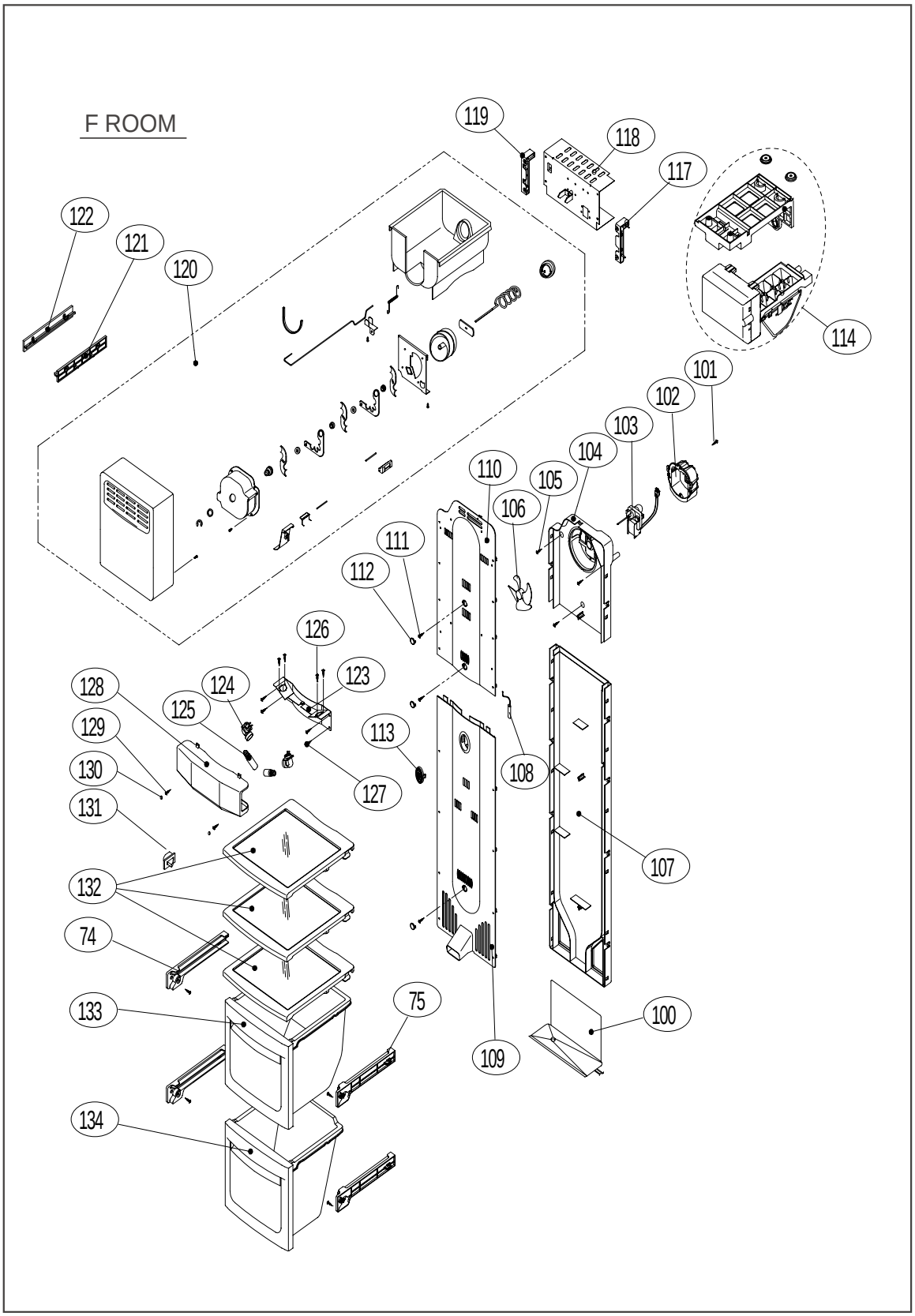
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