

DAEWOO

Service Manual

Refrigerator

Model: FR-581NW



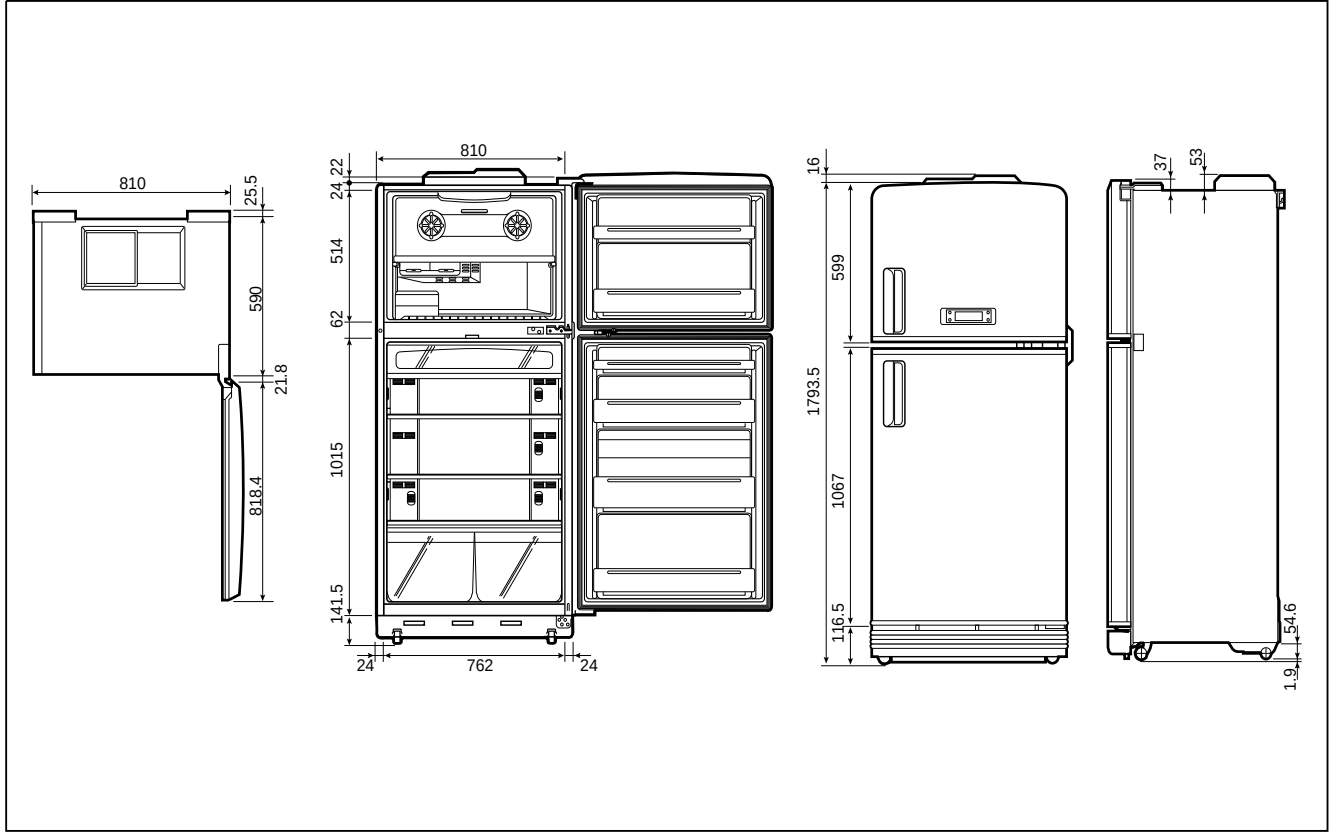
DAEWOO ELECTRONICS CO., LTD.

1. SPECIFICATION

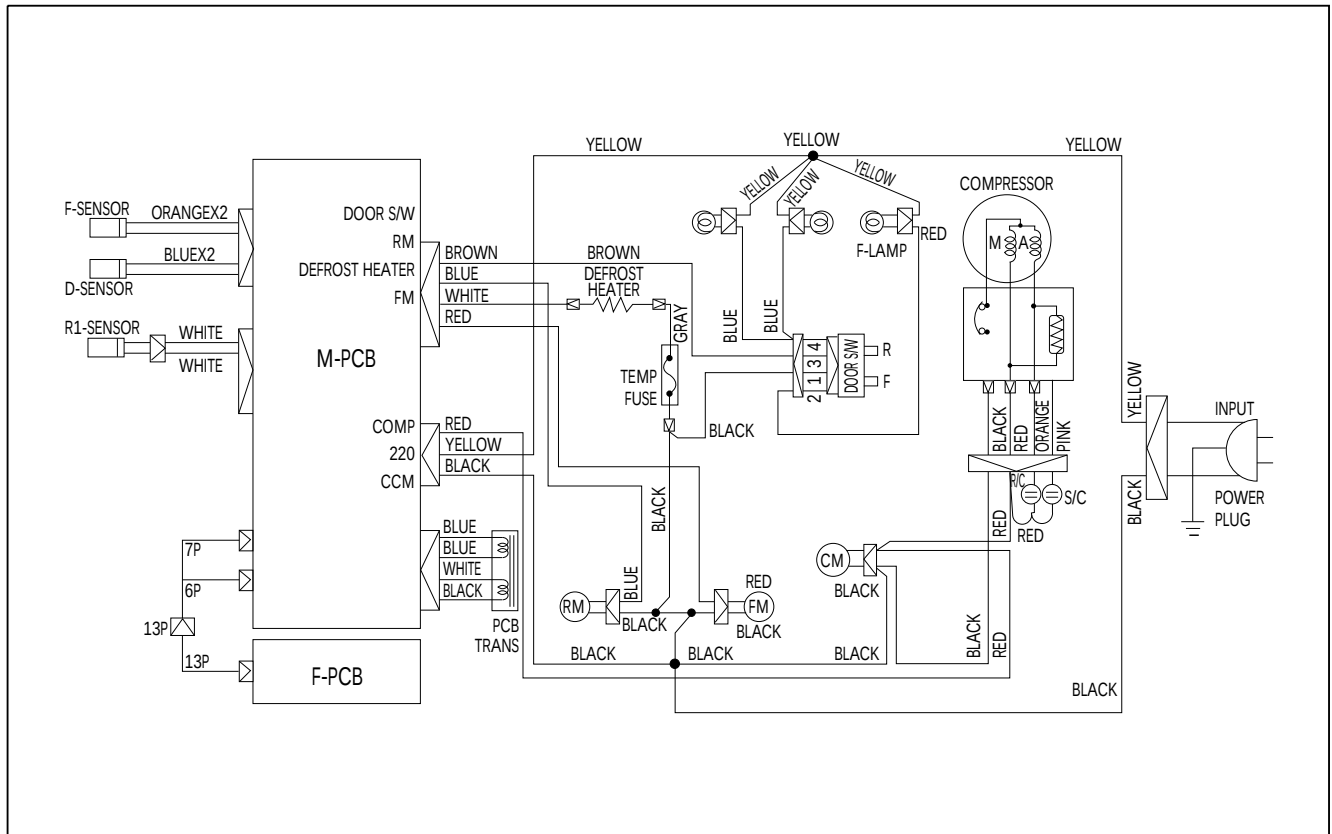
MODEL NAME		FR-581NW	
Refrigerant	R12	200g	
	R134a	160g	
Cooling System		Fan Cooling Convection	
Refrigeration System		Air Forced Convection	
Defrost System		Fin Evaporator Forced	
Defrost Operation		Automatic Start & Stop	
Cold Control		Adjustable Button	
Capacity	Freezer	136 ℓ	
	Refrigerator	346 ℓ	
	Total	482 ℓ	
External Dimension	Height	1810mm	
	Width	818mm	
	Depth	715mm	
Net Weight		96Kg	

