

**<SERVICE MANUAL>
SIDE BY SIDE REFRIGERATOR**



MODEL: FRS-T20DA*

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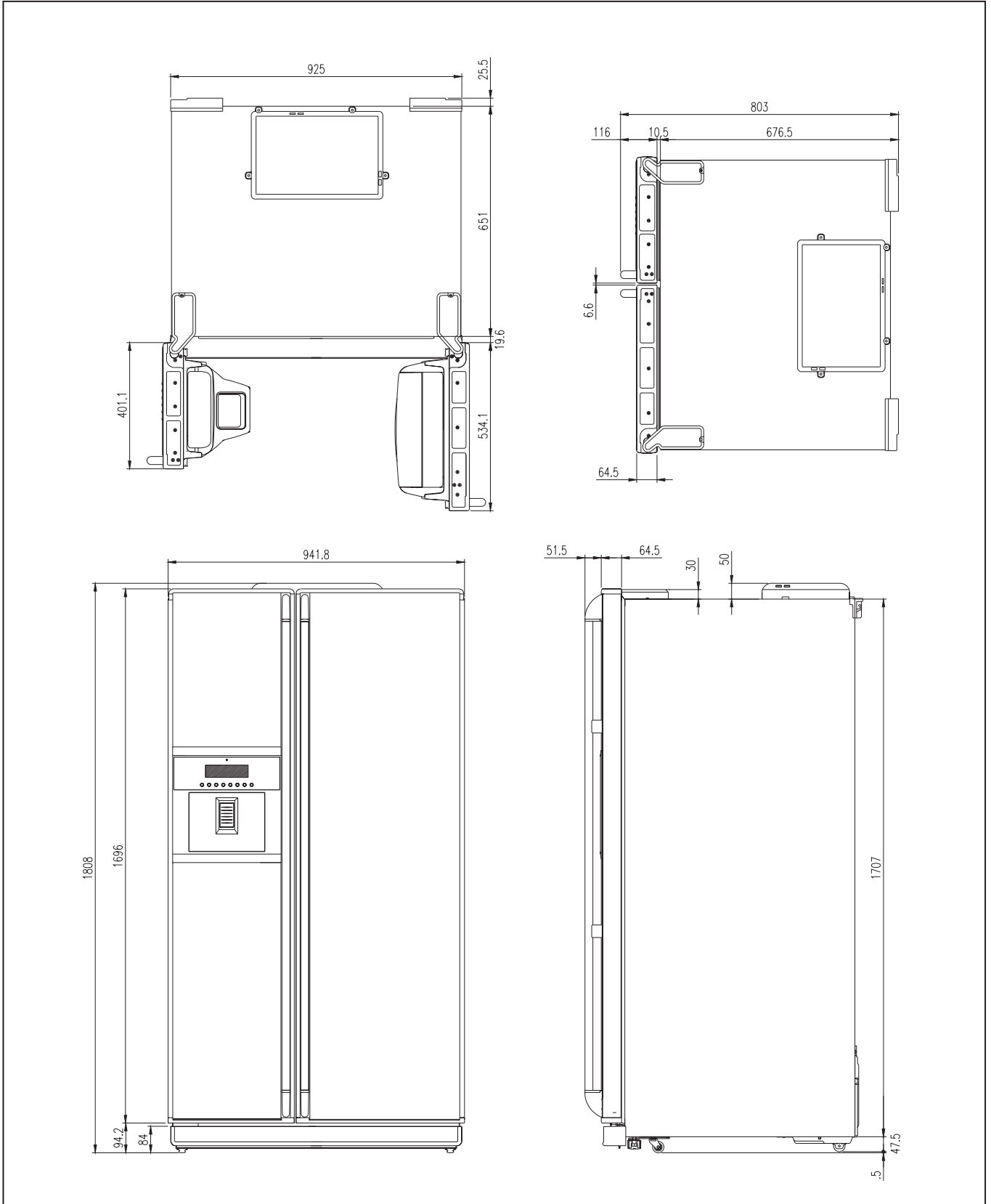
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SAFETY AND PRECAUTION

- 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 gloves 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

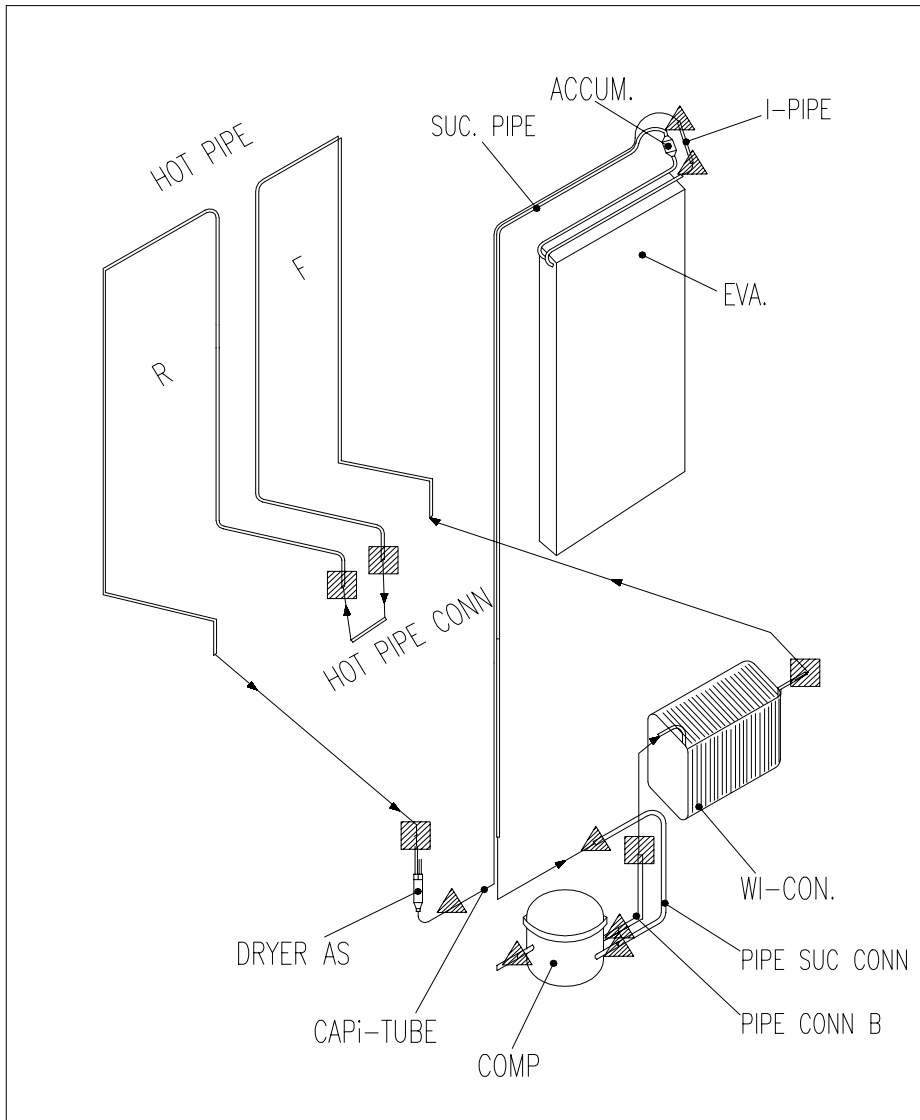
1. EXTERNAL SIZE

■ FRS-T20DA*



2. Refrigeration Cycle

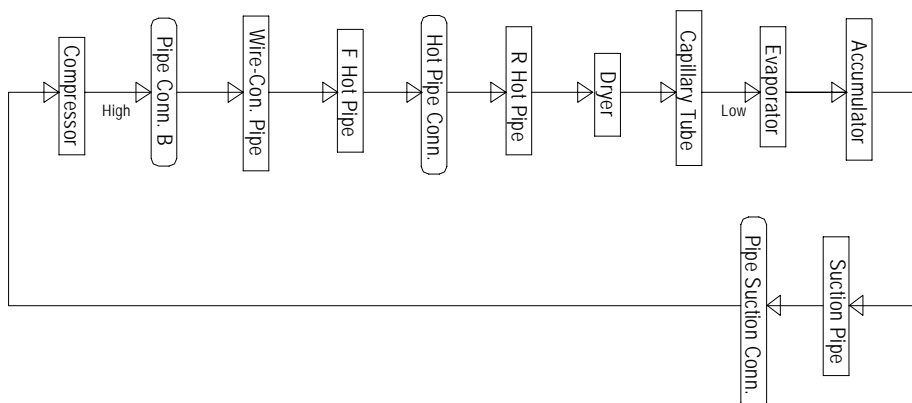
■ MSZ 70* NF (HB)