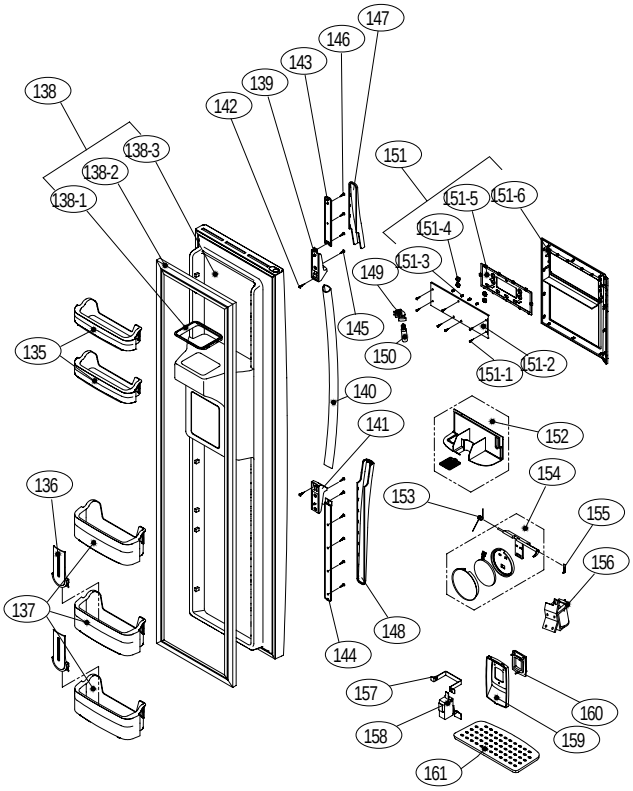
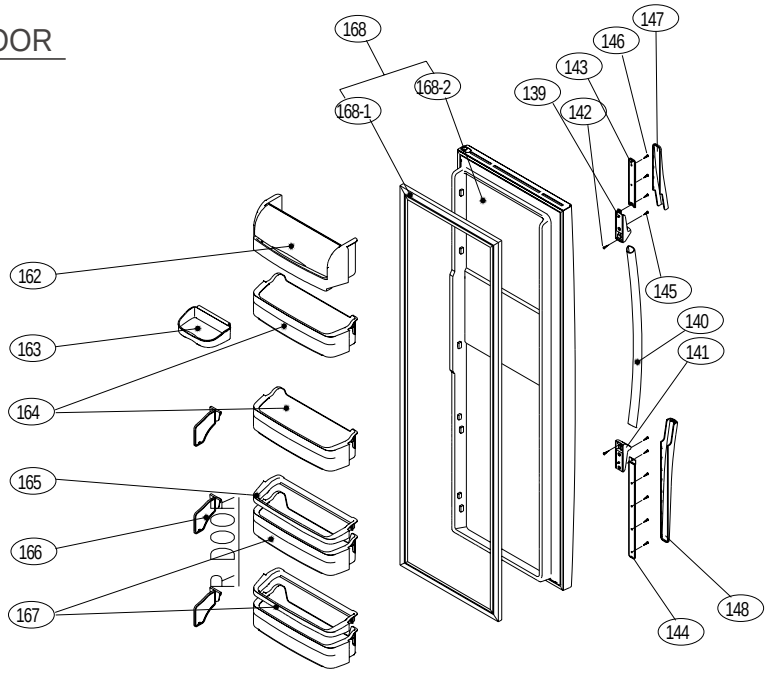
■ FRS-2031