2. EXTERNAL VIEWS

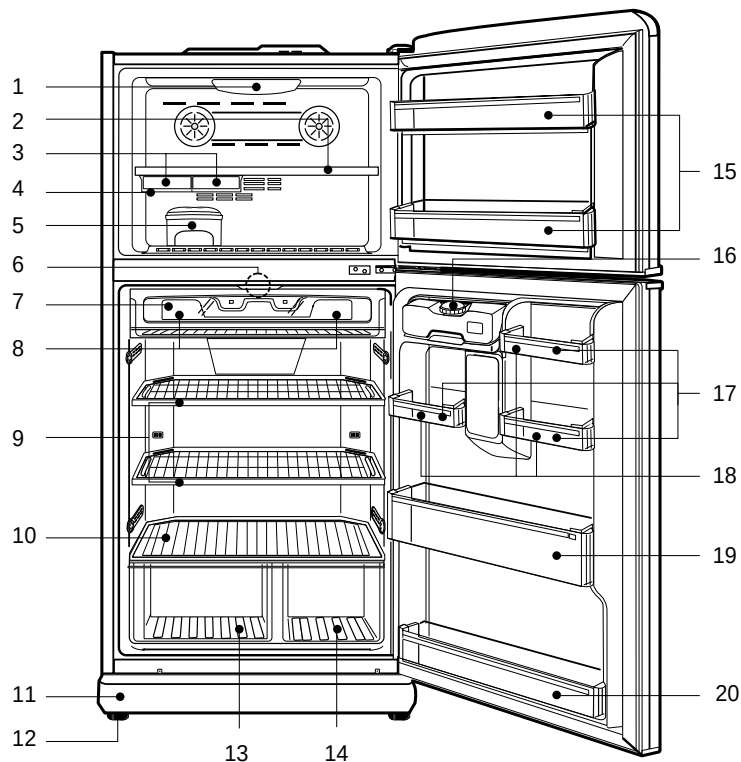
1. FR-581NW



3. WIRE DIAGRAM



NAME OF PARTS FR-581NW



- 1 Freezer Lamp
- 2 Freezer Shelf
- 3 Case Icing
- 4 Guide Icing
- 5 Ice Box
- 6 Low Temperature Deodorant
- 7 Chilled Door
- 8 Refrigerator Lamp
- 9 Refrigerator Shelf
- 10 Crisper Cover
- 11 Front Grille
- 12 Adjustable Foot
- 13 Crisper (A)
- 14 Crisper (B)
- 15 Freezer Pocket
- 16 Water Tank
- 17 Egg Tray
- 18 Egg Pocket
- 19 Bottle Pocket
- 20 Multi Pocket

5. AIR FLOW DIAGRAM

Freezer pocket

Please don't put long term storing items such as ice cream etc. It might be melted because of opening the door frequently.

Inlet of cooling air

It should not be blocked with food etc. as it is the inlet where cooling air returns.

Chilled room

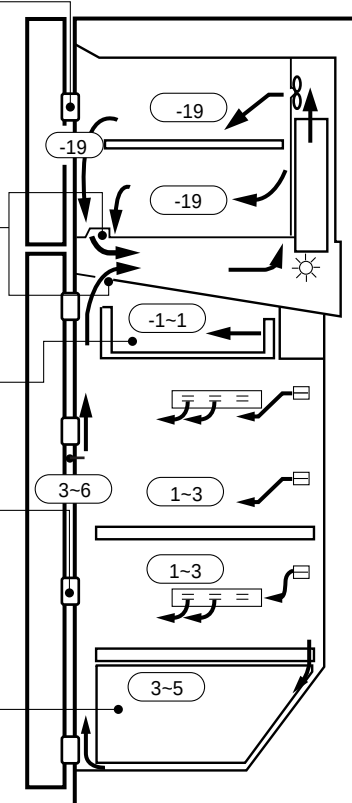
It is good for the storage of fishes and meats.

Refrigerator pocket

It is good for the storage of beer and beverage etc.

Crisper

It is suitable to store vegetable and fruit.
The moisture panel which is attached to the cover maintains the humidity properly.
Vegetable and fruit would be better to be packed with clean wrap foils.



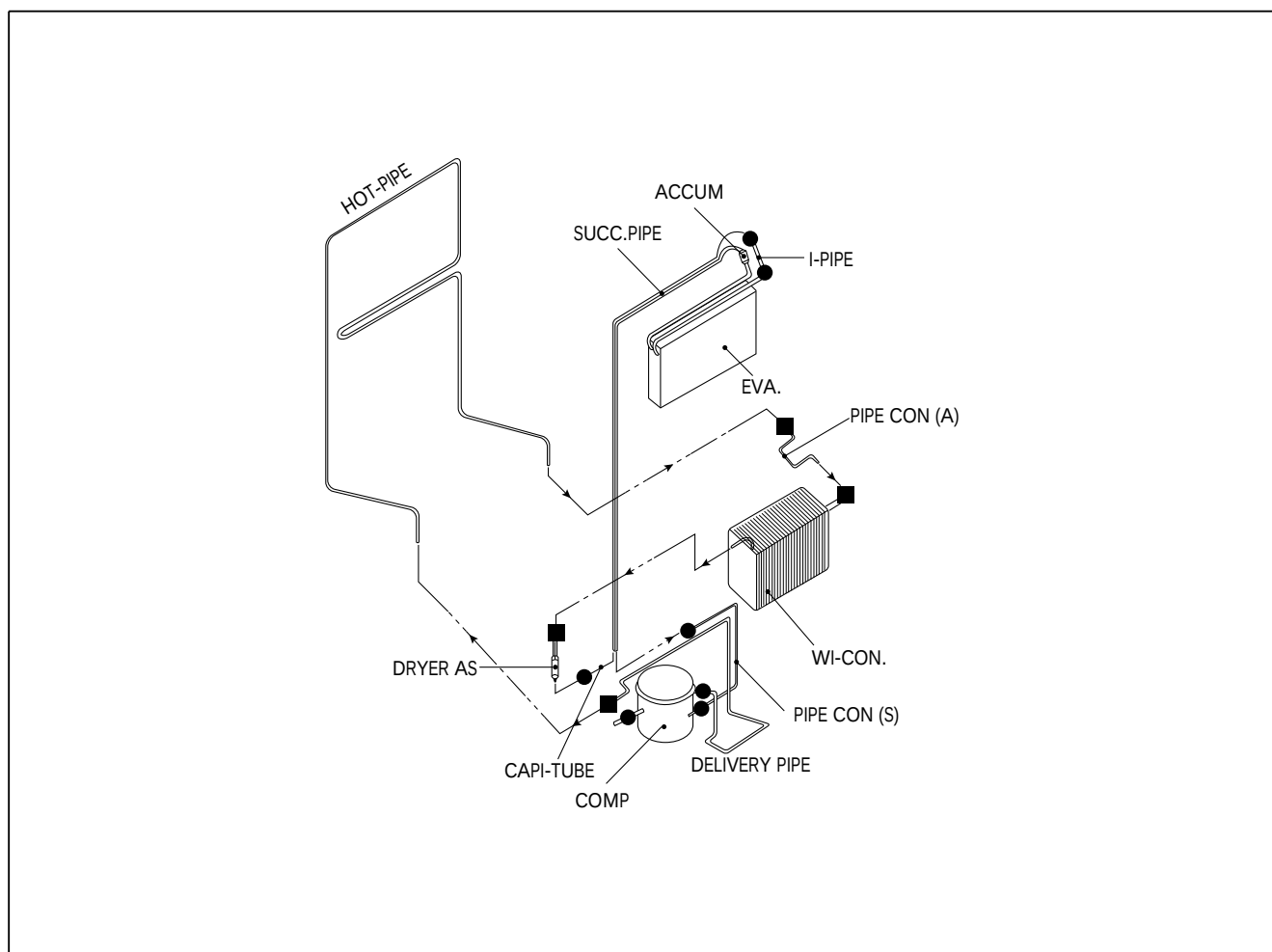
Freezer

Please don't put bottles such as beer, beverage etc. It might be broken because of freezing.