■ Welding Points

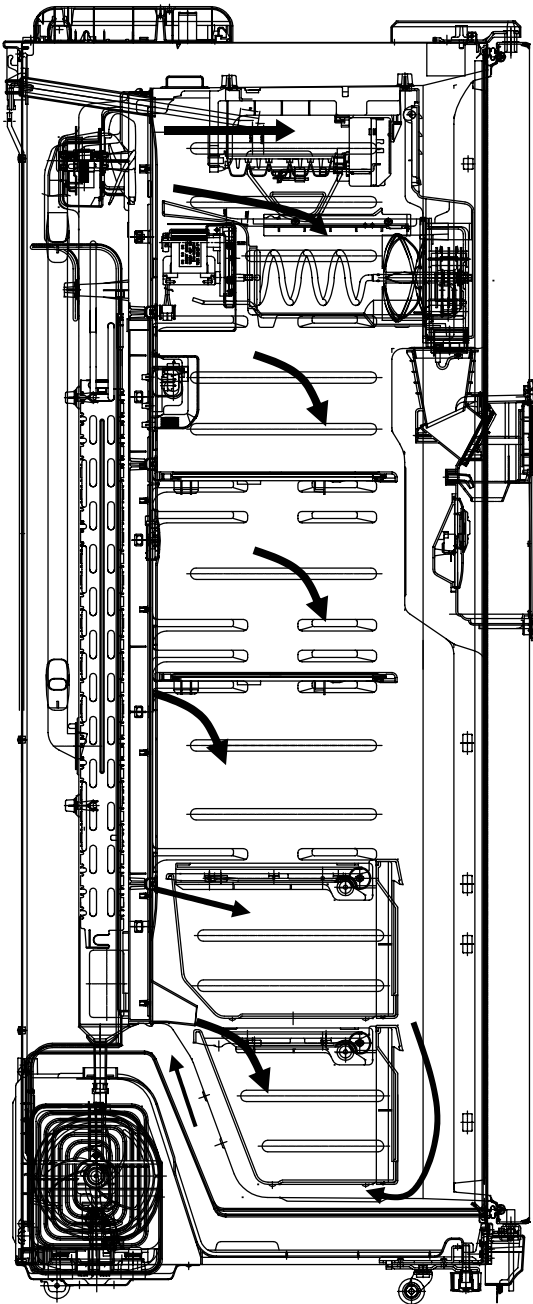
●	5%	7 points
■	35%	5 point

■ Flow of Refrigeration Cycle

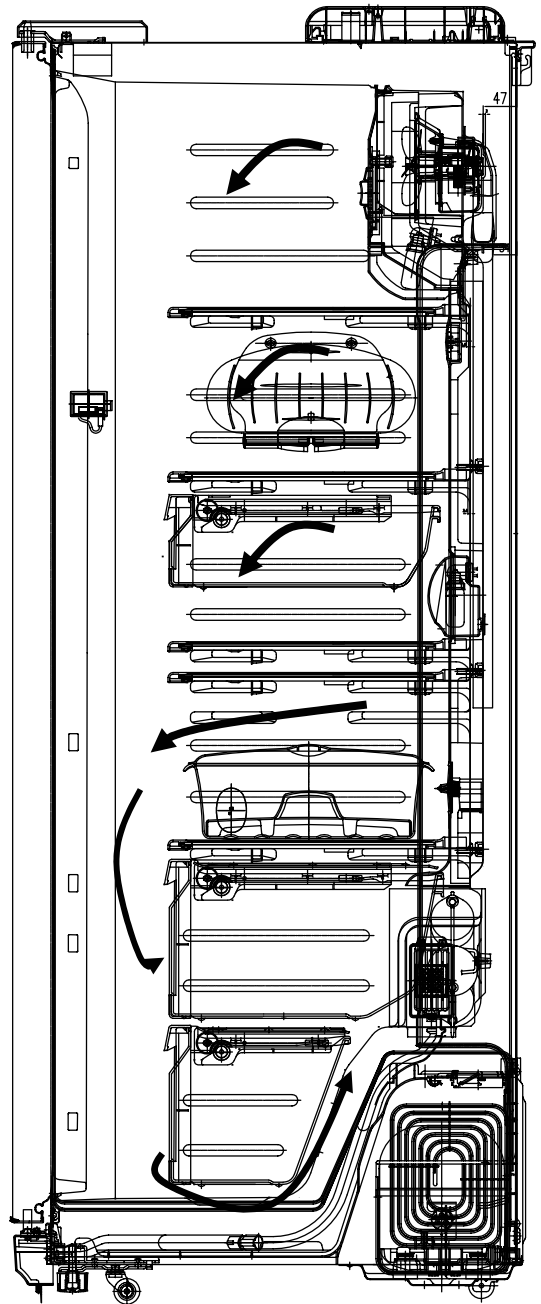


3. Cold Air Circulation

Freezer
Compartment

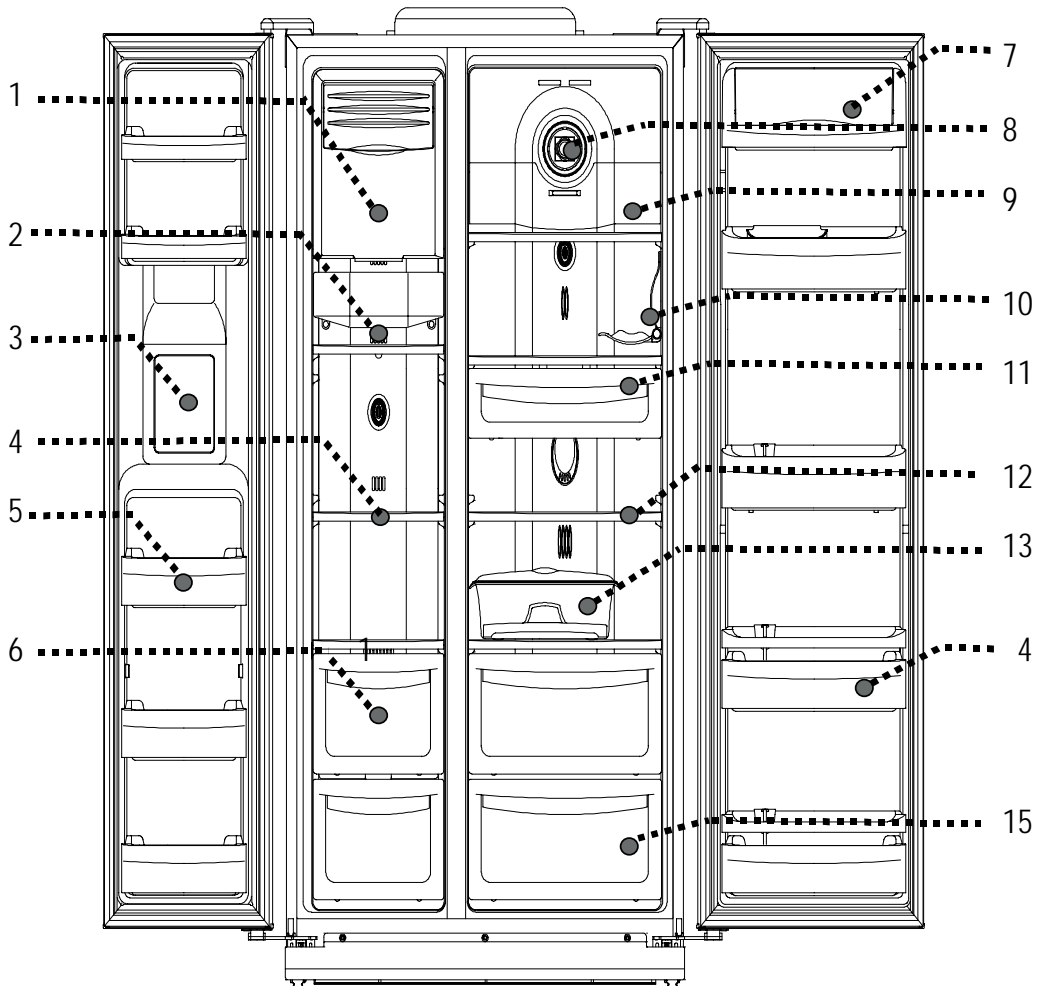


Refrigerator
Compartment



4. NAME OF EACH PART

■ FRS-T20DA*



Freezer

- 1. Ice cubes storage case
- 2. Freezer light
- 3. Water/Ice Dispenser
- 4. Freezer shelves
- 5. Freezer pocket
- 6. Freezer case

Refrigerator Compartment

- 7. Dairy pocket
- 8. Deodorizer
- 9. Refrigerator light(A)
- 10. Wine holder
- 11. Chilled case
- 12. Refrigerator shelves
- 13. Movable Egg case
- 14. Refrigerator pocket
- 15. Refrigerator case

SPECIFICATIONS

1. SPECIFICATIONS

DIVISION		CONTENTS	
MODEL NAME		FRS-T20DA*	
ISO Gross Volume (L)	FREEZER	191	
	REFRIGERATOR	365	
	TOTAL	556	
ISO Storage Volume (L)	FREEZER	174	
	REFRIGERATOR	339	
	TOTAL	513	
EXTERNAL DIMENSION (mm)	WIDTH	928	
	DEPTH	803	
	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)		127	

SPECIFICATIONS

2. ELECTRIC PARTS

1) COMPRESSOR

REFRIGERANT	R134a						
VOLTAGE (V/Hz)	220 ~240/50	230 /50 EUROPE					
COMP MODEL	HPL30YG-5	MK183Q-L2U					
PART CODE	395S130R50	3956183D50					
STARTING TYPE	RSCR	RSCR					

2) RELAY

REFRIGERANT	R134a						
VOLTAGE (V/Hz)	220~240 / 50	230 / 50					
ASSY	TYPE NAME	308NHB	265RHB				
	PART CODE	3018119980	3018125210				
PTC	RESISTANCE	33	33Ω		Ω	Ω	Ω
OVER LOAD	PART CODE	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 μF	X	100 μF	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 s	X	X	5 s	5 s	5 s

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						

SPECIFICATIONS

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	←	←	140W	←	←
PART CODE	X	3012811210	←	←	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 2ND PREMIUM	←	←	←	←	←
PART CODE	X	30143D2060	←	←	←	←	30143D2070

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	←	←	←	←	←

SPECIFICATIONS

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 °C	←	←	←	←	←
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	←	127V/60Hz	220V/60Hz	230V/50Hz	←
PART CODE	x	3015403200	←	3015403100	3015402100	3015403000	←

16) VALVE SOLENOID CRUSHER



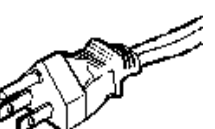
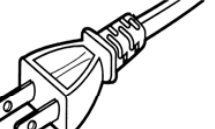
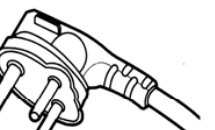
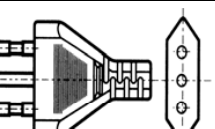
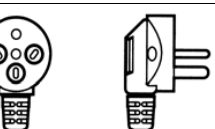
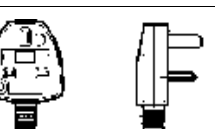
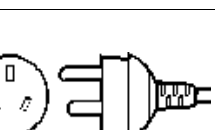
REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220-240 / 50	230 / 50
SPEC	x	110-127V 60Hz	←	←	220-240V 50,60Hz	←	←
PART CODE	x	3015402900	←	←	3015402000	←	←

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	←	←

SPECIFICATIONS

18) 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 housings

3. Door Color Code. 1) Assembly Freezer Door. FRS-T20DA* (220~240V/50Hz)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	3000054340	3000054320	3000054300	3000054330	3000054310

2) Assembly Refrigerator Door

- FRS-T20FA* (100~127V)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	300003944A	300003941A	300003942A	300003943A	300003940A

- FRS-T20FA* (200~240V)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	3000039440	3000039410	3000039420	3000039430	3000039400

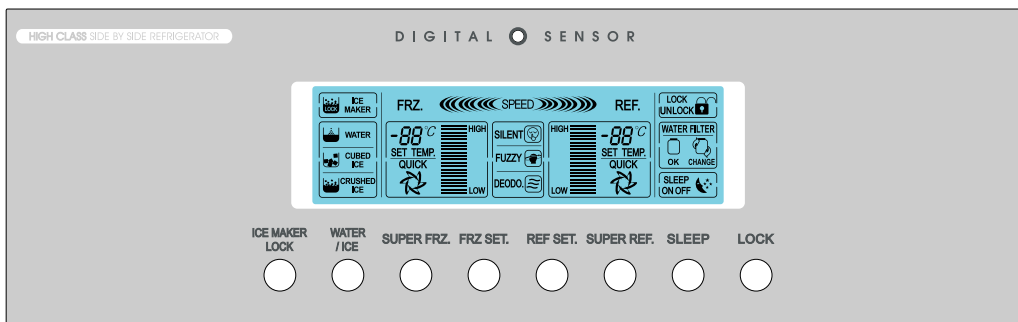
- FRS-T20DA*

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	3000039540	3000039510	3000039520	3000039530	3000039500

1. DISPLAY

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

CONTENTS



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, SET TEMP, 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
<p>2. "FRZ SET." button Temperature control of Freezer compartment 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) →Hlgh Temp. indication : -15°C -17°C -19°C -21°C -25°C</p> <p>3. "SUPER FRZ." button When this mode is chosen, "QUICK" icon and letters of freezer flicker 6 times and ON. (The set temperature and bars are still the previous value.)</p> <p>4. "REF. SET" button Temperature control of Refrigerator compartment 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) →Hlgh Temp. indication : 4°C 3°C 2°C 1°C 0°C</p> <p>5. "SUPER REF." button When this mode is chosen, "QUICK" icon and letters of refrigerator flicker 6 times and ON. (The set temperature and bars are still the previous value.)</p> <p>6. "SLEEP" button Start by pushing the button ("ON" lights.) Stop by pushing button again ("OFF" lights.) Automaticcally terminated after maximum 12 hours ("OFF" lights.)</p> <p>7. Water/Ice button Select Water mode or Ice mode. 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</p> <p>8. "LOCK" button Start by pushing the button ("LOCK" letters and icon light.) *No other buttons and modes, buzzer sound are controllable. Stop by pushing button again for a second ("OFF" and icon light.) * Except "Lock" button, other buttons are inactive during "Sleep" mode.</p>	

OPERATION AND FUNCTIONS

CONTENTS	REMARK
<p>9. "ICE MAKER LOCK" button Start by pushing "ICE MAKER LOCK" button</p> <ul style="list-style-type: none">▶ "ICE MAKER LOCK" is "ON",▶ The Icon & Box of "Cube Ice"/"Crushed Ice" disappear▶ "Water" Icon & Box is always "ON" <p>Stop by pushing "ICE MAKER LOCK" button again.</p> <ul style="list-style-type: none">▶ "ICE MAKER LOCK" Icon is "OFF",▶ The Icon & Box of "Cube Ice"/"Crushed Ice" is "OFF",▶ "Water" Icon & Box is "ON".	
<p>10. Filter information The normal("OK" Icon) is on for 6 month after first power input. After six month, "CHANGE" Icon is on. How to reset Filter information.</p> <ul style="list-style-type: none">▶ Push "LOCK" button and push the "ICE MAKER LOCK" button for 3 seconds.	

