

DAEWOO

Service Manual

Refrigerator

Model: FR-440



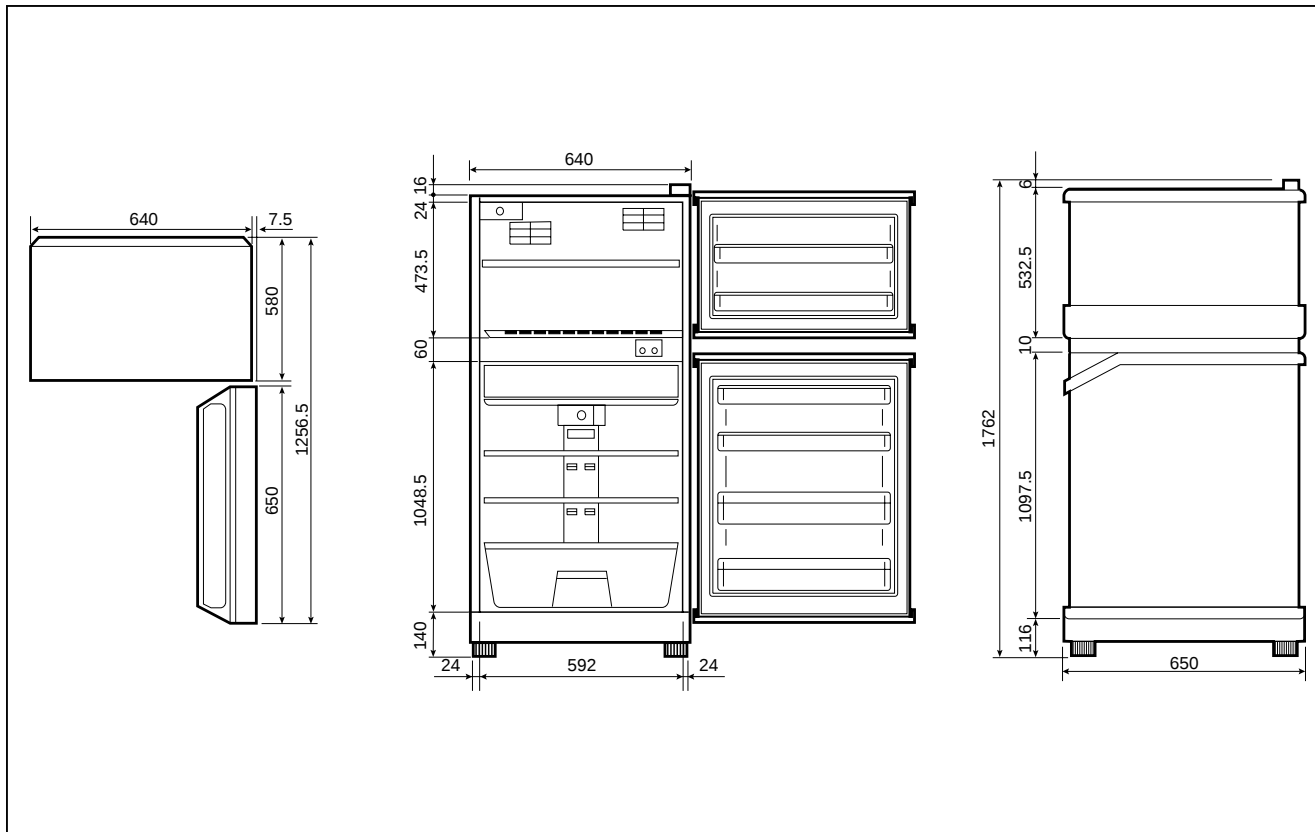
DAEWOO ELECTRONICS CO., LTD.

1. SPECIFICATION

MODEL NAME		FR-440	
Refrigerant	R12	160g	
	R134a	130g	
Cooling System		Fan Cooling Convection	
Refrigeration System		Air Forced Convection	
Defrost System		Fin Evaporator Forced	
Defrost Operation		Automatic Start & Stop	
Cold Control		Adjustable Dial	
Capacity	Freezer	95 ℓ	
	Refrigerator	271 ℓ	
	Total	366 ℓ	
External Dimension	Height	1762mm	
	Width	650mm	
	Depth	650mm	
Net Weight		72Kg	