F DOOR



R DOOR



Total Parts List
FRS-2011

CAUTION : In this Service 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(http://svc.dwe.co.kr)

NO	PART CODE	PART NAME	Q'TY	REMARK
1	3000003620	ASSY CAB URT	1	
2	3012917600	HINGE *T *R AS	1	PO T3.0
3	3012918500	HINGE *T *L AS	1	PO T3.0
4	3016031400	SCREW SPECIAL	2	
6	7051401065	SCREW MACHINE	1	PAN 4 x 10 SW BSNI
7	3011472400	COVER HI *T *R	1	PP
8	3011472300	COVER HI *T *L	1	PP
9	7112401211	SCREW TAPPING	2	T1 TRS 4 x 12 MFZN
10	3012601301	HANDLE CAB COVR *R	1	PP
11	3012601201	HANDLE CAB COVR *L	1	PP
12	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
13	301 0533400	BOX MAIN PCB	1	PP
14		CAPACITOR RUN	1	
15		PCB MAIN AS	1	
16	30114726 10	COVER MAIN PCB BOX	1	PP
17	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
18	3013223400	HOSE ICE MAKER TUBE AS	1	
19	3012519200	GUIDE CAB W/TUBE A AS	1	
20	3011485600	COVER GUIDE CAB W/TUBE A	1	HIPS
21	3011202000	CLAMP WATER TUBE A	5	PA -66
22	3012917800	HINGE *U *R AS	1	PO T3.0
23	3012917700	HINGE *U *L AS	1	PO T3.0
24	3012513300	GUIDE *U HINGE *U	2	POM
25	7002501611	SCREW MACHINE	2	TRS M5 x 16 MFZN
26	3016001240	SPECIAL BOLT *T	8	6 x 22 SWCH22A(YL)
27	3015306 700	SUPPORTER *U HI AS	2	PO T5.0
28	301210 4400	FOOT ADJUST AS	2	
29	3016501200	CASTER TURN AS	2	TURN CASTER
30	3016001240	SPECIAL BOLT *T	2	6 x 22 SWCH22A(YL)
31	3012019500	FIXTURE TUBE FIT B	2	PP
32	3013064200	HOLDER TUBE A	1	ACETAL
33	3011471010	COVER CAB BRKT	1	PP

NO	PART CODE	PART NAME	Q'TY	REMARK
34	7142401611	SCREW TAPPING	3	T2 TRS 4 x 16 MFZN
36	3010326700	BASE COMP AS	1	SBHG T1.2
37	3016003300	SPECIAL BOLT	4	T2 M6.5 x 20 4EA
38		CORD POWER AS	1	
39	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
40	7051401065	SCREW MACHINE	1	PAN 4 x 10 SW BSNI
41		COMP	1	
42	3016002500	SPECIAL WASHER	4	SK-5 T0.8
43	3010101600	RUBBER ABSORBER COMP	4	
44 -1		SWITCH P RELAY AS	1	
44 -2	3811402100	COVER RELAY	1	DS3 - 3NORYL S/S
45	3011113500	CASE VAPORI	1	PP + CTALC
46	3013201700	HOSE DRAIN B	1	PE FRB-5350NT
47	3014413730	PIPE WICON AS	1	
48	3010102100	ABSORBER C MOTR	1	NR FRB-5350NT
49	3012004400	FIXTURE C MOTR	1	SUS
50	3015911500	MOTOR C FAN AS	1	DC12V 2.5W
51	3011802200	FAN	1	ABS (O.D.)3.17 x D110
52	3011200500	CLAMP FAN	1	SUS 304
53	3016806900	DRYER AS	1	XH-9 15g
54	3011474700	COVER MACH ROOM AS	1	SBHG T 0.4
55	7112401211	SCREW TAPPING	6	T1 TRS 4 x 12 MFZN
56	3015403200	VALVE WATER AS	1	
57	3012007800	FIXTURE MOTOR A	1	PP
58	3015911400	MOTER R FAN AS	1	
59	3012007900	FIXTURE MOTOR B	1	HIPS
60	7122401211	SCREW TAPPING	2	T2S TRS 4 x 12 MFZN
61	3011802200	FAN	1	ABS (O.D.)3.17 x D110
62	3013344200	INSU DAMP B	1	F-PS
63	3013344100	INSU DAMP A	1	F-PS
64	3011471200	COVER DAMP	1	HIPS
65	3018701800	DEO ANTI AS	1	
66	3011471300	COVER DEO	1	ABS