2. Temperature Control of Freezer Compartment (FC)

INPUT	Control Object																		
1. FRZ. SET button 2. SUPER FRZ. button 3. F-sensor	1. COMP 2. F-FAN																		
CONTENTS																			
REMARKS																			
<p>1. Temperature modes change by pushing the button.</p> <p style="text-align: center;"> Low → Low-Mid → Mid → Mid-High → High </p> <p>2. Comp. and F-fan are controlled by ON / OFF point of each mode.</p> <p>3. Freezer Compartment [ON / OFF] DIFF : 2 °C (Freezer middle OFF point : -20.0 °C) (If RT ≤ 13°C, F-S OFF point is 2°C UP. Freezer Middle OFF point : -18°C)</p> <p>4. Freezer Compartment [Low → (Low-Mid) → Mid → (Mid-High)] DIFF : 2 degrees respectively *([(Mid-High) → High] DIFF : 4 degrees)</p> <p>5. Control point of each mode</p> <div style="text-align: center;"> <table border="1" style="margin: 10px auto;"> <caption>Temperature Control Points</caption> <thead> <tr> <th>Mode</th> <th>ON point (°C)</th> <th>OFF point (°C)</th> </tr> </thead> <tbody> <tr> <td>Low</td> <td>-1.4</td> <td>-1.6</td> </tr> <tr> <td>(Low-Mid)</td> <td>-1.6</td> <td>-1.8</td> </tr> <tr> <td>Mid</td> <td>-1.8</td> <td>-2.0</td> </tr> <tr> <td>(Mid-High)</td> <td>-2.0</td> <td>-2.2</td> </tr> <tr> <td>High</td> <td>-2.4</td> <td>-2.6</td> </tr> </tbody> </table> </div>		Mode	ON point (°C)	OFF point (°C)	Low	-1.4	-1.6	(Low-Mid)	-1.6	-1.8	Mid	-1.8	-2.0	(Mid-High)	-2.0	-2.2	High	-2.4	-2.6
Mode	ON point (°C)	OFF point (°C)																	
Low	-1.4	-1.6																	
(Low-Mid)	-1.6	-1.8																	
Mid	-1.8	-2.0																	
(Mid-High)	-2.0	-2.2																	
High	-2.4	-2.6																	

CONTENTS	REMARKS
<p>6. SUPER FRZ. (Quick Freezing)</p> <p>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.</p>	<p>* <u>ON/OFF DIFF.</u> : fixed by MICOM</p> <p>* <u>STEP DIFF.</u> : fixed by MICOM</p> <p>* <u>Comp. and C-fan</u> : linked</p>

3. Temperature Control of Refrigerator Compartment (RC)

INPUT	Control Object
1. REF. SET button 2. R-sensor	1. COMP 2. R-FAN
CONTENTS	REMARKS
<p>1. Temperature modes change by pushing the button.</p> <p>Low → Low -Mid → Mid → Mid-High → High</p> <p>2. R-fan are controlled by ON / OFF point of each mode.</p> <p>3. Refrigerator Compartment [ON / OFF] DIFF : 0.5 °C (Refrigerator Compartment middle OFF point : 0.7°C) (If $RT \leq 13^{\circ}C$, R-S OFF point is 2 °C UP. Refrigerator Middle OFF point : 2.7°C)</p> <p>4. Refrigerator Compartment [Low →(Low-Mid)→ Mid →(Mid-High)] DIFF : 1 degree respectively</p> <p>5. Prevention of weak/poor-refrigeration</p> <p>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°C 4) Termination point : Same as R-sensor OFF point of each mode</p>	<p>* <u>ON/OFF Diff.</u> : fixed by MICOM</p> <p>* <u>STEP DIFF.</u> : fixed by MICOM</p>

CONTENTS	REMARKS
<p>6. Control point of each mode</p> <p>7. Super refrigeration proceeds for 40 minutes. * Example of temperature change (Refrigerator ; Low (normal) -> Super refrigeration)</p> <ol style="list-style-type: none"> 1) R-fan and comp. are ON until R-sensor reaches to over-refrigeration OFF point (-7°C). 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. 	

4. Sleep Mode

INPUT	Control Object	
1. SLEEP button	1. COMP 2. R-FAN 3. F-FAN 4. CUSTOM-LCD	
CONTENTS		REMARKS
<p>1. This mode starts with a push of SLEEP button.</p> <p>2. Conditions to start Sleep mode F-sensor = -13°C Unless it is a restart within 40 minutes after the end of previous Sleep mode F-sensor error Door switch error Defrosting (Heater defrosting, pause, Fan delay) If the above conditions of ~ are all satisfied, the sleep mode starts.</p> <p>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 in Silent mode and "ON" letters of SLEEP on LCD is displayed on.</p> <p>4. Termination of Sleep mode 1) MODE 1 F-sensor = -9°C In case of F-sensor error When other button is pushed during this mode Total F/R door open time exceeds 30 seconds during the mode If Sleep mode is terminated by , and , F/R-fan delay for 5 minutes and restart of this mode is prevented for 40minutes. If 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.)</p> <p>5. After Sleep mode stops all the electrical parts return to normal operation and Sleep icon changes from "ON" to "OFF".</p> <p>6. If Sleep mode starts during PRECOOL, it goes on again after the Sleep mode is terminated.</p> <p>7. If Sleep mode starts during Super FRZ., Super REF., it returns to previous set mode after the Sleep mode is terminated.</p>		

5. SILENT (Silence Mode)

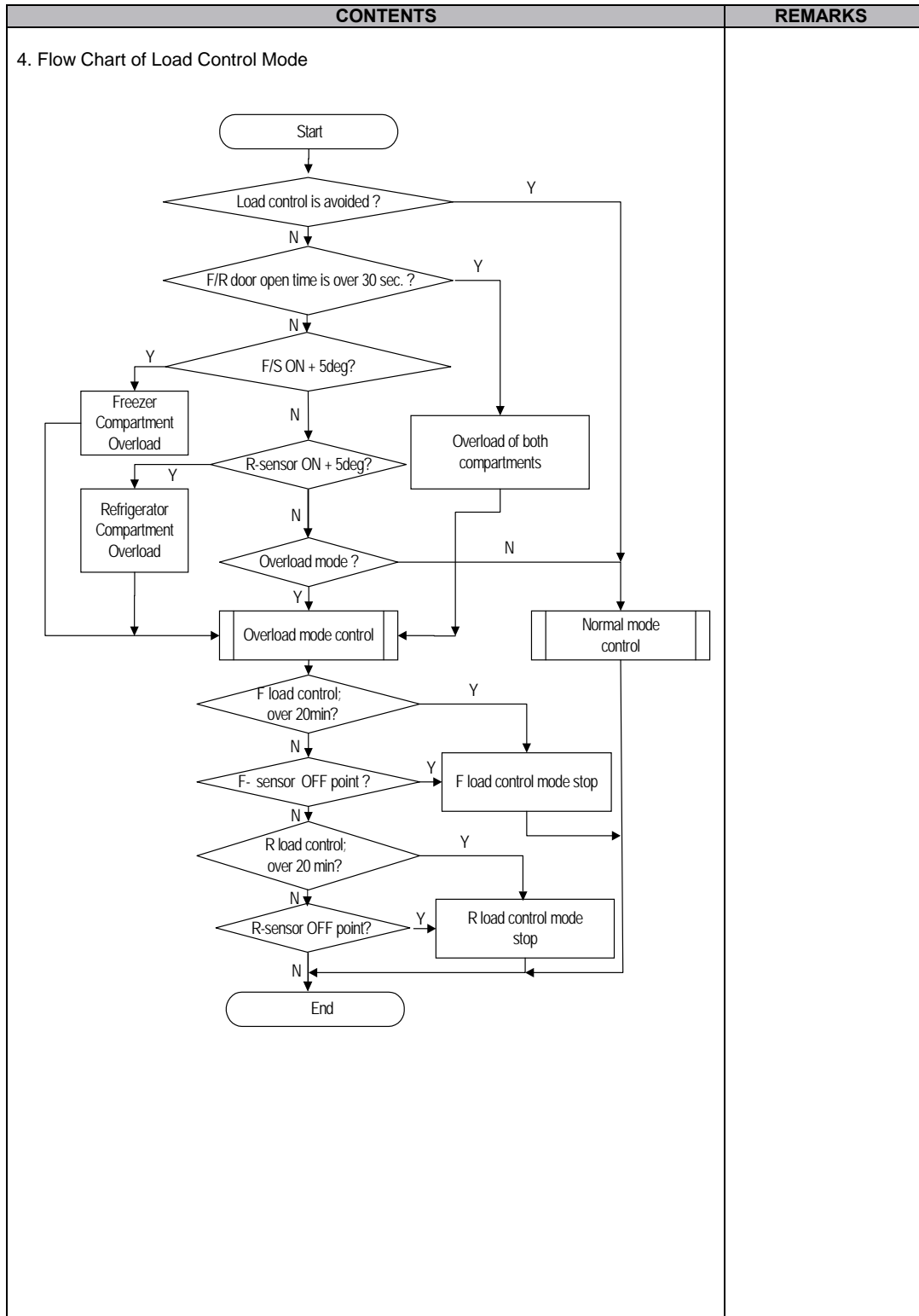
INPUT		Control Object															
1. CDS SENSOR		1. COMP 2. R-FAN 3. F-FAN 4. CUSTOM-LCD															
CONTENTS				REMARKS													
1. Purpose of Silence mode To reduce refrigerator noise at night by decreasing fan RPM to a minimum degree																	
2. Condition to start The optical or 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.) - Standard value to decide "night" : below 5~7 Lux (optical sensor surface) - Standard value to decide "daytime" : above 4~16 Lux (optical sensor surface)																	
3. Control Method																	
<table border="1"> <thead> <tr> <th colspan="2">Control Mode</th> <th>F-FAN</th> <th>R-FAN</th> <th>C-FAN</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Silence</td> <td>Normal</td> <td>10V</td> <td>10V</td> <td>10V</td> </tr> <tr> <td>Load Control</td> <td>12V</td> <td>12V</td> <td>12V</td> </tr> </tbody> </table>					Control Mode		F-FAN	R-FAN	C-FAN	Silence	Normal	10V	10V	10V	Load Control	12V	12V
Control Mode		F-FAN	R-FAN	C-FAN													
Silence	Normal	10V	10V	10V													
	Load Control	12V	12V	12V													
4. Termination Condition The mode stops if lux value is above the standard for more than 1 minute.																	

6. 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)				
F or R door open time exceeds 30 second at a time Freezer and Refrigerator load control starts respectively .				
Over [F-sensor On Point + 5 degree] → F load control				
Over [R-sensor On Point + 5 degree] → R load control				
4) Conditions to avoid load control				
Initial operation (right after power input, 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				
The mode works for 20 minutes.				
(If another condition happens at the end of the mode, it starts again.)				
When it reaches to [F-sensor Off point], F-fan load control mode stops.				
When it reaches to [R-sensor Off point], R-fan load control mode stops.				

CONTENTS	REMARKS
<p>3. Control Time Chart of Each Mode</p> <p>1) Start & stop of load control mode (Normal Control)</p> <p>2) Start & stop of load control mode (Silence Control)</p> <p>3) Start & stop of load control mode (Normal defrosting control)</p>	



7. 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	
1. Conditions to start defrosting cycle 1) Total comp. work time : 6, 8, 24 hours. 2) Total door open time : 3 minutes (Any door - F or R - open time is over 3 minutes.) 3) Total time of [comp. ON + comp. OFF] : 60 hours 4) Any error mode : R1, F1, D1, F3, RT/S, Door-switch 2. Conditions to start defrosting mode 1) The mode starts with the following conditions ; ① Any error happens when total comp. work time is 6 or 8..... or 24hours. ② Total door open time is over 3 minutes. (Any door - F or R - open time is over 3 minutes.) 2) Defrosting mode starts unconditionally as long as total comp. work time is 24 hours, even if the above conditions(①~②) 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.	Remark

CONTENTS	REMARKS
<p>3. Flow Chart of Defrosting Start</p> <pre> graph TD Start([Start]) --> D1{Comp. work time is over 2 hours?} D1 -- No --> End[End] D1 -- Yes --> D2{Total time is over 60 hours?} D2 -- Yes --> StartDefrost[Defrosting mode starts.] D2 -- No --> D3{Comp. work time is over 24 hours?} D3 -- Yes --> StartDefrost D3 -- No --> D4{Comp. work time is over 6 hours?} D4 -- No --> End D4 -- Yes --> D5{Total door open time is over 3 minutes?} D5 -- Yes --> StartDefrost D5 -- No --> D6{Any error?} D6 -- Yes --> StartDefrost D6 -- No --> End </pre>	

8. Defrosting Mode

INPUT	Control Object	
1. Defrosting Cycle	1. COMP 2. F-FAN 3. R-FAN 4. HEATER	
CONTENTS		REMARKS
1. Defrosting Mode		
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Pre-Cool</div> <p style="text-align: center;">↓</p>	1) Time : 50 minutes 2) Comp. / F-fan : ON R-fan : Control Heater : OFF 3) If F-sensor $\leq -27^{\circ}\text{C}$, then PRE-COOL becomes.OFF	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Heater Defrosting</div> <p style="text-align: center;">↓</p>	1) Comp. /F-fan / R-fan : OFF HTR : ON 2) Time limit 30 seconds : Heater is ON regardless of D-sensor temperature right after defrosting start. 30 minutes : in case of D1-Error 80 minutes : in normal control state 3) If D-sensor $\geq 10^{\circ}\text{C}$, Heater Defrosting is OFF	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Pause</div> <p style="text-align: center;">↓</p>	1) Time : 7 minutes Comp./ F-fan / R-fan / Heater / Homebar HTR : OFF	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Fan Delay</div>	1) Time : 5 minutes Comp. : ON F/R-fan, Heater : OFF	