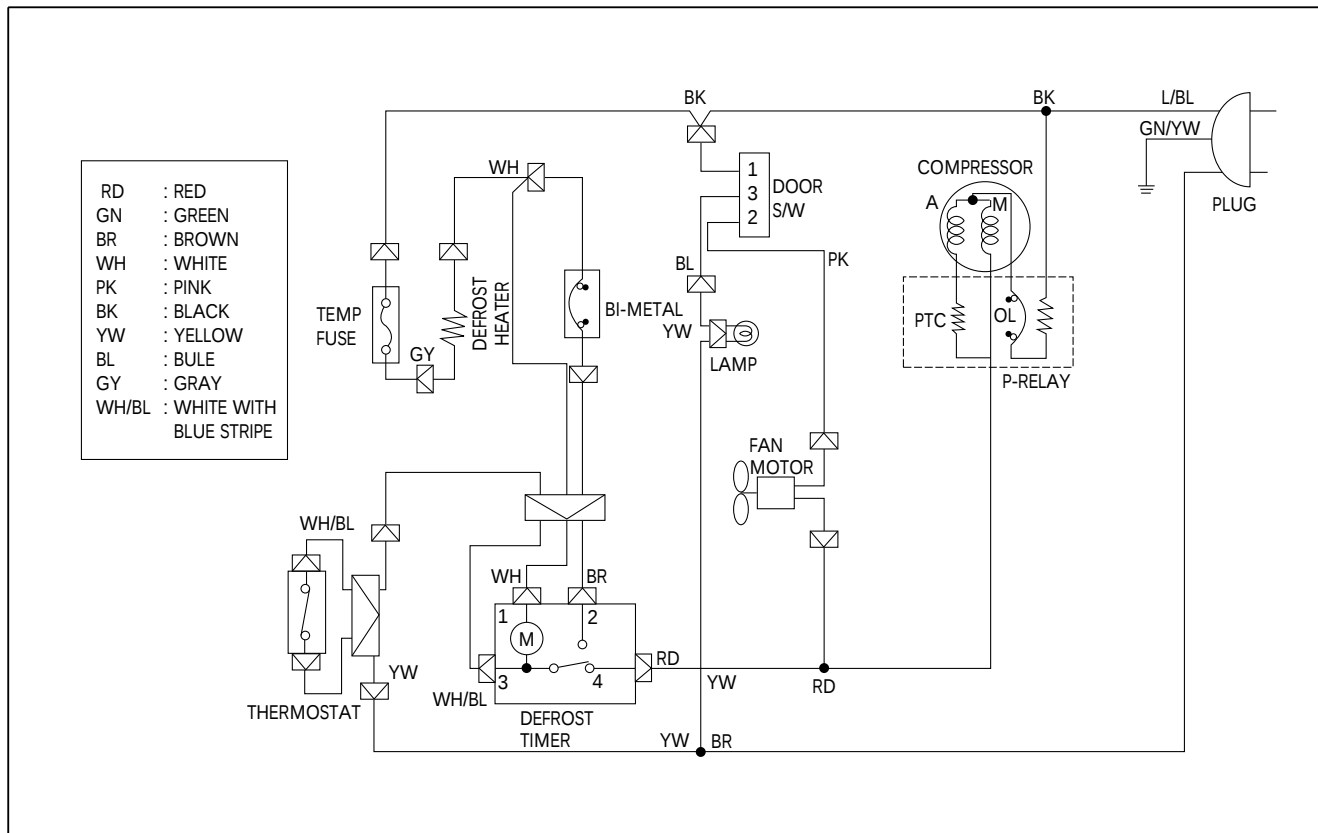
2. EXTERNAL VIEW

1. FR-440



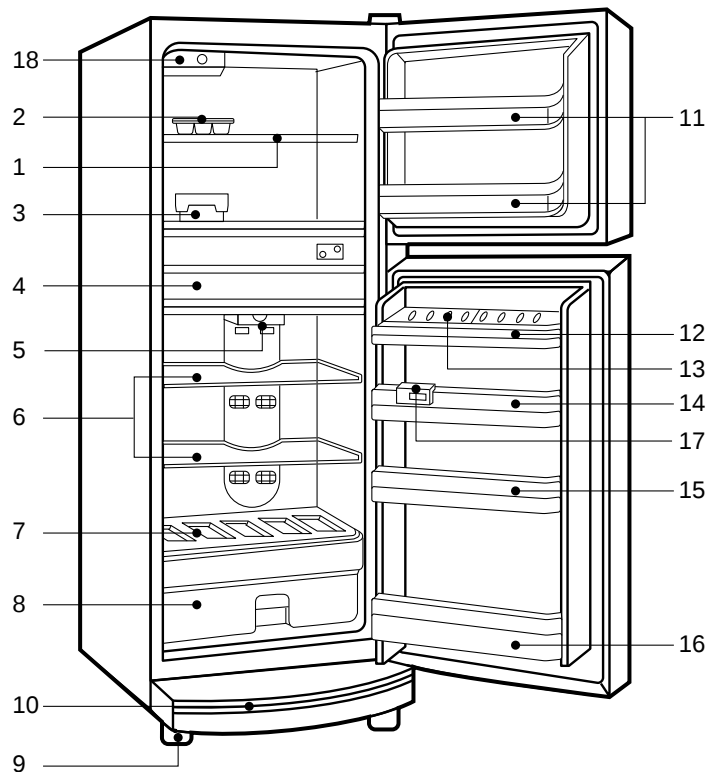
3. WIRE DIAGRAM

1. FR-440



4. NAME OF PARTS

1. FR-440



- 1 Freezer Shelf
- 2 Case Icing
- 3 Case Ice
- 4 Case Child
- 5 Refrigerator
Temperature Controller
- 6 Shelf Refrigerator
- 7 Crisper Cover
- 8 Crisper
- 9 Adjustable Foot
- 10 Front Grille
- 11 Freezer Door Pocket
- 12 Egg Pocket
- 13 Case Egg
- 14 Refrigerator Pocket(SM)
- 15 Refrigerator
Pocket(Medium)
- 16 Refrigerator Pocket(BG)
- 17 Deodorant(Option)
- 18 Freezer Temperature
Controller

5. AIR FLOW DIAGRAM

Freezer door pocket

Do not put ice cream or frozen food in freezer door pocket to store for a long term. Opening and shutting the door can rise up the temperature.

Cold air absorbing duct

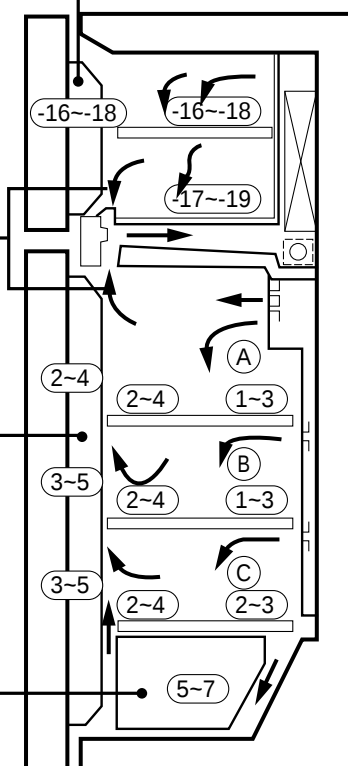
Do not place food in front of the duct because it is the entrance of the cold air.

Refrigerator door pocket

Temperature is high even if the pocket is in the middle. When storing margarine or cheese for one or two weeks, make use of the refrigerator shelf.

Crisper

Suitable in storing fruits or vegetable. Wrapping can prevent from dryness.