NO	PART CODE	PART NAME	Q'TY	REMARK
67	3017905300	SOCKET R LAMP AS	2	
68	7121300811	SCREW TAPPING	1	T2S PAN 3 x 8
69		LAMP R A	2	
70	3015507900	WINDOW R LAMP A	1	MIPS
71	3016002710	SPECIAL SCREW	2	4 x 12
72	3010903200	CAP SCREW	2	PE
73	3017827300	SHELF R AS	4	GLASS + HIPS
74	3012514500	GUIDE CASE A *L AS	5	ABS
75	3012514600	GUIDE CASE A *R AS	5	ABS
76	7142401611	SCREW TAPPING	10	T2 TRS 4 x 16 MFZN
77	3011171200	CASE CHILD AS	1	GPPS + HIPS
79	3018701800	DEO ANTI AS	1	
80	3011472900	COVER RETURN DUCT	1	HIPS
81	3011172000	CASE VEGETB A AS	1	GPPS + HIPS
82	3011485400	COVER VEGETB CASE B	1	GPPS
83	3011172100	CASE VEGETABLE B AS	1	GPPS + HIPS
84	3017827500	SHELF WINE AS	1	ABS
85	3016002710	SPECIAL SCREW	2	4 x 12
86	3010903200	CAP SCREW	2	PE
87	3018124000	SWITCH LAMP	1	SP201R -7DR
88	3017100500	FLAP MULT DUCT	1	PP
89	3013345000	INSU MULT DUCT AS	1	F-PS
90	3011472700	COVER MULT DUCT	1	HIPS
91	3013408100	KNOB MULT DUCT	1	ABS
92	3017905310	SOCKET R LAMP AS	1	250V 1A
93		LAMP R B	1	
94	3015508000	WINDOW R LAMP B	1	MIPS
95	3011473000	COVER SENS	1	ABS
96	3014805400	SENSOR R AS	1	PBN-438
97	3011171300	CASE EGG AS	1	GPPS
98	3014002500	PACKING W/TUBE GUIDE A	2	SILICON
99	3018200800	WATER TANK AS	1	HDPE
100	3012514200	GUIDE DRN	1	GA

NO	PART CODE	PART NAME	Q'TY	REMARK
101	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
102	3012007800	FIXTURE MOTOR A	1	PP
103	3015911310	MOTOR F FAN	1	DL-2213DWFA-2
104	3018917200	LOUVER F C	1	PP
105	7142401611	SCREW TAPPING	3	T2 TRS 4 x 16 MFZN
106	3011834500	FAN	1	ABS (O.D.)3.17 x D130
107	3018914910	LOUVER F D AS	1	PP
108	3014805300	SENSOR F AS	1	PT-38
109	3018914700	LOUVER F B AS	1	HIPS
110	3018914600	LOUVER F A AS	1	HIPS
111	7142401611	SCREW TAPPING	3	T2 TRS 4 x 16 MFZN
112	3010924600	CAP F LUVR	3	HIPS
113	3011473000	COVER SENSOR	1	ABS
114	3012205800	FRAME ICE MAKER AS	1	FR-S660CW
117	3012517900	GUIDE G/MOTR BRACKET *R	1	ABS
118		BRACKET G/MOTR AS	1	
119	3012517800	GUIDE G/MOTR BRACKET *L	1	ABS
120	3011176200	ICE CRUSHER AS	1	
121	3012517700	GUIDE ICE CRUSHER *R	1	ABS
122	3012520500	GUIDE ICE CRUSHER *L	1	ABS
123	3014559510	PLATE LAMP F	1	SBHG T0.8
124	3017905200	SOCKET F LAMP AS	2	
125		LAMP F	2	
126	7121300811	SCREW TAPPING	4	T2S PAN 3X8 MFZN
127	7112401211	SCREW TAPPING	4	T1 TRS 4 x 12 MFZN
128	3015507710	WINDOW F LAMP	1	MIPS
129	3016002710	SPECIAL SCREW	2	4 x 12
130	3010903200	CAP SCREW	2	PE
131	3018124000	SWITCH LAMP	1	SP201R-7DR
132	3017827100	SHELF F AS	3	GLASS + HIPS
133	3011171400	CASE F A AS	1	GPPS + HIPS