Multiple outlet of cooling air

Please don't put in vegetable etc, which contain moisture. It might be frozen because of low temperature.

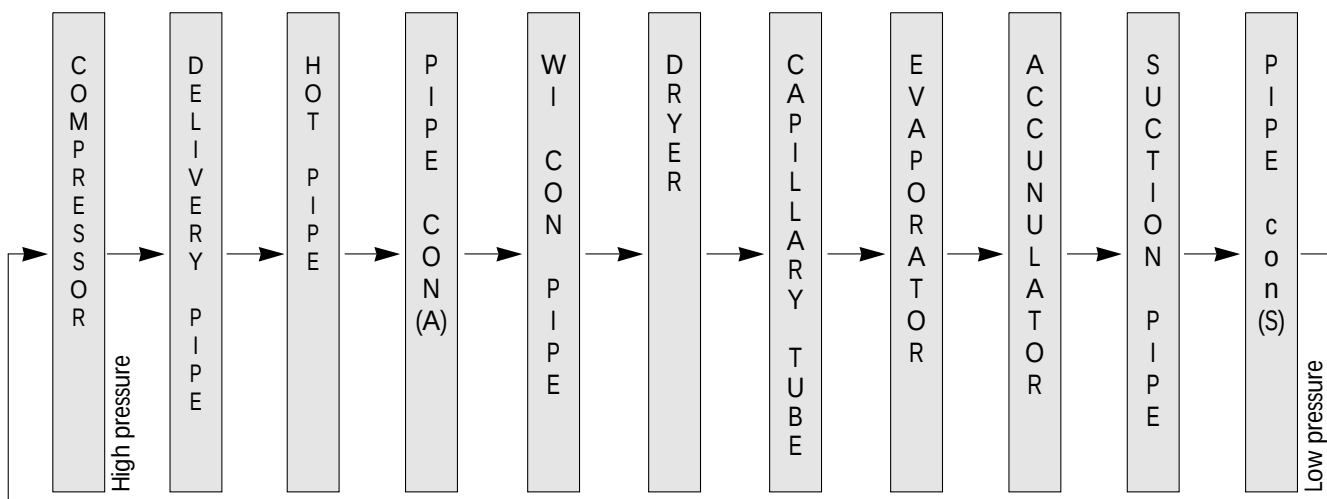
6. REFRIGERANT CYCLE DIAGRAM



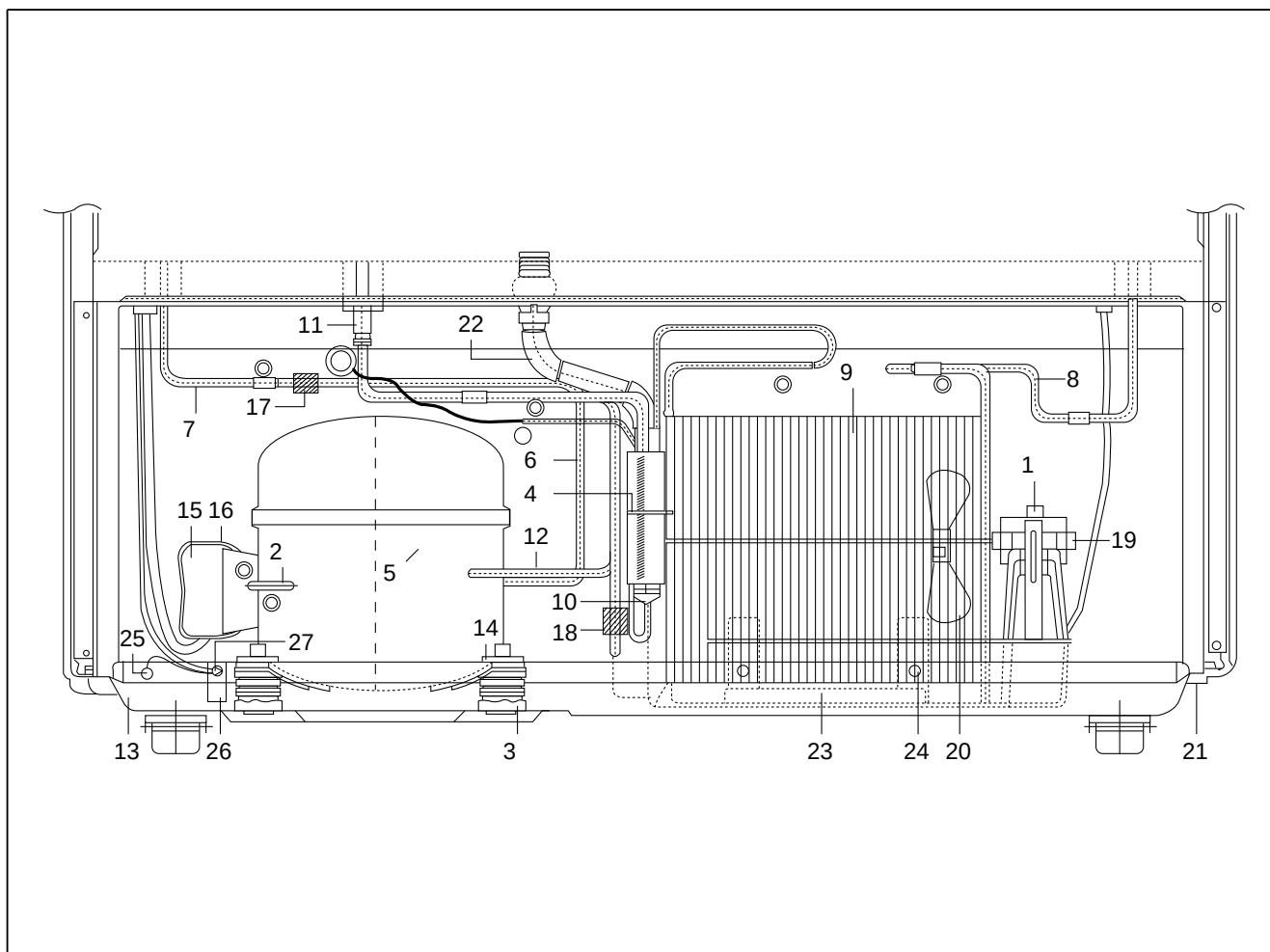
◆ Welding Specifications

i	WELD 5% SILVER
S	WELD 35% SILVER

◆ Freezing Cycle



7. MACHINE ROOM VIEW AND PART LIST



NO	PART NAME	NO	PART NAME	NO	PART NAME
1	FIXTURE C MOTOR AS	10	DRYER	19	MOTOR C
2	PIPE SERVICE	11	PIPE SUCTION AS	20	FAN
3	ABSORBER	12	PIPE SUC CONN	21	BOLT SPECIAL
4	CABLE TIE	13	BASE COMP AS	22	HOSE DRN B
5	COMPRESSOR	14	WASHER SPECIAL	23	CASE VAPORI
6	PIPE CONN A	15	SWITCH P-RELAY AS	24	SCREW TAPPING
7	PIPE HOT	16	CLAMP BAND RELAY	25	SCREW MACHINE
8	PIPE CONN B	17	ABSORBER PIPE B	26	CORD POWER AS
9	PIPE WICON AS	18	ABSORBER PIPE A	27	SCREW TAPPING

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	BL27YE-3	←	BL25YG-2	SL28YE-5	PL25YG-4	SL28YE-5	←
Part code	X	3952127A30	←	3952125Q20	3954128A50	3956125Q40	3954128A50	←
Strating type	X	CSR	←	CSR	RSIR	RSCR	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	HBL27YE-3	←	HBL25YG-2	HSL27YE-5	X	HSL27YE-5	←
Part code	X	3952127G30	←	3952125G20	3954128G50	X	3954128A50	←
Strating type	X	CSR	←	CSR	RSIR	X	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	444THBZZ-52	←	414THBYY-52	276THBYY-52	213THBYY-52	276THBYY-52	←
Part code	X	3018111900	←	3018112510	3018112800	3018110900	3018112800	←