Freezer room

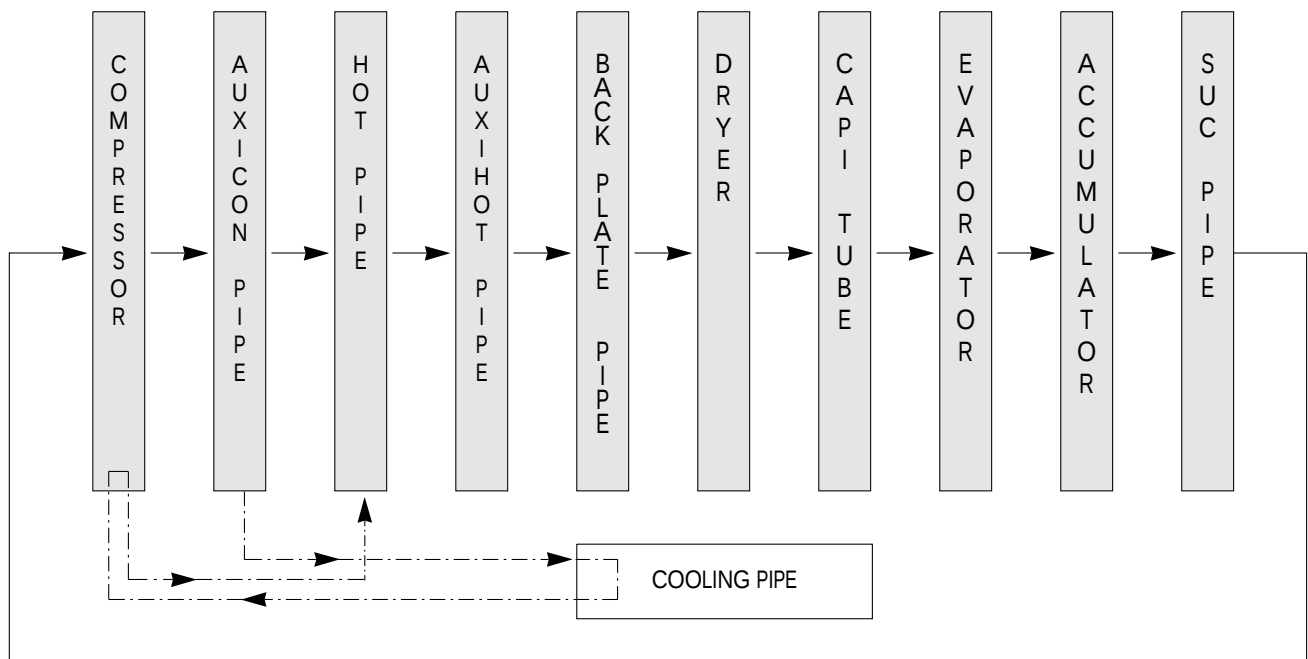
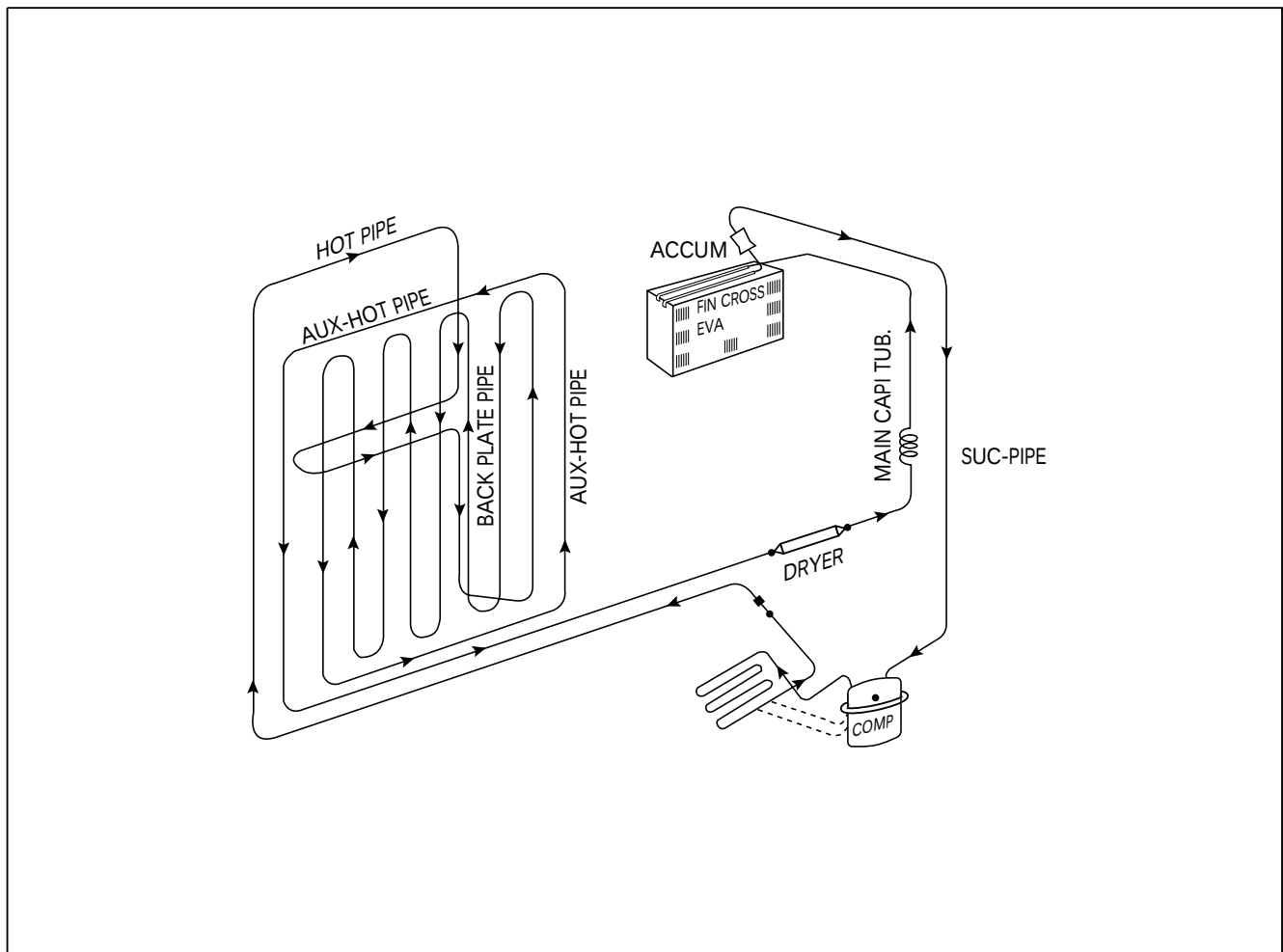
Do not put any bottle such as beer or beverage because it can be frozen and broken.