NO	PART CODE	PART NAME	Q'TY	REMARK
134	3011171500	CASE F B AS	1	GPPS + HIPS
135	3019019000	POCKET F *T	2	HIPS
136	3012516000	GUIDE F POCKET	2	PP
137	3019019100	POCKET F *U	3	HIPS
138	30000 28000	ASSY F DR	1	FR -S660CWI
138 -1	3010957100	CAP ICE PATH FRAME	1	HIPS
138 -2	3012314200	GASKET F DR AS	1	PVC
138 -3	3000003700	ASSY F DR URT	1	
139	3011623800	DECO HNDL *T	1	ABS
140	3012628500	HANDLE	1	AL
141	3011613900	DECO HNDL *U	1	ABS
142	3016031700	SPECIAL SCREW	2	
143	3010326100	BASE DECO COVER *T	1	HIPS
144	3010326200	BASE DECO COVER *U	1	HIPS
145	3016002700	SPECIAL SCREW	4	WASR + TRS 5 x 16 MFZN
146	7112401211	SCREW TA PPING	8	T1 TRS 4 x 12 MFZN
147	3011472100	COVER HNDL DECO *T	1	ABS
148	3011472200	COVER HNDL DECO *U	1	ABS
149	3017905500	SOCKET DISP BOX AS	1	250V 1A
150		LAMP DISP	1	
151	3011485800	COVER DISPNS BOX AS	1	FR -S660CWI
151-1	7173300811	SCREW TAPPTITE	7	T1 PAN 3 x 8 MFZN
151-2	30143C3110	PCB FRONT AS	1	FR -S660CW (SBS03-HLCD)
151-3	3016302600	BUTTON CONTL B	4	ABS
151-4	3016303100	BUTTON CONTL A	4	ABS
151-5	3015508700	WINDOW F PCB	1	ABS
151-6	3011485500	COVER DISPNS BOX	1	ABS
152	3010539100	BOX DISPNS ICE SHUT AS	1	GPPS + ABS
153	3015102200	SPRING ICE D/LEVER	1	ϕ 0.8 SUS 304
154	3011485900	COVER ICE FLAP AS	1	
155	3012019700	FIXTURE ICE SHUT LVR	1	T1 SUS304
156		VALVE SOL DISP	1	
157	3012020000	FIXTURE MICRO S/W	1	T0.6 SUS304-3/4H
158	3018125800	SWITCH MICRO	1	VP333A-2D

NO	PART CODE	PART NAME	Q'TY	REMARK
159	3012518200	GUIDE DISPENSER A	1	ABS
160	3012518900	GUIDE DISPENSER B	1	SILICON
161	3012402100	GRILLE DISPENSER	1	ABS
162	3019019400	POCKET DAIRY AS	1	GPPS + HIPS
163	3019019300	P OCKET R *S	1	GPPS
164	3019019800	POCKET R *M	2	HIPS
165	3011474600	COVER HOMEBAR AS	1	GPPS
166	3019022100	POCKET R *H	1	HIPS
167	3012514100	GUIDE R POKT	2	HIPS
168	3012513400	GUIDE BOTL	2	PP
169	3019019200	POCKET R	2	HIPS
170	3000025300	ASSY R DR	1	FR -S580CRI
170-1	3012314500	GASKET R DR AS	1	PVC
170-2	3012314400	GASKET HOMEBAR B AS	1	PVC
170-3	3000003810	ASSY R DR URT	1	
170-4	3012314300	GASKET HOMEBAR A AS	1	PVC
170-5	3011471700	COVER FRAME HOMEBAR	1	ABS
170-6	3012918300	HINGE HOMEBAR *R AS	1	STS304
170-7	3012918200	HINGE HOMEBAR *L AS	1	STS304
170-8	3016030600	SPECIAL SCREW C	8	SUS M5
170-9	3010951500	CAP H OMEBAR ARM PLT * L	2	ABS
170-10	3016030800	SPECIAL SCREW A	2	SUS M5
170-11	3016030600	SPECIAL SCREW C	4	SUS M5
170-12	3014560300	PLATE HOMEBAR ARM *R AS	1	STS 304
170-13	3011791900	DOOR HOMEBAR URT AS	1	
170-14	3014560200	PLATE HOMEBAR ARM *L AS	1	STS 304