Refrigerant	R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Relay model	X	783RHBZZ-52	←	427THBZZ-52	276THBYY-52	X	276THBYY-52	←
Part code	X	3018112700	←	3018112520	3018112800	X	3018112900	3018112800

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	230V/10μF	←	300V/7μF	X	350V/5μF	X	X
Part code	X	400EL15130	←	386100400	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	230V/10μF	←	300V/7μF	X	X	X	X
Part code	X	400EL15130	←	386100400	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	200V/100μF	←	←	X	350V/25μF	X	X
Part code	X	3016400100	←	←	X	400EL16110	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	290V/50 μF	X
Part code	X	3016400100	←	←	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	ORM-1001L1 IS-3211DWB FN	←	ORM-1001D1 IS-3211DWB FV	ORM-1001B2 IS-23211DWB FR	ORM-1005B1 IS-23211DWB FJ	ORM-1001H2 IS-3211DWB FT	←
Part code	X	3015902520	←	3015902530	3015902540	3015902510	3015902550	←

6. R-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	ORM-1002L1 IS-3211DWB FM	←	ORM-1002D1 IS-3211DWB FU	ORM-1002B2 IS-3211DWB FQ	ORM-1006B1 IS-23211DWB FE	ORM-1002H2 IS-3211DWB FS	←
Part code	X	3015902620	←	3015902630	3015902640	3015902610	3015902650	←

7. C-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	RF111EAC03	←	RF111SAC03	RF111BAC03	RF111GAC03	RF111HAC03	←
Part code	X	3015902720	←	3015902730	3015902740	3015902700	3015902750	←

8. 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	180W	←	←	180W	←	←	←
Part code	X	3010006721	←	←	3010006711	←	←	←

9. 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	120V/15W	←	←	240V/15W	←	←	←
Part code	X	3013600010	←	←	3013600030	←	←	←

10. PCB TRANSFORMER

Refrigerant	R12, R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Part code	X	5EPK041004	←	5EPK057800	5EPK042000	←	5EPK057720	5EPK041005

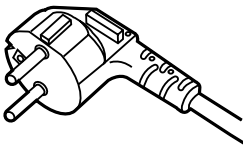
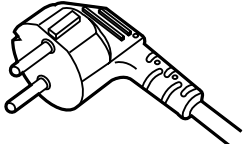
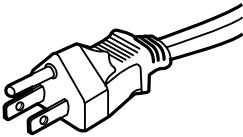
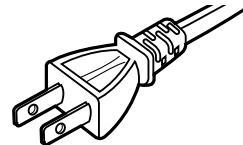
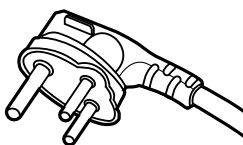
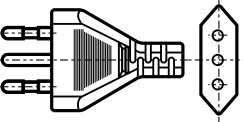
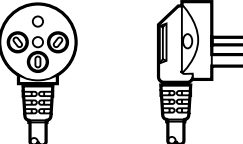
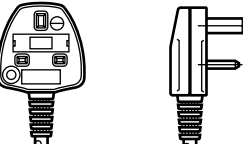
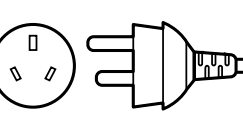
11. MAIN PCB ASSEMBLY

Refrigerant	R12, R134a							
Voltage	100V/50,60Hz	110V/60Hz	115, 120V/60Hz	127V/60Hz	220V/50Hz	220V/60Hz	230V/50Hz	240V/50Hz
Spec.	X	N805	←	←	←	←	←	←
Part code	X	3014353010	←	←	3014363010	←	←	←

12. DRYER

Refrigerant	R12	R134a
Spec.	10 g	15 g
Part code	3016802100	3016801211

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.

9. DOOR COLOR SPECIFICATION

1. ASSEMBLY URETHAN FREEZER 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	X	X	PWFT006A40	X	X	X	PWFT006A50

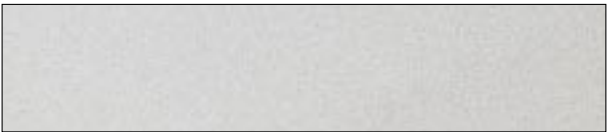
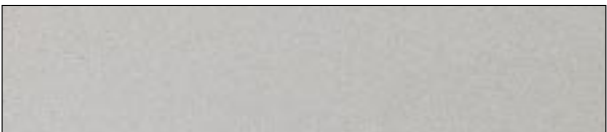
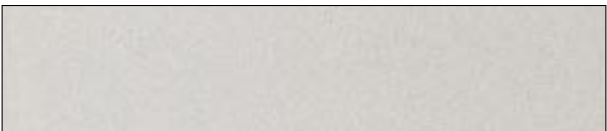
2. ASSEMBLY URETHAN REFRIGERATOR DOOR

FR-581NW

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	X	X	PWRT006A60	X	X	X	PWRT006A70

COLOR TABLE

1. PCM type

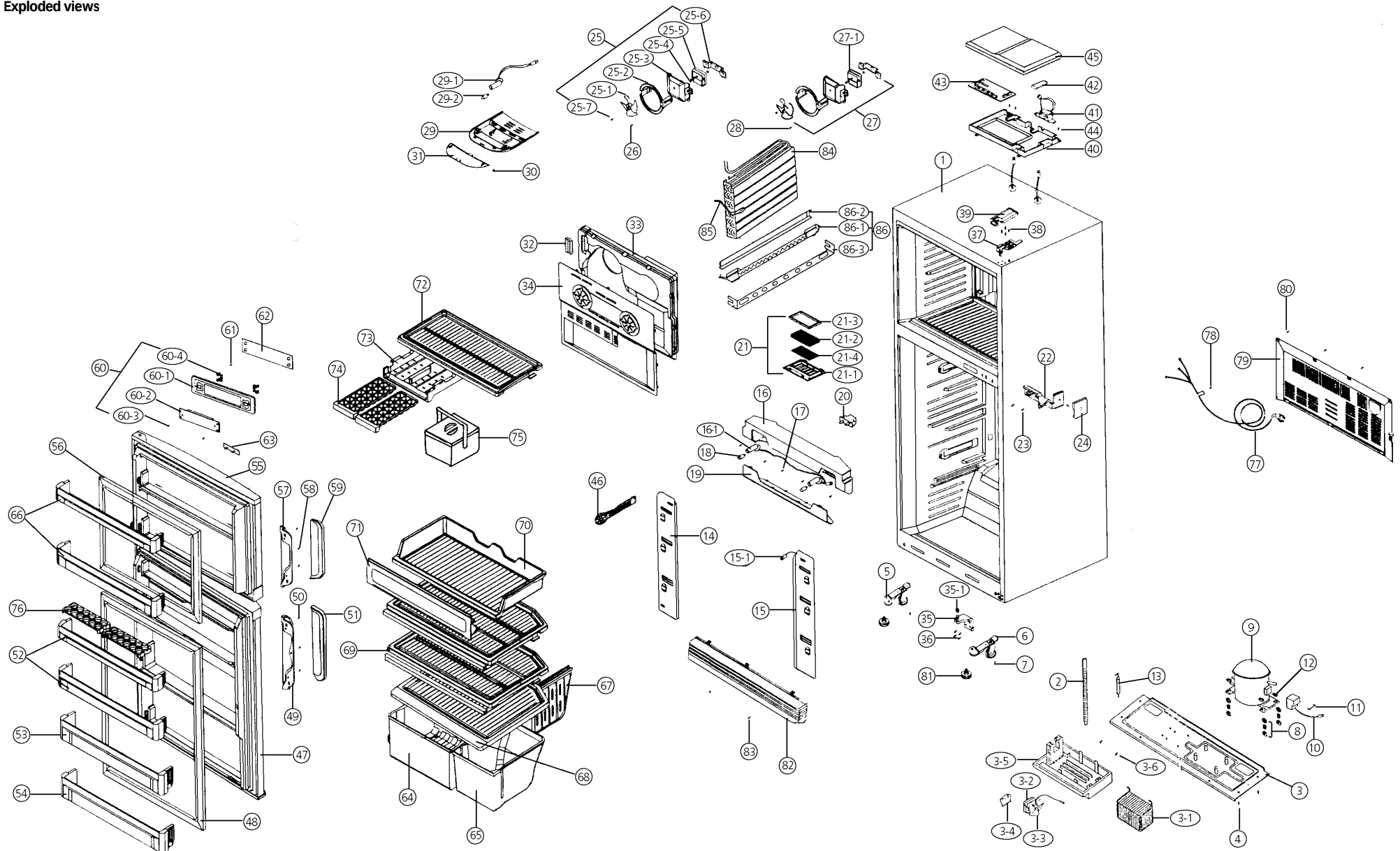
NO	COLOR CHIP	COLOR NAME
1		P/WITH (WH069)
2		'94 L/GRAY (GY158)
3		'95 L/GRAY (GY259)
4		'94 M/GRAY (GY331)
5		'95 M/GRAY (GY335)
6		'97 M/GRAY (GY267)
7		M. D/GRAY (GY750)
8		N/BUE (BL718)
9		MINT GREEN (GN206)
10		'97 BEIGE (BE215)