Refrigerating room

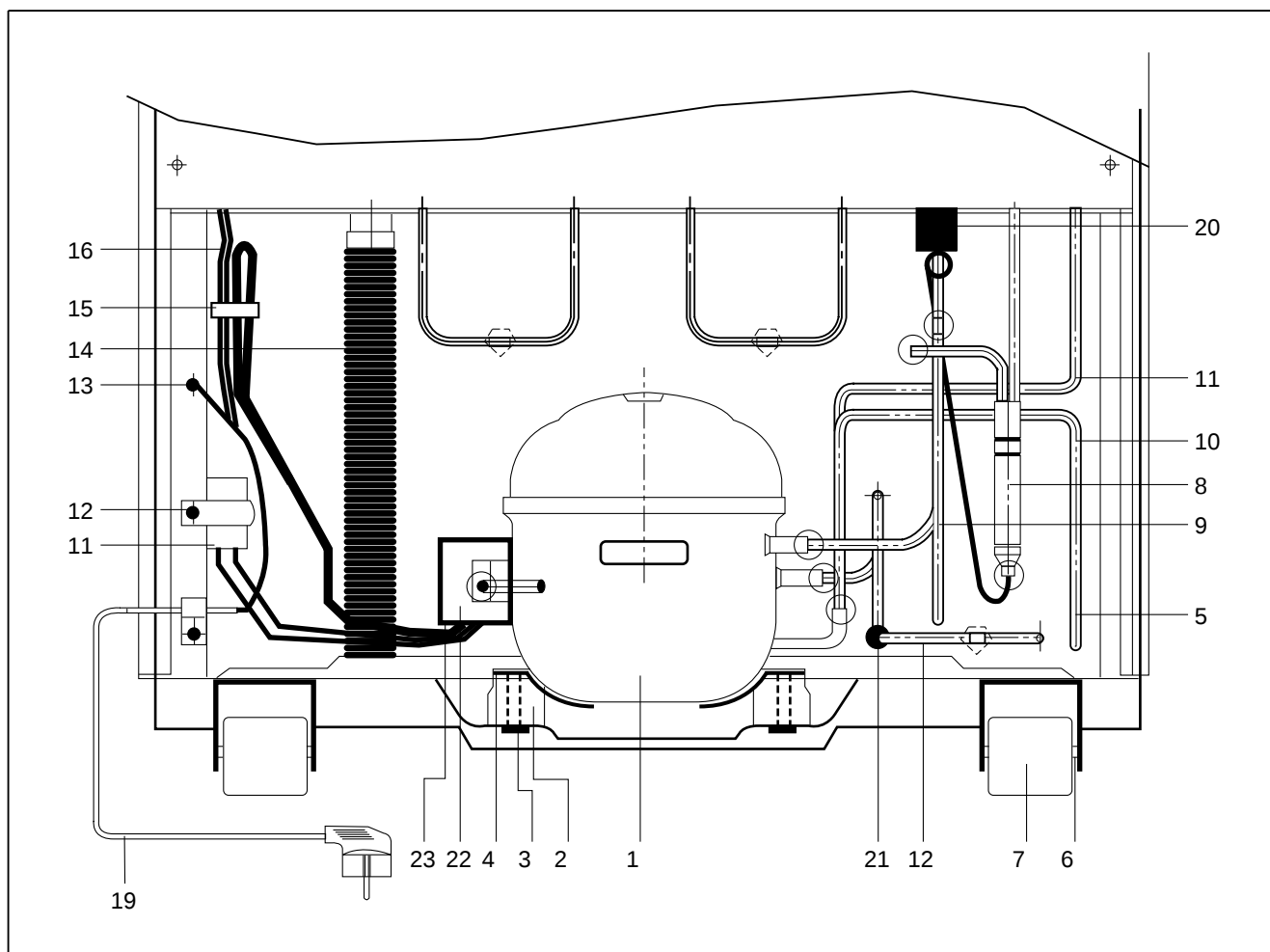
This model is multi-flow type which flows out cold air from each shelf space. The hot air after making the refrigerator cold, flows into cooling system through the front upper part.

Do not put food having much moisture at the middle part of each shelf space ("A", "B" and "C" part). It can be frozen owing to the low temperature.

6. REFRIGERANT CYCLE DIAGRAM



7. MACHINE ROOM VIEW AND PART LIST



NO	PART NAME	NO	PART NAME	NO	PART NAME
1	COMPRESSOR	9	PIPE CON (SUC)	17	CABLE CLAMP
2	ABSORBER	10	PIPE COOLING CON (AUX)	18	STARTING CAPACITOR
3	BOLT COMP. FIXTURE	11	PIPE COOLING (A)	19	POWER CORD
4	FIXTURE COMP. WASHER	12	PIPE CON (P.A)	20	ABSORBER PIPE
5	PLATE AUX-CON AS	13	SCREW MACHINE	21	VIBRATIONPROOF MASS(B)
6	CASTER PIN	14	DRAIN HOSE(B) AS	22	SWITCH P-RELAY AS
7	CASTER	15	TAPE OPP	23	RELAY BAND
8	DRYER	16	CEC COVER		

8. MAIN COMPONENTS

1. COMPRESSOR

Refrigerant	R12							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Comp. model	X	CL23YE-3-C	CL23Y-1-C	CL23Y-2-C	SL27YE-5-C	PL25YE-4	X	SL27YE-5-C
Part code	X	3957123C30	3951123C10	3957123C20	3954127C80	3956125442	X	3954127C80
Strating type	X	CSIR	CSIR	CSIR	RSIR	RSCR	x	RSIR