Total Parts List

FRS-2031

CAUTION : In this Service 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(http://svc.dwe.co.kr)

NO	PART CODE	PART NAME	Q'TY	REMARK
1	3000003620	ASSY CAB URT	1	
2	3012917600	HINGE *T *R AS	1	PO T3.0
3	3012918500	HINGE *T *L AS	1	PO T3.0
4	3016031400	SCREW SPECIAL	2	
6	7051401065	SCREW MACHINE	1	PAN 4 x 10 SW BSNI
7	3011472400	COVER HI *T *R	1	PP
8	3011472300	COVER HI *T *L	1	PP
9	7112401211	SCREW TAPPING	2	T1 TRS 4 x 12 MFZN
10	3012601301	HANDLE CAB COVR *R	1	PP
11	3012601201	HANDLE CAB COVR *L	1	PP
12	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
13	3010533400	BOX MAIN PCB	1	PP
14		CAPACITOR RUN	1	
15		PCB MAIN AS	1	
16	3011472610	COVER MAIN PCB BOX	1	PP
17	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
18	3013223400	HOSE ICE MAKER TUBE AS	1	
19	3012519200	GUIDE CAB W/TUBE A AS	1	
20	3011485600	COVER GUIDE CAB W/TUBE A	1	HIPS
21	3011202000	CLAMP WATER TUBE A	5	PA-66
22	3012917800	HINGE *U *R AS	1	PO T3.0
23	3012917700	HINGE *U *L AS	1	PO T3.0
24	3012513300	GUIDE *U HINGE *U	2	POM
25	7002501611	SCREW MACHINE	2	TRS M5 x 16 MFZN
26	3016001240	SPECIAL BOLT *T	8	6 x 22 SWCH22A(YL)
27	3015306700	SUPPORTER *U HI AS	2	PO T5.0
28	3012104400	FOOT ADJUST AS	2	
29	3016501200	CASTER TURN AS	2	TURN CASTER
30	3016001240	SPECIAL BOLT *T	2	6 x 22 SWCH22A(YL)
31	3012019500	FIXTURE TUBE FIT B	2	PP
32	3013064200	HOLDER TUBE A	1	ACETAL
33	3011471010	COVER CAB BRKT	1	PP

NO	PART CODE	PART NAME	Q'TY	REMARK
34	7142401611	SCREW TAPPING	3	T2 TRS 4 x 16 MFZN
36	3010326700	BASE COMP AS	1	SBHG T1.2
37	3016003300	SPECIAL BOLT	4	T2 M6.5 x 20 4EA
38	3011344200	CORD POWER AS	1	250V 12A
39	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
40	7051401065	SCREW MACHINE	1	PAN 4 x 10 SW BSNI
41		COMP	1	
42	3016002500	SPECIAL WASHER	4	SK -5 T0.8
43	3010101600	RUBBER ABSORBER COMP	4	NBR
44 -1		SWITCH P RELAY AS	1	
44 -2	3811402100	COVER RELAY	1	DS3 -3NORYL S/S
45	3011113500	CASE VAPORI	1	PP + CTALC
46	3013201700	HOSE DRAIN B	1	PE FRB -5350NT
47	3014413730	PIPE WICON AS	1	
48	3010102100	ABSORBER C MOTR	1	NR FRB-5350NT
49	3012004400	FIXTURE C MOTR	1	SUS
50	3015911500	MOTOR C FAN AS	1	DC12V 2.5W
51	3011802200	FAN	1	ABS (O.D.)3.17 x D110
52	3011200500	CLAMP FAN	1	SUS 304
53	3016806900	DRYER AS	1	XH-9 15g
54	3011474700	COVER MACH ROOM AS	1	SBHG T0.4
55	7112401211	SCREW TAPPING	6	T1 TRS 4 x 12 MFZN
56	3015403200	VALVE WATER AS	1	
57	3012007800	FIXTURE MOTOR A	1	PP
58	3015911400	MOTER R FAN AS	1	
59	3012007900	FIXTURE MOTOR B	1	HIPS
60	7122401211	SCREW TAPPING	2	T2S TRS 4 x 12 MFZN
61	3011802200	FAN	1	ABS (O.D.)3.17 x D110
62	3013344200	INSU DAMP B	1	F-PS
63	3013344100	INSU DAMP A	1	F-PS
64	3011471200	COVER DAMP	1	HIPS
65	3018701800	DEO ANTI AS	1	
66	3011471300	COVER DEO	1	ABS