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 VIEWS AND PARTS LIST

1. Exploded views



2. Parts list

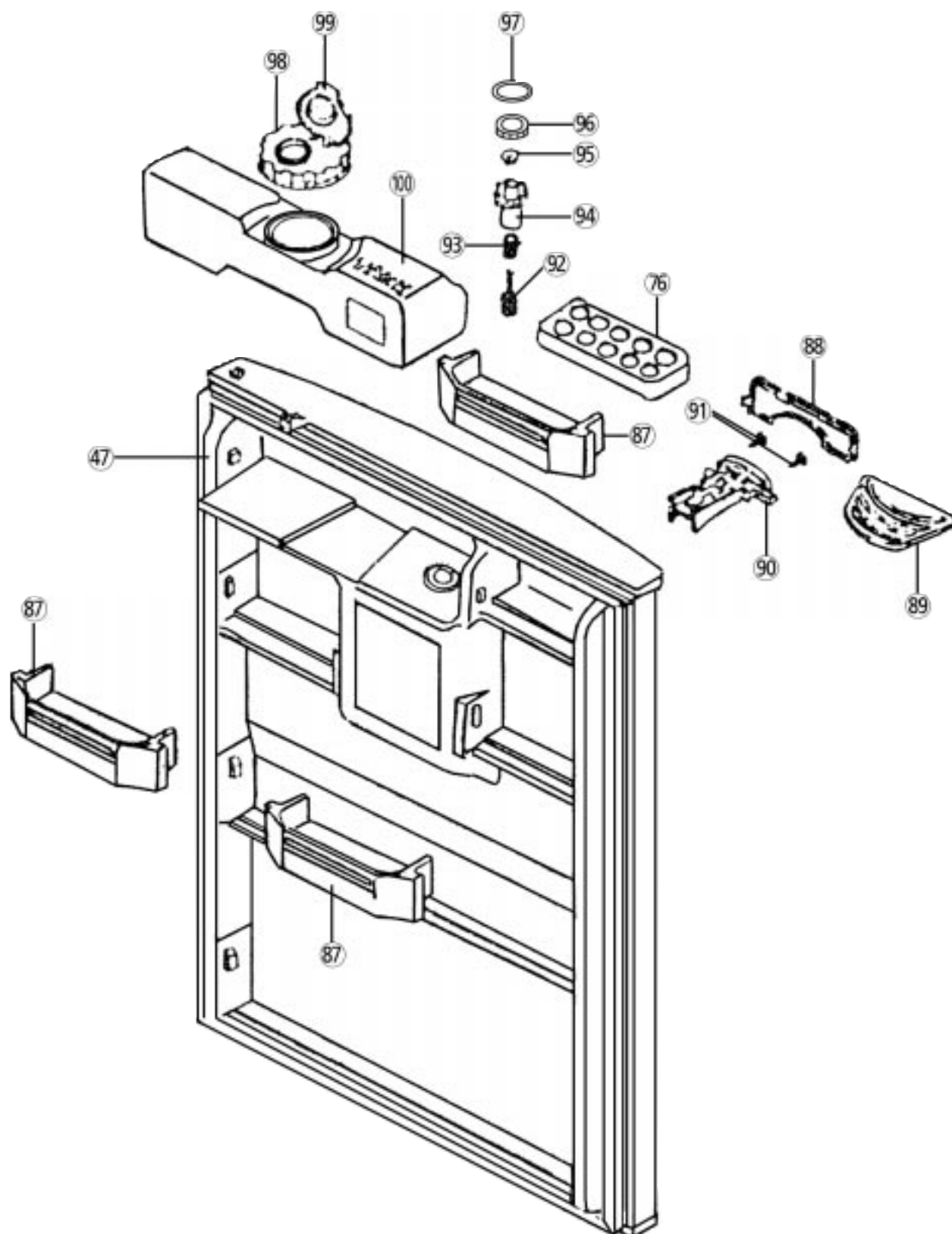
NO	PART NAME	PART CODE		DESCRIPTION	Q'ty	REMARK
		FR-581NW				
1	ASSY CAB URT				1	
2	HOSE DRAIN (B)	3013202200	←	PP	1	
3	BASE COMP AS	3010309100	←		1	
3-1	PIPE WI-CON AS	3014415500	←		1	
3-2	MOTOR C AS				1	REFER TO # 9
3-3	FAN	3011800400	←	ABS (Ø 110mm)	1	
3-4	FIXTURE C MOTOR AS	3012006000	←		1	
3-5	CASE VAPORI	3011111700	←	PP	1	
3-6	SCREW TAPPING	7112401211	←	T1 TRS 4 x 12 MFZN	2	
4	SPECIAL BOLT	3016003300	←	T2 6.5 x 20	4	
5	FOOT *F *L AS	3012700700	←		1	
6	FOOT *F *R AS	3012100600	←		1	
7	BOLT HEX	3016000700	←	M6 x 15	2	
8	ABSORBER COMP AS	3010101440	←		4	
9	COMPRESSOR				1	REFER TO # 8
10	SWITCH P RELAY AS				1	REFER TO # 8
11	RELAY BAND	3816100100	←	SK-5 T0.7	1	
12	SPECIAL WASHER	3016002500	←	SK-5 T0.8	4	
13	DRYER AS				1	REFER TO # 10
14	ASSY R*S LUVR *L	3010028804			1	
15	ASSY R*S LUVR *R	3010028822			1	
15-1	SENSOR R1 AS	3014701140	←		1	
16-1	SOCKET R LAMP AS	3017900860	←	250V/1A	1	
17	SCREW TAPPING	7112401611	←	T2 TRS 4 x 16 MFZN	3	
18	LAMP AS				2	REFER TO # 10
19	WINDOW R	3015501600		GPPS	1	
20	SWITCH DR	3018100020	←	2BUTTON/4PIN	1	
21	CASE DEO AS	3011101800	←		1	
21-1	CASE DEO AS	3011102501	←	PP	1	
21-2	DEODORANT	3018700600	←		1	
21-3	SEALING DEO	3017714600	←	F-US	1	
21-4	DEODERANT SHEET	3018700700	←		1	
22	HINGE *M AS	3012904800	←	SCP-1 T3.21	1	
23	SPECIAL BOLT *M	3016001220	←	6B-1 6 x 20	3	
24	COVER *M HI	3014424700	←	ABS	1	
25	MOTOR F AS				1	
25-1	FAN	3011800400	←	ABS (Ø 110mm)	1	