Refrigerant	R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Comp. model	X	HBL23YE-3-C	HBL23YE-1-C	X	HSL27YE-5-C	X	HSL27YE-5-C	HSL27YE-5-C
Part code	X	3952123L20	3952123L10	X	3954127L50	X	3954127L50	3954127L50
Strating type	X	CSR	CSR	X	RSIR	X	RSIR	RSIR

2. RELAY ASSEMBLY

Refrigerant	R12							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Relay model	X	427THBY-52	←	414THBY-52	232THBY-52	197SHBY-52	X	232THBY-52
Part code	X	3018108120	←	3018109740	3018103090	3018103010	X	3018103090

Refrigerant	R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Relay model	X	427THBY-52	←	X	276THBY-52	X	276THBY-52	276THBY-52
Part code	X	3018108120	←	X	3018105031	X	3018109510	3018105031

3. RUNNING CAPACITOR

Refrigerant	R12							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	X	X	X	X	350V/5μF	X	X
Part code	X	X	X	X	X	400EL15110	X	X

Refrigerant	R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	300V/7μF	←	X	X	X	X	X
Part code	X	386100400	←	X	X	X	X	X

4. STARTING CAPACITOR

Refrigerant	R12							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	140V/100μF	←	←	X	X	X	X
Part code	X		←	←	X	X	X	X

Refrigerant	R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	200V/100μF	←	X	X	X	290V/50μF	X
Part code	X	3016400100	←	X	X	X	4124G62020	X

5. F-FAN MOTOR

Refrigerant	R12, R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	3210DWNFH-2	←	←	3210DWNFF-2	3210DWNFD-1	3210DWNFI-1	←
Part code	X	401VB42021	←	←	401VA42021	4017G24502	401UB42021	←

6. DEFROST HEATER

Refrigerant	R12, R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	148W	←	←	148W	←	←	←
Part code	X	400EL22311	←	←	400EL22211	←	←	←

7. LAMP ASSEMBLY

Refrigerant	R12, R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	10W	←	←	13W	←	←	←
Part code	X	4019S15200	←	←	400EL20111	←	←	←

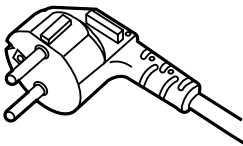
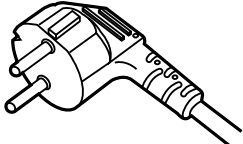
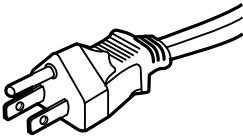
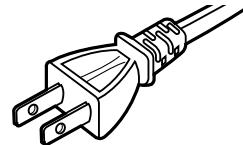
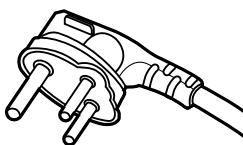
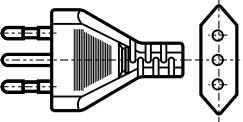
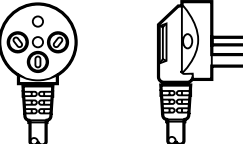
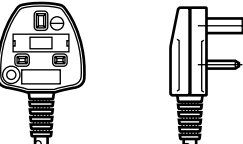
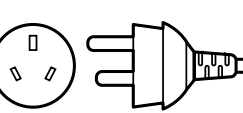
8. DEFROST TIMER (FR-440M)

Refrigerant	R12, R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	TMDEX09UA1	←	←	TMDEX09UC1	←	←	←
Part code	X	3018101200	←	←	3018100300	←	←	←

11. DRYER

Refrigerant	R12	R134a
Spec.	10 g	15 g
Part code	3016800103	3016801100

POWER CORD SPECIFICATION

NO	SHAPE OF POWER CODE	PART CODE	DESCRIPTION	REMARK
1		3011315000	CP-2PIN	FOR EUROPEAN COUNTRY
2		401RA17200	CP-2PIN	FOR OTHER COUNTRY
3		4006D17101	KP-30	FOR AMERICA
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 for lead wire, without any kinds of terminal or housing.

DOOR COLOR SPECIFICATION : ASSEMBLY URETHAN FREEZER DOOR**FR-440**

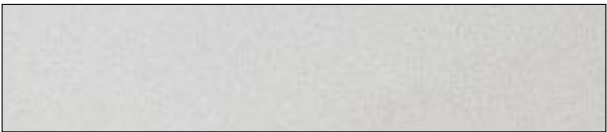
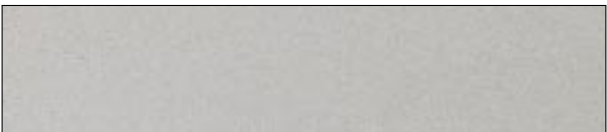
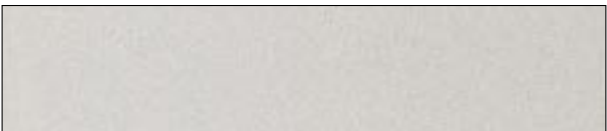
Refrigerant	R12				R134a			
Color type	Dull lamina sheet	High glossy lamina sheet	Normal PCM	High glossy bright PCM	Dull lamina sheet	High glossy lamina sheet	Normal PCM	High glossy bright PCM
Part code	X	PFDT1UH060	X	X	X	PFDT1UH065	X	X

ASSEMBLY URETHAN REFRIGERATOR DOOR

Refrigerant	R12				R134a			
Color type	Dull lamina sheet	High glossy lamina sheet	Normal PCM	High glossy bright PCM	Dull lamina sheet	High glossy lamina sheet	Normal PCM	High glossy bright PCM
Part code	X	PFDY2UH060	X	X	X	PFDY2UH065	X	X

COLOR TABLE

1. PCM type

NO	COLOR CHIP	COLOR NAME
1		P/WITH (WH069)
2		'94 L/GRAY (GY158)
3		'95 L/GRAY (GY259)
4		'94 M/GRAY (GY331)
5		'95 M/GRAY (GY335)
6		'97 M/GRAY (GY267)
7		M. D/GRAY (GY750)
8		N/BUE (BL718)
9		MINT GREEN (GN206)
10		'97 BEIGE (BE215)