9. Error Display (LCD Display of Front PCB)

INPUT	Control Object	
1. Temperature Control Buttons	LCD	
CONTENTS		REMARKS
<p>1. How to start</p> <p>1) Press "crushed ice" button 5 times while pressing "water" button at the same time.</p> <p>2) Push "super freeze" button 5 times while pushing "freezer set" button at the same time.</p> <p>2. Display</p> <p>Error code is displayed on LCD.</p> <p>3. How to stop</p> <p>1) Push "reset water filter " button 1 time.</p> <p>2) It stops automatically in 4 minutes from the start.</p> <p>4. All the error Codes are reset if they turn to be normal.</p> <p>5. Error Code</p>		
ERROR CODE	CONTENTS	
<i>F1</i>	F-sensor ; disconnection, short.	
<i>r1</i>	R-sensor ; disconnection, short.	
<i>rt</i>	RT-sensor ; disconnection, short.	
<i>d1</i>	D-sensor ; disconnection, short.	
<i>dr</i>	R-Door Switch ; defective	
<i>dF</i>	F-Door Switch ; defective	
<i>dH</i>	Homebar (Refreshment Center) Door Switch ; defective	
<i>C1</i>	Cycle ; abnormal or defective.	
<i>F3</i>	Return after defrosting ; abnormal or defective	
<i>E1</i>	I sensor ; defective	
<i>EF</i>	F sensor ; defective	
<i>Et</i>	Horizontal switch ; error	
<i>E9</i>	Water supply ; error	
<i>ES</i>	Micro switch ; error	
<i>EA</i>	Drop the ice while Et	
<i>Eu</i>	Full ice switch ; error	
<i>Co</i>	Display Full-Down mode	
<i>d2</i>	Display forced defrost mode for A/S	

CONTENTS		REMARKS																										
<p>6. Control way of Errors (if any)</p> <p>1) "F1" ERROR Cause : F-sensor disconnection / short Control : Condition of ambient temperature</p> <table border="1"> <tr> <td>RT/S</td> <td>~7°C</td> <td>~13°C</td> <td>~19°C</td> <td>~29°C</td> <td>over 29°C</td> </tr> <tr> <td>Work rate ON/OFF</td> <td>14/ 50</td> <td>16 / 41</td> <td>27 / 45</td> <td>26 / 22</td> <td>35 / 20</td> </tr> </table> <p>If F-sensor is normal, the error is terminated automatically.</p> <p>2) "r1" ERROR Cause : R-sensor disconnection / short Control : Condition of ambient temperature</p> <table border="1"> <tr> <td>RT/S</td> <td>~7°C</td> <td>~13°C</td> <td>~19°C</td> <td>~29°C</td> <td>~39°C</td> <td>over 39°C</td> </tr> <tr> <td>Work rate ON/OFF</td> <td>OFF</td> <td>3 / 50</td> <td>2 / 10</td> <td>3 / 7</td> <td>4 / 6</td> <td>6 / 4</td> </tr> </table> <p>If R-sensor is normal, the error is terminated automatically</p> <p>3) "rt" ERROR Cause : RT-sensor disconnection / short (pull-down) Control : Normal operation, deletion of control condition by RT-sensor If RT-sensor is normal, the error is terminated automatically.</p> <p>4) "d1" ERROR Cause : D-sensor disconnection / short (pull-down) Control : Time limit (30min.) of defrosting-return If D-sensor is normal, the error is terminated automatically.</p> <p>5) Door ERROR("dF","dR","dH" on display) Cause : in case it senses that door is open for more than 1 hour. Control : Deletion of function related door switch sensing If door switch (open & close) is sensed, the error is terminated automatically.</p> <p>6) "C1" ERROR Cause : in case comp. works for over 3 hours when D-sensor temp. is over -5°C Control : Normal operation When D-sensor temp. is below -5°C in comp. OFF, it is terminated.</p> <p>7) "F3" ERROR Cause : in case defrosting-return is done by time limit of 80min. Control : Deletion of Pre-cool mode in defrosting mode If defrosting-return is done by D-sensor, it is terminated.</p> <p>8) "d2" MODE (A/S forced defrosting mode) Push " fridge set " button 5 times while pushing "freezer set." button simultaneously. Control : A/S forced defrosting control (Pre-cool is deleted.) If D-sensor temp. is over 10°C, the mode is terminated automatically.</p>		RT/S	~7°C	~13°C	~19°C	~29°C	over 29°C	Work rate ON/OFF	14/ 50	16 / 41	27 / 45	26 / 22	35 / 20	RT/S	~7°C	~13°C	~19°C	~29°C	~39°C	over 39°C	Work rate ON/OFF	OFF	3 / 50	2 / 10	3 / 7	4 / 6	6 / 4	
RT/S	~7°C	~13°C	~19°C	~29°C	over 29°C																							
Work rate ON/OFF	14/ 50	16 / 41	27 / 45	26 / 22	35 / 20																							
RT/S	~7°C	~13°C	~19°C	~29°C	~39°C	over 39°C																						
Work rate ON/OFF	OFF	3 / 50	2 / 10	3 / 7	4 / 6	6 / 4																						

OPERATION AND FUNCTIONS

CONTENTS	REMARKS
<p>9) "EI" ERROR Cause : I-SENSOR disconnection / short Control : After water supply, Ice drop every 4.8hour. Termination : When I-SENSOR is normal.</p> <p>10) "EF" Error Cause : When Flow-sensor is ERROR(There is no Pulse during some time.) The number of pulse signal is below 10 by 1 sec during water supply. Control : Control by time (By Vector time recorded EEPROM.) (Generally, Water is supplied about 5.5s.) Termination : Exchange Flow-Sensor</p> <p>11) "E9" Error Cause : I-Sensor temp(5min after Water supply) doesn't go up. Control : Normal control Termination : Normal condition</p> <p>12) "ES" Error (Micro S/W Error) Cause : When it senses 1min continuously Control : Stop Dispenser & Crusher function. Display : Relative LED is flicker. Termination : Normal condition</p> <p>13) Malfunction of Ice Drop Motor Cause : Malfunction of Ice Drop Motor. [Check the Motor by pushing Test S/W.] Termination : Exchange Motor</p> <p>14) "Eu" Error Cause : Switch(which senses if the ice is full or not) is in Error. Control : When dropping the Ice, the motor just rotates 90 degree. Termination : When the switch is in normal.</p> <p>15) "EA" Error Cause : When sensing Ice dropping by time 3times in level sensor SW Error. Control :Stop of Ice Maker. Termination : With normal level switch. * Reinput of power or push of icemaker test switch.</p> <p>16) "Et" ERROR Cause : Level switch error (No pulse is sensed for some time.) Control : By time. (Supply mode is skipped.) Termination : Normal condition.</p> <p>* When all ERROR CODE is normal, the Refrigerator reset.</p>	

10. Forced Defrosting

INPUT	Control Object
1. "FRZ. SET" Button 2. "REF. SET." button 3. "LOCK" button	Defrosting Mode
CONTENTS	
1. How to start Set "LOCK ON" first, then push "REF. SET" button 5 times while pushing "FRZ. 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)	REMARKS

11. Initial Defrosting

INPUT	Control Object
D-sensor Initial or first power input (power plugin)	Defrosting Mode
CONTENTS	
If D-sensor temp. $\leq 3.5^{\circ}\text{C}$, defrosting mode starts from Pre-cool at first power input.	REMARKS
	Comp. is delayed for 6 min. at the initial defrosting.

12. Buzzer or Alarm

INPUT	Control Object
F-PCB buttons Door Switch Initial Power Input	BUZZER
CONTENTS	
1. Buzzer sounds if any button of F-PCB is pushed. 2. Buzzer sounds 4 times, 3 seconds after initial power input. 3. Buzzer sounds 3 times in case of A/S forced defrosting, 1 time in case of Pull Down operation. 4. If door is open, buzzer sounds every 1 minute for 5 minutes. (Door open alarm)	REMARKS

13. 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	

14. Explanation After Delivery

INPUT	Control Object
"FRZ. SET" button "REF. 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.	

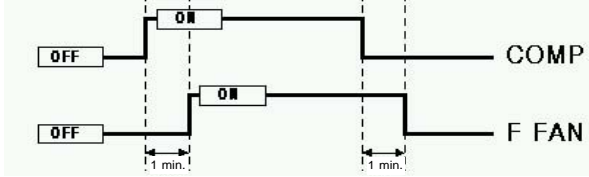
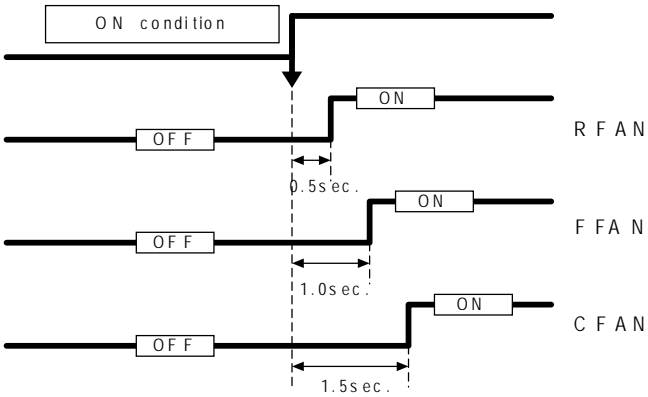
15. Prevention of Compressor Restart

INPUT	Control Object
None	Comp.
CONTENTS	REMARKS
Comp. does not start again for 6 minutes though F-sensor is ON.	6min. delay

16. 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)	

17. Delay Function of Electric Components

INPUT	Control Object	
COMP ON/OFF	COMP F-FAN	
CONTENTS		REMARKS
<p>1) F-fan delay by comp. ON/OFF F-fan is ON/OFF 1 minute after comp. is ON/OFF.</p>  <p>2) F an Delay and Priority</p> 		

18. Home Bar (Home Bar Models Only) Heater

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

19. Control of Interior Lights

INPUT	Control Object	
Refrigerator Door Freezer Door Home-Bar Door (Home Bar Models Only)	COMP	
CONTENTS		REMARKS
<p>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.</p> <p>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.</p> <p>3) R-lights ON/OFF by Home Bar(Home Bar Models Only) 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.)</p> <p>4) DISPENSER LAMP CONTROL DISPENSER LAMP turns ON/OFF by DISPENSER SW. Dispenser Lamp turns ON for 5 seconds after sensing switch close.</p>		

20. Demonstration Function

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

21. Regulation of R-sensor OFF Point

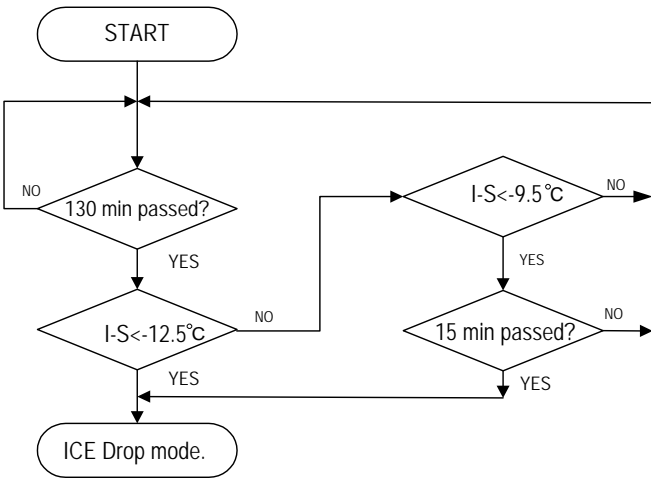
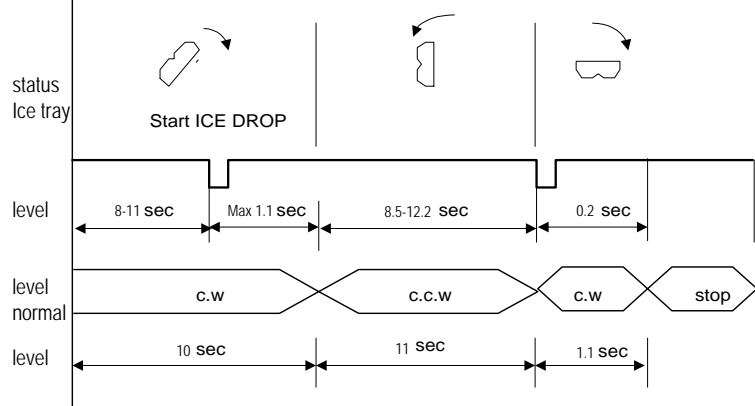
INPUT	Control Object
J1, J2 on Main PCB	Resistance of R-sensor Mid ON/OFF Point
CONTENTS	
<p>Regulation of R-sensor OFF point (1.5degree DOWN) In case refrigeration of refrigerator is weak or insufficient, take the following action.</p> <p>R36 : R-SENSOR standard resistance in normal mode (31.4K) R37 : In case of weak ref., cut J1 to down the standard resistance by 1.5deg(2K) R38 : In case of weak ref., cut J2 to down the standard resistance by 1.5deg(2K)</p> <p>R36 = Mid ON/OFF point R36 + R37 = Mid OFF point - 1.5 deg R36 + R37 + R38 = Mid OFF point - 3.0 deg</p>	
REMARKS	