NO	PART NAME	PART CODE		DESCRIPTION	Q'ty	REMARK
		FR-581NW				
25-2	MOUSE BELL	3018500100	←	HIPS	1	
25-3	COVER MOTOR C	4017Z32233	←	HIPS	1	
25-4	ABSORBER MOTOR	4017Z08430	←	EPR-B3(H40)	1	
25-5	MOTOR F				1	REFER TO # 9
25-6	COVER MOTOR B	4017Z32244	←	HIPS	1	
25-7	FIXTURE FAN	4004Q10060	←	STS27	1	
26	SCREW TAPPING	7112401611	←	T2S TRS 4 x 16 MFZN	2	
27	MOTOR R AS				1	
27-1	MOTOR R				1	REFER TO # 9
28	SCREW TAPPING	7112401611	←	T2S TRS 4 x 16 MFZN	2	
29	COVER F M/F DUCT A	3011406600		ABS	1	
29-1	SOCKET *F LAMP AS	3017900820	←	250V/1A	1	
29-2	LAMP AS				1	REFER TO # 10
30	SCREW TAPPING	7112401611	←	T1 TRS 4 x 12 MFZN	2	
31	WINDOW F	3015500400	←	GPPS	1	
32	BRACKET F SENS	4017Z29010	←	SCP-1 T3.2	1	
33	INSULATOR F LOUVER AS	3013321400	←	F-PS	1	
34	LOUVER F AS	3018903400	←	PP	1	
35	ASSY *U HI	3010010700	←		1	
35-1	WASHER PLAIN	7400108511	←	PW-1-8.5	1	
36	SPECIAL BOLT	3016001201	←	6B-1 6 x 20	4	
37	HINGE *T AS	3012904700	←		1	
38	SPECIAL BOLT T/U	3016001230	←	6B-1 6 x 20	4	
39	COVER *T HI	3011432900	←	PP	1	
40	BOX M/PCB	3010511700	←	PP	1	
41	TRANS POWER				1	REFER TO # 10
42	CAPACITOR				1	REFER TO # 8
43	PCB MAIN AS				1	REFER TO # 10
44	SCREW TAPPING	7112401211	←	T1 TRS 4 x 12 MFZN	3	
45	COVER M/PCB BOX	3011425300	←	PP	1	
46	COVER CUBIC/C	3011424400	←	ABS	4	
48	GASKET R DR AS	3012305000	←	PVC+MAGNET	1	
49	HANDLE R DR	3012605100	←	ABS+CR	1	
50	SCREW TAPPING	7112401611	←	T2S TRS 4 x 16 MFZN	3	
51	DECORATOR R DR HANDLE	3011601800	←	ABS	1	
52	POCKET SM	3019002301	←	GP	2	
53	POCKET JUMBO	3018000500	←	GP	1	
54	POCKET M	3019000901	←	GP	1	
55	ASSY F DR TOTAL				1	REFER TO # 12

NO	PART NAME	PART CODE		DESCRIPTION	Q'ty	REMARK
		FR-581NW				
56	GASKET F DR AS	3012304800	←	PVC+MAGNET	1	
57	HANDEL F DR	3012605000	←	ABS+CR	1	
58	SCREW TAPPING	7112401611	←	T2S TRS 4 x 16 MFZN	3	
59	DECORATOR F DR HANDLE	3011601700	←	ABS	1	
60	PANEL F*T	3014203600			1	
60-1	PANEL F CONTROL	3014203500	←		1	
60-2	PCB *F AS	3014351110			1	
60-3	SCREW TAPPITE	7173301011	←	TT2 BIN 3 x 10 MFZN	1	
60-4	BUTTON FCP	3016300700	←	ABS+CR	2	
61	SCREW TAPPING	7125401213	←	T2S FLT 4 x 16 MFCR	2	
62	PLATE FCP NAME	3014512100	←	PC-FILM T0.5	1	
63	PLATE NAME TANK	3014512500	←	ABS+CR	1	
64	CASE VEGETB A	3011104500	←	SAN	1	
65	CASE VEGETB B	3011101300	←	SAN	1	
66	POCKET F *T	3019001801	←	GP	2	
67	SUPOTR VEGETB COVER	3015301003	←	SAN	1	
68	COVER V/CASE	3011407001		SAN	1	
69	SHELF R AS	3010051200		SAN	2	
70	CASE CHILD	3011105200	←	SAN	1	
71	DOOR CHILD CASE	3011716700	←	SAN	1	
72	SHELF F	3017808300		SAN	1	
73	GUIDE ICING	3011403600		HIPS	1	
74	CASE ICING	3011106100	←	PP	2	
75	BOX ICE CASE	4010E99100	←		1	
			←			
77	CORD POWER AS				1	REFER TO # 11
78	SCREW TAPPING	7112401211	←	T1 TRS 4 x 12 MFZN	1	
79	GRILLE	3012400100			1	
80	SCREW TAPPING	7112401211	←	T1 TRS 4 x 12 MFZN	5	
81	FOOT ADJ AS	3012100400	←	PP	2	
82	COVER CAB BRKT	3011425100	←	PP	1	
83	SCREW TAPPING	7112401211	←	T1 TRS 4 x 12 MFZN	2	
84	EVAPORATOR	3017000923	←		1	
85	FUSE TEMP AS	3017200101	←	SW-103T (77°C)	1	
86	ASSY D HTR				1	
86-1	HEATER D AS				1	REFER TO # 9
86-2	COVER HTR *T	3011408201	←	AL 1200P-H24 T0.4	1	
86-3	COVER HTR *U	3011408100	←	AL 1200P-H24 T0.4	1	

2. FR-581NW

1. Exploded views



2. Parts list

NO	PART NAME	PART CODE		DESCRIPTION	Q'ty	REMARK
		FR-581NW				
16	DUCT CHILD AS	3010054901			1	
47	ASSY R DR TOTAL				1	REFER TO # 12
76	CASE EGG	3011107410	←	SAN	2	
87	POCKET EGG	3019005110	←	GP	3	
88	WINDOW W/D AS	3015502400	←		1	
89	COVER WATER ACEPT	3011412910	←	ABS+GOLD	1	
90	FIXTURE LEVER AS	3012003600	←		1	
91	SCREW TAPPING	7112401311	←	MFZN	2	
92	SHAFT OUTLET	3014900600	←	ABS	1	
93	SPRING DISPENSER	3015100100	←	SUS 304 0.9	1	
94	CAP OUTLET	3010922700	←	ABS	1	
95	PACKING W/TANK	3014001500	←	SILICON	1	
96	PACKING CAP A	3014001000	←	SILICON	1	
97	PACKING CAP B	3014001010	←	SILICON	1	
98	CAP W/TANK A	3010914100	←	ABS	1	
99	CAP W/TANK B	3010914200	←	ABS	1	
100	TANK W/D	30182002100	←	PE	1	

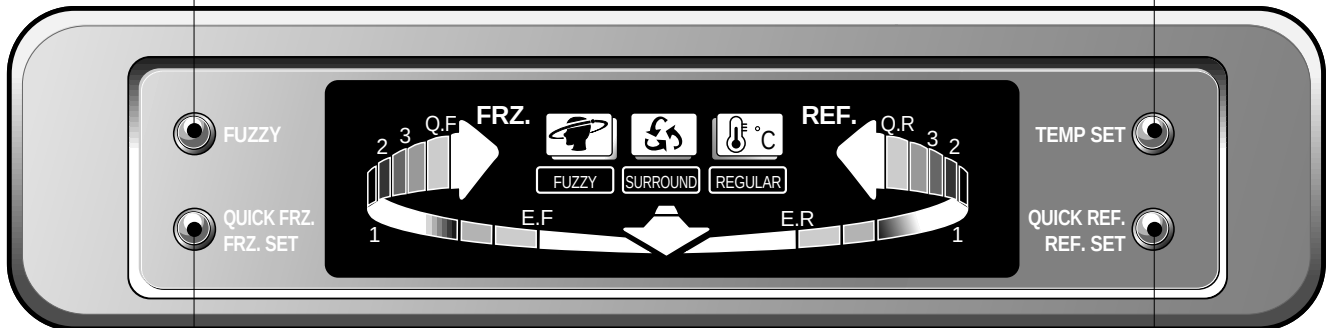
11. ELECTRONIC FUNCTION

1. N805

1) How to use the panel

- BAR LEDs light on 3 times.
- FUZZY icon lights on.
- FUZZY canceled, if buttoned again.
- Both compartments' LEDs of "E.F", "E.R", "1", "2", "3" go off.