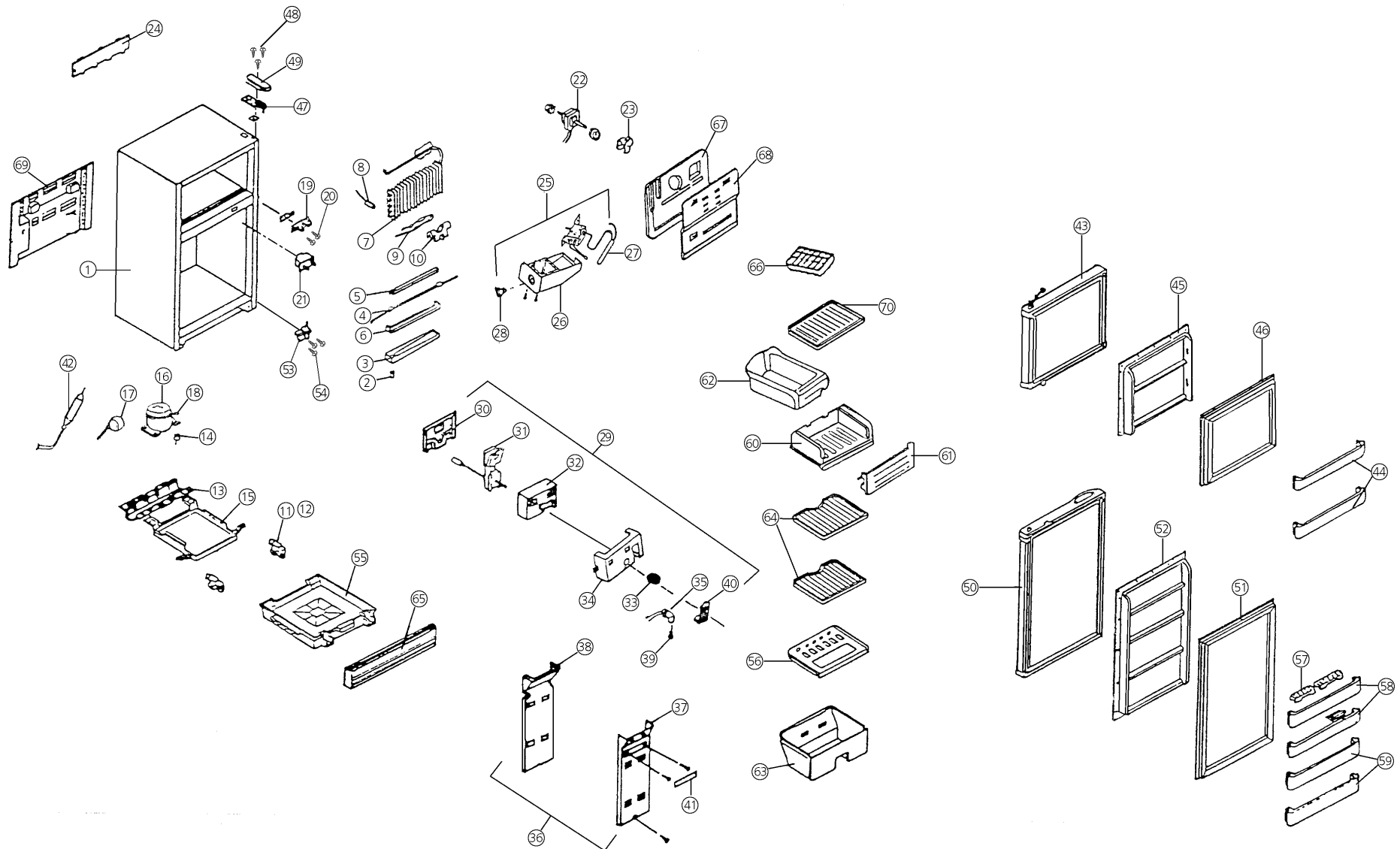
2. Lamina sheet type

NO	COLOR CHIP	COLOR NAME
1		P/WITH (WH069)
2		'94 L/GRAY (GY158)
3		'95 L/GRAY (GY259)
4		'94 M/GRAY (GY331)
5		'95 M/GRAY (GY335)
6		'97 M/GRAY (GY267)
7		M. D/GRAY (GY750)
8		N/BUE (BL718)
9		MINT GREEN (GN206)
10		S/GOLD
11		G/GREEN

10. EXPLODED VIEW AND PARTS LIST

1. FR-440

1. Exploded views



Exploded views and parts list

2. Parts list

NO	PART CODE	PART NAME	DESCRIPTION	QUANTITY	REMARK
1		ASSY URT CAB		1	REFER TO # 75
2	4018G54120	PIPE DRN	AL T1.0	1	
3	4018G45110	GUIDE DRN	AL	1	
4		HTR GLASS TUBE AS		1	REFER TO # 62
5	4017Z73570	COVER DEFR HTR *T	AL	1	
6	4017Z73580	COVER DEFR HTR *U	AL	1	
7	3017044800	EVA FIN SAS		1	
8	3018111100	SWITCH BIMTL AS		1	
9	400EL21213	FUSE TEMP AS		1	
10	4017Z90590	FIXTURE FUSE TEMP	PP	1	
11	4017Z40622	FOOT *F ASS		2	
12	4017Z40192	ADJ. FOOT AS	PP	2	
13	3010302800	BASE COMP		1	
14	3010100201	ABSORBER COMP	NR H=40	4	
15	3014504001	PLATE AXCON AS	SGCC	1	
16		COMPRESSOR		1	REFER TO # 61
17		SWITCH P RELAY AS		1	REFER TO # 61
18	4019H09030	SPECIAL WASHER	SWRH	4	
19	3012900640	HINGE *M AS	ZN DC-2	1	
20	3016000220	SPECIAL SCREW	M6X16 SWCH22A	2	
21	3010023400	SWITCH DR AS		1	REFER TO # 62
22		MOTOR FAN AS		1	
23	4017Z42312	FAN	ABS	1	
24	4017Z28490	COVER M/PCB	PP	1	
25	3010501600	BOX CONTL AS		1	
26	3010500403	BOX CONTL	HIPS	1	
27	3018300401	THERMOSTAT		1	
28	4017G31041	KNOB C/S	ABS	1	
29	401QA26000	ASSY R/DAMPER		1	
30	4010Y26030	INSULATOR DAMP B	F-PS	1	
31	4010Y21300	DAMPER R AS	D-704	1	
32	4010C31261	INSULATOR DAMP A	F-PS	1	
33	4017Z18180	KNOB	ABS	1	
34	4010Y22130	COVER DAMP	HIS	1	
35	3017901410	SOCKET LAMP AS		1	REFER TO # 62
36	4010Y75203	MULTI DUCT AS		1	
37	4010Y75213	DUCT MULTI	HIPS	1	
38	4010Y75221	INSULATOR M/F DUCT	F-PS 0.033	1	
39		LAMP AS		1	