22. Summary of Function

CONTENTS	
<p>How to start function modes All the modes are started with "LOCK ON".</p>	
A/S forced defrosting	"FRZ SET." + "REF SET." 5 times.
Pull down Functions	"FRZ SET." + "REF SET." + "SLEEP" 5 times.
Explanation after delivery & installation	"REF SET." for 3 sec. Right after first power in.
ERROR display	"FRZ SET." + "SUPER FRZ." 5 times.
EERROM Clear	"SLEEP" + "LOCK" 5 times.
Reset water filter	"ICE MAKER LOCK" for 3 sec.
DEMO function	"REF SET." + "SLEEP" 5 times.

23. Automatic Ice Maker

Input	Control Object
Full ice sensing switch Ice Maker Lock Sensors	Ice separating motor
CONTENTS	
<p>1-1. Flow of ice making</p> <pre> graph TD START([START]) --> IM[Ice making Mode] IM --> ISM[Ice separating Mode] ISM --> WSM[Water supply Mode] WSM --> WSCM[Water supply Check Mode] WSCM --> RETURN([RETURN]) ISM -- water supply stand-by --> IM </pre> <p>1) Press TEST switch of Icemaker for more than 1 second and test mode starts. * Test mode starts from ice separating mode. * In case test switch has an error of short, test is done only once.</p> <p>2) With the initial power input, Ice tray turns to be horizontal and ice making mode starts.</p> <p>3) Control of water hose heater * Heater is always ON if RT-sensor has an error or RT is below 15 degree. * Heater is always ON for 60 minutes (max. limit time) if Flow-sensor has an error.</p> <p>4) Water supply stand-by Condition : if ice is sensed full. Operation : proceeds to Ice making mode (Ice separating and water supply modes stop.) Termination ; if it is in normal condition.</p> <p>5) Crusher Function It stops operation when freezer door is open. It operates if freezer door is closed.</p>	<p>REMARKS</p>

CONTENTS	REMARKS
<p>1-2. Ice Maker MODE</p>  <pre> graph TD START([START]) --> D1{130 min passed?} D1 -- NO --> START D1 -- YES --> D2{I-S < -12.5°C} D2 -- YES --> END([ICE Drop mode.]) D2 -- NO --> D3{I-S < -9.5°C} D3 -- YES --> D4{15 min passed?} D4 -- YES --> END D4 -- NO --> D1 D3 -- NO --> D1 </pre> <p>1) I-S is -12.5°C and below after 130 min. => Ice maker complete</p> <p>2) Although I-S isn't -12.5°C below for 130 min, I-S maintains -9.5°C below continuously => Ice maker complete</p> <p>3) I-Sensor Error: Ice Maker Complete after 4.8HR</p> <p>2. Ice Drop MODE</p>  <p>1) Each Section's Time used in S/W ERROR Confirm</p> <p>2) Ice Drop MOTOR Rotation is Sensible by Each Sections</p> <p>3) S/W ERROR: Ice Drop Every Time</p> <p>4) Ice Drop MOTOR ERROR: Stop to the Status</p>	

CONTENTS	REMARKS														
<p>3. Water-Input MODE</p> <pre> graph TD START([START]) --> InletON[Inlet value ON] InletON --> Count0[Water input pulse Count=0] Count0 --> D1{1 Sec passed after inlet value on?} D1 -- N --> Count0 D1 -- Y --> D2{Water input pulse >10} D2 -- N --> Error[Flow-Sensor Error mode] D2 -- Y --> D3{Water input pulse >target pulse} D3 -- Y --> Error D3 -- N --> D4{time > target time} D4 -- Y --> Error D4 -- N --> D3 Error -.-> D3 D4 --> InletOff[Inlet value off] InletOff --> STOP([STOP]) </pre> <p>1) Convert of Water-Input Mode After Ice Drop: Water-Input Valve Open.</p> <p>2) Flow Sensor Error: Water-Input is Controlled by Time</p> <p>3) Variable Factor Value : Using for A/S Steps</p> <p>①Flow Sensor Normal Operation : Flow Pulse Value sets "238" (Water input by Time -: Maximum Water Inut Time => 15 sec.</p> <p>②Flow Sensor error : Water input time => 5.5 sec.</p> <p>4. Water-Input Confirm MODE</p> <p>I-S Temp. Rising Value with RT-S Temp. Mode after 5 min. : Estimate of Water Input</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>RT-S</td> <td>7°C</td> <td>~13°C</td> <td>~19°C</td> <td>~29°C</td> <td>~39°C</td> <td>39°C</td> </tr> <tr> <td>I-S</td> <td>-10°C</td> <td>-9°C</td> <td>-8°C</td> <td>-7°C</td> <td>-6°C</td> <td>-5°C</td> </tr> </table>	RT-S	7°C	~13°C	~19°C	~29°C	~39°C	39°C	I-S	-10°C	-9°C	-8°C	-7°C	-6°C	-5°C	
RT-S	7°C	~13°C	~19°C	~29°C	~39°C	39°C									
I-S	-10°C	-9°C	-8°C	-7°C	-6°C	-5°C									

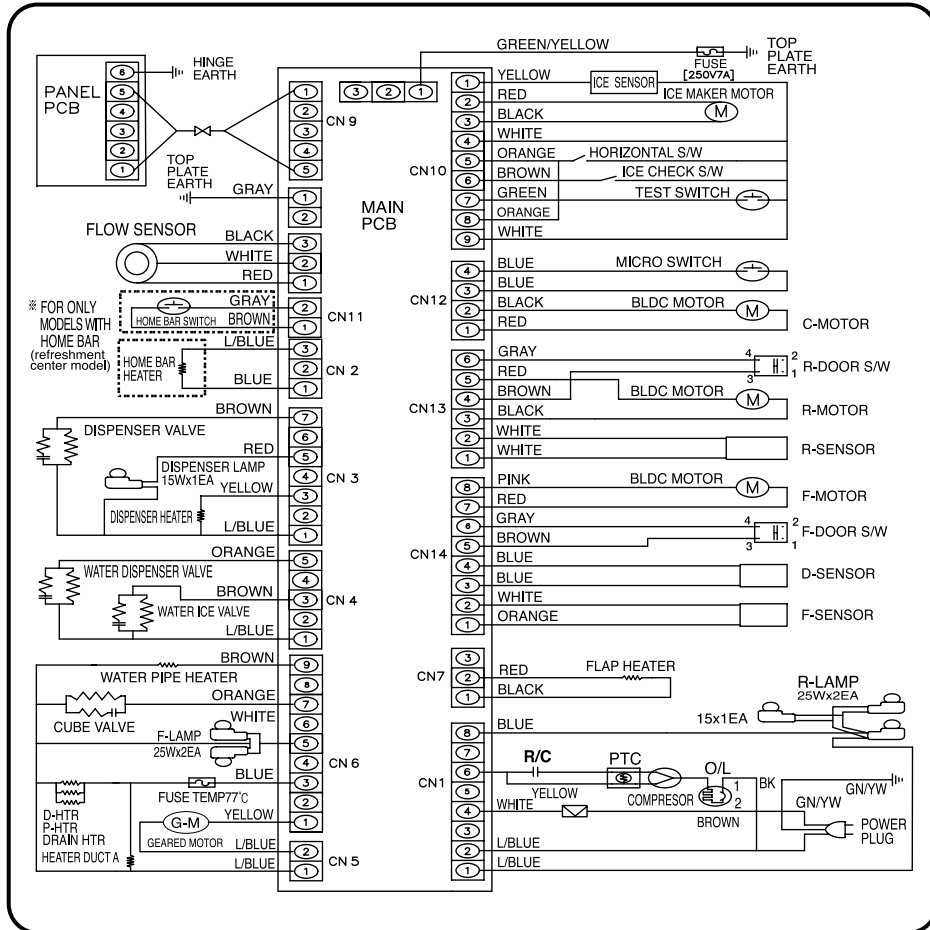
24. Dispenser Control Function

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	
<p>1) Water/Ice Selection Button</p> <p>* Initial Mode : Water Progress : Water → Ice Cube → Crushed Ice → Water</p> <p>* Pushing the dispenser value, water/Ice cube/crushed Ice is dispensed as your selection.</p> <p>2) Lock Ice Maker Button</p> <p>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"</p> <p>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".</p> <p>3) Display</p> <ul style="list-style-type: none"> - Initial Mode : Water 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 is "ON" , The letters of crushed, cube Ice are "OFF" - There is no input during 1 hour, Dispeser transform into Water Mode. 	

Contents		Remark
3) Control Flow & Timing Chart		'D.P' = Dispenser
3-1) Crushed Ice		
3-2) Cubed Ice		
3-3) Water		
Delay Time : A = 500ms, B = 500Ms, C = 2.0s, D = 5.0s		