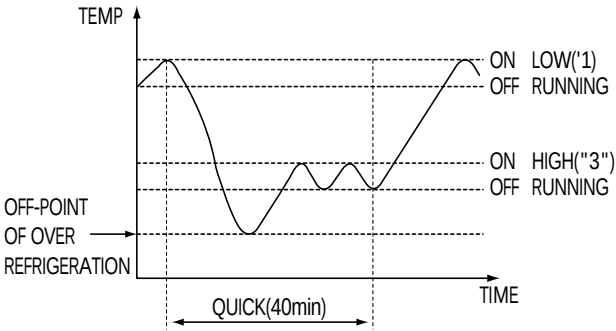
1. Pressing once
 - 1) Temperature regulation of both compartments.
 - 2) Other LEDs are in ordinary state.
 - 3) Fuzzy (button) does not work.
 - 4) Quick FRZ. button : Temperature regulation of freezer
E.F → 1 → 2 → 3 → E.F
 - 5) Quick REF. button : Temperature regulation of refrigerator (fresh-food compartment)
E.F → 1 → 2 → 3 → E.F
2. Pressing twice
 - 1) Temperature regulation of both compartments (freezer & refrigerator) finished.
 - 2) Returns to ordinary state.
 - 3) No flicker of LED.

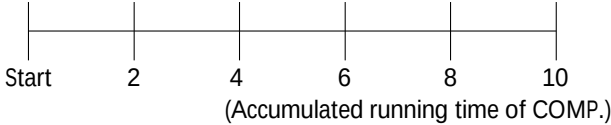


- BAR LEDs lights on 3 times.
- LEDs of freezer ("E.F", "1", "2", "3") go off.
- QUICK LED lights on.
- Refrigerator LEDs are in ordinary state.
- Buttoned again, then canceled.

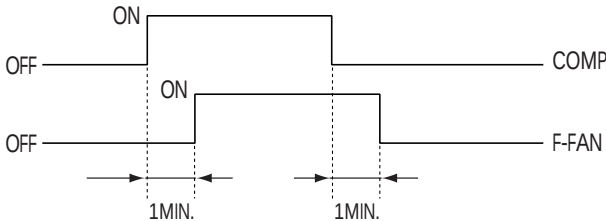
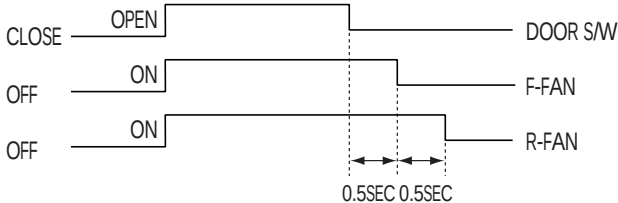
- BAR LEDs lights on 3 times.
- LEDs of freezer ("E.R", "1", "2", "3") go off.
- QUICK LED lights on.
- Freezer LEDs are in ordinary state.
- Buttoned again, then canceled.

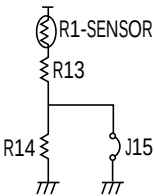
NO.	Control Function	Control Objects	Contents	Remark															
1	Freezer temperature control	COMP. F-fan R-fan C-fan LED	1. If press the temperature set button, then freezer temperature range will blink. During blinking, press the quick freezer/freezer set button. E.F → 1 → 2 → 3 → E.F  2. COMP. F-fan controlled by on/off point of each temperature range. 3. Freezer temperature on/off difference is 5°C. 4. Temperature(°C)/Resistance(kΩ) <table border="1"> <thead> <tr> <th></th><th>E.R</th><th>1</th><th>2</th><th>3</th></tr> </thead> <tbody> <tr> <td>COMP. on</td><td>-15.5/17.5</td><td>-16.5/18.4</td><td>-17.5/19.5</td><td>-18.5/20.6</td></tr> <tr> <td>COMP. off</td><td>-20.5/23.0</td><td>-21.5/24.3</td><td>-22.5/25.7</td><td>-24.5/28.8</td></tr> </tbody> </table> 5. Bar LED is irrelevant with COMP. on/off. 6. In case of temperature regulation in the middle of fuzzy, fuzzy is canceled and temperation is done.		E.R	1	2	3	COMP. on	-15.5/17.5	-16.5/18.4	-17.5/19.5	-18.5/20.6	COMP. off	-20.5/23.0	-21.5/24.3	-22.5/25.7	-24.5/28.8	
	E.R	1	2	3															
COMP. on	-15.5/17.5	-16.5/18.4	-17.5/19.5	-18.5/20.6															
COMP. off	-20.5/23.0	-21.5/24.3	-22.5/25.7	-24.5/28.8															
2	Fridge temperature control	COMP. R-fan C-fan LED	1. If press the temperature set button, then fridge temperature range will blink. During blinking, press the quick fridge/fridge set button press. E.R → 1 → 2 → 3 → E.R  2. R-fan controlled by on/off point of each temperature range. 3. Fridge temperature on/off difference is 0.35°C. 4. Temperature(°C)/Resistance(kΩ). <table border="1"> <thead> <tr> <th></th><th>E.R</th><th>1</th><th>2</th><th>3</th></tr> </thead> <tbody> <tr> <td>R-fan. on</td><td>1.35/28.4</td><td>0.35/29.7</td><td>-0.65/30.9</td><td>-2.65/33.8</td></tr> <tr> <td>R-fan. off</td><td>1.0/28.7</td><td>0.0/30.0</td><td>-1.0/31.4</td><td>-3.0/34.3</td></tr> </tbody> </table> 5. Prevention of weak fridge. 1) When weak fridge temperature(7°C) is sensed, COMP. is on. 2) When R1-sensor value reaches R-fan off point COMP. is controlled by F-sensor. 3) R1-sensor detects and cancels weak fridge.		E.R	1	2	3	R-fan. on	1.35/28.4	0.35/29.7	-0.65/30.9	-2.65/33.8	R-fan. off	1.0/28.7	0.0/30.0	-1.0/31.4	-3.0/34.3	
	E.R	1	2	3															
R-fan. on	1.35/28.4	0.35/29.7	-0.65/30.9	-2.65/33.8															
R-fan. off	1.0/28.7	0.0/30.0	-1.0/31.4	-3.0/34.3															

NO.	Control Function	Control Objects	Contents	Remark
			6. Bar LED is irrelevant with R-fan on/off. 7. In case of temperature regulation in the middle of fuzzy, fuzzy is canceled and temperation is done.	
3	Quick freezing	COMP. F-fan C-fan LED	1. Quick freezing mode is started by pressing quick freeze button.  2. When quick freeze is done, COMP., F-fan, C-fan are on for 150 min. regardless of F-sensor. 3. Quick freezing is possible in fuzzy mode.	
4	Quick fridge	COMP. R-fan C-fan LED	1. Quick fridge mode is started by pressing quick refrigerate button.  2. Quick freezing is possible in fuzzy mode. 3. Temperature graph in quick fridge is as follow.  1) R-fan and COMP. are on until the R1-sensor value reaches the point of over fridge temperature(-7°C) 2) After the over fridge temperature, '3'(high) is done until the quick fridge ends(40 min.). 3) Ordinary state starts after quick fridge.	