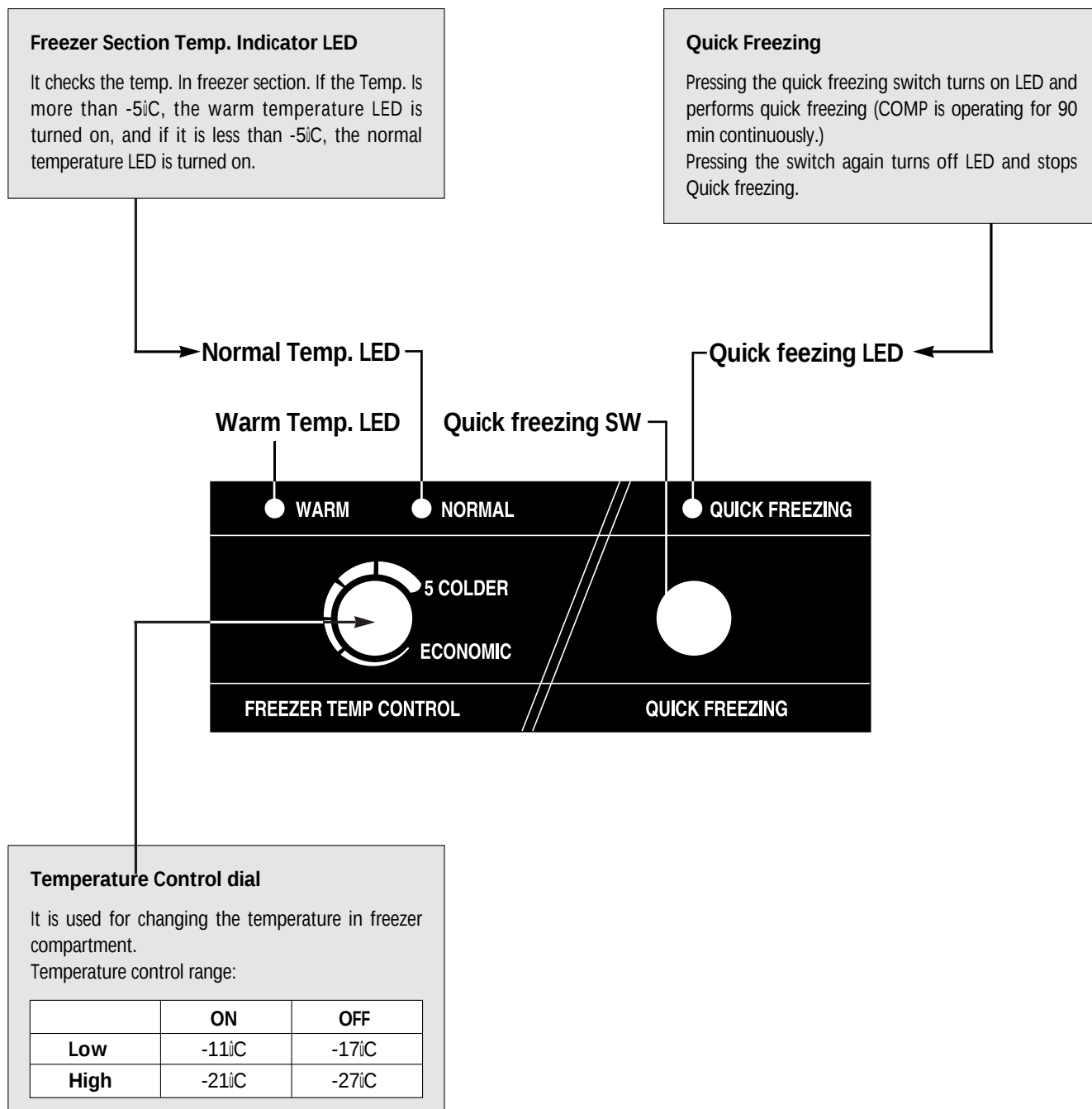
Exploded views and parts list

NO	PART CODE	PART NAME	DESCRIPTION	QUANTITY	REMARK
40	4017Z87570	SHADER	HC-2	1	
41	401 0C75252	LABEL DUCT	PC T0. 17	1	
42		DRYER AS		1	REFER TO # 62
43		ASSY URT *T DOOR		1	REFER TO # 76
44	4018G35011	POCKET F *T	HC-2	2	
45	4018Z46017	LINER F DR	ABS 1.4 x 682 x 1116	1	
46	4010Y47100	GASKET F DR AS	PVC-S+NR+MAGNET 37	1	
47	401 0G51402	HINGE *T AS	SPHC	1	
48	3016000301	SPECIAL SCREW	M5X14 S1018C ZN5 MICRO	3	
49	401 0G51455	COVER *T HI	PP 42	1	
50		ASSY URT *U DOOR		1	REFER TO # 76
51	401 0Y47200	GASKET R DR AS	PVC-S+NR+MAGNET 37	1	
52	4018Z37018	DR INL R	ABS 1.4 x 682 x 1138	1	
53	3012900401	HINGE *U AS	MF-ZN5-C	1	
54	3016000600	SPECIAL SCREW	M6X20	4	
55	4017Z91110	CASE VAPORI	PP	1	
56	3011413001	COVER V/CASE AS		1	
57	4017Z97171	CASE EGG		2	
58	4018G35113	POCKET EGG	HIPS	2	
59	4017Z68414	POCKET BOTL	HIPS	2	
60	4010E30312	CASE CHILD			
61	3011703201	DOOR CHILD AS		1	
62	4017Z99112	CASE ICE	HC-2	1	
63	4018G30011	CRISPER	HC-2	1	
64	4010E55211	SHELF R	GPS	2	
65	401 0Y44515	COVER PLT *F	PP	1	
66	4010G56011	CASE ICING	PE-HD	1	
67	4018Z75502	INSULATOR F LUVR AS		1	
68	4018Z75115	LOUVER F	PP	1	
69	4017Z1068A	COVER MECH ROOM	PP (JI-36)	1	
70	4010E55112	SHELF F		1	
71	4010E59900	DEODORANT		1	OPTION

11. ELECTRONIC FUNCTION

1. FR-440

1) How to use the panel



2) Function table

NO.	Control Function	Control Objects	Contents	Remark																				
1	Quick Freezing	COMP. Fan LED	● WARM NORMAL 5 COLDER ECONOMIC FREEZER TEMP CONTROL ● QUICK FREEZING QUICK FREEZING 1. If press the quick freezing switch, then illuminates quick freezing LED and starts quick freezing. (If press again, then stops quick freezing) 2. COMP. and Fan operate for 90 min continuously. 3. After 90 min. F-sensor checks the temperature. If it is COMP. on temperature, it continues quick freezing until it reaches COMP off temperature. 4. If it becomes auto defrosting time during quick freezing, defrosting starts from Pre-cool after finishing quick freezing. 5. If quick freezing switch is turn on during defrosting Pre-cool, defrosting starts from Pre-cool after finishing quick freezing. But if COMP. has been operating for more than 40 min., the Pre-cool will be omitted. 6. If quick freezing switch is turned on during Defrosting Heater on or Fan delay, it performs quick freezing just after finishing defrosting. But the quick freezing LED comes on immediately.																					
2	Freezer tem- perature control	COMP. Fan	1. COMP. on/off temperature is controlled by F-sensor. 2. Usually COMP. and the fan operates simultaneously.																					
3	Prevent COMP. restarting	COMP. Fan	1. Restarting in 6 min. after COMP. off.																					