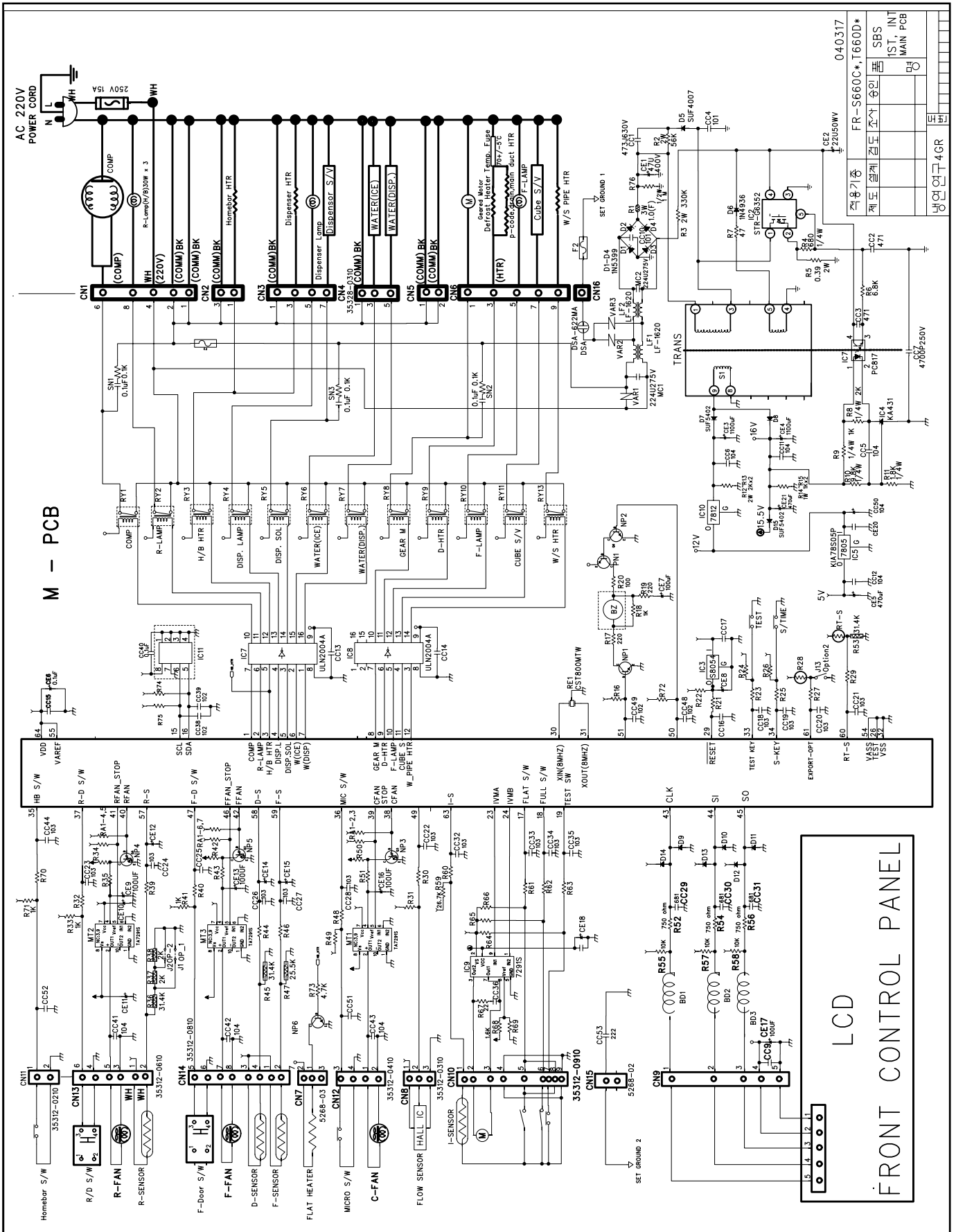
1. WIRING DIAGRAM

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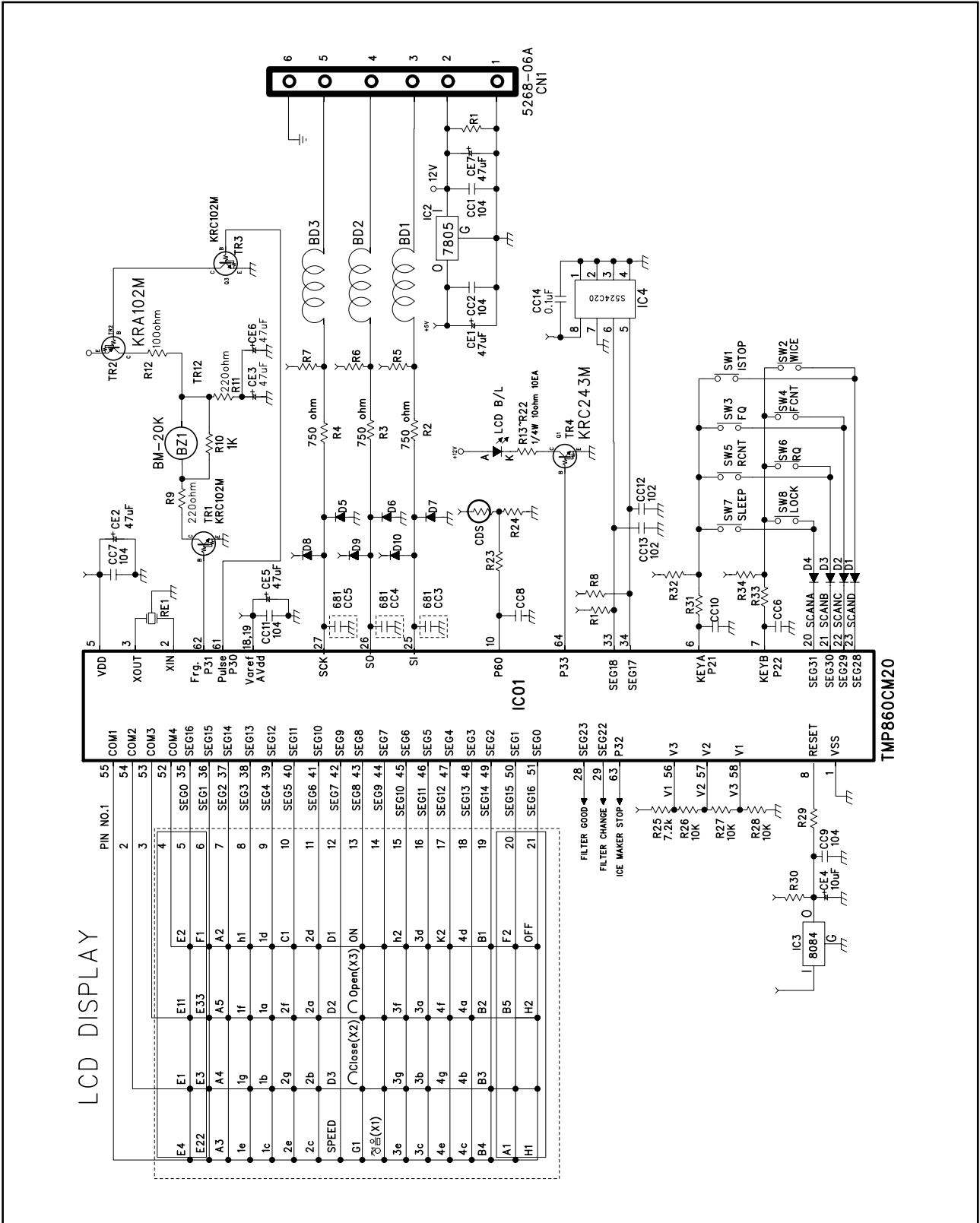