NO.	Control Function	Control Objects	Contents	Remark
5	Fuzzy	COMP. R-fan F-fan C-fan LED	1. Fuzzy mode is started by pressing fuzzy button.  2. Fuzzy mode is canceled by pressing fuzzy button once again. 3. Prediction cooling is applied to both compartment. 1) In case of frequent door opening is '3'(high). 2) In case of less frequent door opening is '2'(middle).	
6	Determination defrost		1. How to determin defrost mode. 1) Accumulated running time of COMP. 2) Running ratio of COMP. 3) Accumulated time of door opening 4) Total time(On time of COMP.+Off time of COMP.) 5) Outside temperature. 6) D, F RT, R1-sensor and door switch error. 2. Starting conditions of defrost mode.  1) When the accumulated time is 6, 8, 10, defrost starts. 2) If the accumulated time is more than 10, defrost mode starts unconditionally.	
7	Defrost mode	COMP. R-fan F-fan C-fan Heater	1. Pre-cool 1) Time is 50 min. 2) COMP. and F-fan is on. 3) If the F-sensor $\leq -27^{\circ}\text{C}$ even the time elapsed is less than 50 min., the Pre-cool step goes off. 2. R-fan defrost 1) Time is 10 min. 2) Only R-fan is on. 3) If D-sensor $\geq 10^{\circ}\text{C}$, R-fan will be off and jump to pause step.	

NO.	Control Function	Control Objects	Contents	Remark																																				
			3. Heater defrost 1) If D-senso r ≥10°C, Heater is off. 2) Limited time is 80 min. 4. Pause 1) Time is 4 min. 2) COMP. F-fan, R-fan are off. 5. Fan delay 1) Time is 5 min. 2) COMP. and C-fan are on. 6. Time table. <table><tr><th></th><th>Pre-cool</th><th>R-fan defrost</th><th>Heater defrost</th><th>Pause</th><th>Fan delay</th></tr><tr><td>COMP.</td><td>on</td><td>off</td><td>off</td><td>off</td><td>on</td></tr><tr><td>F-fan</td><td>on</td><td>off</td><td>off</td><td>off</td><td>off</td></tr><tr><td>R-fan</td><td>control</td><td>on</td><td>off</td><td>off</td><td>off</td></tr><tr><td>Heater</td><td>off</td><td>off</td><td>on</td><td>off</td><td>off</td></tr><tr><td>Limited time</td><td>50 min.</td><td>10 min.</td><td>80 min.</td><td>4 min.</td><td>5 min.</td></tr></table>		Pre-cool	R-fan defrost	Heater defrost	Pause	Fan delay	COMP.	on	off	off	off	on	F-fan	on	off	off	off	off	R-fan	control	on	off	off	off	Heater	off	off	on	off	off	Limited time	50 min.	10 min.	80 min.	4 min.	5 min.	
	Pre-cool	R-fan defrost	Heater defrost	Pause	Fan delay																																			
COMP.	on	off	off	off	on																																			
F-fan	on	off	off	off	off																																			
R-fan	control	on	off	off	off																																			
Heater	off	off	on	off	off																																			
Limited time	50 min.	10 min.	80 min.	4 min.	5 min.																																			
8	Demo function	R-fan F-fan	1. If CN10 terminal on the M-PCB is shorted, all electric devices are off except F-fan and R-fan. 2. Fan control table. <table><tr><th></th><th>Normal status</th><th>Demo status</th></tr><tr><td>Door open</td><td>F, R-fan : off</td><td>F, R-fan : on</td></tr><tr><td>Door close</td><td>F, R-fan : on</td><td>F, R-fan : off</td></tr></table> 3. F-PCB indicates the normal status and fuzzy status alternately. FRZ.    REF. SURROUN REGULAR E.F E.R Normal status ↕ FRZ.    REF. FUZZY SURROUN REGULAR E.F E.R Fuzzy status		Normal status	Demo status	Door open	F, R-fan : off	F, R-fan : on	Door close	F, R-fan : on	F, R-fan : off																												
	Normal status	Demo status																																						
Door open	F, R-fan : off	F, R-fan : on																																						
Door close	F, R-fan : on	F, R-fan : off																																						

NO.	Control Function	Control Objects	Contents	Remark
9	Electric device delay	Door S/W COMP. R-fan F-fan	1. F-fan on or off time is delayed, when COMP. is on or off.  2. F-fan and R-fan on or off time is delayed, when door switch is on or off. 	
10	Initial defrost	COMP. R-fan F-fan C-fan Heater	1. If D-sensor $\leq 3.5^{\circ}\text{C}$ in initial power supply, it enters to defrost mode.	
11	Delivery function	COMP. F-fan R-fan C-fan Heater	1. If press the quick freezing and quick refrigerating button for 3 sec., before power on, then delivery function will start.  2. The electric devices are off for 3 hours in delivery function. 3. The custom LED is on normally.	
12	COMP. restart prevent	COMP.	1. After COMP. is off, the COMP. is not on even though the F-sensor is at on point for 6 min.	
13	COMP. restart prevent	COMP.	1. Alarm buzzes 3 sec. after initial power on. 2. Alarm buzzes whenever each switch in F-PCB is pressed. 3. If the door is opened for more than 1 min., chirpy sound alarm buzzes. 4. If adjust temperature, the fuzzy button will be not operative and the buzzer will be off.	

NO.	Control Function	Control Objects	Contents	Remark						
14	Forced defrost	COMP. F-fan R-fan Heater	1. Press the quick freezing button 5 times, when press the fuzzy button. After that can enter the forced defrost mode.  2. Forced defrost mode. 1) The Pre-cool step is omitted. 2) Start from R-fan defrost.							
15	Adjust R1-sensor off point		1. When the temperature in fridge room is low (Low temperature even though R-fan and COMP. are operating properly), following functions are operating for easy after service. 1)  R13 : Off point determination in normal operation R14 : Decreases off point determination J15 : If remove J1, the off point will be decreased. 2) Resistance value R13 : 31. 4 kΩ R14 : 2.15 kΩ 3) Off point temperature <table><tr><th></th><th>Off point temperature</th></tr><tr><td>J15 shorted</td><td>-1.0°C</td></tr><tr><td>J15 opened</td><td>-2.5°C</td></tr></table>		Off point temperature	J15 shorted	-1.0°C	J15 opened	-2.5°C	
	Off point temperature									
J15 shorted	-1.0°C									
J15 opened	-2.5°C									
16	Error display	LED	1. Press the fuzzy button 3 times. When press the quick freezing and the quick refrigeration button. After that error mode.  2. All the custom LED are off, unless there is error. 3. If any error, relevant LED lights on. 4. Press the fuzzy button 3 times again. When press the quick freezing and the quick refrigeration button. After that error mode is canceled. 5. All error code will be reset, if they become normal. 6. Error code is referred to 3) Self-diagnosis table.							

3) Self-diagnosis table

Code	Defect function	Check method
F 1 (FRZ.)	F-sensor	- Compressor & F-fan is on for 24 minutes. - Compressor & F-fan is off for 16 minutes.
R 1 (REF.)	R1-sensor	- Regarded by R2-sensor.
R 2 (Q.R)	R2-sensor	- Detecting weak cooling is impossible.
D 1 (E.R)	D-sensor	- Heater is on only for 35 minutes.
RT (E.R)	RT-sensor	
D 0 (1 Fridge)	Door switch	
C 1 (2 Fridge)	Cooling cycle (check after first defrost mode)	
F 3 (3 Fridge)	Heater	- Natural defrost for 80 minutes.

- ◆ If both R1 and R2-sensor are out of order, then RT-sensor control R-fan.
- Room temperature $\leq 14^{\circ}\text{C}$: R-fan is off
 - Room temperature $\geq 26^{\circ}\text{C}$: R-fan is on for 15 minutes, R-fan is off for 5 minutes
 - $14^{\circ}\text{C} < \text{Room temperature} < 26^{\circ}\text{C}$: R-fan is on for 2 minutes, R-fan is off for 18 minutes

4) Circuit and wiring diagram