4	Warm & normal TEMP. LED	LED	1. If F-sensor detects temperature over -5℃, warm temperature LED is on. 2. During defrosting, the normal temperature LED is always on and F-sensor detects the temperature after finishing defrosting. 3. In quick freezing, warm temperature LED and normal temperature LED are off.																					
5	Defrost	COMP. Fan Heater	<table><tr><th></th><th>PRE-COOL</th><th>Defrosting</th><th>Fan & COMP. delay</th></tr><tr><td>COMP.</td><td>●</td><td></td><td>●</td></tr><tr><td>Fan</td><td>●</td><td></td><td>●</td></tr><tr><td>D-heater</td><td></td><td>●</td><td></td></tr><tr><td>Prior range</td><td>quick freezing</td><td>defrosting</td><td>←</td></tr></table>		PRE-COOL	Defrosting	Fan & COMP. delay	COMP.	●		●	Fan	●		●	D-heater		●		Prior range	quick freezing	defrosting	←	
	PRE-COOL	Defrosting	Fan & COMP. delay																					
COMP.	●		●																					
Fan	●		●																					
D-heater		●																						
Prior range	quick freezing	defrosting	←																					

NO.	Control Function	Control Objects	Contents	Remark																								
			1. After accumulated 13 hours of COMP. operation, it enters to defrosting mode. 2. When power is loaded for the first time or when instant power failure occurs, D-sensor detects temperature below 3.5°C. It immediately enters into defrosting mode. 3. During Pre-cool period, it operates COMP. and fan for 40 min. regardless of F-sensor. 4. After finishing Pre-cool, the D-heater is immediately turned on. 5. At D-sensor temperature 13°C, the D-heater stops. 6. If the D-heater does not stop within 1.5 hours, it enforcedly turns off D-heater. 7. Fan, COMP. operates in 5 min. unconditionally after finishing defrosting. 8. The defrosting LED is always on from Pre-cool to fan & COMP. delay.																									
6.	Forced defrost	Heater	1. It is set by forced defrosting switch. 2. It can not be set when D-sensor temperature is above 3.5°C. 3. Manual reset is not possible. 4. If the D-sensor detect 13°C the D-heater stops.																									
7.	Term	COMP. Fan Heater	<table><tr><th>Mode</th><th>Usually</th><th>Usual short</th></tr><tr><td>Prevent COMP. restart</td><td>6 min.</td><td>0 sec.</td></tr><tr><td>Delay after switch on</td><td>2 sec.</td><td>0 sec.</td></tr><tr><td>Accumulated COMP operation time</td><td>13 hours</td><td>40 sec.</td></tr><tr><td>Quick freezing</td><td>90 min.</td><td>10 sec.</td></tr><tr><td>Defrosting Pre-cool</td><td>40 min.</td><td>2 sec.</td></tr><tr><td>Maximum D-heater on</td><td>90 min.</td><td>10 sec.</td></tr><tr><td>COMP & fan delay</td><td>5 min.</td><td>2 sec.</td></tr></table>	Mode	Usually	Usual short	Prevent COMP. restart	6 min.	0 sec.	Delay after switch on	2 sec.	0 sec.	Accumulated COMP operation time	13 hours	40 sec.	Quick freezing	90 min.	10 sec.	Defrosting Pre-cool	40 min.	2 sec.	Maximum D-heater on	90 min.	10 sec.	COMP & fan delay	5 min.	2 sec.	
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3) Circuit and wiring diagram