2. CIRCUIT WIRING DIAGRAM

Main PCB

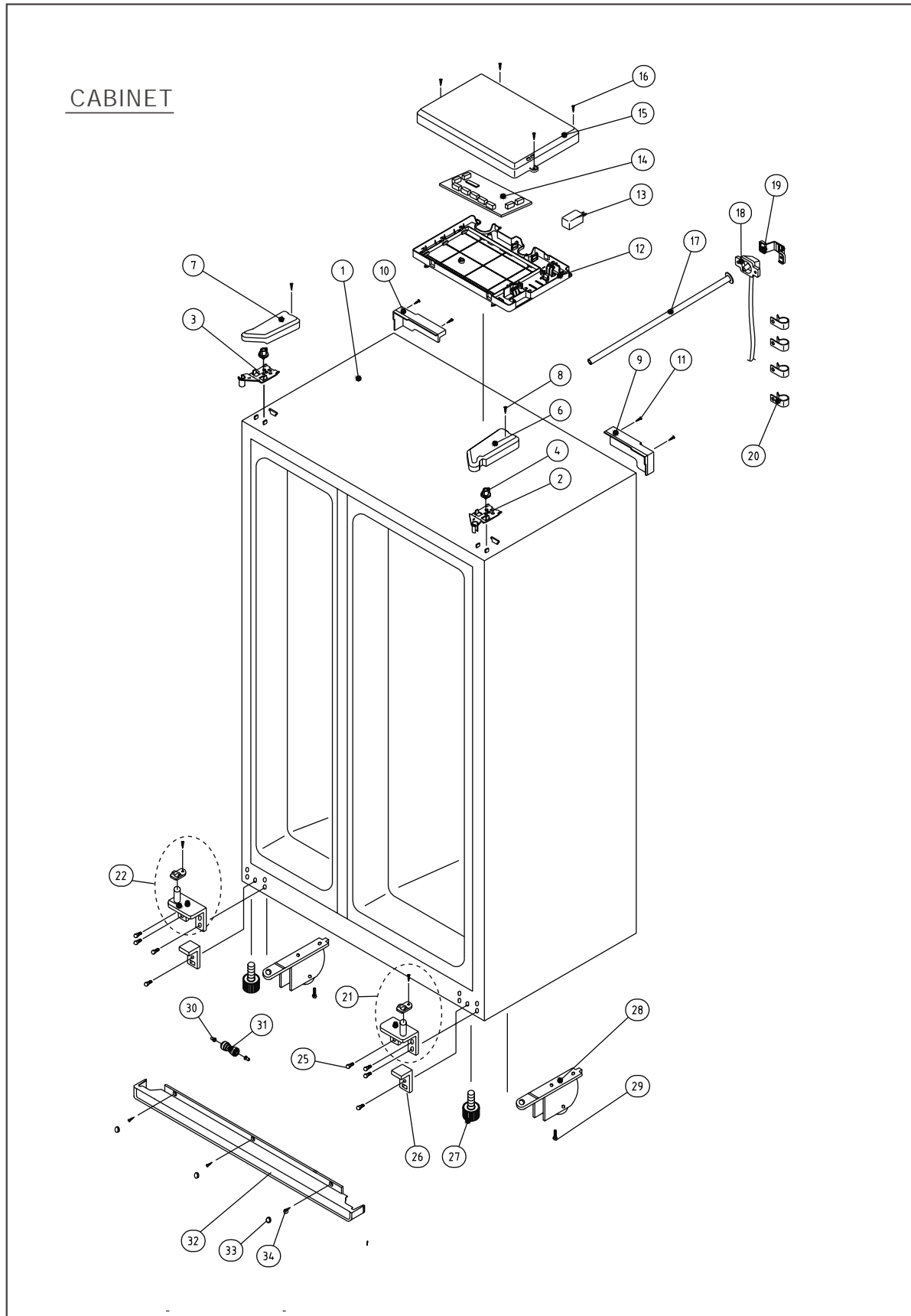


FRONT PCB DIAGRAM

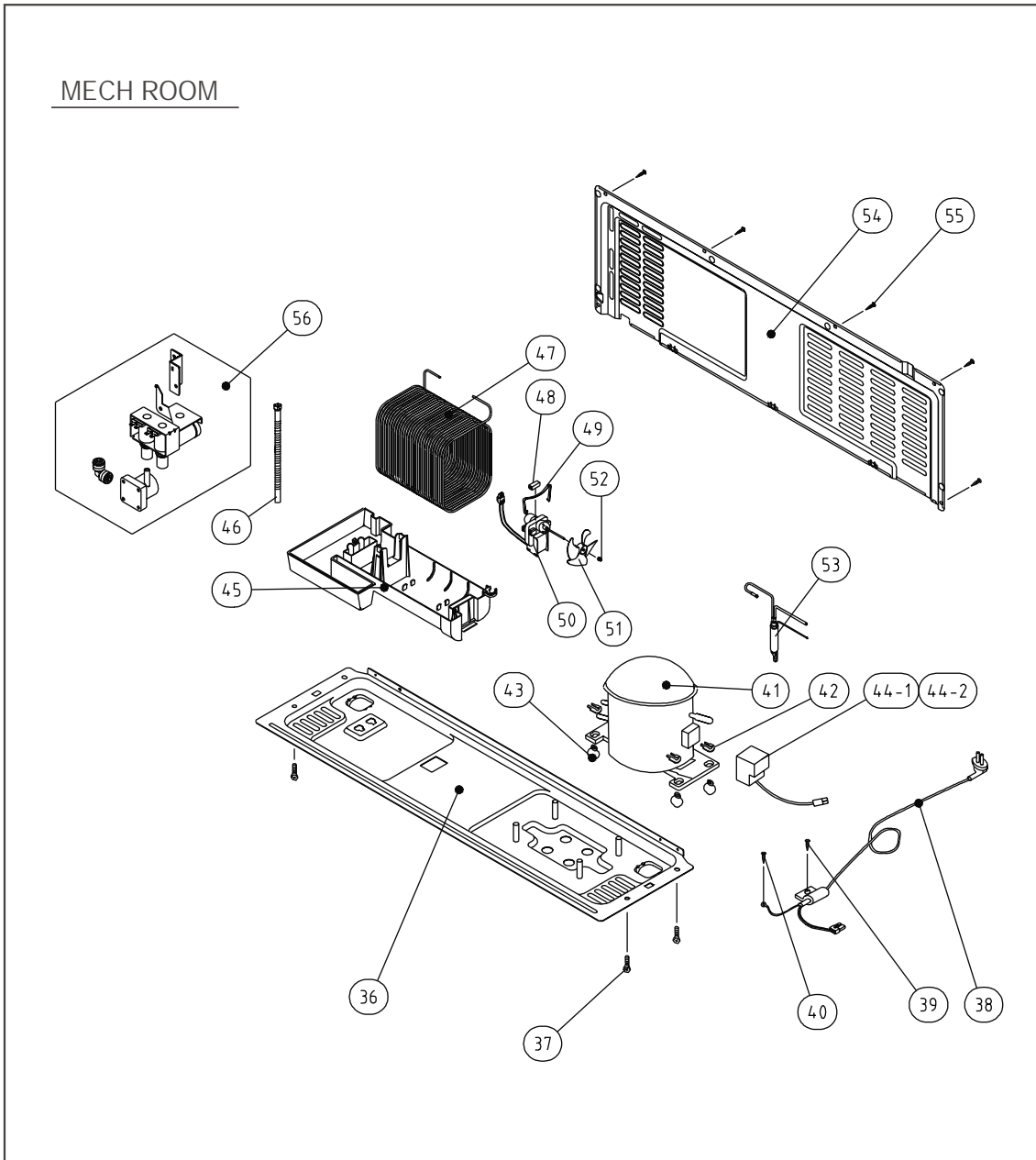


EXPLODED VIEW

1. FRS-T20DA*

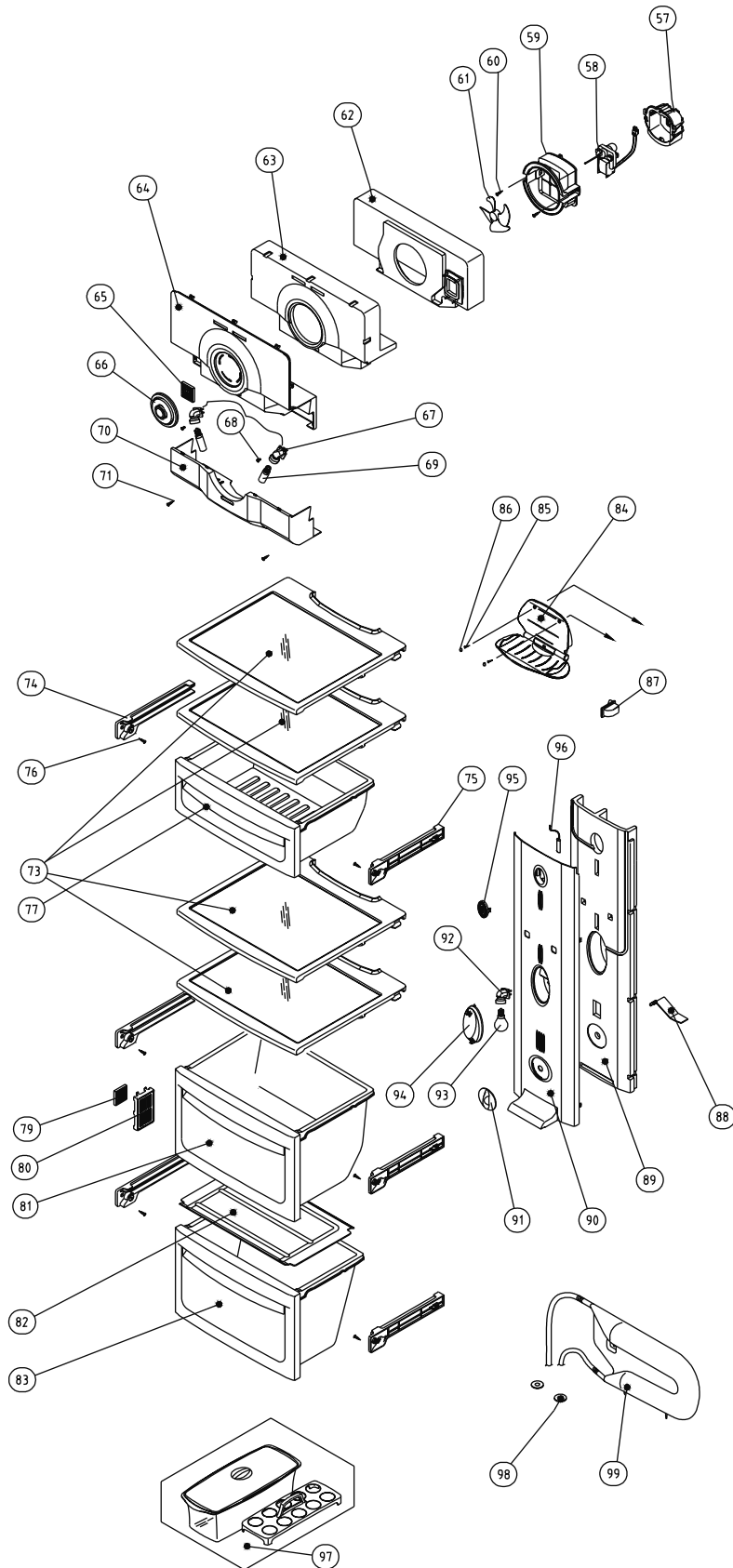


EXPLODED VIEW



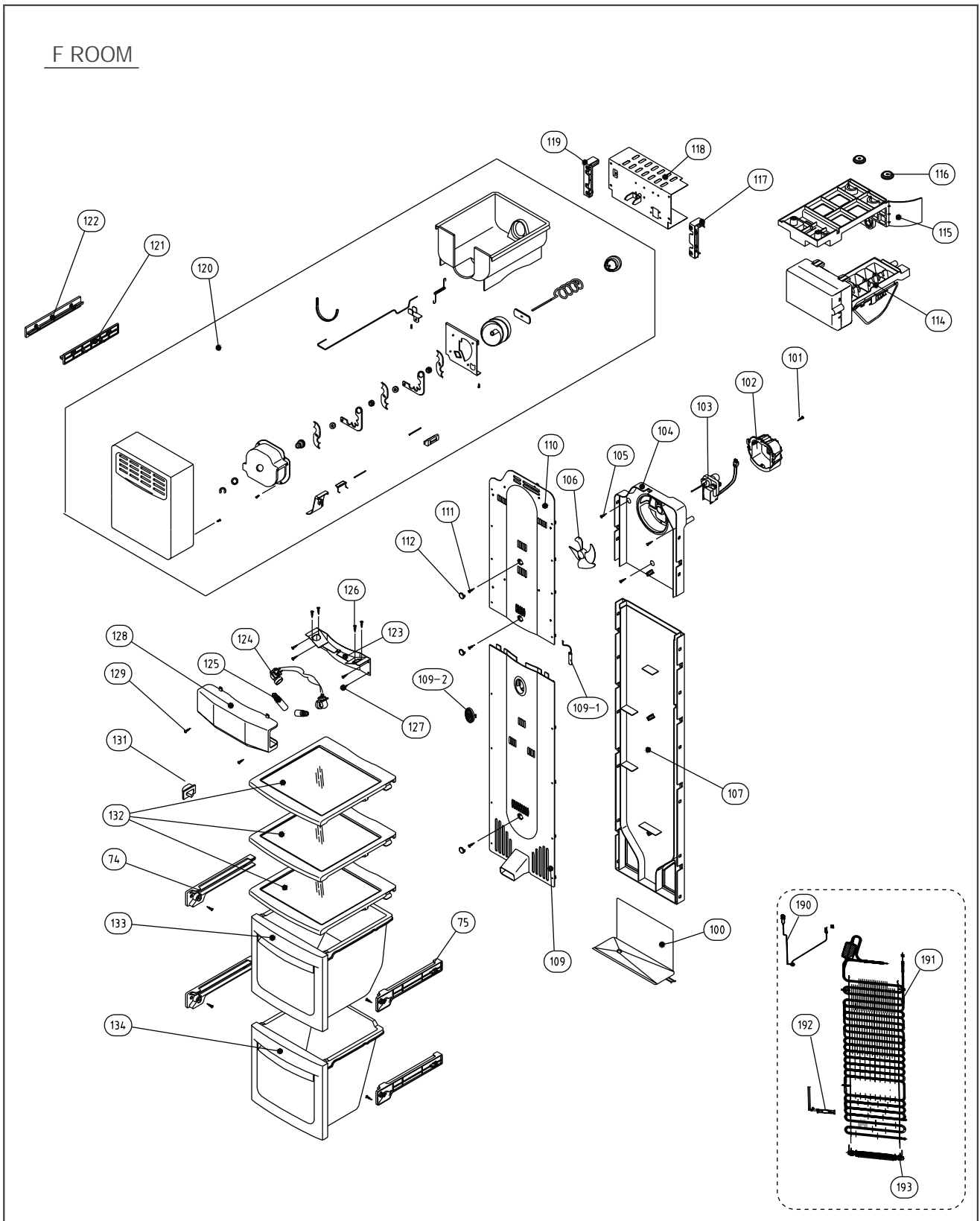
EXPLODED VIEW

R-Room



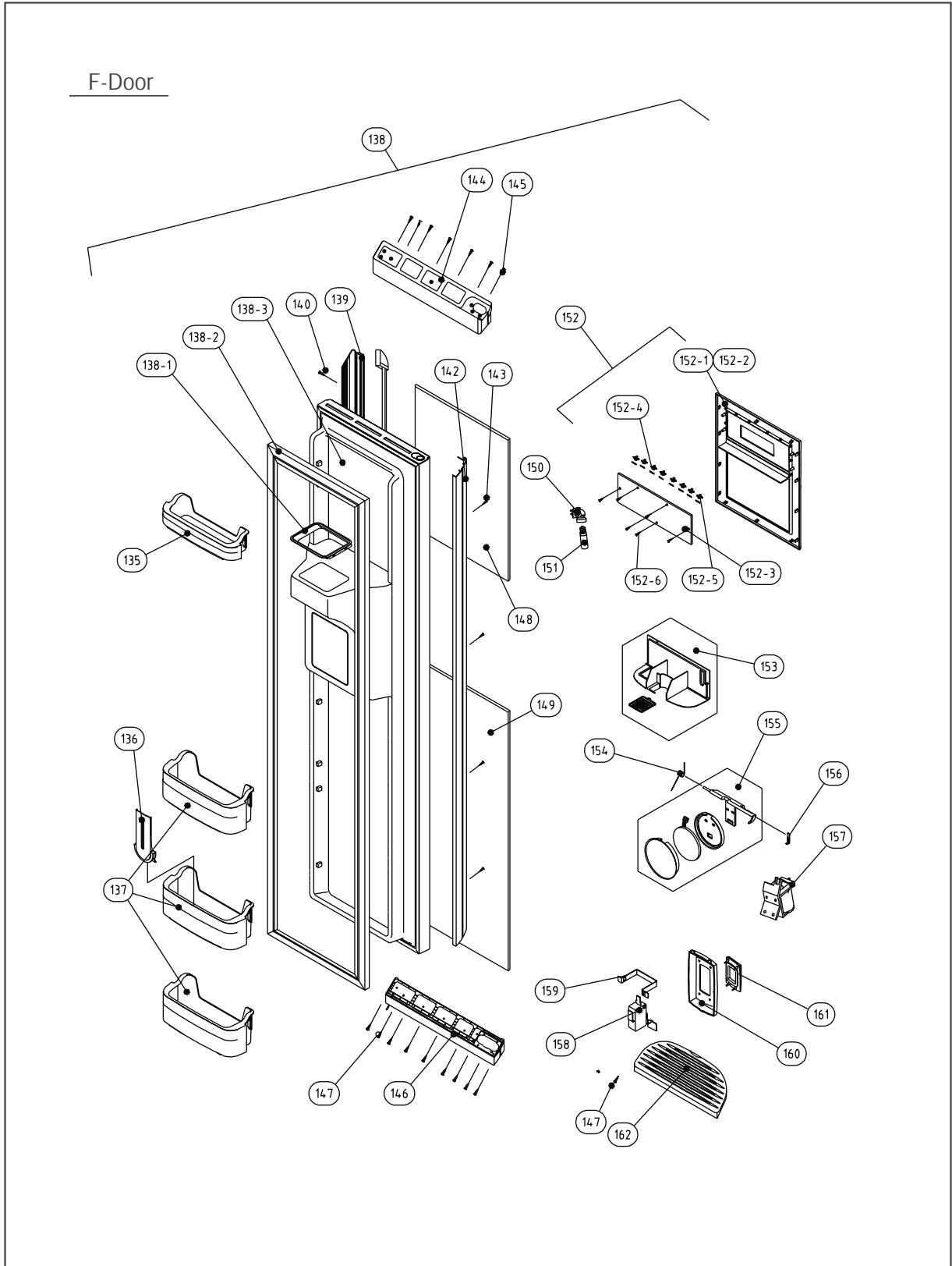
EXPLODED VIEW

F ROOM

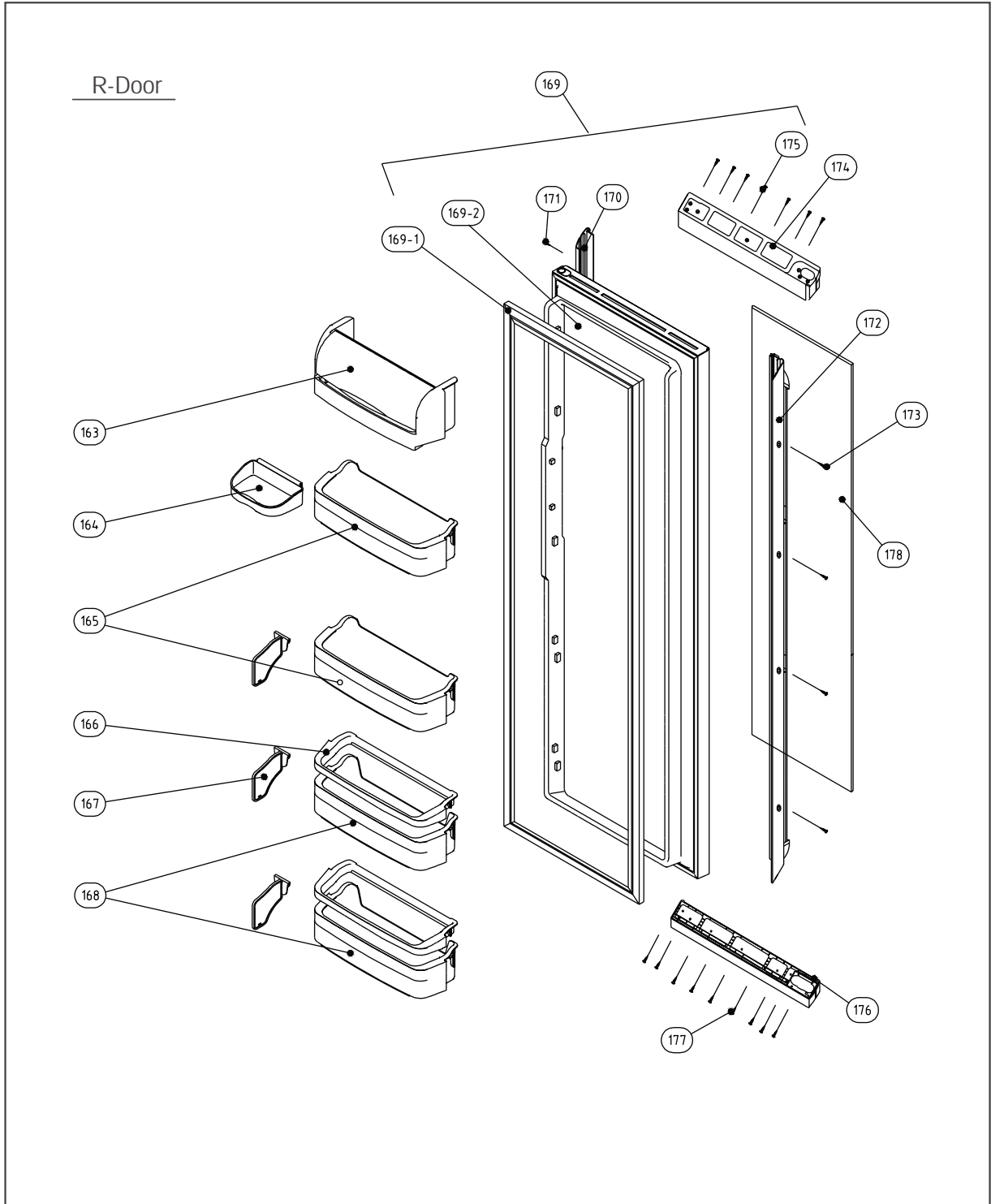


EXPLODED VIEW

F-Door



EXPLODED VIEW



2. FRS-T20DA* Parts List

NO	Part Number	Parts Name	Q'ty	Description
1	3000025800	ASSY CAB URT	1	
2	3012908100	HINGE *T *R AS	1	PO T3.0
3	3012907400	HINGE *T *L AS	1	PO T3.0
4	3016031400	SPECIAL SCREW	2	
6	3011472400	COVER HI *T *R	1	PP
7	3011472300	COVER HI *T *L	1	PP
8	7112401211	SCREW TAPPING	2	T1 TRS 4 x 12 MFZN
9	3012601301	HANDLE CAB COVR *R	1	PP
10	3012601201	HANDLE CAB COVR *L	1	PP
11	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
12	3010533400	BOX MAIN PCB	1	PP
13		CAPACITOR RUN	1	
14		PCB MAIN AS	1	
15	3011472610	COVER MAIN PCB BOX	1	PP
16	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
17	3013223400	HOSE ICE MAKER TUBE AS	1	
18	3012519200	GUIDE CAB W/TUBE A AS	1	
19	3011485600	COVER GUIDE CAB W/TUBE A	1	HIPS
20	3011202000	CLAMP WATER TUBE A	5	PA-66
21	3012907300	HINGE *U *R AS	1	PO T5.0
22	3012907200	HINGE *U *L AS	1	PO T5.0
25	3016001240	SPECIAL BOLT *T	8	6 x 22 SWCH22A(YL)
26	3015306700	SUPPORTER *U HI AS	2	PO T5.0
27	3012104400	FOOT ADJUST AS	2	
28	3010654500	BRACKET ADJ FOOT AS	2	TURN
29	3016001240	SPECIAL BOLT *T	2	6 x 22 SWCH22A(YL)
30	3012019500	FIXTURE TUBE FIT B	2	PP
31	3013064200	HOLDER TUBE A	1	ACETAL
32	3011433500	COVER CAB BRKT	1	PP
33	3010962400	CAP CAB BRKT COVR	3	NR
34	7142401611	SCREW TAPPING	3	T2 TRS 4 x 16 MFZN
36	3010326701	BASE COMP AS	1	SBHG T1.2
37	3016003300	SPECIAL BOLT	4	T2 M6.5 x 20 4EA

NO	Part Number	Parts Name	Q'ty	Description
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	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	3011474730	COVER MACHROOM AS	1	SBHG T0.4
55	7112401211	SCREW TAPPING	6	T1 TRS 4 x 12 MFZN
56		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
67	3017905300	SOCKET R LAMP AS	2	
68	7121300811	SCREW TAPPING	1	T2 PAN 3X8
69		LAMP R A	1	
70	3015507900	WINDOW R LAMP A	1	MIPS

NO	Part Number	Parts Name	Q'ty	Description
71	3016002710	SPECIAL SCREW	1	T2S PAN 3X8
73	3017827320	SHELF R A AS	4	FRAME + SHELF + FIXTURE
74	3012514500	GUIDE CASE A *L AS	5	ABS
75	3012514600	GUIDE CASE A *R AS	5	ABS
76	7142401611	SCREW TAPPING	14	T2 TRS 4 x 16 MFZN
77	3011171220	CASE CHILLED AS	1	GPPS + HIPS
79	3018701800	DEO ANTI AS	1	
80	3011472900	COVER RETURN DUCT	1	HIPS
81	3011172020	CASE VEGETB A AS	1	GPPS + HIPS
82	3011473200	COVER VEGETB CASE B	1	GPPS
83	3011172160	CASE VEGETB 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	3011472750	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	3011171330	CASE EGG AS	1	GPPS
98	30140002500	PACKING W/TUBE GUIDE A	2	SILICON
99	3018200801	TANK WATER AS	1	FR-S660CW
100	3012515000	GUIDE DRN AS	1	FR-S660CW
101	7112401211	SCREW TAPPING	1	T1 TRS 4 x 12 MFZN
102	3012007800	FIXTURE MOTOR A	1	PP
103	3015911300	MOTOR F FAN AS	1	DC12V 2.5W
104	3018914400	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