NO	PART CODE	PART NAME	Q ' TY	REMARK
67	3017905300	SOCKET R LAMP AS	2	
68	7121300811	SCREW TAPPING	1	T2S PAN 3 x 8
69		LAMP R A	2	
70	3015507900	WINDOW R LAMP A	1	MIPS
71	3016002710	SPECIAL SCREW	2	4 x 12
72	3010903200	CAP SCREW	2	PE
73	3017827300	SHELF R AS	4	GLASS + HIPS
74	3012514500	GUIDE CASE A *L AS	5	ABS
75	3012514600	GUIDE CASE A *R AS	5	ABS
76	7142401611	SCREW TAPPING	10	T2 TRS 4 x 16 MFZN
77	3011171200	CASE CHILD AS	1	GPPS + HIPS
79	3018701800	DEO ANTI AS	1	
80	3011472900	COVER RETURN DUCT	1	HIPS
81	3011172000	CASE VEGETB A AS	1	GPPS + HIPS
82	3011485400	COVER VEGETB CASE B	1	GPPS
83	3011172100	CASE VEGETABLE B AS	1	GPPS + HIPS
84	3017827500	SHELF WINE AS	1	ABS
85	3016002710	SPECIAL SCREW	2	4 x 12
86	3010903200	CAP SCREW	2	PE
87	3018124000	SWITCH LAMP	1	SP201R-7DR
88	3017100500	FLAP MULT DUCT	1	PP
89	3013345000	INSU MULT DUCT AS	1	F-PS
90	3011472700	COVER MULT DUCT	1	HIPS
91	3013408100	KNOB MULT DUCT	1	ABS
92	3017905310	SOCKET R LAMP AS	1	250V 1A
93		LAMP R B	1	
94	3015508000	WINDOW R LAMP B	1	MIPS
95	3011473000	COVER SENS	1	ABS
96	3014805400	SENSOR R AS	1	PBN -438
97	3011171300	CASE EGG AS	1	GPPS
98	3014002500	PACKING W/TUBE GUIDE A	2	SILICON
99	3018200800	WATER TANK AS	1	HDPE
100	3012515000	GUIDE DRN AS	1	FR -S580CG

NO	PART CODE	PART NAME	Q'TY	REMARK
101	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
102	3012007800	FIXTURE MOTOR A	1	PP
103	3015911310	MOTOR F FAN	1	DL-2213DWFA-2
104	3018917200	LOUVER F C	1	PP
105	7142401611	SCREW TA PPING	3	T2 TRS 4 x 16 MFZN
106	3011834500	FAN	1	ABS (O.D.)3.17 x D130
107	3018914910	LOUVER F D AS	1	PP
108	3014805300	SENSOR F AS	1	PT-38
109	3018914700	LOUVER F B AS	1	HIPS
110	3018914600	LOUVER F A AS	1	HIPS
111	7142401611	SCREW TAPPING	3	T2 TRS 4 x 16 MFZN
112	3010924600	CAP F LUVR	3	HIPS
113	3011473000	COVER SENSOR	1	ABS
114	3012205800	FRAME ICE MAKER AS	1	FR-S660CW
117	3012517900	GUIDE G/MOTR BRACKET *R	1	ABS
118		BRACKET G/MOTR AS	1	
119	3012517800	GUIDE G/MOTR BRACKET *L	1	ABS
120	3011176200	ICE CRUSHER AS	1	
121	3012517700	GUIDE ICE CRUSHER *R	1	ABS
122	3012520500	GUIDE ICE CRUSHER *L	1	ABS
123	3014559510	PLATE LAMP F	1	SBHG T0.8
124	3017905200	SOCKET F LAMP AS	2	
125		LAMP F	2	
126	7121300811	SCREW TAPPING	4	T2S PAN 3X8 MFZN
127	7112401211	SCREW TAPPING	4	T1 TRS 4 x 12 MFZN
128	3015507710	WINDOW F LAMP	1	MIPS
129	3016002710	SPECIAL SCREW	2	4 x 12
130	3010903200	CAP SCREW	2	PE
131	3018124000	SWITCH LAMP	1	SP201R-7DR
132	3017827100	SHELF F AS	3	GLASS + HIPS
133	3011171400	CASE F A AS	1	GPPS + HIPS