NO	Part Number	Parts Name	Q'ty	Description
107	3018914910	LOUVER F D AS	1	PP
109	3018914700	LOUVER F B AS	1	HIPS
109-1	3014805300	SENSOR F AS	1	PT-38
109-2	3011473000	COVER SENSOR	1	ABS
110	3018914630	LOUVER F A AS	1	HIPS
111	7142401611	SCREW TAPPING	3	T2 TRS 4 x 16 MFZN
112	3010924600	CAP F LUVR	3	HIPS
114	3000025900	ASSY ICE MAKER	1	
115	3012205600	FRAME ICE MAKER	1	HIPS
116	3012013200	FIXTURE C	2	PP
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	3011176230	CASE ICE CRUSHER AS	1	FRS-551F
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
131	3018124000	SWITCH LAMP	1	SP201R-7DR
132	3017827120	SHELF F A AS	3	GLASS + HIPS
133	3011171460	CASE F A AS	1	GPPS + HIPS
134	3011171530	CASE F B AS	1	GPPS + HIPS
135	3019019030	POCKET F *S	1	HIPS
136	3012516000	GUIDE F POCKET	1	PP
137	3019019120	POCKET F	3	HIPS
138		ASSY F DR	1	FR-T660DD
138-1	3010957100	CAP ICE PATH FRAME	1	HIPS
138-2	3012314200	GASKET F DR AS	1	PVC
138-3	3011754100	DOOR F URT AS	1	

NO	Part Number	Parts Name	Q'ty	Description
139	3012604500	HANDLE INTR DR AS	1	AL
140	3016040200	SPECIAL SCREW FRAME	4	4X14 S18C
142	3012201500	FRAME F DR *O	1	AL
143	3016040200	SPECIAL SCREW FRAME	4	4X14 S18C
144	3010930300	CAP F INTR DR *T	1	ABS+SPRAY
145	7142401211	SCREW TAPPING	7	T2 TRS 4X12 MFZN
146	3010930400	CAP F INRT DR *U AS	1	ABS+SPRAY
147	7142401211	SCREW TAPPING	9	T2 TRS 4X12 MFZN
148		PANEL F DR *T	1	
149		PANEL F DR *U	1	
150	3017905500	SOCKET DISP BOX AS	1	250V 1A
151	3013600020	LAMP DISP	1	AC240V 15W
152	3011490200	COVER DISPNS BOX AS	1	OTHER COLOR
	3011490210	COVER DISPNS BOX AS	1	BK MIRROR
152-1	3011437000	COVER DISPNS BOX	1	ABS+SPRAY
152-2	3015509300	WINDOW F PCB AS	1	OTHER COLOR
	3015509310	WINDOW F PCB AS	1	BK MIRROR
152-3	30143C4110	PCB *F AS	1	
152-4	3016303400	BUTTON CONTL	8	ABS+AL
152-5	3012307800	GASKET BUTN	1	NR
152-6	7173300811	SCREW TAPPTITE	7	TT2 BIN 3X8 MFZN
153	3010542200	BOX DISPNS ICE SHUT AS	1	
154	3015102200	SPRING ICE D/LEVER	1	Ø0.9 SUS 304
155	3011485900	COVER ICE FLAP AS	1	
156	3012019700	FIXTURE ICE FLAP AS	1	SUS304
157		VALVE SOL DISP	1	DISP SN6
158	3018126600	MICRO S/W AS	1	FR-S660CD
159	3012020000	FIXTURE MICRO S/W	1	T0.6 SUS304-3/4H
160	3012208100	FRAME DISPNS BUTN	1	ABS+AL
161	3016303800	BUTTON DISPNS	1	SILICON
162	3012406200	GRILLE DISPNS	1	ABS
163	3019019400	POCKET DAIRY AS	1	POCKET + COVER
164	3019019310	POCKET R *S	1	GP + BLUE
165	3019019830	POCKET R *M	2	HIPS

NO	Part Number	Parts Name	Q'ty	Description
166	3012514100	GUIDE R POKT	2	HIPS
167	3012513400	GUIDE BOTL	3	PP
168	3019019230	POCKET R	2	HIPS + SILK
169	3000039500	ASSY R DR	1	FR-T690DG
169-1	3012314500	GASKET R DR AS	1	PVC
169-2	3011754200	DOOR R URT AS	1	FR-T690DG
170	3012201800	FRAEM R DR *O	1	AL
171	3016040200	SPECIAL SCREW FRAME	4	4X14 S18C
172	3012604500	HANDLE INTR DR AS	1	
173	3016040200	SPECIAL SCREW FRAME	4	4X14 S18C
174	3010930500	CAP R INTR DR *T	1	ABS+SPRAY
175	7142401211	SCREW TAPPING	7	T2 TRS 4X14 MFZN
176	3010964400	CAP R INTR DR *U AS	1	ABS+SPRAY
177	7142401211	SCREW TAPPING	7	T2 TRS 4X14 MFZN
178		PANEL R DR	1	
190	3014805200	SENSOR D AS	1	PBN-43
191		EVA AS	1	
192		FUSE TEMP AS	1	
193		HEATER D AS	1	

RED PARTS ARE MODEL DEPENDENT.