NO	PART CODE	PART NAME	Q ' TY	REMARK
134	30111171500	CASE F B AS	1	GPPS + HIPS
135	3019019000	POCKET F *T	2	HIPS
136	3012516000	GUIDE F POCKET	2	PP
137	3019019100	POCKET F *U	3	HIPS
138	3000028000	ASSY F DR	1	FR -S660CWI
138 -1	3010957100	CAP ICE PATH FRAME	1	HIPS
138-2	3012314200	GASKET F DR AS	1	PVC
138 -3	3000003700	ASSY F DR URT	1	
139	3011623800	DECO HNDL *T	1	AB S
140	3012628500	HANDLE	1	AL
141	3011613900	DECO HNDL *U	1	ABS
142	3016031700	SPECIAL SCREW	2	
143	3010326100	BASE DECO COVER *T	1	HIPS
144	3010326200	BASE DECO COVER *U	1	HIPS
145	3016002700	SPECIAL SCREW	4	WASR + TRS 5 X 16 MFZN
146	7112401211	SCREW TAPPING	6	T1 TRS 4 x 12 MFZN
147	3011472100	COVER HNDL DECO *T	1	ABS
148	3011472200	COVER HNDL DECO *U	1	ABS
149	3017905500	SOCKET DISP BOX AS	1	250V 1A
150		LAMP DISP	1	
151	3011485800	COVER DISPNS BOX AS	1	FR -S650CWI
151-1	7173300811	SCREW TA PPTITE	7	T1 PAN 3 x 8 MFZN
151-2	30143C3110	PCB FRONT AS	1	FR -S660CW (SBS03 - HLCD)
151-3	3016302600	BUTTON CONTL B	4	ABS
151-4	3016303100	BUTTON CONTL A	4	ABS
151 -5	3015508700	W INDOW F PCB	1	ABS
151-6	3011485500	COVER DISPNS BOX	1	ABS
152	3010539100	BOX DISPNS ICE SHUT AS	1	GPPS + ABS
153	3015102200	SPRING ICE D/LEVER	1	ϕ0.8 SUS 304
154	3011485900	COVER ICE FLAP AS	1	
155	3012019700	FIXTURE ICE SHUT LVR	1	T1 SUS304
156		VALVE SOL DISP	1	DISP SN6
157	3012020000	FIXTURE MICRO S/W	1	T0.6 SUS304-3/ 4H
158	3018125800	SWITCH MICRO	1	VP333A-2D

NO	PART CODE	PART NAME	Q' TY	REMARK
159	3012518200	GUIDE DISPENSER A	1	ABS
160	3012518900	GUIDE DISPENSER B	1	SILICON
161	3012402100	GRILLE DISPENSER	1	ABS
162	3019019400	POCKET DAIRY AS	1	GPPS + HIPS
163	3019019300	POCKET R *S	1	GPPS
164	3019019800	POCKET R *M	2	HIPS
165	3012514100	GUIDE R POKT	2	HIPS
166	3012513400	GUIDE BOTL	2	PP
167	3019019200	POCKET R	2	HIPS
168	3000018800	ASSY R DR	1	FR -S580CG
168 - 1	3012314500	GASKET R DR AS	1	PVC
168 - 2	3000003810	ASSY R DR URT	1	

DAEWOO

DAEWOO ELECTRONICS Corp.

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